

The Changing Security Balance in the Gulf

*Joint and Asymmetric Warfare, Missiles and
Missile Defense, Civil War and Non-State
Actors, and Outside Powers*

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Request for comments:

This report is a draft that will be turned into an electronic book. Comments and suggested changes would be greatly appreciated. Please send any comments to Anthony H. Cordesman, Arleigh A. Burke Chair in Strategy, at acordesman@gmail.com.

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I. The Security Balance: The Changing Balance of the Gulf Forces and Regional Threats

The security balance in the Gulf has changed radically in character over the last decade. What was once primarily a conventional military balance, shaped largely by the threats posed by state actors like Iran and Iraq, has changed into a complex mix of conventional capabilities, irregular or asymmetric warfare capabilities, missile forces, the possible creation of nuclear forces, internal conflicts and insurgencies, extremist or terrorist movements, and internal security threats. The causes of conflict have also changed radically to include violent religious extremism, sectarian and ethnic tensions, as well as the political upheavals and violence caused by problems in governance, economics, and internal stability.

The tensions between Iran and the Arab Gulf states still dominate the conventional military balance in the region, but the end result is a much broader and far more complex security balance. Iran's search for nuclear weapons has made Israel a more active part of the Gulf military balance – at least to the extent it has a nuclear and missile dimension. The US had maintained and increased its commitments to the Arab state in the Gulf, and now heads a new coalition that is seeking to degrade and destroy the efforts of a new non-state actor – the Islamic State – to create a “Caliphate” in Syria and Iraq.

Members of the Gulf Cooperation Council –Bahrain, Kuwait, Oman, Qatar, the UAE, and Saudi Arabia – and surrounding states – Egypt, Israel, Iran, Iraq, Jordan, Lebanon, Syria, and Yemen – must now deal with problems and threats that go far beyond conventional military conflict. In fact, three powers that once played a key role in shaping the conventional balance – Iraq, Syria, and Yemen – must now deal with civil conflicts and fighting with shifting mixes of non-state actors that make it impossible to assess their conventional forces as any form of cohesive fighting force.

Scenarios are not predictable, and neither are the key elements of force that might be used. The Islamic State has shown that non-state actors can quickly evolve from relatively small extremist movements to protostates, while the Iraqi government has shown the wrong kind of leadership can transform regular military forces into little more than a façade regardless of their strength in manpower, equipment, supplies, and form training. The fact that the Islamic State has a major presence in both Iraq and Syria -- as well as the shifting role of Kurdish minorities in Iraq, Syria, and Turkey – has made it harder to define the geographic lines for assessing the Gulf balance.

So has the flow of outside volunteers and money to extremist groups, and the role of state actors in supporting various militias, extremist groups and insurgents. Shi'ite actors like Iran's Al Quds Force, the Hezbollah, and Shi'ite militias represent one element of these changes. A wide range of Sunni “jihadist” or violent actors like the Islamic State and Al Nusra Front – some of which fight each other— play a growing role. So do non-Arab ethnic groups like the Iraqi, Syrian, and Turkish Kurds while both Islamic and other minorities have – in contrast – increasingly become the targets of non-state actors.

The civil side of developments in the region is also becoming a critical factor changing the security balance. The political upheavals since 2011 have confirmed the long standing warnings in Arab development reports that population growth, weak and corrupt

governance, poor economic development, and major career barriers to one of the youngest populations in the world were creating a structural crisis with explosive potential to affect internal security.

These same forces interact with trends hyperurbanization, massive shifts in media and communications, and failed secularism to help empower the emergence of new sectarian, ethnic, regional, and tribal tensions, and give force and momentum to both growing divisions between Sunni, Shi'ite, and other sects and violent religious extremism. The threat from within is often more important than the threat from without, although the impact of international terrorism, links between non-state actors, and state-driven interference in other states by groups like the Iranian Al Quds force makes any distinction between internal and external security uncertain at best.

These changes in the political and security landscape of Middle East have had profound effects on relationships between Gulf and other Middle Eastern states, and external powers. This is most certainly true of the relationship between the Arab Gulf Cooperation Council states and the United States.

On the one hand, they have created forces that create a new range of reasons for military cooperation, like the US-led coalition attacking the Islamic State and US and Saudi cooperation in trying to deal with the growing instability in Yemen. On the other hand, the U.S. and individual GCC states have often differed as to how to deal with the political upheavals that have occurred since 2011, especially in countries such as Bahrain and Egypt, how to deal with the internal tensions and fighting in Syria and Iraq, the implications of U.S. negotiations with Iran over its nuclear program, and the U.S.' strategic "pivot to Asia" and growing US self-reliance on domestic petroleum reserves. The GCC states need US security support more than ever before, but many in the GCC question U.S. security commitments.

At the same time, the GCC states face somewhat similar problems on an internal level. They need cooperation, integration, and interoperability more than ever before. The tensions between member states, however, still present serious problems in moving forward, and the need to create a far more functional GCC is making slow progress. Some of the need for change was recognized at the 35th GCC Summit in December of 2014, which called for more unified command efforts, and an integrated regional police and naval force.¹ The police force was stated to be needed to be used for counter-terrorism purposes in the GCC states to address a threat that all member states face.² While the joint Navy force went without a stated explanation, it was clear that estimated naval force was to act as a military deterrent against increasing Iranian intervention in the Gulf. The Gulf States – as well as other regional states and the US – are just beginning to react to the fundamental changes in the security balance.

The Changing Conventional Military Balance

The evolving mix of other changes does not mean that the conventional balance is not continuing to change in important ways. The basic statistics that shape the Gulf military balance are shown in **Figure I.1**. It has been shaped by the fact the GCC states have made massive investments in improved land, air, and naval weaponry – along with the US. Egypt and Israel have made major investments that affect the Gulf balance as well.

In contrast, Iran has been unable to compete in terms of both investment and access to advanced foreign systems. Iraq has never recovered from its massive losses of conventional arms during the US led invasion in 2003, and has suffered further losses as a result of its defeats by the Islamic State. Syria has lost a significant amount of its inventory because of its civil war, and has not been able to compete in military technology. Yemen's military forces have been deeply divided by internal fighting among its Sunni power brokers, have not been able to keep with the Houthi, and have faced a growing threat from Al Qaida in the Arabian Peninsula.

The strategic focus of the conventional balance has also changed. The GCC states, US, Britain, and France do see a conventional threat from Iran, but the primary Iranian threat they face is now from a much broader mix of both conventional and asymmetric air/sea/missile forces in the Gulf, and Iran's efforts to expand its influence in Syria, Lebanon, Iraq, and in Gaza through Hamas. Other security threats, like Yemen, are both a mix of non-state actors and threats that are largely the practical concern of Saudi Arabia.

The GCC states, Egypt, Israel, and Jordan are all making major investments in conventional arms, but the past focus on the Arab-Israeli balance has largely been replaced by an Egyptian and Jordanian focus on internal security, the threats posed by Arab non-state actors, and the crises in Libya and Iraq/Syria. Iraq and Syria focus on internal divisions and the threat posed by the Islamic State.

At the same time, the Gulf conventional military balance is altered by radical changes in intelligence, surveillance, and reconnaissance (ISR) capabilities. Ever since the first Gulf War in 1990-1991, the US has steadily increased its real and near real-time intelligence coverage and battle management and targeting capabilities in the region – capabilities tied to precision air and cruise missile strike capabilities and the ability to manage every aspect of joint warfare.

Battle management has become a mix of “C4I” – command, control, secure and digital communications, computer, and intelligence capabilities and command centers and new command facilities – adding BM or battle management to an acronym like C4I. The overall mix of C4I/BM and ISR in any given country – and that links countries together – is reshaping the nature of deterrence and warfighting at every level.

Precision-guided weapons are steadily increasing in accuracy, lethality, and range. This change ranges from short-range battlefield systems to long-range ballistic and cruise missiles, as well as long-range air strike systems like the Storm Shadow. Unmanned aerial vehicles (UAVs) and unmanned aerial combat vehicles (UCAVs) are also altering the force mix in both conventional and irregular warfare. Coupled to the near-real time targeting capability and command flexibility offered by new ISR and C4I/BM systems, this is creating capabilities for joint warfare of many different kinds and giving practical meaning to the concepts of a “revolution in military affairs” that emerged in the 1980s and 1990s.

These changes are affecting the balance of power in ways that counts of manpower and equipment can do little to reveal. Iran, for example, is largely on its own. Egypt, Israel, Jordan, and each of the GCC states is linked to different degrees to US capabilities along with key US allies with power regional projection capabilities like Britain and France. Iraq, Syria, and Yemen

At the same time, each Gulf and regional power has developed its own approach and mix of these “conventional” capabilities, although their progress remains far more limited than in US forces. The Arab Gulf powers have had more money and access to advanced technology, but many have bought far more than they have properly integrated into their force structures, and trained and exercised to use. The GCC has failed to emerge as a fully functional alliance in terms of doctrine, force structure, interoperability, and integration. It has made relatively little progress in developing integrated, real world mission capabilities of its own. This lack of real world integration and interoperability severely weakens the conventional and irregular warfare capability of each GCC, and limits their individual and collective capability to take practical advantage of their superior access to military technology and weapons.

Iran, in contrast, has had to improvise an uncertain mix of capabilities and rely far more on its own limited industrial base and lower-grade imports. Even before the upheavals that triggered a major civil war in 2011, Syria faced resource limits that meant it largely failed to modernize its capabilities beyond the levels common in the early 1990s and sometimes the levels it had in 1982. Iraq has been shattered by the impact of its defeats in 1991, the US involvement in 2003 and the fighting that followed, and by new defeats by the Islamic state in 2014. It has only recovered very limited conventional capability. Yemen has never seriously competed in military modernization, and has steadily lost conventional military capability since 2011 as its civil war intensified. Yemen’s capabilities remain primitive.

The Prospects for a Broader Arab Alliance

While they are not directly part of the Gulf military balance assessed in detail in this study, key outside states are playing a growing role in shaping the conventional balance. The forces of Jordan, Egypt, and Turkey are not part of traditional assessments of the Gulf balance, but -- like Syria’s conventional forces -- can play a role in some scenarios and their forces are summarized in **Figure I.2**.

Each of the major outside Arab powers has also made improvements in its conventional forces as well as the GCC states, although they have faced more serious resource limitations than the wealthy Arab Gulf states. Lebanon’s armed forces have improved some aspects of their weaponry but the country remains divided and Hezbollah constitutes a separate force that plays a role in Syria’s civil war, and has ties to Iran. Israel’s primary concerns are Iran’s missile forces, potential nuclear forces, and role in Syria, Lebanon, and Gaza – along with the rocket/missile/asymmetric warfare threat from Hezbollah in Lebanon and Hamas in Gaza, as well as non-state actors in Syria.

This aspect of conventional balance may also change radically in the near future. Saudi Arabia, the UAE, and other GCC states reached to Jordan and Morocco as allies after 2011. Key figures like King Abdullah of Jordan called earlier for the creation of a broader Arab alliance in 2014, and Jordan was already playing a critical role in securing the “western flank” of the Gulf. President Sisi of Egypt also called for a broader Arab alliance, and these calls for a broader alliance took on a far more tangible form when Saudi Arabia assembled a 10 nation Arab coalition to try to halt the Houthi takeover of Yemen in late March.

It is still far too early to include such forces in a detailed assessment of the balance, but the 26th Summit of the Arab League has formally called for such an alliance, and one that covers a much wider range of security issues than Yemen. The Summit was held in Sharm el-Sheikh at the end of March, and issued a communique on March 29th that stated:³

The Arab leaders have agreed in principle to form a joint military force to address growing Arab challenges and threats. The resolution came following two-day meetings that focused on Yemen, Libya, Syria and terrorism. Under the resolution, it is up to each Arab country to join the joint military force, which will be mainly tasked with swift military intervention in case an Arab League member state comes under threats, including terrorist ones. Arab leaders asked Secretary-General of the Arab League Nabil Al-Araby to meet with Arab chiefs of staff within one month to discuss the details of the joint force. The Arab leaders have re-affirmed unwavering support for the UAE's full sovereignty on the three Gulf islands; Greater Tunb, Lesser Tunb and Abu Musa. The Arab leaders declared backing for all measures and peaceful means Abu Dhabi may resort to restore its sovereignty on the three occupied islands.

The Arab leaders condemned Iran's action aimed at bolstering its occupation of the three islands, its recurring breaches of the memorandum of understanding, signed by the two countries on Abu Musa, on November 20, 1971. Iran has taken provocative actions aimed at altering the island's demographic status, through construction of housing units and settling non-natives on it, in addition to illegitimate construction of installations as well as carrying out military maneuvers and drills.

The final communique clarified that the Iranians have been building hospitals and facilities for economic, cultural, social, sports and religious purposes. Moreover, the island often witnesses visits by Iranian officials. Such acts constitute blatant breaches of the UAE sovereignty on the three islands; they are illegal and do not erase the fact that the UAE enjoys sovereignty on the three islands.

The Arab leaders urged Iran to respect the UAE sovereignty on the islands, halt such violations and provocative acts that constitute intervention in internal affairs of an independent and sovereignty state. Moreover, it urged Tehran to abstain from enforcing a de facto situation and halt building installations, with intention to change the demographic status on the islands.

Furthermore, the summiteers urged the government in Tehran to accept direct negotiations with Abu Dhabi or resort to the International Court of Justice to seek a peaceful settlement to the issue on basis of international laws and rules.

The Arab leaders have reaffirmed full support to the 'Determination Storm' operation in support of legitimacy in Yemen. They empathized that the operation was based on the Arab Treaty of Joint Defense, the Arab League Charter and Article 51 of the UN Charter, as well as the responsibilities of maintaining the national unity, sovereignty and independence of the Arab states.

The Arab leaders expressed hope that the compelling military measures would restore security and stability to all Yemen under constitutional legitimacy, countering Houthis' attempts supported by external parties. These external parties aim to threaten security of Yemen, the region and the Arab national security, as well as the international peace and security through sequestration of the Yemeni will, arousing seditions and dismantling the country's social fabric and national unity.

The Arab leaders urged the Houthi militias to immediately withdraw from the capital Sana'a, other towns, and the government institutions as well as normalizing the security situation in Sana'a and other governorates, besides returning the heavy and medium weaponry to the constitutional legitimate authorities.

The Arab leaders reiterated the full commitment to Yemen's unity, and respect of its sovereignty and independence, rejecting all forms of intervention in its internal affairs. They voiced support to the Yemeni people and their expectations for freedom, democracy and social justice, as well as enabling them to achieve comprehensive development.

The Arab leaders underlined the importance of urgently responding to Yemen President Abd Rabbuh Mansour Hadi's call for a conference on Yemen to be held in the Saudi capital of Riyadh under the umbrella of the Gulf Cooperation

Council (GCC). All Yemeni powers and parties keen on the country's security and stability are supposed to come together for a national dialogue. Custodian

of the Two Holy Mosques King Salman bin Abdulaziz Al Saud was commended for welcoming to host the conference in Riyadh.

The Arab leaders welcomed a UN Security Council statement, adopted on 22 March 2015, demanding the Houthis and their allies to stop their aggressions against the Yemeni governorates, especially on Ta'izz and Aden. The Arab leaders welcomed the request by the Yemeni President for safeguarding Yemen's constitutional legitimacy, and eagerness on the implementation of the GCC Initiative, and the Security Council relevant resolutions. They underlined support to the Yemeni leadership and people in their continuous and open war against terrorism and piracy and emphasized the necessity of making urgent arrangements to handle the deteriorating humanitarian situation in Yemen, where more than 16 million people are suffering severe shortage of food and medical care.

A later press release added:⁴

The Declaration also emphasizes the need that the Middle East gets rid of nuclear weapons and weapons of mass destruction and on Israel's accession to the Nuclear Non-Proliferation Treaty (NPT), in the Middle East, as well as to place all its nuclear facilities as well as the Middle East countries, including Iran, to the comprehensive safeguards system of the International Atomic Energy Agency.

Sharm el Sheikh Declaration stressed in this context that the Arab economic integration is an integral part of the Arab national security system, including the completion of the Greater Arab Free Trade Zone and the achievement of food security as well as the initiative of the Sudan in this regard, in addition to the sustainable development and optimal utilization of resources and narrowing the Arab food gap and future management of financial resources for achieving Arab water security.

The Declaration expressed the Arab leaders' deep thanks to President Abdel Fattah Al-Sisi of the Arab Republic of Egypt and its great people for the warm reception and hospitality and to the Government of the Arab Republic of Egypt and its various institutions for accurate preparation of the Arab summit, well organization and its good management.

If nothing else, the declaration expresses a level of unity in opposing the expansion of Iran's strategic interests that has never before existed. The initial operations of the Saudi-led coalition in airstrikes on the Houthis in Yemen have shown that a broader military coalition can have teeth as well as words, and Egypt has talked about major deployments of ground troops. It could lead to far more practical military cooperation in the future.

The Nuclear, Rocket/Missile, and Missile Defense Balance

Long-range missiles and rockets have also become a key part of the balance. Iran is seeking to develop precision-guided missiles that could deliver significant lethality against point targets ranging from military facilities to critical infrastructure like power plants, desalination plants, and petroleum facilities. Several GCC states are acquiring long-range, air delivered precision-guided missiles like the Storm Shadow, and most of the GCC states are developing advanced missile defenses – defense Israel already has and is steadily improving. The air balance is becoming an air-missile balance coupled to the balance of both surface-to-air missile defenses and point and wide area missile defenses.

At the same time, as later chapters discuss, Israel's long-standing nuclear monopoly is now threatened by Iran's nuclear programs and potentially by a range of Arab nuclear power programs. It is still unclear whether Iran will continue to actively pursue a nuclear weapons

program, and what form and timing will be involved. At the same time, it is unclear how Israel will react and whether it will attempt some form of military action if P5+1 efforts to reach some form of arms control agreement with Iran fail.

It is equally unclear how Israel will attempt to change its nuclear forces, targeting, and doctrine. While Israel probably has a mature mix of nuclear-armed aircraft and missiles with both tactical and strategic nuclear weapons, including thermonuclear warheads, no reliable unclassified estimate exists of these forces. It is also possible that Saudi Arabia will choose to update the long-range missile force it has bought from China, and seek nuclear warheads from Pakistan.

Asymmetric/Irregular Warfare

Iran has been forced to take the lead in improving its unconventional and irregular warfare capabilities by the fact it has lacked both the resources to match the military build-up and modernization in the Arab Gulf states, US, Britain, and France, and the severe restrictions outside powers have placed on the sales of modern arms and military technology. As the following chapters show, this basic asymmetry in warfighting capability may well lead to very different kinds of warfare and makes predicting the nature of key scenarios and their outcome steadily more difficult.

The emergence of non-state actors and the support of such movements by outside states has interacted with major political upheavals in Bahrain, Iraq, Syria, and Yemen, and the emergence of radical, violent Islamic extremist movements. These include a number of key Sunni “Jihadist” movements like the Islamic State, Al Nusra Front, and Al Qaida in the Arabian Peninsula. These also include Alewite-led militia movements in Syria, the Shi’ite Hezbollah in Lebanon, and a mix of Shi’ite militias in Iraq. Many have direct or indirect state sponsorship, and some fight alongside the forces of states like Syria, Iraq, and Yemen. Just as one man’s terrorist is another man’s freedom fighter, non-state actors can be actors for other states.

Iran’s steady build-up of an air-sea-missile mix of asymmetric and conventional forces is, however, a key development. Iran has developed a capability to threaten shipping and the flow of petroleum using a wide mix of anti-ship missile forces, marine and naval special forces, guided missile patrol boats, mine warfare vessels and smart mines, and submarines and midget submarines. These forces can act independently in limited wars, or in combination with Iran’s ballistic missiles, combat aircraft, and major combat ships, as well as land warfare or support from allied countries and non-state actors. They can fight low-level and sporadic wars of attrition or directly threaten to “close the Gulf” to the flow of oil, gas, and product exports. Iran has already found that these forces do act as a deterrent and possible source of intimidation and leverage in dealing with its Gulf neighbors. They also potentially offset the weaknesses in Iran’s military modernization and conventional forces.

These shifts make it increasingly unclear that any serious form of future conflict in the region will fail to mix conventional and asymmetric/irregular warfare. Virtually every major military power has the ability to mix such capabilities, and will do so in any given scenario where that offers it advantages. Most future conflicts seems likely to have some ethnic or sectarian dimension, and involve non-state actors and outside powers wherever possible.

They also ensure that military balance is becoming a mix of different military balances whose deterrent and warfighting character is becoming steadily more scenario specific. These scenarios will not be determined by the structure and size of each actor's order of battle. The mix of forces involved will be decided on an opportunistic basis tailored to the scenario – with political considerations playing a major role in how each side assembles its forces, escalates, or seek conflict termination.

Non-State Actors and Internal Security Forces: Terrorism, Civil War and Insurgency

Non-state actors are, however, anything but a mix of proxies for given states. They have become a major independent factor at the national, regional, and international levels. The ideological tensions and divisions that once emerged out of Pan Arabism have been replaced with a radically different threat: Islamic extremism and tensions between Sunnis, Shi'ites, other Islamic sects, and religious minorities.

These shifts are exemplified by the expanding role of Hezbollah, Al Qaida in the Arabian Peninsula, and the Shi'ite militias in Iraq; and by the rise of the Islamic State and other extremist movements like the Al Nusra Front and Khorasan Front. Some like the Hezbollah and Shi'ite militias may have ties to a state but act with considerable independence. Collectively, they make up a whole new status of forces shaping the balance in a major civil war in Syria, Iraq's uncertain stability and unity, the conflict and division in Yemen, and new internal tension in Lebanon.

They have also led to a spectrum of internal and regional conflict involving a wide range of terrorist activity by state and non-state actors. It also involves insurgency and civil war, and conflict where the religious or ideological dimension can be as important as the size of the military forces involved. The role of foreign volunteers has also come to play a critical role in this aspect of the change security balance, as have the international networking capability of groups like Al Qaeda and the Islamic State.

Iraq, Syria, and Yemen are the main current centers of such threats in the region, but this is only part of the story. Saudi Arabia has made major improvements and increases in its internal security and counterterrorism forces, and they played a key role in driving the leadership and key operations of Al Qaeda in the Arabian Peninsula (AQAP) into Yemen, as well as cooperating with the internal security forces of the UAE in aiding the government of Bahrain. All of the other GCC states have strengthened their internal security forces, as have Egypt, Jordan, and Lebanon.

The end result has been that all of the states in the region have made major increases in their internal security and paramilitary forces, and altered the training and equipment of at least some of their regular forces to deal with the threat of terrorism, sabotage, or insurgency. In a number of cases, the increase in internal security and counter-terrorism forces has placed a critical role in preserving internal security, and led to significant changes in the overall structure and mix of regular and internal security forces.

At the same time, the growing role of such non-state actors has led to other new elements of the balance within states like the expansion of Iranian influence through tools like the Al Quds Force and its intelligence service – the MOIS – which are linked to non-state actors

like Hezbollah, Iraqi Shi'ite militias, and Hamas, and new covert groups in the Ministries of Interior, Ministries of Information, intelligence services, and royal courts in several of the GCC states.

The Civil Side of Security

The final changing dimension of the security balance has been the need of every Gulf and regional state to reinforce the civil side of security. As the political upheavals since 2011 have shown, the religious, ideological, governance, and economic side of security provided to be as – or more – important in Libya, Tunisia, Syria, Iraq, Bahrain, and Yemen as the military balance or the capability of internal security forces.

A few nations like Saudi Arabia have attempted to address these issues through major new civil spending programs. It is, however, far harder to measure, particularly in nations where open political dissent is severely restricted. Some analyses, like the World Bank governance indicators and the Arab development reports of the UNDP provided extensive warning as to just how serious these tensions and pressure were becoming, but they did not provide any clear warning as to timing or the nature of what would happen.

The civil causes of instability and violence are critical uncertainties shaping the security and stability of the region that need far more examination in the future, along with the impact of stronger internal security measures in winning popular support from key elements of society, or alienating it through excessive measures.

The Data for Measuring the Changing Nature of the Security Balance

This analysis does not attempt to examine every possible scenario, although it does touch on many. These have been analyzed in other Burke Chair studies focusing on Iran and Iraq. It is rather an attempt to provide a survey of the key trends and forces that shape various aspects of the regional balance, and that form the building blocks that could shape future conflicts, and the patterns of deterrence, warfighting, escalation, and conflict termination that might be involved.

It is also an attempt to highlight some of the areas where adequate data are lacking. Unclassified sources do a far better job of providing data on major weapons platforms than they do in providing any meaningful ability ISR, C4I, mission profiles, and ordnance. The data on asymmetric forces are limited, as are the data on internal security forces. Little data are available on the holdings of non-state actors aside from total manning. No reliable data are available on Israel's nuclear forces and much of the key data on missile systems is uncertain or unreliable. There is a clear need to upgrade the analysis of the region to provide better data and metrics on key changes.

The Unchanging Strategic Importance of the Gulf Region

All of these military shifts need to be kept in a broader strategic context. The increase in petroleum and alternative fuels outside the Gulf has not changed its vital strategic importance to the global and US economy. It has reduced the Gulf's share of total global petroleum output, but the Middle East still produced 32.2% of the world total in 2013, amounting to 28.358 billion barrels per day (bbl/d).⁵ The

GCC members (excluding Bahrain) produced 23.9% of the world's total oil in 2013, amounting to 21.234 billion bbl/d, while Iran's production amounted to another 4% of the global total, or 3.558 billion bbl/d.⁶

From a strategic viewpoint, the flow of oil and gas tanker traffic out of the Gulf and through the Strait of Hormuz remains the world's most important energy chokepoint. The EIA also reported in November 2014 that an average of 167 million barrels worth of oil a day passed through the Strait of Hormuz, and that,⁷

The Strait of Hormuz is the world's most important oil chokepoint because of its daily oil flow of 17 million barrels per day in 2013. Flows through the Strait of Hormuz in 2013 were about 30% of all seaborne-traded oil.

EIA estimates that more than 85% of the crude oil that moved through this chokepoint went to Asian markets, based on data from Lloyd's List Intelligence tanker tracking service.⁶ Japan, India, South Korea, and China are the largest destinations for oil moving through the Strait of Hormuz.

Qatar exported about 3.7 trillion cubic feet (Tcf) per year of liquefied natural gas (LNG) through the Strait of Hormuz in 2013, according to BP's Statistical Review of World Energy 2014.⁷ This volume accounts for more than 30% of global LNG trade. Kuwait imports LNG volumes that travel northward through the Strait of Hormuz.

At its narrowest point, the Strait of Hormuz is 21 miles wide, but the width of the shipping lane in either direction is only two miles wide, separated by a two-mile buffer zone. The Strait of Hormuz is deep and wide enough to handle the world's largest crude oil tankers, with about two-thirds of oil shipments carried by tankers in excess of 150,000 deadweight tons.

As **Map I.1** shows, the Gulf also remains the world's most important energy chokepoint, and **Map I.2** shows that when the Gulf is viewed in terms of its broader strategic geography, there are only a limited number of functioning pipelines that provide alternative export routes – most of which are currently operating to their present capacity or under serious military threat.

The US Department of Energy's Energy Information Agency (EIA) reported in November 2014 that,⁸

Most potential options to bypass Hormuz are currently not operational. Only [Saudi Arabia](#) and the [United Arab Emirates](#) (UAE) presently have pipelines able to ship crude oil outside of the Persian Gulf and have additional pipeline capacity to circumvent the Strait of Hormuz. At the end of 2013, the total available unused pipeline capacity from the two countries combined was approximately 4.3 million bbl/d (see Table 2).

Saudi Arabia has the 746-mile Petrolina, also known as the East-West Pipeline, which runs across Saudi Arabia from its Abqaiq complex to the Red Sea. The Petrolina system consists of two pipelines with a total nameplate (installed) capacity of about 4.8 million bbl/d. The 56-inch pipeline has a nameplate capacity of 3 million bbl/d, and its current throughput is about 2 million bbl/d. The 48-inch pipeline had been operating in recent years as a natural gas pipeline, but Saudi Arabia converted it back to an oil pipeline. The switch increased Saudi Arabia's spare oil pipeline capacity to bypass the Strait of Hormuz from 1 million bbl/d to 2.8 million bbl/d, but this is only achievable if the system operates at its full nameplate capacity.

Saudi Arabia also operates the Abqaiq-Yanbu natural gas liquids pipeline, which has a capacity of 290,000 bbl/d. However, this pipeline is currently running at capacity and cannot move any additional oil.

The UAE operates the Abu Dhabi Crude Oil Pipeline (1.5 million bbl/d) that runs from Habshan, a collection point for Abu Dhabi's onshore oil fields, to the port of Fujairah on the Gulf of Oman, allowing crude oil shipments to circumvent the Strait of Hormuz. The pipeline can transport more than half of UAE's total net oil exports. The government plans to increase this capacity in the near future to 1.8 million bbl/d.

Other pipelines are currently unavailable as bypass options Saudi Arabia also has two additional pipelines that run parallel to the Petroline system and bypass the Strait of Hormuz, but neither of the pipelines currently has the ability to transport additional volumes of oil if the Strait of Hormuz is closed.

The 1.65 million bbl/d, 48-inch Iraqi Pipeline in Saudi Arabia (IPSA), which runs parallel to the Petroline from pump station #3 (there are 11 pumping stations along the Petroline) to the port of Mu'ajjiz, just south of Yanbu, Saudi Arabia, was built in 1989 to carry 1.65 million bbl/d of crude oil from [Iraq](#) to the Red Sea. The pipeline closed indefinitely following the August 1990 Iraqi invasion of Kuwait. In June 2001, Saudi Arabia seized ownership of IPSA and converted it to transport natural gas to power plants. Saudi Arabia has not announced plans to convert the pipeline back to transport crude oil.

Other pipelines, such as the Trans-Arabian Pipeline (TAPLINE) running from Qaisumah in Saudi Arabia to Sidon in Lebanon, or a strategic oil pipeline between Iraq and [Turkey](#), have been out of service for years because of war damage, disuse, or political disagreements. These pipelines would require extensive renovation before they can transport oil. Relatively small quantities, several hundred thousand barrels per day at most, could also be transported by truck if the Strait of Hormuz is closed.

These petroleum exports play a critical role in providing energy key global economies like China, India, Japan, South Korea, and Taiwan, as well as in limiting the global price of oil, gas, and petroleum products. They also affect the global price of oil and petroleum products regardless of where they come from, and the health of a global economy where every business and job in the US is steadily becoming more dependent on the flow of imports and exports. Some 15.2 million barrels a day of the 17 million barrels a day oil flowing out of the Strait of Hormuz go on through the Strait of Malacca to support the economy of key exports to the US and other significant amount goes to India.

The US has sharply reduced its dependence on direct petroleum imports, but the Department of Energy's Energy Information Agency (EIA) reported in early 2015 that the US still imported 27% of its petroleum in 2014.⁹ Its *Annual Energy Outlook* still calculated that the US would remain dependent on imports for some of its liquid fuels – which are critical to the transport sector – through 2040, with a rise in import dependence to 32% towards the end of the period.¹⁰

These calculations are uncertain and continue to shift over time. What is far more of a constant is that reductions in direct US imports do not affect the steady growth of the overall dependence of the US economy on the health of the global economy and its imports and manufactured goods. Estimates of this dependence differ even within the US government, but the latest CIA reporting available in March 2015 indicated that US imports totaled \$2.273 trillion in 2013 – the latest year for which data were available. These imports equaled 13.6% of a total GDP of \$16.72 trillion. Only 8.2% of these imports were petroleum. Some 86.9% were manufactured goods, and at least 35% were from countries like China, Japan, and Korea that **Map I.2** shows are dependent on Gulf oil imports. This indirect US dependence on imports had a net impact on the US economy of at least \$690 billion versus \$186 billion for crude oil imports.¹¹

Figure I.1: Gulf Military Forces – Part One

Category	Yemen	Iraq	Iran	GCC	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Total Active Manpower (1,000s)	66.7	177.6	523	368.1	8.2	15.5	42.6	11.8	227	63
Total Reserve Manpower (1,000s)			350	23.7		23.7				
Land Forces										
Active Manpower (1,000s)	60	100	450	281.5	6	11	25	8.5	175	56
Reserve Manpower (1,000s)			350	0						
Main Battle Tanks	880	270+	1663+	1691	180	293	117	30	600	471
Armored Fighting Vehicles				0						
Self-Propelled Artillery	25	48	292+	645	82	106	24	28	224	181
Towed artillery	310	60	2030+	299	36		108	12	50	93
Multiple Rocket Launchers	249	3	1476+	209	9	27		6	60	107
Mortars	642	950	5000	898	24	78	101	45	437	213
Surface to Surface Missile Launchers	28		30	6						6
Naval Forces										
Active Navy Manpower (1,000s)	1.7	3.6	33	24.7	0.7	2	4.2	1.8	13.5	2.5
Active Marine Manpower (1,000s)		1.5	7.6	3					3	
Reserve Manpower				0						
Submarines			3	0						
Submersibles			26	12			2			10
Destroyers/Frigates/Corvettes			6	27	3		5		11	8
Missile Patrol Boats			54	15		8				7
Other Patrol Boats	21	26	108	86	6	10	4	4	56	6
Patrol Craft	1	6	14	37	4	2	7	7	9	8
Hovercraft			8	0						
Amphibious Ships	1		17	2			1			1
Landing Craft	3		3	51	9		5	1	8	28
Support Ships	2		50	33	2	1	6	2	17	5
Armed Naval Helicopter			13	28					28	

Figure I.1: Gulf Military Forces – Part Two

Air Forces	Yemen	Iraq	Iran	GCC	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Active Manpower (1,000s)	3	5	18	35	1.5	2.5	5	1.5	20	4.5
Reserve Manpower (1,000s)				0						
Total Combat Aircraft	75	11	334	655	39	66	44	18	313	175
Fighters	10		184+	93	12				81	
Fighter/Ground Attack	65	8	110	405	21	39	15	12	180	138
Reconnaissance		10	6	21					14	7
AWACS & Airborne Early Warning				9					7	2
Intelligence				2					2	
Maritime Patrol and Surveillance	2		5	0						
Transport	13	32	117	149	10	5	17	12	56	49
Tankers			3	24		3			18	3
Armed and Attack Helicopters	19		2	130	28	29	15	21		37
Air Defense Forces										
Active Manpower (1,000s)	2	4	12	16					16	
Reserve Manpower (1,000s)				0						
Anti-Missile Defense Launchers			some	0		some			some	some
Heavy Surface to Air Missile Forces										
Units	some		16 bn, 5 sqn	140+ bty, 6+bn, 2+ sqn	some	16-17 bty	2 sqn	some	123 bty	6 bn
Launchers	some		529+	1818+	13+	some	some	some	1805	some
Missiles	some		some	302+	91	136+	some	75	some	some
Short Range Missiles (SHORADS)	some		18+	some	some	some	some	some	some	some
Man Portable Missiles (MANPADs)	some	some	some	some	some	some	some	some	some	some

Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure I.2: Key Outside Forces – Part One

Category	Egypt	Israel	Lebanon	Jordan	Turkey	Syria*
Total Active Manpower (1000s)	438.5	176.5	60	100.5	510.6	178
Total Reserve Manpower (1000s)	479	465		65	378.7	
Land Forces						
Active Manpower (1000s)	310	133	56.6	74	402	110
Reserve Manpower (1000s)	375	400		60	258.7	
Main Battle Tanks	2540	500	324	752	2504	some
Armored Fighting Vehicles						
Armored Infantry Fighting Vehicles	390		16	452	650	some
Self-Propelled Artillery	492	250		568	1118	some
Towed artillery	962	447	201	100	760+	some
Multiple Rocket Launchers	450	30	11	14	146+	some
Mortars	2564	250	275	759	5813+	some
Surface to Surface Missile Launchers	42	7				
Naval Forces						
Active Navy Manpower (1000s)	18.5	9.8	1.8	0.5	45.5	5
Active Marine Manpower (1000s)					3.1	
Reserve Manpower (1000s)	14	10			55	
Submarines	4	3			14	
Submersibles		20				
Destroyers/Frigates/Corvettes	10	3			24	2
Missile Patrol Boats	21				6	22
Other Patrol Boats	96	42	12	7	11	8
Patrol Craft	18	10	1		38	
Hovercraft						
Amphibious Ships	3				4	3
Landing Craft	9	3	2		49	
Support Ships	32	3			79	2
Armed Naval Helicopter	15				29	10

Figure I.2: Key Outside Forces – Part Two

Air Forces	Egypt	Israel	Lebanon	Jordan	Turkey	Syria*
Active Manpower (1000s)	30	34	1.6	12	60	17.5
Reserve Manpower (1000s)	20	55			65	
Total Combat Aircraft	569	440	9	75	335	277
Fighters	62	143		29	53	75
Fighter/Ground Attack	310	251	4	38	282	185
Reconnaissance	6	6	3		38	
AWACS & Airborne Early Warning	7	4			3	
Intelligence	2	4				
Maritime Patrol and Surveillance		3				
Transport	64	59		20	87	23
Tankers		11			7	
Armed and Attack Helicopters	45	84	9	25		54
Air Defense Forces						
Active Manpower (1,000s)	80					
Reserve Manpower (1,000s)	70					
Anti-Missile Defense Launchers	some	some		some	some	
Heavy Surface to Air Missile Forces						
Units	5 div	32 bty		16-17 bty	6+ sqn	4 div, 3 reg
Launchers	72+	24+		some	some	some
Missiles	702+	some		930+	some	some
Short Range Missiles (SHORADS)	some	some		some	some	some
Man Portable Missiles (MANPADs)	some	some	some	some	some	some

Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

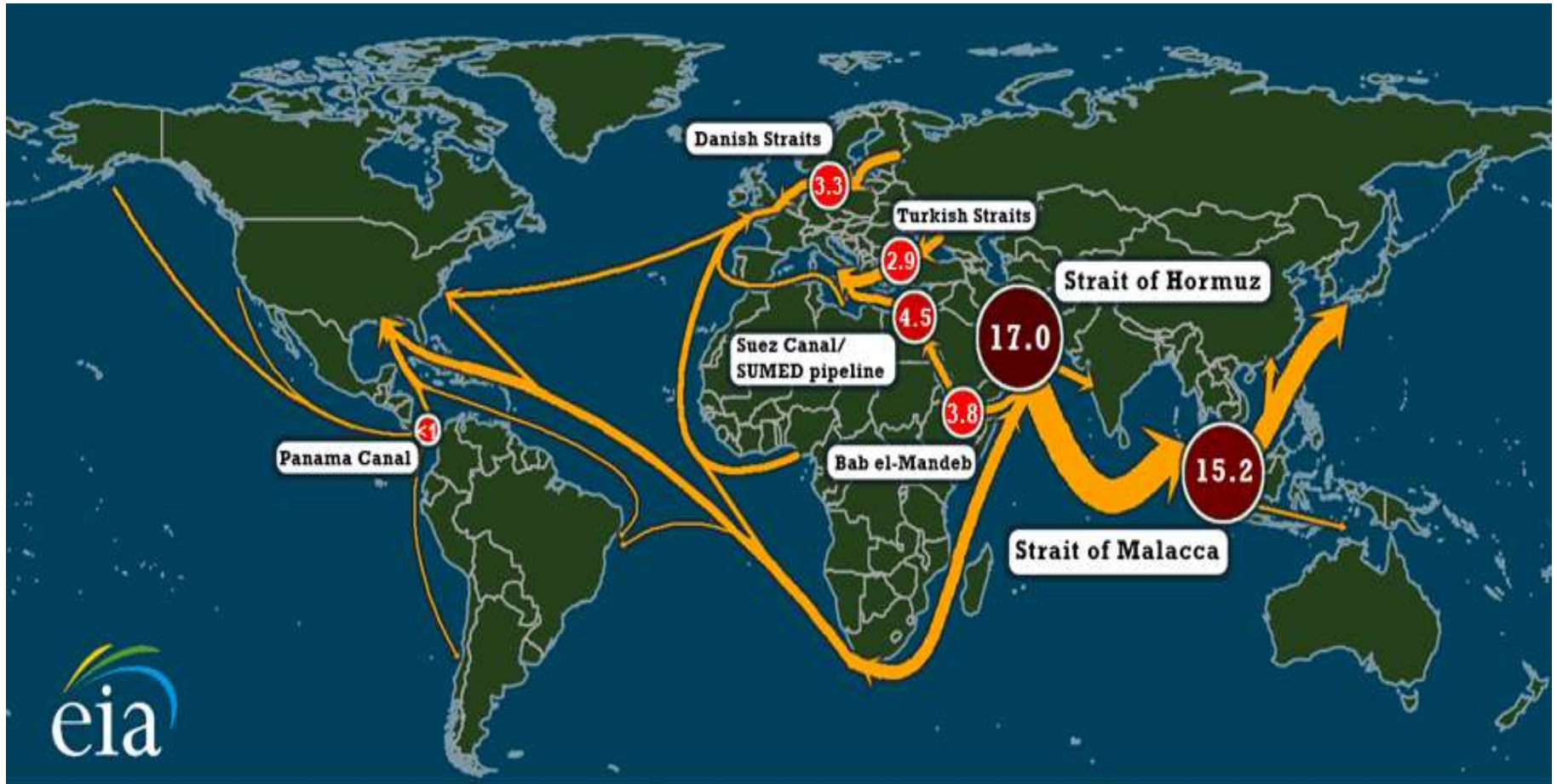
* According to *The Military Balance 2015*, IISS, “ongoing attrition during the civil war has severely reduced equipment numbers for almost all types. It is unclear how much remains available for operations”.

Map I.1: Gulf Energy Facilities and the Broader Geography of the Gulf Region



Source: DOE/EIA, November 2014, <http://www.eia.gov/countries/regions-topics.cfm?fips=wotc&trk=p3>.

Map I.1: The Global Strategic Importance of Gulf Oil Exports



All estimates in million barrels per day. Includes crude oil and petroleum products. Based on 2013 data.

Source: DOE/EIA, November 2014, <http://www.eia.gov/countries/regions-topics.cfm?fips=wotc&trk=p3>.

II. Military Expenditures

There are many different ways to measure the size and capability of military forces; however, the amount of money a given military power spends on security is a key indicator of strength. It provides a rough measure of total military capability, and, when compared with other expenditures, demonstrates the value its government places on its security. In the case of the Gulf both total national security expenditures and arms transfer data are key indicators, although Iran is seeking to create a significant national defense industrial base.

Most of the expenditure data now available focus on expenditures in the defense budget, rather than provide matching data on internal security expenditures – although some countries do include extensive paramilitary forces in such budgets. In most cases, however, such data provide at least a rough indication of the trends in both conventional and asymmetric military forces at the state level.

Figure II.1 compares the military expenditures of each GCC member during 1997-2012, along with those of Iraq, Yemen, and Iran.

Figure II.2 shows how the total military expenditures of the GCC contrasted to that of Iran. It is clear that the GCC, as a whole, spends far more than Iran on its military. Furthermore, Saudi Arabia alone spent about 5.5 times more than Iran on its military and the United Arab Emirates spent almost twice as much as Iran during this period. And, as a whole, the GCC combined spent just over 9 times more than Iran on its military.

For Iran, the limits to its military expenditures were more a matter of necessity than intent. Unlike the GCC states, Iran was subject to crippling sanctions, leading to a devalued currency, significant reductions in oil exports, trade disruptions, higher inflation, and a shrinking economy, some problems other Gulf States are not facing.¹² Therefore, it is not surprising that the GCC collectively spends more on their military than Iran. Saudi Arabia, alone, spent nearly \$56.5 billion on its military in 2012, compared to Iran's \$10.6 billion. Collectively, the GCC nearly spent an overwhelming \$98.5 billion on their militaries, outspending Iran nearly 10:1. This spending superiority allows the GCC to invest in newer technology, weaponry and defense acquisitions.

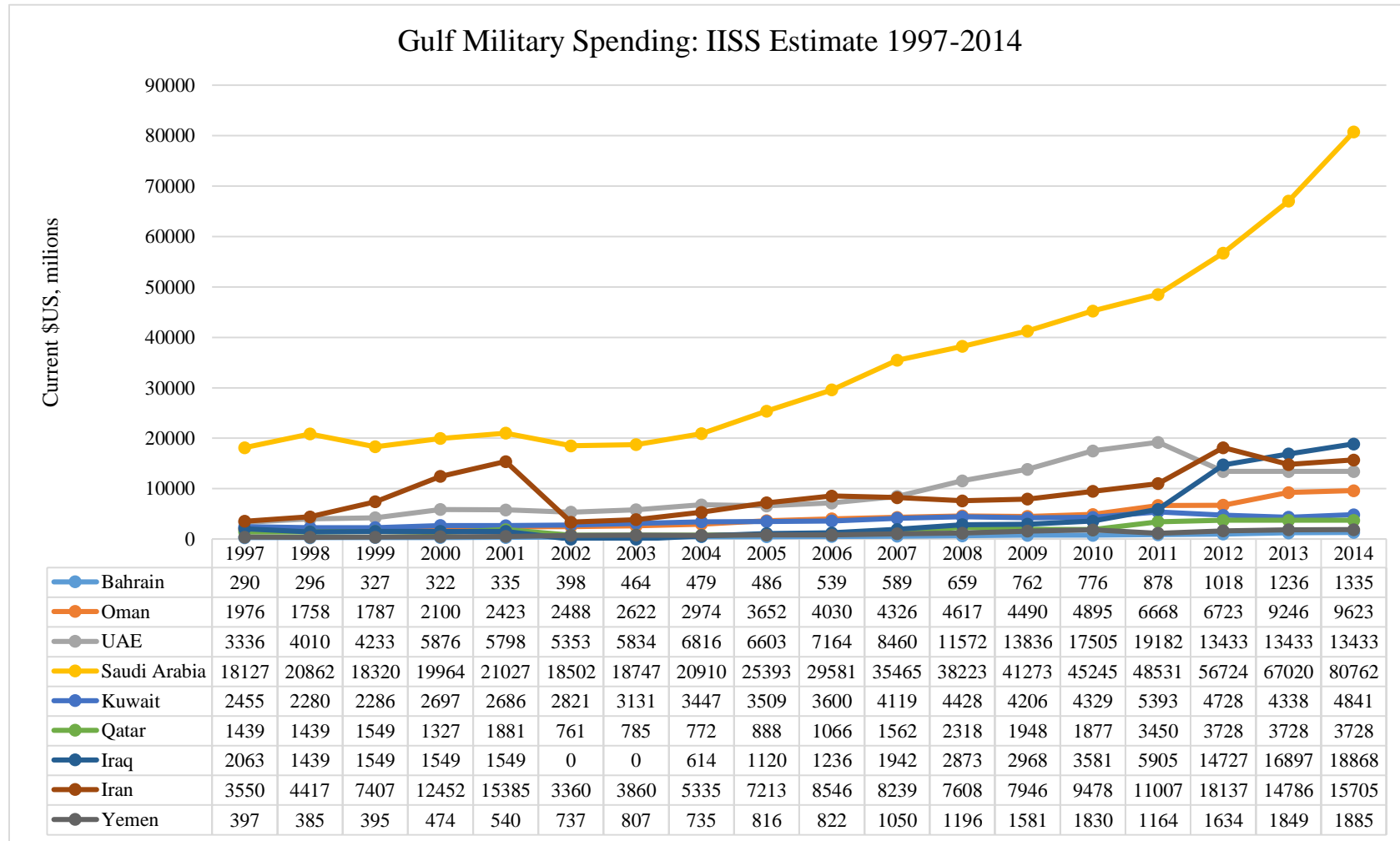
The percentages of gross domestic product (GDP) each country spends on defense are shown in **Figure II.3**. They provide another indicator of the forces driving the military balance. It is important to note, however, that showing such percentage is only a measure of effort in terms of the burden defense spending places on a given national economy. It does not account for the different size of such economies, it does not indicate the impact of outside factors like sanctions, and it does not show the size the resulting expenditures.

For example, **Figure II. 3** shows that in 2012 Oman spent 16.36% of its GDP on its military—the highest of any GCC and Gulf state. However, the data in **Figure II.1** show that Oman's total expenditures were only \$12.334 billion, the third highest of the Gulf States, and significantly less than Saudi Arabia's \$56.498 billion.

The impact of sanctions on Iran seems to be reflected by the fact that the trend line data in **Figure II.3** suggest that the percentage of Iran's GDP spent on its military has been decreasing, and **Figure II.4** shows that Iran's GDP decreased after stronger sanctions were applied in 2011.

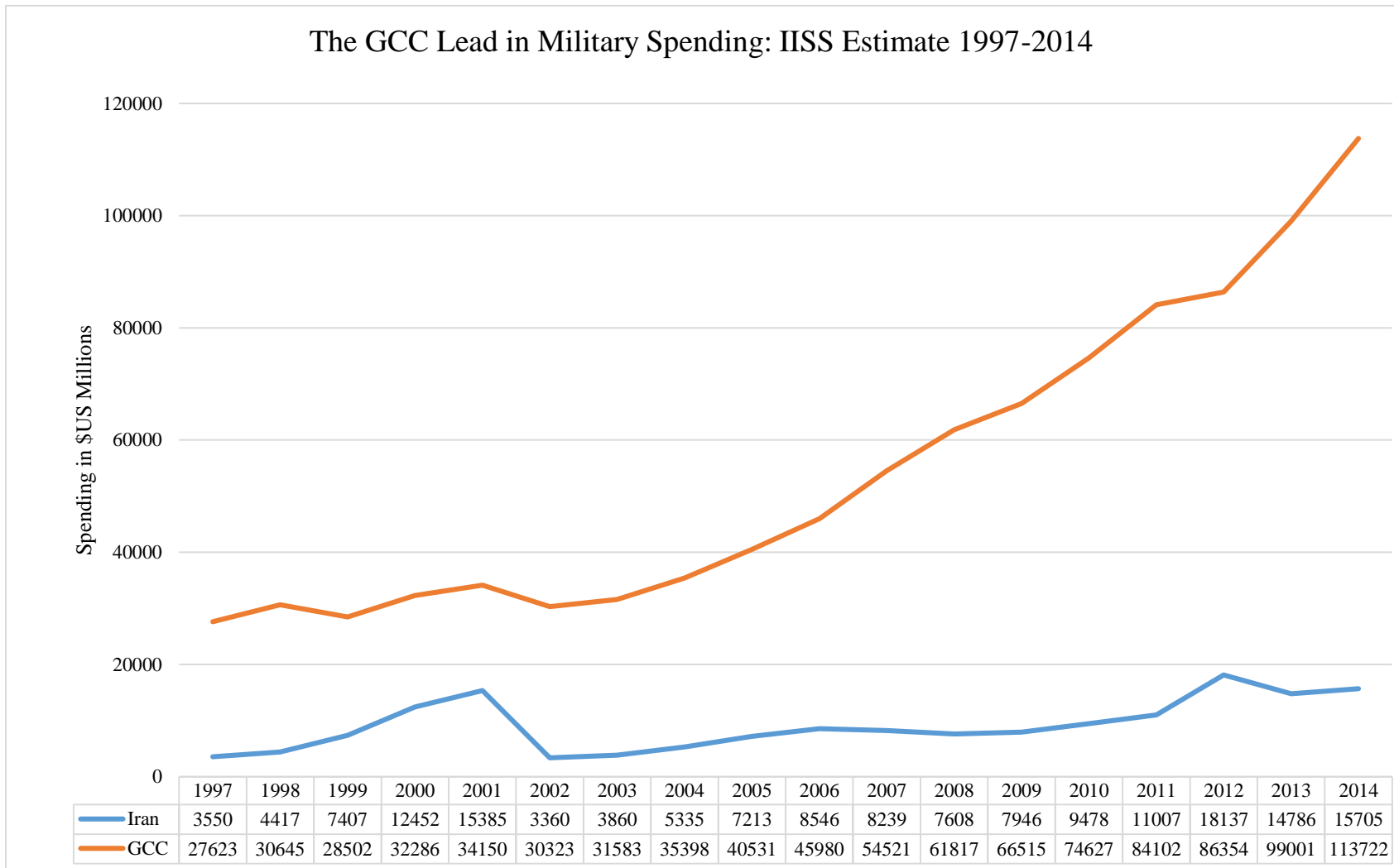
In contrast, both GDP of the Arab states continued to increase through 2014, and this limited the extent to which they had to increase the burden on their economies to pay for defense. **Figure II.1 and Figure II.2** show that nearly all of the GCC states increased funding for their military from 2010 onwards, some quite significantly.

Figure II.1: Gulf States Military Spending, 1997-2014



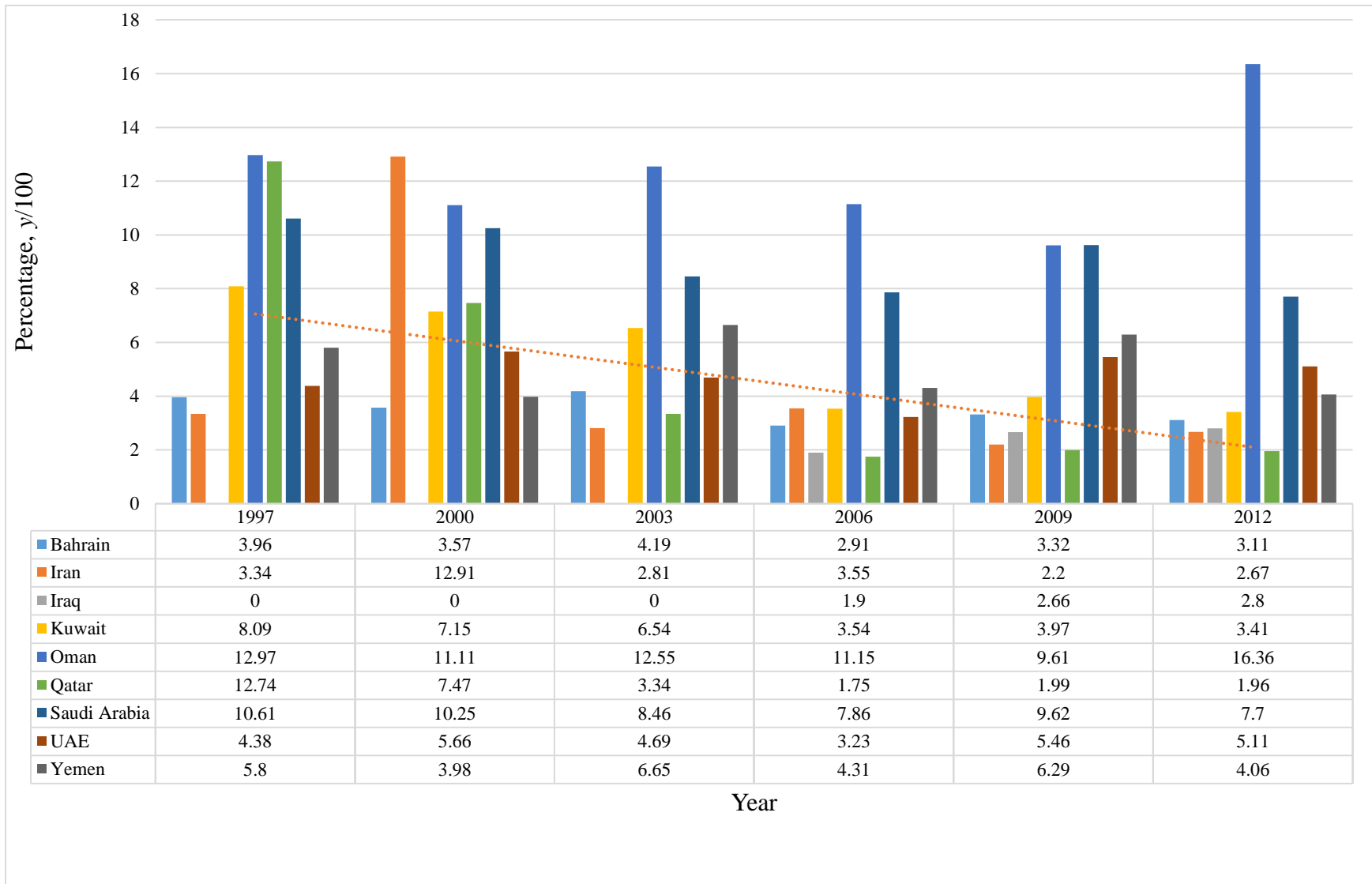
Source: IMF Data, World Economic Outlook Database October 2014

Figure II.2: Gulf State Military Spending, 1997-2014



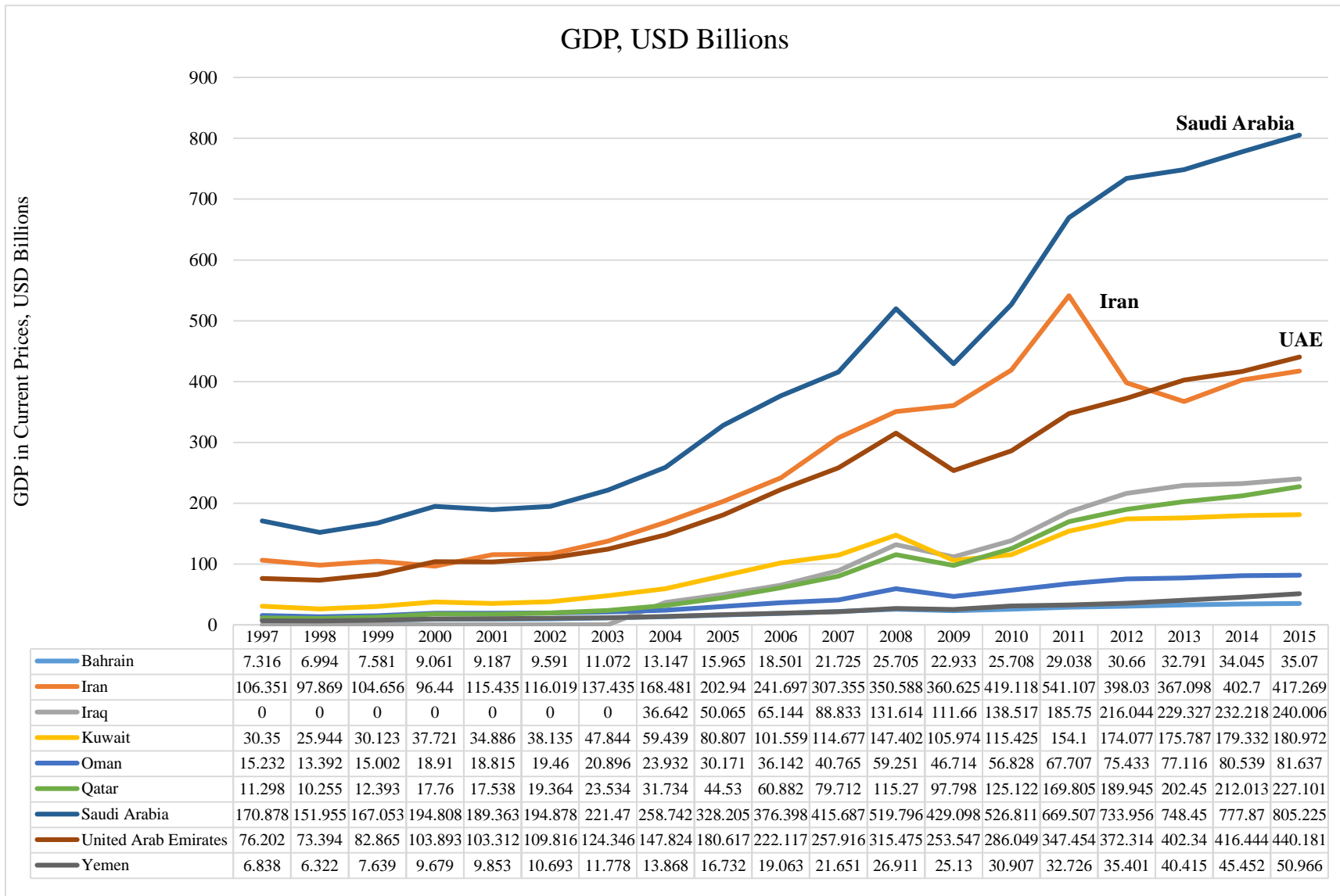
Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure II.3: Military Expenditures as a Percentage of GDP for the Gulf States



Sources: (2014) Chapter Seven: Middle East and North Africa, The Military Balance, 114:1, 297-354, <http://dx.doi.org/10.1080/04597222.2014.871884> ; IMF Data, World Economic Outlook Database October 2014.

Figure II.4: Gulf States' Gross Domestic Product



Source: IMF Data, World Economic Outlook Database October 2014

III. Arms Imports

The GCC states, Egypt, Jordan, Lebanon – and to a lesser extent Iraq – have had a major advantage over Iran in arms imports ever since the fall of the Shah. Since 1980, the US and other Western states have sought to block or limit transfers of key arms and technology to Iran – including munitions, modernization kits, spare parts, and advanced dual-use technology. Russia and China have also shown restraint in exporting advanced arms, and UN sanctions have further restricted Iran's options.

Iran has attempted to counter by setting up a large mix of covert purchasing networks during the Iran-Iraq War, bought from third nations with fewer restrictions, and bought on the black market. It only had limited success, however, even in paying a premium prices while the Arab states had open access at market prices. Similarly, Iran made some successful efforts to improve its industrial base, but these had limited success and involved massive investment costs and severe diseconomies of scale.

A Lack of Reliable Official Data on Total Arms Transfers

There are no current *reliable* metrics on the overall trends in arms transfers. Only one country has provided extensive official data on global sales, even its reporting has been cut back and now has substantial gaps. The US Arms Control and Disarmament Agency (ACDA) once published a much more comprehensive assessments called *World Military Expenditures and Arms Transfer (WMEAT)*, but publication became erratic and the last version seems to have been published on-line in 2012. ([http://www.state.gov/t/avc/rls/rpt/wmeat/2012/.](http://www.state.gov/t/avc/rls/rpt/wmeat/2012/)), and only covered the period from 1999 to 2009.

Mixed Official Data on US Arms Transfers: Defense Security Cooperation Agency (DCSA)

The US does still report major requests for the transfer or sale of *US arms* through its Defense Security Cooperation Agency (DCSA) (<http://www.dsca.mil/major-arms-sales>), but these are figures for proposed sales and not actual sales. It also reports total orders and deliveries by year for actual sales and orders by country (http://www.dsca.mil/sites/default/files/fiscal_year_series_-_30_september_2013.pdf and http://www.dsca.mil/sites/default/files/historical_facts_book_-_30_september_2013.pdf), but it has not published a new volume since 2013, and many NGO estimates do not seem to use these totals.

These DCSA data still show, however, the massive scale of US arms transfers to the Gulf. During one five year period in the DCSA reports –2009 to 2013, the DCSA reports that the US provided the following arms transfers to the GCC states:

- Bahrain signed \$372,341 million in new arms agreements and took \$421,117 million in arms deliveries.
- Kuwait signed \$3,386,192 million in new arms agreements and took \$1,503,455 million in arms deliveries
- Oman signed \$2,355,850 million in new arms agreements and took \$220,779 million in arms deliveries
- Qatar signed \$250,222 million in new arms agreements and took \$103,163 million in arms deliveries
- Saudi Arabia signed \$47,319,216 million in new arms agreements and took \$10,265,488 million in arms deliveries

- The UAE signed \$15,261,826 million in new arms agreements and took \$3,469,495 million in arms deliveries

They also indicate that GCC signed a grand total of \$68.9 billion in new arms agreements and took \$15,983.6 billion in arms deliveries.

Mixed Official Data on US Arms Transfers: Congressional Research Service (CRS)

The US Congressional Research Service published a declassified intelligence estimate called *Conventional Arms Transfers to Developing Nations*, with a detailed break out of total arms transfers and orders for each MENA country, but it has not published such reports since August 2012, and the last such report covered the 2004-2011 period. Even so, these past totals are still useful.

- **Figures III.1 to III.2** show the trends from 2004-2011 in terms of both new orders and actual deliveries. They show that the GCC states has a massive advantage over Iran in actual arms deliveries of 80:1 in in 2008-2011 and 25:1 in 2004-2007.
- **Figures III.3 to III.4** show that that the GCC states advantage over Iran in new arms orders was of 252:1 in in 2008-2011 and 15:1 in 2004-2007. This ensure that the GCC states will have a massive advantage over Iran in the near term.

The GCC advantage in these figures is partially offset by the lack of standardized and, to some extent, interoperability in GCC and allied forces that come from each country buying a different mix of weapons and equipment from different suppliers, as well as from the lack of standardization in doctrine, training, supply, and logistics. At the same time, the GCC states benefit from access to outside training facilities, military experience, and access to advanced US intelligence, surveillance, and reconnaissance (ISR) capabilities and command, control, communications, computer, and battle management capabilities (C4I/BM). They also do not face technological risk since they can choose between proven systems while any Iranian produced systems that are not exact copies of foreign systems mean Iran must assume the risk of problems in performance, delivery delays, and cost escalation.

A few key Gulf States also dominate many of these arms transfers. A separate CRS report by Christopher M. Blanchard indicates that Saudi Arabia ordered \$90.435 billion in major new arms transfers from the US alone between October 2010 and October 2014. These arms sales are shown in **Figure III.5**, and include some of the most modern weapons in US inventory.¹³

Similarly, the CRS reports that UAE – which has some of the most effective armed forces in the Gulf – has also placed substantial orders for US weapons and technology. Kenneth Katzman provided the following list of major arms orders and summary of their impact:¹⁴

From 2007 to 2010, the UAE agreed to acquire more U.S. defense articles and services through the Foreign Military Sales program—\$10.4 billion worth—than any other country in the world except Saudi Arabia. Until 2008, the most significant buy was the March 2000 purchase of 80 U.S. F-16 aircraft, equipped with the Advanced Medium Range Air to Air Missile (AMRAAM) and the HARM (High Speed Anti-Radiation Missile), a deal exceeding \$8 billion...Defense industry sources say that the equipment and capabilities on the F-16s sold to the UAE were highly sophisticated. Earlier, in September 2006, the United States sold UAE High Mobility Artillery Rocket Systems (HIMARS) and Army Tactical Missile Systems (ATACMs), valued at about \$750 million.

Among recent major sales:

- In March 2009, the UAE signed agreements with Boeing Co. and Lockheed Martin Corp. to buy \$3 billion worth of military transport aircraft (C-17 and C-130, respectively).

- On November 4, 2010, the Defense Security Cooperation Agency (DSCA) notified Congress of two potential sales: \$140 million worth of ATACMs and associated support; and a possible \$5 billion worth of AH-64 Apache helicopters
- (30 helicopters, remanufactured to Block III configuration).¹⁵
- On November 30, 2011, DSCA notified (transmittal number 10-56) a potential sale of 4,900 Joint Direct Attack Munitions (JDAM) kits with an estimated value of \$304 million. The widespread perception was that the munitions could potentially be used to strike hard targets, such as nuclear facilities in Iran, although there are no indications the UAE would conduct such a strike on its own. The United States previously sold the UAE JDAM kits worth \$326 million in January 3, 2008.
- On April 25, 2013, Secretary of Defense Chuck Hagel, visiting UAE, reportedly finalized a sale to UAE of an additional 25-30 F-16 aircraft and associated “standoff” air-to-ground munitions. The sale was in conjunction with similar weapons sales to Israel and Saudi Arabia, and which Secretary Hagel and other officials clearly indicated were intended to signal U.S. and partner resolve to Iran. The agreement came about one week after President Obama met visiting Abu Dhabi Crown Prince Shaykh Mohammad at the White House on April 16, 2013. A related possible sale was notified on January 24, 2014, for equipment upgrades to the F-16 being purchased, with an estimated value of \$270 million.
- On October 15, 2013, DSCA (transmittal no. 13-48) notified a potential sale of numerous precision-guided missiles for its F-16 fleet, including 20 of the advanced ATM-84 SLAM-ER Telemetry missile and 5,000 GBU-39/B “bunker buster” bombs. (The sale of the SLAM-ER would represent the first sale of that weapon to a Gulf state.) The principal contractors will be Boeing and Raytheon, and the estimated cost of the munitions is \$4 billion.
- Press reports say the UAE and other Gulf states are interested in purchasing the advanced F-35 “Joint Strike Fighter” if and when the United States approves it for sale to the Gulf States. The UAE is said to also be evaluating the French-made Rafale and the Boeing F/A-18, but has reportedly ruled out purchasing the British-made Typhoon.
- *Possible Drone Sale?* At the IDEX defense show in February 2013, the UAE reportedly agreed to a commercial sale, worth about \$200 million, for Predator unmanned aerial vehicles (UAVs), although the system apparently would be unarmed and for surveillance only. Still, Defense Department officials say they have not completed formulating a policy for the sale of such equipment to the Gulf States and it is possible that the deal might not be permitted by DOD.

The UAE is pivotal to the U.S. effort to forge a Gulf-wide missile defense network because the UAE has ordered the Terminal High Altitude Air Defense System (THAAD), the first sale ever of that sophisticated missile defense system. A sale of THAAD equipment was first announced September 9, 2008, valued at about \$7 billion. However, subsequent negotiations altered the purchase somewhat; on November 2, 2012, DSCA notified Congress of a potential sale to the UAE of additional THAAD equipment: 9 launchers, 48 missiles, and associated equipment with total estimated value of \$1.135 billion.¹⁹ In September 2013, the Defense Department awarded a \$3.9 billion contract to Lockheed Martin for about 300 THAAD missiles, of which about 192 would be exported to the UAE—suggesting the UAE purchase has increased since the November 2012 DSCA notification.²⁰ Also on November 5, 2012, DSCA announced the first sale of the THAAD to neighboring Qatar.

Among significant other recent missile defense sales to the UAE are the advanced Patriot antimissile systems (PAC-3, up to \$9 billion value, announced December 4, 2007). Also announced on September 9, 2008, were sales to UAE of vehicle mounted “Stinger” anti-aircraft systems (\$737 million value).

Kuwait has not attempted to create forces on the scale of Saudi Arabia and the UAE, but its purchases have still been significant. Since its liberation in 1991, the CRS reports that Kuwait’s major purchases from the US include:¹⁵

- 218 M1A2 tanks at a value of \$1.9 billion in 1993. Delivery was completed in 1998.
- A 1992 sale of 5 Patriot anti-missile fire units, including 25 launchers and 210 Patriot missiles, valued at about \$800 million. Delivery was completed by 1998. Some of them were used to intercept Iraqi short-range missiles launched at Kuwait in the 2003 war.
- A 1992 sale of 40 FA-18 combat aircraft.
- A September 2002 sale of 16 AH-64 (Apache) helicopters equipped with the Longbow fire-control system, valued at about \$940 million.
- A December 4, 2007, Defense Security Cooperation Agency (DSCA) notification to Congress reported a sale to Kuwait of 80 PAC-3 (Patriot) missiles and 60 PAC-2 missiles and upgrades, valued at about \$1.3 billion.
- On September 9, 2008, DSCA notified a sale of 120 AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM), along with equipment and services, with a total value of \$178 million.
- On August 11, 2010, the Administration notified Congress of another potential Patriot-related sale—of 209 Patriot “Guidance Enhanced Missile-T” (GEM-T) missiles valued at \$900 million. The prime contractor for that system is Raytheon.
- On February 27, 2012, the Administration notified Congress of a potential sale of 80 AIM-9X-2 SIDEWINDER missiles, and associated parts and support, with an estimated value of \$105 million. The sale, if completed, would help Kuwait modernize its fighter aircraft and enhance interoperability with U.S. aircraft.
- On July 20, 2012, the Administration notified a potential sale of 60 Patriot Advanced Capability (“PAC-3”) missiles and 20 Patriot launching stations, plus associated equipment. The total value of the sale could reach \$4.2 billion. On December 31, 2013, DoD said Lockheed Martin would deliver 14 of the missiles and seven launcher modification kits by June 30, 2016.
- On April 17, 2013, DSCA notified a potential sale to Kuwait of one C-17 cargo aircraft and associated equipment, with an estimated total cost of \$371 million.
- On December 4, 2013, DSCA notified a possible sale to Kuwait of technical support to its U.S.-made F-18s for an estimated cost of about \$150 million.
- Kuwait is said to be considering adding more FA-18 aircraft, although it is evaluating and might instead order the Rafale or the Typhoon. The latter two combat aircraft are made by European manufacturers.

Oman has bought many of its arms from the UK, but the CRS reports it has also has made some major purchases from the US:¹⁶

- *F-16s*: In October 2001, Oman purchased (with its own funds) 12 U.S.-made F-16 C/D aircraft from new production. Along with associated weapons (Harpoon and AIM missiles), a podded reconnaissance system, and training, the sale was valued at about \$825 million; deliveries were completed in 2006. Oman made the purchase in part to keep pace with its Gulf neighbors, including UAE and Bahrain, that had bought F-16s. The Defense Security Cooperation Agency (DSCA) notified Congress on August 4, 2010, of a potential sale to Oman of up to 18 additional F-16s and associated equipment and support. The sale could be worth up to \$3.5 billion to the main manufacturer, Lockheed Martin.¹¹ Oman signed a contract with Lockheed Martin for 12 of the aircraft in December 2011, with a contract for an additional six still possible. The twelve are to be delivered through 2014. On December 11, 2012, DSCA notified a sale of weapons systems for the F-16, including 27 AMRAAMs, 162 GBU laser-guided bombs, and other weaponry and equipment, with a total estimated value of about \$117 million.
- In July 2006, according to the Defense Security Cooperation Agency (DSCA), Oman bought the JAVELIN anti-tank system, at a cost of about \$48 million.

- In November 2010, DSCA notified Congress of a possible sale of up to \$76 million worth of countermeasures equipment and training to protect the C-130J that Oman is buying from Lockheed Martin under a June 2009 commercial contract. The prime manufacturer of the equipment is Northrop Grumman. Another possible sale of countermeasures equipment—in this case for Oman’s aircraft that fly Sultan Qaboos—was notified on May 15, 2013.
- On October 19, 2011, DSCA notified Congress of a potential sale to Oman of AVENGER fire units, Stinger missiles, and Advanced Medium Range Air to Air Missiles (AMRAAMs)—all of which are to help Oman develop a layered air defense system. The total value of the potential sale, including associated equipment and training, is about \$1.25 billion.
- On June 13, 2012, DSCA notified a sale of various types of AIM “Sidewinder” air-to-air missiles to modernize Oman’s F-16 fleet and enhance its interoperability with U.S. forces.
- On May 21, 2013, Secretary of State John Kerry visited Oman reportedly in part to help finalize a sale to Oman of ground-based air defense systems made by Raytheon. The equipment has an estimated value of \$2.1 billion. DSCA has not, to date, made a notification to Congress about the potential sale

Qatar has made French purchases, but has also bought some advanced arms from the US. The CRS reports that the proposed US sales during 2012-2013 included:¹⁷

- UH-60M BLACK HAWK Helicopters, \$1,112 million, June 13, 2012
- MH-60R and MH-60S SEAHAWK Helicopters, \$2,500 million, June 26, 2012
- AH-64D APACHE Block III Longbow Helicopters; Related Missiles, \$3,000 million, July 12, 2012
- HELLFIRE Missiles \$137 million, July 12, 2012
- Terminal High Altitude Area Defense (THAAD) Fire Units, \$6,500 million, November 5, 2012
- PATRIOT Configuration-3 Missile Fire Units and Missiles \$9,900, million, November 7, 2012
- M142 High Mobility Artillery Rocket System (HIMARS); M57 Army Tactical Missile System (ATACMS) Block 1A T2K Rockets; M31A1 Guided Multiple Launch Rocket System (GMLRS) Rockets, \$406 million, December 24, 2012
- Javelin Guided Missiles, \$122 million, March 28, 2013
- Large Aircraft Infrared Countermeasures (LAIRCM) Systems, \$110 million, May 15, 2013
- C-17 Globemaster III Equipment and Support, \$35 million, June 27, 2013
- A/N FPS-132 Block 5 Early Warning Radar, \$1,100 million, July 29, 2013.

Bahrain a major strategic partner of the United States because it provides key naval and air base facilities, but the CRS reports that,¹⁸

its total government budget is only about \$6 billion per year, “allowing modest amounts of national funds to be used for purchases of major combat systems. About 85% of Bahrain’s defense equipment is of U.S.-origin.

- In 1998, Bahrain purchased 10 U.S.-made F-16Cs from new production, worth about \$390 million. It later purchased 12 more of the system, bringing its

F-16 fleet to 22. In 1999 and 2009, the United States sold Bahrain Advanced Medium-Range Air-to-Air Missiles (AMRAAMs) to arm the F-16s.

- An August 2000 sale of 30 Army Tactical Missile Systems (ATACMs, a system of short-range ballistic missiles fired from a multiple rocket launcher), valued at about \$70 million, included an agreement for joint U.S.-Bahraini control of the weapon. That arrangement was reached in part to allay U.S. congressional concerns about possible U.S. promotion of missile proliferation in the region.
- In 2007, the United States sold Bahrain several hundred “Javelin” anti-armor missiles worth up to \$42 million; 9 UH-60M Blackhawk helicopters worth up to \$252 million; and 6 Bell search and recovery helicopters, valued at about \$160 million.
- Section 581 of the FY1990 foreign operations appropriation act (P.L. 101-167) made Bahrain the only Gulf state eligible to receive the Stinger shoulder-fired anti-aircraft missile, and the United States has sold Bahrain about 70 Stingers since 1990. (This authorization has been repeated in subsequent legislation.)

These lists of transfers by weapons systems vary sharply by country and report, but also provide a tangible picture of both the scale of the qualitative improvements to Arab Gulf forces and the level of US strategic commitment to the Arab Gulf states. As the previous figures have shown, Britain and France have also made major sales, again giving the Arab Gulf states a major edge in weapons quality and military technology over Iran.

Commercial and Media Reporting

Various commercial services and defense media also report arms sales, but such reporting is extremely erratic and often is little more than a summary of manufacturer publicity reporting. The reporting by IHS Jane’s is a partial exception

NGO Reporting

The Stockholm International Peace Research Institute’s Arms Transfer Database seems to represent the most accurate outside NGO assessment, but has significant cost and data collection limits relative to declassified US intelligence. However, the SIPRI numbers are sometimes very different from the US numbers and substantially smaller, although they exhibit the same basic trends.

According to the Stockholm International Peace Research Institute’s Arms Transfer Database, the GCC countries, as a whole, spent more than \$23.4 billion dollars on arms transfers between 2004 and 2013 (**Figure III. 6 and Figure III.7**). The GCC nations increased their arms transfer agreements during 2009-2013 by 127% over the previous five year period. Iran, however, only spent a total of roughly \$1.4 billion on arms transfer agreements from 2004-2013; and nearly 40% less on arms transfers between 2009 and 2013.

These figures give the GCC a ratio of 80:1 for new Arms agreements in 2008-2011 and 25:1 in 2004-2007. Even though the periods involved are somewhat different, the SIPRI data may show a major GCC lead over Iran, but they clearly do not track with the CRS data. The SIPRI figures for Saudi Arabia seems particularly low.

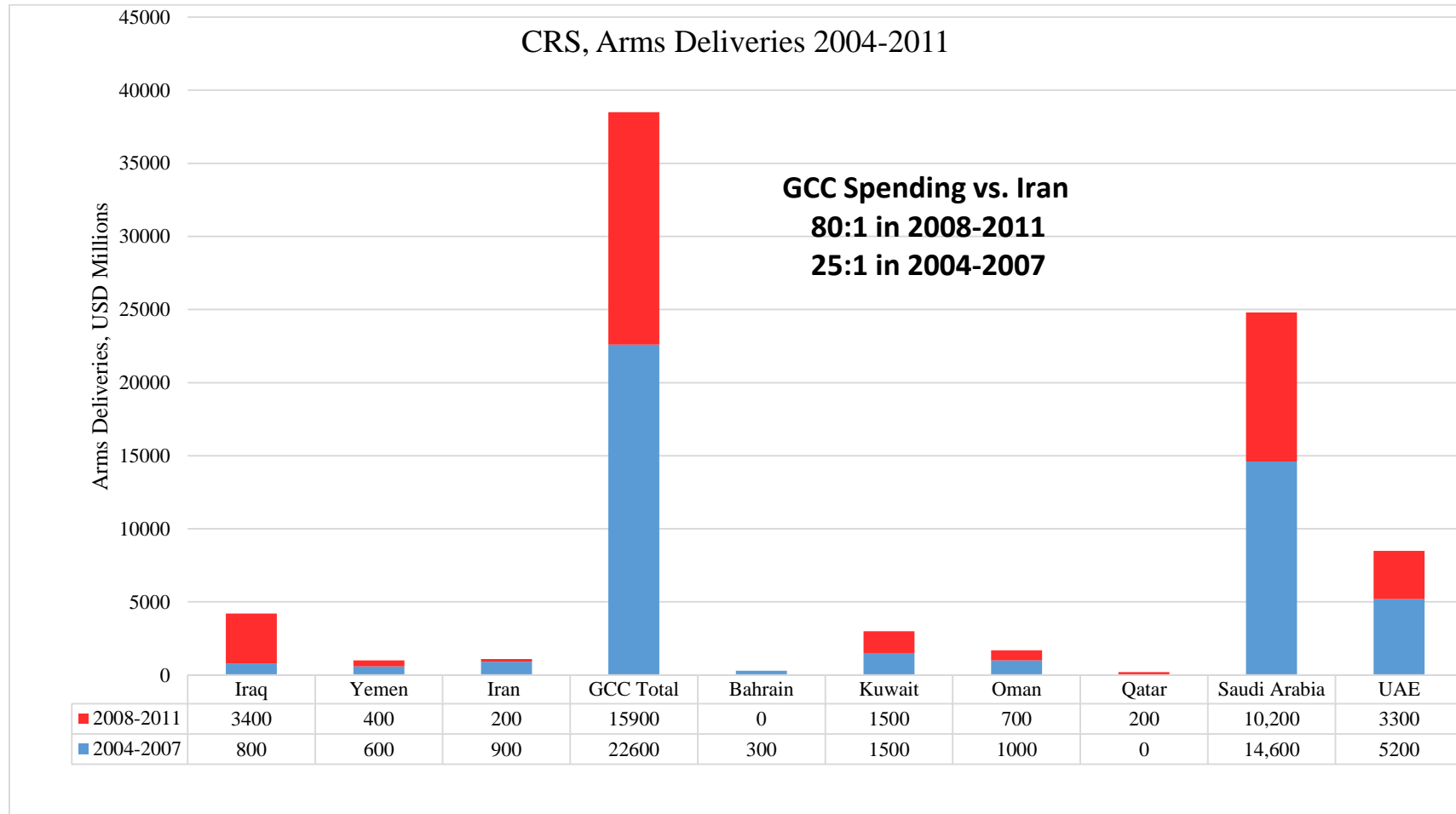
The GCC arms imports are not limited by sanctions, and this allows the GCC states, Jordan and Egypt to take full advantage of international arms sales and arms transfer agreements in buying upgrades and purchasing of more advanced arms. In contrast, Iran doesn’t have access to many of the markets it needs to obtain replacement parts for its weaponry and armor that originally came from

the West. Sanctions have forced Iran to reverse engineer parts—and in some cases, entire weapons—to maintain its military force. This has forced Iran to try to find “work arounds” to keep its equipment running, make uncertain procurements and modernization efforts, try to produce parts of uncertain quality at high cost, and contribute to an expensive black market in order to find vital parts for its military. It has led Iran to create a larger military industrial base, but at an extremely high unit cost because of the lack of scale, and to attempt efforts that were too advanced for its industrial base to fully support.

Looking at Major Weapons Transfers

The IISS provides another way of looking at the impact of arms transfers on the balance. **Figure II.8** shows the recent arms transfers to key Gulf countries reported by the IISS in various editions of its annual *Military Balance* since 2013, as well as some reported by other sources. These data sometimes include sales or transfers that are reported by manufacturers before the final contract is signed or do not materialize for other reasons, but give a broad indication of the impact of outside technology transfer on the balance.

Figure III.1 CRS: The Arms Delivery Gap: Iran vs. GCC 2004-2011



Source: Richard F. Grimmett and Paul K. Kerr, *Conventional Arms Transfers to Developing Nations, 2004-2011*, Congressional Research Service, August 24, 2012. p. 58 ,59. “0” represents any value below \$50 million.

Figure III.2: CRS: The Arms Delivery Gap: Iran vs. GCC 2004-2011

Recipient Country	U.S.	Russia	China	Major West European	All Other European	All Others	Total
2004-2007							
Bahrain	200	0	0	100	0	0	300
Iran	0	500	200	0	0	200	900
Iraq	200	100	0	100	300	100	800
Kuwait	1,500	0	0	0	0	0	1,500
Oman	700	0	0	300	0	0	1,000
Qatar	0	0	0	0	0	0	0
Saudi Arabia	4,300	0	200	9,900	100	100	14,600
UAE	600	200	0	4,000	400	0	5,200
Yemen	0	400	0	0	100	100	600
GCC Total	7,300	200	200	14,300	500	100	22,600

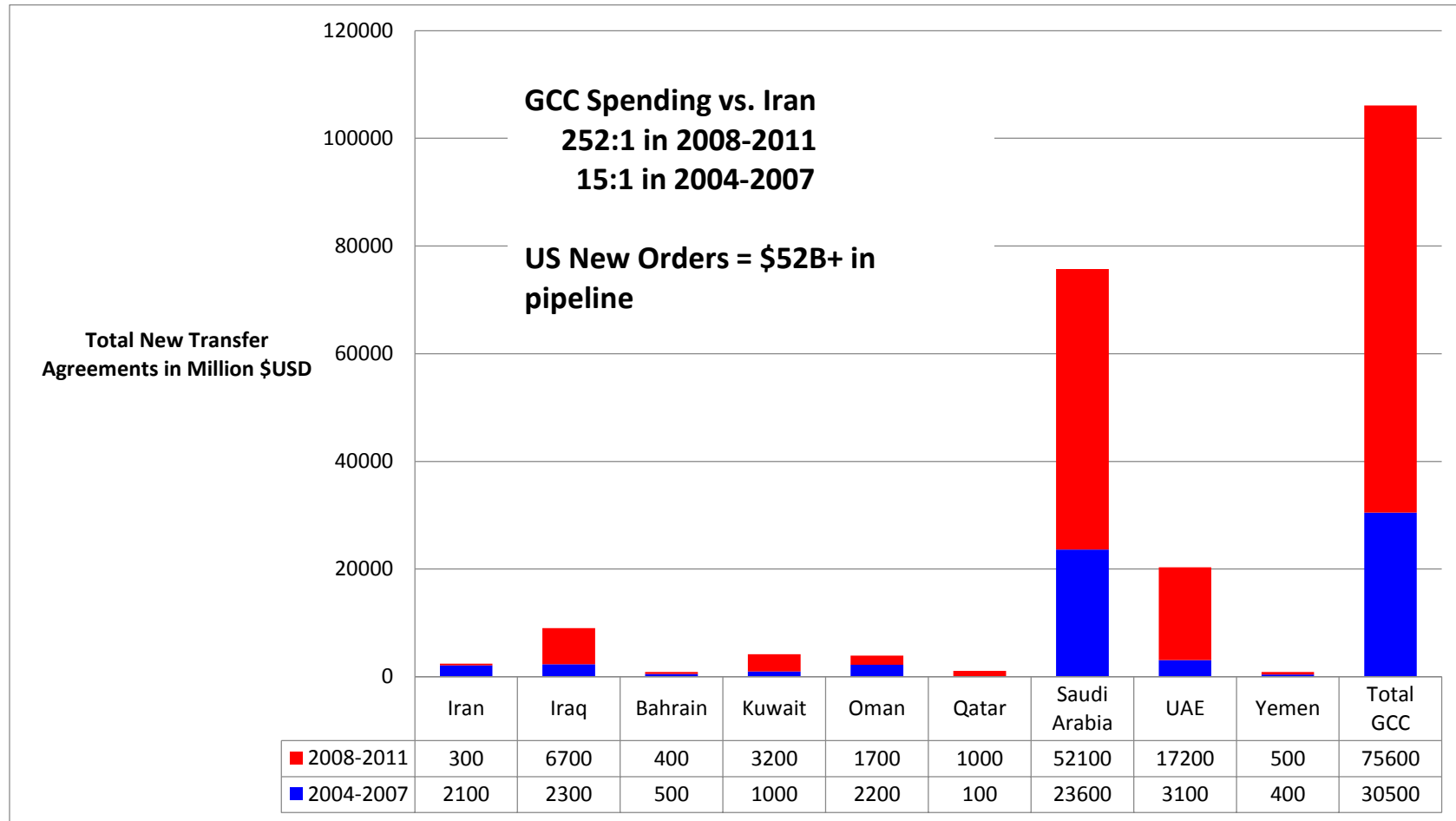
Recipient Country	U.S.	Russia	China	Major West European	All Other European	All Others	Total
2008-2011							
Bahrain	0	0	0	0	0	0	0
Iran	0	200	0	0	0	0	200
Iraq	2,600	300	0	300	100	100	3,400
Kuwait	1,300	100	100	0	0	0	1,500
Oman	200	0	0	500	0	0	700
Qatar	0	0	0	200	0	0	200
Saudi Arabia	5,900	0	700	3,300	300	0	10,200
UAE	2,000	300	100	600	300	0	3,300
Yemen	0	100	0	0	200	100	400
GCC Total	9,400	400	900	4,600	600	0	15,900

Notes: 0—data less than \$50 million or nil. All data are rounded to the nearest \$100 million.

a. Major West European category includes France, United Kingdom, Germany, and Italy totals as an aggregate figure.

Source: Richard F. Grimmett and Paul K. Kerr, *Conventional Arms Transfers to Developing Nations, 2004-2011*, Congressional Research Service, August 24, 2012. p. 58, 59. “0” represents any value below \$50 million.

Figure III.3: CRS: The New Arms Order Gap: Iran vs. GCC 2004-2011



Source: Richard F. Grimmett and Paul K. Kerr, *Conventional Arms Transfers to Developing Nations, 2004-2011*, Congressional Research Service, August 24, 2012. p. 58 ,59. "0" represents any value below \$50 million.

Figure III.4: CRS: The New Arms Order Gap: Iran vs. GCC 2004-2011

Recipient Country	U.S.	Russia	China	Major West European	All Other European	All Others	Total
2004-2007							
Bahrain	400	0	0	100	0	0	500
Iran	0	1,600	300	0	100	100	2,100
Iraq	1,100	100	100	200	600	200	2,300
Kuwait	1,000	0	0	0	0	0	1,000
Oman	100	0	0	2,100	0	0	2,200
Qatar	0	0	0	0	0	100	100
Saudi Arabia	5,000	0	800	16,900	800	100	23,600
UAE	1,400	300	100	1,100	200	0	3,100
Yemen	0	200	0	0	100	100	400

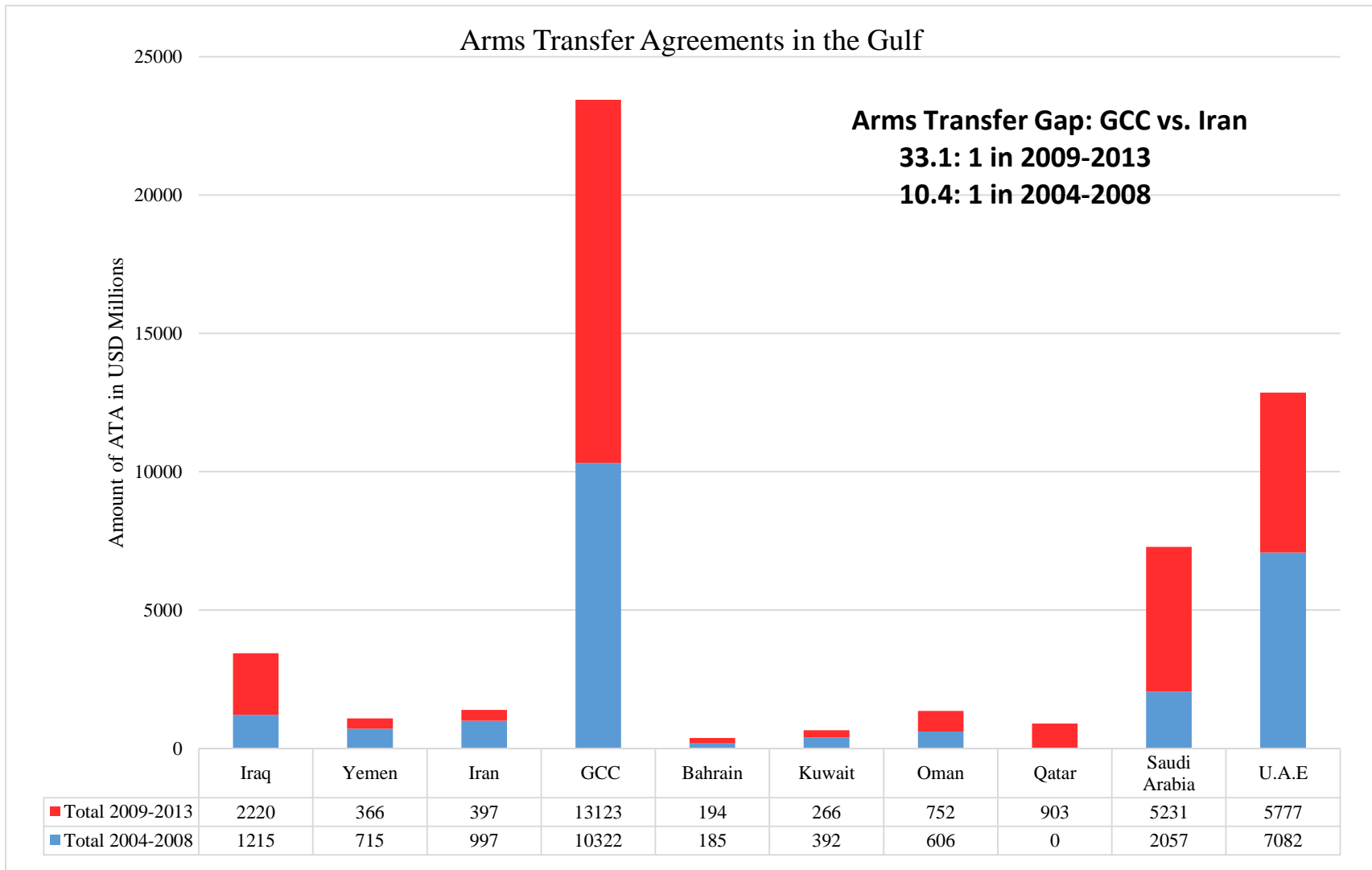
Recipient Country	U.S.	Russia	China	Major West European	All Other European	All Others	Total
2008-2011							
Bahrain	400	0	0	0	0	0	400
Iran	0	100	0	0	100	100	300
Iraq	4,800	300	0	500	900	200	6,700
Kuwait	2,500	700	0	0	0	0	3,200
Oman	1,500	0	0	200	0	0	1,700
Qatar	200	0	0	800	0	0	1,000
Saudi Arabia	45,600	0	0	5,300	1,100	100	52,100
UAE	14,300	100	0	1,600	1,100	100	17,200
Yemen	0	100	0	0	300	100	500

Notes: 0=data less than \$50 million or nil. All data are rounded to the nearest \$100 million.

a. Major West European category includes France, United Kingdom, Germany, and Italy totals as an aggregate figure.

Source: Richard F. Grimmett and Paul K. Kerr, *Conventional Arms Transfers to Developing Nations, 2004-2011*, Congressional Research Service, August 24, 2012. p. 58 ,59. "0" represents any value below \$50 million.

Figure III.3: Arms Transfer Agreements in Millions of U.S. Dollars (SIPRI)



Source: Stockholm International Peace Research Institute Arms Transfers Database, <http://www.sipri.org/database/armstransfers>

Figure III.5: Major US arms Transfers to Saudi Arabia: October 2010 to October 2014

Formal Notification Date	System	Recipient Force	Estimated Cost
October 2010	F-15 Sales, Upgrades, Weaponry and Training	RSAF	\$29.400
October 2010	APACHE, BLACKHAWK, AH-6i, and MD-530F Helicopters	SANG	\$25.600
October 2010	APACHE Longbow Helicopters	RSLF \$	3.300
October 2010	APACHE Longbow Helicopters	Royal Guard	\$2.200
November 2010	JAVELIN Missiles and Launch Units	—	\$0.071
May 2011	Night Vision and Thermal Weapons Sights	RSLF	\$0.330
June 2011	CBU-105D/B Sensor Fuzed Weapons	RSAF	\$0.355
June 2011	Light Armored Vehicles	—	\$0.263
June 2011	Light Armored Vehicles	SANG	\$0.350
September 2011	Howitzers, Fire Finder Radar, Ammunition, HMMWVs	—	\$0.886
October 2011	Up-Armored HMMWVs	RSLF	\$0.033
December 2011	PATRIOT Systems Engineering Services	—	\$0.120
August 2012	RSAF Follow-on Support	RSAF	\$0.850
August 2012	Link-16 Systems and ISR Equipment and Training	RSAF	\$0.257
November 2012	C-130J-30 Aircraft and KC-130J Air Refueling Aircraft	RSAF	\$6.700
November 2012	RSLF Parts, Equipment, and Support	RSLF	\$0.300
November 2012	PATRIOT (PAC-2) Missiles Recertification	RSADF	\$0.130
June 2013	SANG Modernization Program Extension	SANG	\$4.000
July 2013	Mark V Patrol Boats	RSNF	\$1.200
August 2013	RSAF Follow-on Support	RSAF	\$1.200
October 2013	U.S. Military Training Mission (USMTM) Program Support Services	MOD	\$0.090
October 2013	SLAM-ER, JSOW, Harpoon Block II, GBU-39/B Munitions	RSAF	\$6.800
November 2013	C4I System Upgrades and Maintenance	RSNF	\$1.100
December 2013	TOW 2A and 2B Missiles	RSLF	\$0.170
December 2013	TOW 2A and 2B RF Missiles	SANG	\$0.900
April 2014	Facilities Security Forces- Training and Advisory Group (FSF-TAG) Support Services	MOI	\$0.080
August 2014	AWACS Modernization	RSAF	\$2.000
October 2014	Patriot Air Defense System with PAC-3 enhancement —	—	\$1.750
		Total	\$90.435

Source: U.S. Defense Security Cooperation Agency (DSCA).

Notes: Includes proposed sales to Royal Saudi Air Force (RSAF), Saudi Arabian National Guard (SANG), Royal Saudi Land Forces (RSLF), Royal Guard, Royal Saudi Air Defense Force (RSADF), Royal Saudi Naval Forces (RSNF), Ministry of Interior (MOI), and Ministry of Defense (MOD). Dashes indicate unspecified recipient force in DSCA public notice

Source: Christopher M. Blanchard, "Saudi Arabia: Background and U.S. Relations," Congressional Research Service, RL33533, January 23, 2015, p. 10.

Figure III.6: SIPRI Estimate of Arms Transfer Agreements: 2004-2008 in \$US Millions

Recipient Country	U.S.	Russia	China	Major West European*	All Other European	All Others	Total
2004-2008							
Algeria	0	2486	61	44	34	96	2721
Bahrain	94	0	0	60	31	0	185
Egypt	2183	305	179	37	164	252	3120
Iran	0	699	215	0	0	83	997
Iraq	519	190	0	10	269	227	1215
Israel	4565	0	0	81	0	0	4646
Jordan	235	0	8	89	170	81	583
Kuwait	289	0	0	14	89	NA	392
Lebanon	1	0	0	3	0	3	7
Libya	0	39	0	7	0	0	46
Morocco	20	150	289	0	23	NA	482
Oman	531	0	0	56	0	19	606
Qatar	0	0	0	0	0	0	0
Saudi Arabia	1029	0	33	857	72	66	2057
Syria	0	90	20	0	0	346	456
Tunisia	5	0	0	168	0	0	173
U.A.E	3782	0	0	3161	89	50	7082
Yemen	8	478	0	70	110	49	715

Source: Stockholm International Peace Research Institute Arms Transfers Database, <http://www.sipri.org/database/armstransfers>

Figure III.7: SIPRI Estimate of Arms Transfer Agreements 2009-2013 in \$US Millions

Recipient Country	U.S.	Russia	China	Major West European*	All Other European	All Others	Total
2009-2013							
Algeria	22	3854	18	278	56	0	4228
Bahrain	134	0	0	17	29	14	194
Egypt	1038	886	72	75	286	NA	2357
Iran	0	125	272	0	0	NA	397
Iraq	1678	195	20	126	200	1	2220
Israel	304	0	0	699	0	14	1017
Jordan	117	224	0	1	429	35	806
Kuwait	115	101	0	49	1	0	266
Lebanon	78	0	0	2	9	80	169
Libya	0	61	0	39	1	2	103
Morocco	909	0	0	873	511	508	2801
Oman	75	0	0	615	59	3	752
Qatar	710	0	0	182	11	0	903
Saudi Arabia	1533	0	33	2852	606	207	5231
Syria	0	1314	0	0	0	235	1549
Tunisia	52	0	0	0	0	0	52
U.A.E	3488	670	0	942	473	204	5777
Yemen	16	90	0	0	11	249	366

Source: Stockholm International Peace Research Institute Arms Transfers Database, <http://www.sipri.org/database/armstransfers>

M RTP 34	PBF	3	n/k	TURK	Yonka-Onuk Shipyard	2012	n/k	-
M RTP 16	PBF	3	n/k	TURK	Yonka-Onuk Shipyard	2012	n/k	-
AW139	MRH Hel	3	n/k	ITA	Finmeccanica (Agusta Westland)	2011	n/k	-
<i>Leopard 2A7</i>	MBT	62	See notes	GER	KMW	2013	2015	Part of €1.89bn (US\$2.47bn) contract incl 24 PzH 2000
<i>PzH 2000</i>	Arty (155mm SP)	24	See notes	GER	KMW	2013	2015	Part of €1.89bn (US\$2.47bn) contract incl 62 <i>Leopard 2A7</i>
<i>B737 AEW</i>	AEW&C ac	3	R6.6bn (US\$1.8bn)	US	Boeing	2014	n.k.	Part of US\$23bn package
<i>A330 MRTT</i>	Tkr/Tpt	2	See notes	Int'l	Airbus Group (Airbus Defense & Space)	2014	n.k.	Part of US\$23bn package
<i>AH-64E Apache Guardian</i>	Atk hel	24	R8.9bn (US\$2.4bn)	US	Boeing	2014	n.k.	Part of US\$23bn package
<i>Patriot PAC-3</i>	SAM upgrade	n.k.	US\$1.7bn	US	Raytheon	2014	n.k.	Part of US\$23bn package

Oman

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Date	Notes
Al-Shamikh class	FFG	3	US\$785m	UK	BAE Systems	2007	2012	Project Khareef. Delivery delayed.
Fearless class	PCO	4	US\$880m	SGP	ST Engineering	2012	2015	-
Rodman 101	PB	3	US\$15.5m	ESP	Rodman Polyships	2012	2013	For costal police.

C-130J-30 <i>Hercules</i>	Tpt ac	2	n/k	US	Lockheed Martin	2010	2013	Delivery due in 2013 and 2014.
C-295	Tpt ac	8	n/k	Int'l	EADS	2012	2013	For air force. 5 in tpt and 3 in MP configuration.
NH90TTH	Tpt Hel	20	n/k	Int'l	NH Industries	2004	2010	10 delivered by mid-2012.
<i>Al-Ofouq-class</i>	PCO	4	US\$880m	SGP	ST Engineering	2012	2015	First three vessels launched 2014; awaiting commissioning
F-16C/D	FGAac	12	n.k	US	Lockheed Martin	2011	2014	First four delivered Jul 2014
NH90TTH	Med tpt hel	20	n.k	FRA/GER/ITA/NLD	NH Industries	2004	2010	Deliveries ongoing
Eurofighter <i>Typhoon</i>	FGAac	12	See notes	GER/ITA/ESP/UK	Eurofighter GmbH (BAE Systems)	2013	2017	Part of UK£2.5bn (US\$4bn) deal including eight <i>Hawk</i> Mk 128. Nine single-seat and three twin seat.
C-295M	Lt tpt ac	8	n.k	Int'l	Airbus Group (Airbus Defense & Space)	2012	2013	For air force. Five in tpt and three in MP configuration. First delivered 2013.

Saudi Arabia

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Due	Notes
LAV II	APC (W)	724	US\$2.2bn	CAN	General Dynamics (GDLS)	2009	2011	For national guard.
CAESAR	Arty (155mm SP)	132	n/k	FRA	Nexter	2006	2010	For national guard. 100 delivered 2010–11. Additional order for 32 signed in 2012 for delivery by end-2014.
Patriot PAC3	AD system upgrade	n/k	US\$1.7bn	US	Raytheon	2011	n/k	Including ground-systems, training, package and support equipment
Eurofighter <i>Typhoon</i>	FGA ac	72	US\$8.9bn	Int'l	Eurofighter GmbH	2005	2008	Project Salam. First 24 delivered by Sept 2011. Original plan to

								final assemble remaining 48 in SAU dropped.
Saab 2000 <i>Erieye</i>	AEW&C ac	1	US\$670m	SWE	Saab	2010	n.k.	-
A330 MRTT	Tkr/Tpt ac	6	US\$600m	FRA	EADS	2008	2011	Delivery in progress.
F-15E <i>Strike Eagle</i>	FGA ac	84	US\$11.4bn	US	Boeing	2012	2015	F-15SA variant. Part of a package incl F-15S upgrades, AH-64 and AH-6i helicopters that could total US\$24bn.
F-15S <i>Eagle</i>	FGA ac upg	68	n/k	US	Boeing	2012	n/k	Upgrade to F-15SA standard. Part of a package incl F-15S upgrades, AH-64 and AH-6i helicopters that could total US\$24bn
UH-60M <i>Black Hawk</i>	Tpt Hel	24	n/k	US	Sikorsky	2012	n/k	For national guard.
MD530F	MRH Hel	12	US\$40.7m	US	MD Helicopters	2012	2013	All to be delivered in 2013
A330 MRTT	Tkr/Tpt	6	US\$600m	FRA	Airbus Group (Airbus Defense & Space)	2008	2011	Includes additional three ac ordered July 2009; fourth ac delivered Apr 2014
KC-130J <i>Hercules</i>	Tkr ac	2	US\$180m	US	Lockheed Martin	2013	n.k	Initial two ac pending agreement of larger order
AH-64E <i>Apache Guardian</i>	Atk hel	48	US\$450m	US	Boeing	2013	2014	
AH-6I <i>Little Bird</i>	MRH hel	24	n.k	US	Boeing	2014	n.k.	For National Guard

UAE

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Due	Notes
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<i>Patriot Advanced AD System Capability (PAC) 3</i>	AD System	10 fire units, 172 msl	US\$3.3bn	US	Raytheon	2008	2012	To replace HAWK. First bty delivered 2012.
<i>Agrab (Scorpion) 120mm MMS</i>	Arty (120mm SP Mor)	72	US\$214m	RSA/SGP/UAE/UK	IGG	2011	n/k	
<i>Agrab (Scorpion) MMS</i>	120mm SP Mor	48	US\$106m	RSA/SGP/UAE/UK	IGG	2007	n/k	Delivery status unclear
<i>Abu Dhabi-class</i>	FFGHM	1	n.k.	ITA	Fincantieri	2009	2012	Delivery scheduled for late 2012.
<i>Baynunah-class</i>	FSGHM	6	US\$820m	FRA/UAE	ADSB	2003	2011	Fourth vessel launched Feb 2012. Delivery expected to be complete by 2014.
<i>Ganthoot-class</i>	FS	2	US\$117m	ITA	Fincantieri	2009	2012	Both vessels launched 2012. Delivery scheduled for late 2012/early 2013.
<i>Ghannatha II-class</i>	PBFG	12	AED935m	SWE/UAE	Swedeship Marine/ADSB	2009	n/k	3 to be built in Sweden; remaining 9 in UAE. First UAE-built vessel launched in Jul 2012.
<i>Al Saber-class</i>	PB	12	US\$34.6m	UAE	ADSB	2009	2011	For coast guard.
M RTP16	PB	34	AED460m	TUR/UAE	Tonca-Onuk Shipyard/ADSB	2009	2010	First 12 to be built in Turkey; remaining 22 in UAE. 20 delivered by Aug 2012.

Saab 340 <i>Erieye</i>	AEW&C ac	2	US\$234m	SWE	Saab	2009	2011	First delivered Apr 2011.
A330 MRTT	Tkr/Tpt ac	3	n.k.	Int'l	EADS	2008	2012	First delivered 2012; other 2 due by end-2012. Order for 2 more possible.
C-17 <i>Globemaster</i>	Tpt ac	2	n.k.	US	Boeing	2010	2012	-
C-130 <i>Hercules</i>	Tpt ac	12	AED5.9bn	US	Lockheed Martin	2009	n.k.	-
PC-21	Trg ac	25	US\$492.4m	CHE	Pilatus	2009	2011	First aircraft flew in 2011. Deliveries underway
UH-60M <i>Black Hawk</i>	Tpt Hel	26	n.k.	US	Sikorsky	2008	2010	16 delivered by end 2011; up to 23 to be upgraded with <i>Battle Hawk</i> kits.
UH-60M <i>Black Hawk</i>	Tpt Hel	14	US\$171m	US	Sikorsky	2009	n.k.	To be delivered by end of 2012.
<i>Falcon Eye</i>	ISR Satellite	2	€800m (US\$1.1bn)	Int'l	Airbus Group/Thales	2013	2017	First satellite due to launch in 2017; second 2018
<i>Agrab Mk2 (Scorpion) MMS</i>	Arty (120mm SP Mor)	72	US\$214m	RSA/SGP/UAE/UK	IGG	2011	2014	Deliveries ongoing
<i>Baynunah-class</i>	FSGHM	6	AED 3bn (US\$820m)	FRA/UAE	ADSB	2003	2006	First of class built in FRA, others in UAE
Terminal High Altitude Area Defense (THAAD)	SAM	12	n.k	US	Lockheed Martin	2011	2015	Two Batteries
<i>Patriot PAC-3</i>	SAM	42	US\$3.3bn	US	Raytheon	2008	2012	To replace HAWK. First

									bty delivered 2012
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Iran

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Date	Notes
<i>Mowj</i> -class	FSGM	5	n.k	Iran	IRIN	2004	2010	Second vessel in sea trials at Bandar Anzali 2014. Third launched at Bandar Abbas.

Iraq

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Date	Notes
BTR-4	APC (W)	420	US\$2.5bn	UKR	Khariv Morozov	2010	2011	Contract value includes 6 An-32 tpt ac.
Swiftships 35m	PB	15	US\$181m	US	Swiftships	2009	2012	For navy.
F-16C/D <i>Fighting Falcon</i> Block 52	FGA ac	18	US\$3bn	US	Lockheed Martin	2011	n.k.	Initial order for 18 in 2011, with additional 18 ordered 2012. 24 C and 12 D models. Delivery to be completed in 2018
Beech 350ER <i>King Air</i>	Tpt ac	6	US\$10.5m	US	Hawker Beechcraft	2008	2010	-
C-130J <i>Super Hercules</i>	Tpt ac	4	US\$292.8m	US	Lockheed Martin	2009	2012	Delivery to begin in 2012 and continue through 2013.
C-130J-30 <i>Super Hercules</i>	Tpt ac	6	US\$433.1m	US	Lockheed Martin	2009	2012	First delivered late 2012.
AN-32	Tpt ac	6	US\$2.5bn	UKR	Antonov ASTC/Aviant	2010	2011	Delivery delayed
Lasta-95	Trg ac	20	US\$230m	SER	UTVA	2007	2010	Option for further 16
EC635	Tpt Hel	24	US\$490m	FRA	Eurocopter	2009	n.k.	Cost incl. training and maintenance. First delivery reported mid-2011

Bell 407	Tpt Hel	27	US\$60.3	US	Bell	2009	n.k.	For army, AR-407 configuration. FMS contract
MT-LB	APC (T)	500	EUR150m	BLG	Terem	2012	n/k	
<i>Al Basra</i> -class	PCC	2	US\$86m	US	River Hawk Fast Sea Frames	2010	2012	Delivery scheduled for late 2012.
FA-50	FGA ac	24	US\$1.1bn	ROK	KAI	2013	2016	Deliveries to occur 2016-17
Mi-28NE <i>Havok</i>	Atk Hel	15	n.k	RUS	Rostvertol	2012	2014	First batch of three delivered Oct. 2014
Mi-35M <i>Hind</i>	Atk Hel	28	n.k	RUS	Rostvertol	2013	2013	Third batch of four delivered Sep 2014
<i>96K6</i> Pantsir- <i>SI</i>	AD	n.k	n.k	RUS	KBP Instrument Design Bureau	2012	2014	Total number on order unclear. Deliveries underway

Source: IISS Military Balance 2013 to 2015, and selected reporting by IHS Janes

IV. Military Manpower

Military manpower is another indication of military strength, although its importance is easy to exaggerate. Combat experience, training, readiness, and armament are critical, and weapons strength and military technology have long been better indicators of military capability. Manpower is also only useful if it can be deployed and supported in combat, and total national military manning is not a useful measure of power projection or maneuver capability in any given real world scenario.

Iran does, however, have a significant lead in total active manpower, as **Figure IV.1** shows. Based on IISS figures, the GCC is 154,900 active troops, and 326,300 reserve forces shy of Iran's total manning. The GCC's paramilitary forces do exceed Iran's by 7,260 men.

Iran can draw upon a much larger manpower base, and has a conscript rather than professional force. "All males are required to report for military service at age 18," or after they complete their collegiate schooling.¹⁹ They must then serve for two years. In the GCC members, only the United Arab Emirates and Qatar have mandatory conscription, for nine and four months, respectively. Other members of the GCC depend on all-voluntary forces.

Conscription in Iran serves several purposes. First, it allows the regime to educate its youth both ideologically and to serve at the national level. Second, it helps reduce the impact of Iran's employment problems. Third, it reduces the cost of Iran's forces, and fourth, sheer mass creates a defensive deterrent. It builds upon the perceived lesson of the Iran-Iraq War that a large force and defense help deter potential aggressors and secure the revolutionary regime.

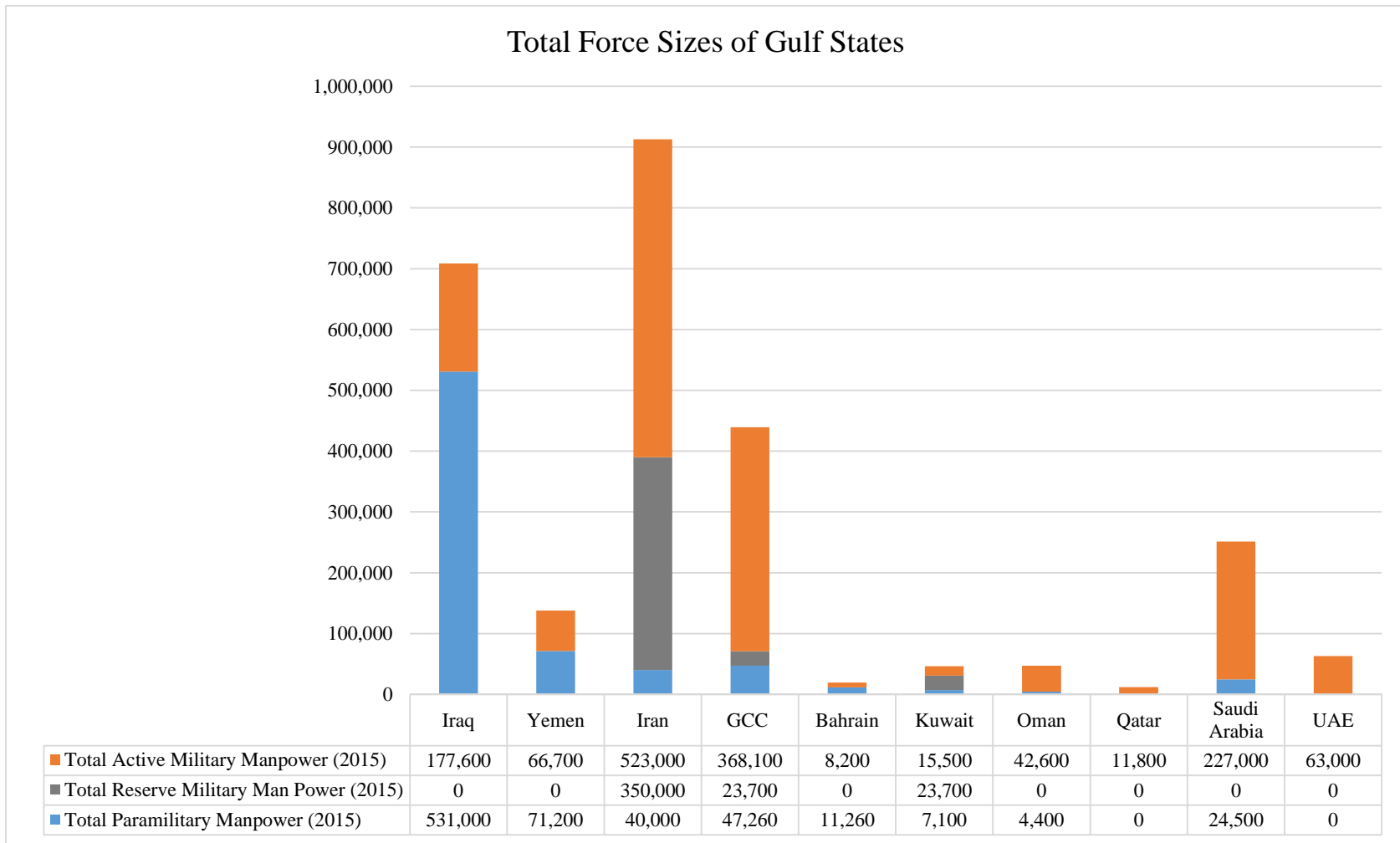
Iran's active army and Revolutionary Guard forces total some 450,000, compared to a 5,000-man air force and a 38,000-man navy. This large ground force in the active Army (350,000) and Iranian Revolutionary Guard Corps (100,000) is partly the legacy of the Iran-Iraq War, where Iran used mass mobilization and human wave tactics to overcome Iraq's advantage in weapons numbers and imports. It has since been sustained in part because of Iran's fear that it might be the next target after the US invasion of Iraq in 2003, in part because it helps compensate for Iran's lack of modern arms imports, and in part because these numbers give it an edge in one aspect of military capability that helps deter and intimidate its Arab neighbors.

While Israel may be Iran's declared enemy, a large "ground heavy" force structure helps compensate for Iran's limits in other areas like airpower. As is discussed later in more detail, most of Iran's operational fighter aircraft were built in the 1960s, 1970s, or early 1980s—many of which are not in production as of 2015. This helps explain why the manpower of Iran's Air Force (IRIAF) matches that of Oman and Iraq, but lags behind that of Saudi Arabia. Collectively, GCC Air Force manpower out matches Iran 7:1.

Figure IV.2 illustrates the manpower gap between Iran and the GCC states by military branch.

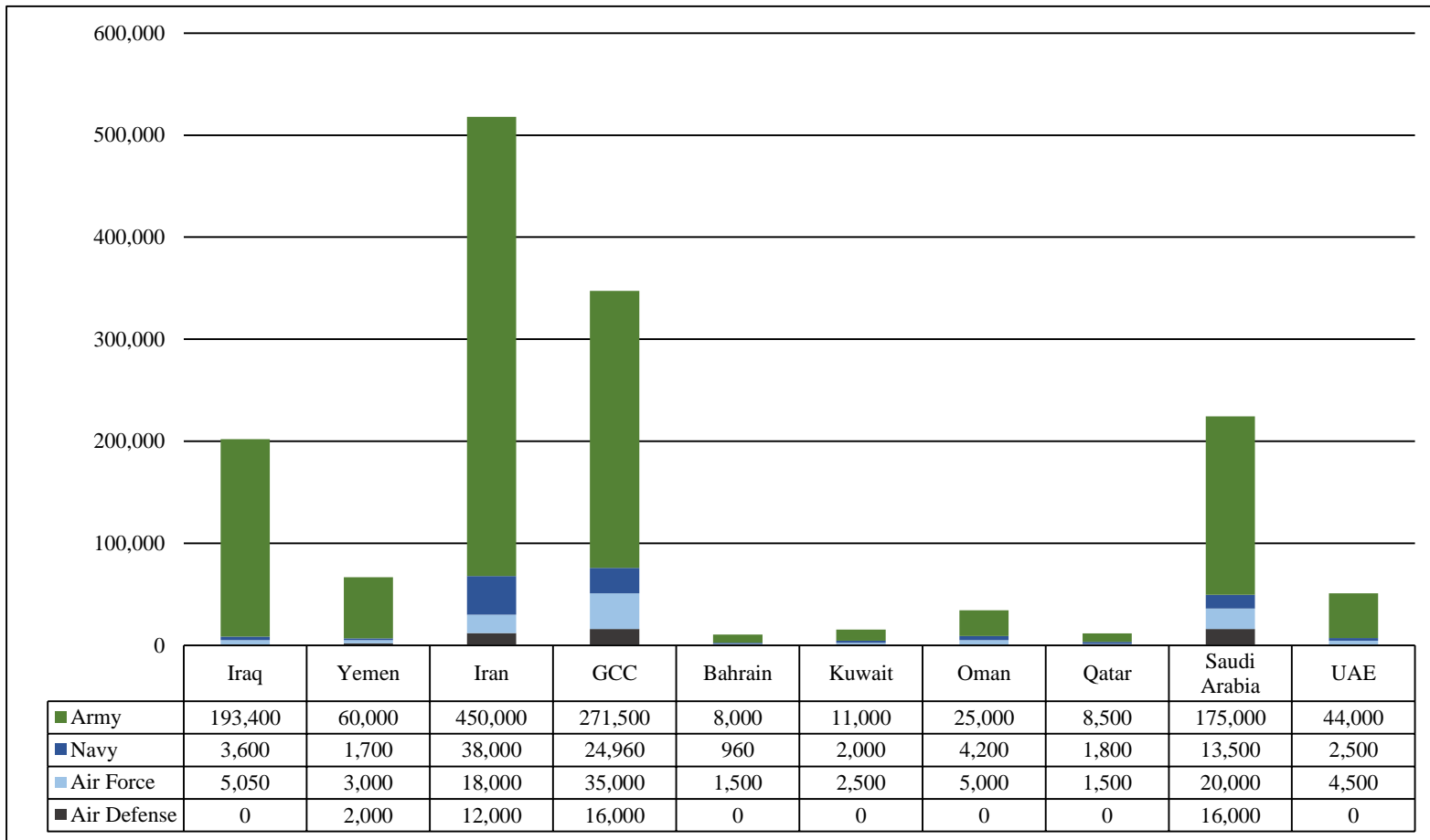
Figure IV.3 highlights the gap between Gulf marine forces. Iran has more naval manpower (including marines), and its marines give a limited capability to project power across the Gulf or to occupy islands and offshore facilities.

Figure IV.1: Total Gulf State Active, Reserve, and Paramilitary Manpower



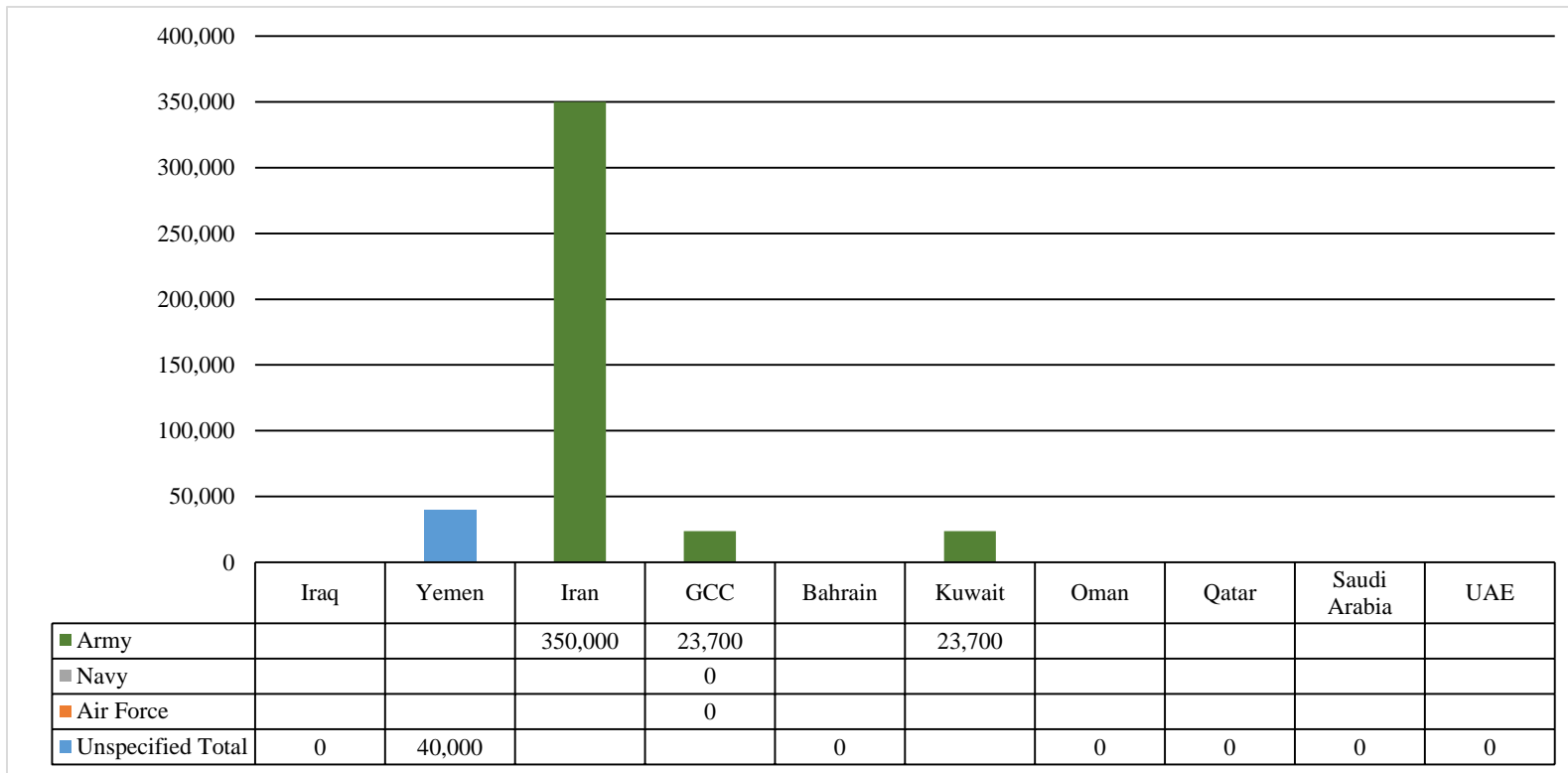
Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure IV.2: Total Active Gulf State Manpower by Military Branch



Source: Based on Chapter Seven: Middle East and North Africa,” in The Military Balance, International Institute for Strategic Studies, 2015, p. 303-362, material form IHS Jane’s as adjusted by the authors.

Figure IV.3: Total Manning of Gulf Reserve Forces



Source: Based on Chapter Seven: Middle East and North Africa,” in The Military Balance, International Institute for Strategic Studies, 2015, p. 303-362, material form IHS Jane’s as adjusted by the authors

V. Ground Forces

Like the comparisons of the other key elements of military power that follow, comparisons of conventional land forces need to be kept in careful perspective. They describe the total pool of military resources for only one element of military power. In any real scenario, only selected elements of land forces will be involved, and generally in combination with air, sea, and missile power. The land balance may also be heavily shaped by either non-state actors or internal security and paramilitary police forces – forces where reporting is sometimes missing and often dated or wrong in unclassified sources.

Scenario Considerations

Many of the potential scenarios in the Gulf region are more likely to be dominated by air missile and sea combat than land warfare. At the same time, even air-sea scenarios may involve the use of marines, guards, or other land units. Asymmetric or irregular warfare involving non-state actors is likely to be dominated by land warfare, and potential land threats exist on the Saudi, Kuwaiti, and Omani borders.

The level of deterrence, any actual combat, the resulting patterns of escalation, and combat termination are all likely to involve joint warfare and be very scenario specific. Iran might well use its ground forces for defense and to offset the US and GCC advantage in air and sea power. It might also try to dominate Iraq, create a threat along the Saudi border, or to drive across the Shat al Arab and seize Kuwait.

The Islamic State, Syrian civil war, and crisis in Iraq have all involved the Gulf States in land combat to train rebels and assist in coalition air missions. The civil war in Yemen has led to limited Saudi intervention, and could further broaden the threat from Iran. The uncertain state of Iran's nuclear and missile programs affect the level of deterrence affecting all branch of combat arms. There is no one center of gravity to use in judging the capability of Gulf land forces, or any other element of Gulf military power and if a dominant threat is to emerge, there is no way to predict it at this time.

The force mixes, geography, and training patterns in the region all shape how the land balance affects given scenarios in other ways:

- Iran is superior in mass, but not weapons quality. It is over-reliant on aging and worn armor and towed artillery.
- Iranian has limited ability to project and sustain armored forces.
- Iran cannot provide *effective, survivable air cover, and survivable naval escorts and defense.*
- The key GCC area of vulnerability too an Iranian land attack – unless Iran can prepare by redeploying and staging in Iraq -- is through Iraq to Kuwait: the “Kuwaiti hinge. (Much depends on level of Iraqi ties to Iran.)
- Iran does not practice large-scale forced entry with amphibious forces, but significant capability for small raids and can quickly ferry substantial forces if invited in.

- Iranian IRGC, marines, special forces do have significant raid capability in Gulf and near coastal areas. Raids on offshore and critical shore facilities.
- Iran does have a significant capability for covert operations, sabotage, and covert or proxy attacks on US-allied military facilities.

Other scenarios involve complex and unpredictable mixes of conventional land forces, irregular or asymmetric land forces, militias, and hostile non-state actors. The conventional balance of power may prove largely irrelevant and actual war fighting/deterrent capabilities will be further influenced by the role of air and missile power. Ideology, religion, and internal sectarian, ethnic, and tribal differences can play a critical role under such conditions.

The role of the US power projection forces, and those of other outside powers like Britain and France – may be equally important in an actual case, as can the way in which regional powers that are not directly involved contribute money, weapons, advisors, and political support. The ability to add foreign non-state actors like the Hezbollah, or embed key elements of train and assist forces like the Iranian Al Quds forces has made a major difference in recent fighting.

It is equally critical to understand that the Gulf land balance cannot be assessed in terms of the forces actually in the region. No meaningful assessment of the Gulf balance can ignore the potential scale of the air, sea, and land forces that the US and nations like Britain and France can project or reinforce into the region on relatively short notice.

More generally, large-scale warfighting capability is a critical test of deterrence and the ability to maintain regional stability, but it is only one. Politics, ideology, religion, and alliances/strategic partnerships are also critical. The growing role of asymmetric forces and non-state actors is also making the use of irregular war, proxies, and low-level wars of attrition steadily more important. Just as war is an extension of diplomacy by other means, there are many potential combinations of politics and ideology that can be extensions of war by other means.

The Other Elements of Land Force Power

The force numbers that follow do help provide a picture of the total capabilities of the land forces of each state in the region, illustrate the diversity in the force structures of given statement, and show how manning and equipment both vary and relate to unit force structures.

As is the case with every aspect of the military balance in the Gulf, however, static, quantifiable measures of force strength do not compare many critical elements of combat capability. In broad terms, the other – less tangible – aspects of military capability that can play a critical role in real world scenarios include

- Training and exercise experience in land combat and joint warfare at unit and full-scale combat level.
- Combat experience.
- Readiness.

- Sustainability.
- Motivation and morale.
- Intelligence, surveillance, and reconnaissance capability. (ISR)
- Targeting and smart munitions capabilities.
- Command, control, communications, computer, and battle management capabilities (C4I/BM)
- Political leadership and unity.
- Interoperability and common doctrine, training, and leadership for allied forces.

The latter two “intangibles” are particularly important. The GCC has never achieved anything like its potential in developing effective integration and interoperability for land forces or any other element of its military forces. It has never been able to create effective common training and exercise activity, although outside powers like the US have helped. The GCC has never bridged over a long history of national rivalries to use its mass purchasing power to reduce costs, or create common facilities to reduce unit costs and achieve economies of scale. These problems are particularly important in the case of GCC land forces because they are scattered throughout the southern Gulf, slow to assemble and then maneuver, and would face serious problems in terms of sustainability, common combat and service support, and coordinating C4I/BM and ISR activity.

At the same time, Iran has never fully solved the problems in dividing its land forces between the regular Army and the Islamic Revolutionary Guards, and in integrating other paramilitary elements into a coherent approach to defense in depth. Iraq’s land forces are now deeply divided between a Shi’ite led regular army, paramilitary police elements, Shi’ite militias, Sunni tribal forces (and potentially a Sunni national guard, and the Kurdish Pesh Merga.

These problems compound a long-standing failure in every Gulf country to create uniform standards for land and other forces. Gulf orders of battle have units that range from high quality to near incapacity, and other have military politics that means these differences between units are never properly addressed. Corruption is often a problem, and so is promotion by ideology, sect, ethnicity, family, tribe, and political connection.

Land Forces Personnel

Figure V.1 shows that Iran has some 325,000 active soldiers, with 350,000 in reserve, plus some 100,000 additional Revolutionary Guards in its land forces This is far more than the total for the GCC countries—which collectively have 169,400 active military with 23,700 in reserve, plus 38,500 National and Royal Guard forces.

Iran also has a striking advantage in paramilitary manpower. If anything, however, **Figure V.1** understates the level of Iran’s efforts. Its Basij Resistance Force is not shown, but has been expanded since 2003 to provide defense in depth against a foreign invader, and now has a nominal strength of over 1,000,000 men.

Iran's active and reserve forces are largely conscript. The GCC state forces are largely professional, long service forces. At the same time, a significant number are foreign, and native promotion and leadership is sometimes a matter of birth or family status. Force loyalty and cohesion might be an issue for all GCC services, but could presents special challenges if some GCC land forces came under severe stress in combat.

Maneuver and Power Projection

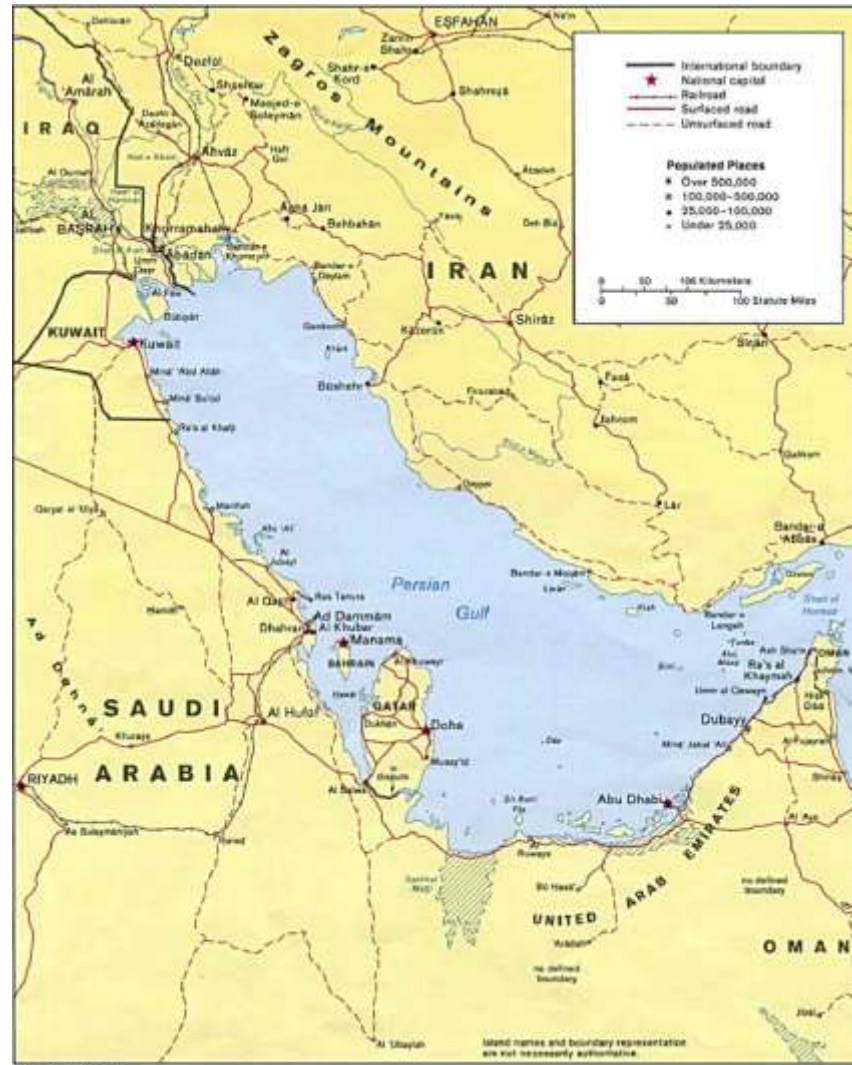
Map V.1 show the degree to which the Gulf acts as a water barrier to land operations and maneuvers. Iran must either use amphibious capabilities it currently lacks to strike across the Gulf, thrust its forces into and through Iraq, and then go into Saudi Arabia to the West or into Kuwait. **Map V.2** shows that the "Kuwaiti hinge" in the upper Gulf is the only short land attack route to the southern Gulf, and Iranian forces would then have to cross a water barrier in the Shatt al Arab.

Iran, Iraq, and GCC ground forces are not well organized to project ground forces in offensive war maneuvers. Iran's force structure has never fully recovered from its defeats in the last phase of the Iran-Iraq War, or been able to acquire the modern land weapons that Iranian plans called for in the first wars after the Iran-Iraq War ended. Much of Iran's force structure is designed for defense in depth, and to operate with support from nearby facilities in the rear. Power projection is generally exercised in limited missions best suited to irregular warfare; air support exercises are idealized and unrealistic as to Iran's capabilities and the survivability of its airpower; and Iran's pool of modern armor, self-propelled artillery, land-based air defenses, and combat and service support equipment has many limitations.

Iraq's force structure has never recovered from its defeats in past wars, the fighting between 2003 and 2011, and its shattering defeats by the Islamic State in late 2013 and early 2014. It does not really have a standing army, air force, and navy in the normal sense. It is rather a work in progress.

At the same time, **Map V.1** shows the problem that Arab Gulf forces face in terms of consolidating their strength, and GCC ground forces have limited ability to cooperate and deploy as a united force, and only poor to mediocre joint training and readiness for large-scale operations. **Parts One and Two of Figure V.2** illustrate the lack of standardization in summary form, but sharply understate the case. There is no combat doctrine, or realistic large-scale exercise activity. The unit types list in **Figure V.2** are nominal at best, and

Map V.1: The Geographic Barriers to Gulf Land Force Operations



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Source: CIA

Map V.2: The “Kuwait Hinge”



Source: CIA

combat units vary sharply from country to country, and often within countries, in manning and equipment. Combat and service support forces are even more diverse and often fall short of what is need for combat maneuvers away from a major home operating base. Equipment standardization is poor and interoperability is limited. In many cases, member countries of the GCC have put more emphasis on improving cooperation with national internal security forces than cooperation with other member states.

Geography is another key factor. Bahrain is an island and rapid movement away from the island is difficult. Qatar and the UAE are at significant maneuverability and sustainability distance from Kuwait and the Saudi border. Saudi land forces are designed to operate near the military cites that house and base most Saudi forces. Efforts to create integrated Gulf land forces are largely symbolic and do not seem to have realistic plans to either support the vulnerable areas around Kuwait or the Saudi border with Iraq.

Armor

The GCC, spends far more on every branch of its on its military than Iran, and GCC land forces have much better quality military equipment as well as better and more modern rotary and fixed wing aircraft to provide support in air-land combat.

Main battle tanks are a case in point. **Figure V.3** shows that the GCC states have more main battle tanks, and other armor, than Iran. The GCC collectively has the capability to operate over 800 more MBTs than Iran. Other armored vehicles, include Armored Infantry Fighting Vehicles (AIFVs), Reconnaissance Vehicles (RECCE), Armored Personnel Carriers (APCs), and Personnel Protective Vehicles (PPVs). According to IISS, Iran's MBT arsenal relies on 150 Zulfiqar, 480 T-72Zs, 150 M60A1s, 75 T-62's, 100 *Chieftain* Mk3/Mk5s, 540 T54/T-55/Type-59/*Safir*-74s, and 168 M47/M48s.²⁰

Figure V.4 shows that the main armor in GCC ground forces is more modern than Iran's. More broadly, most of the GCC models of both tanks and other armored weapons are Western made and of a higher quality than those in Iranian inventory. Due to sanctions and other political constraints, Iran also does not have easy access to the markets it needs to obtain replacement parts for its weaponry and armor originating from the West.

Many of Iran's tanks and other major weapons are decades old and some had extensive wear during the Iran-Iraq War. Iran has been forced to reverse engineer parts—and in some cases, entire tanks---to maintain its military force, causing operability problems for the Iranians, and forcing it to turn to an expensive black market to find vital parts for its military.

The bulk of Iran's modern armor relies on Soviet era designs and equipment that they have upgraded, like their T72Zs, and their T54/T55s. Many of its western made MBTs are nearly 40 years out of date. Iranians has been forced to upgrade and maintain them, locally, and this raises questions about both their operational effectiveness, and their sustainability in maneuver warfare.

At the same time, **Figure V.4** illustrates the broader lack of standardization and attendant interoperability and sustainability problems inherent in the national differences between the forces of the GCC states. The GCC's heavy armor relies heavily on M60As and their variations. Of the nine different battle tanks used by the GCC states, four of them originate from the US (M1A2/A2s, M60A3S, M60A1, and the M60A3) and all but one originate from Western powers (the M-84 was originally produced in Yugoslavia, then Croatia after

Yugoslavia was dissolved). Furthermore, upgrades to GCC armor is done by the supplier, meaning that the challenges Iran faces in maintaining its armor are not experienced by the GCC.

Artillery Numbers vs. Artillery Quality

Iran's ground forces do, however, have some advantages. Iran's forces have extensive experience in defending the country as a result of the Iran-Iraq War and Iran reacted to the US invasion of Iraq by steadily improving its defense depth. Its Army, IRGC, and Basij forces are organized to conduct asymmetric war and conduct a war of attrition

As **Figure IV.4** show, Iran's massive numbers of towed artillery and artillery rockets also give it massive advantage in sheer artillery firepower – albeit largely in terms of defensive mass fires – rather than precision. Iran's artillery does, however, have limited numbers of self-propelled artillery weapons – and its training exercises show it has limited maneuvering skills and uncertain sustainability. Iran is, however, acquiring drones for targeting purposes, and does seem to be improving its fire control systems.

The Air-Land Battle

The Figures that only cover the capabilities of Gulf land forces disguise a critical aspect of actual deterrent and war fighting capability. Almost all modern land combat between states and involving the organized forces of non-state actors is air-land combat, and heavily dependent on airborne manned and unmanned ISR platforms, close air support, deep strike, and interdiction bombing. As Chapter VII shows, the GCC states have a significant advantage in fixed and rotary wing strike capability, and in modern land-based air defense capability. The GCC also have an advantage in airlift and air mobility.

As Chapter X shows, the GCC also has the advantage that the United States can project massive amounts of tactical airpower by Gulf standards within a matter of days. Deploying seapower takes time, and deploying US heavy land combat units that do not have prepositioned equipment can take weeks to months, depending on the threat. The combination of US precision strike, stealth, ISR, and C4I/BM capabilities, however, is not determined by what the US deploys forward at any given time, but by what the US can project in days. This allows the US and GCC to rapidly change both the air-land and air-sea-missile balance in ways that no comparison of the forces currently deployed in the Gulf can indicate.

It should be noted, however, that the political dimension of any conflict between GCC states and non-state actors within its population, or outside non-state actors that become embedded in its population – particularly in urban areas – present a very different challenge. Combat dominated by its political dimensions, and the need to protect civilian populations and avoid alienating them, can place serve limits on air targeting and strike capability as well as land operations, particularly in urban and built-up areas.

Iran's Limits; the Critical Future Role of Iraq; the Future Roles of Syria, Egypt and Jordan; and The Problem of Yemen

The limits to Iran's present mix of major land force weapons are shown in more detail in **Figure V.5**. At the same time, **Figure V.6** shows that the US invasion of Iraq in 2003 fundamentally changed the Gulf balance, and the totals for Iraq in **Figure V.6** do not reflect the impact the Islamic State had in defeating and weakening Iraqi forces in late 2013 and during the course of 2014.

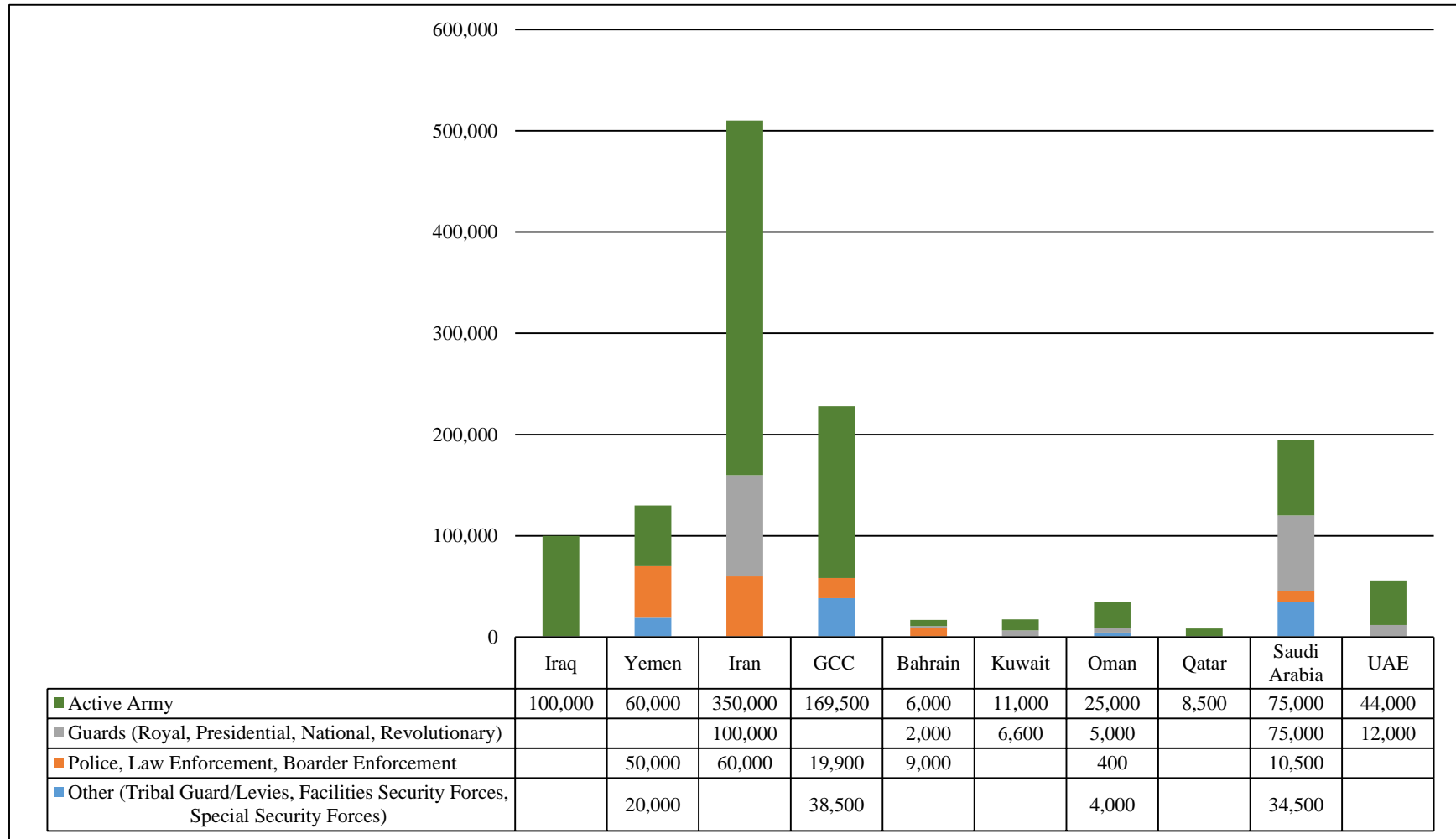
The future recovery of Iraq forces, Iraq's ability to defeat the Islamic State, and Iran's future levels of influence in Iraq will have a critical impact on the real-world balance of land and other forces in the Gulf. Similarly, much depends on the future stability, alignments, and role that Syria, Egypt, and Jordan will play.

At present, Syria poses a threat largely because of the Islamic State group, al-Nusra Front, and other non-state actors and is not a meaningful part of the conventional military balance in the Gulf. This could, however, change and some in the Arab Gulf fear some form of Iran-Iraqi-Syrian strategic axis could emerge over time.

Egypt and Jordan are not major actors in the Gulf balance, but King Abdullah of Jordan has taken an initiative that has led to official discussions of far more direct military cooperation between them and the GCC states. At the same time, Jordanian stability is critical to securing the Western flank of the Gulf, as is the stability of Egypt – which also plays a key role in allowing the US to project power into the Gulf region.

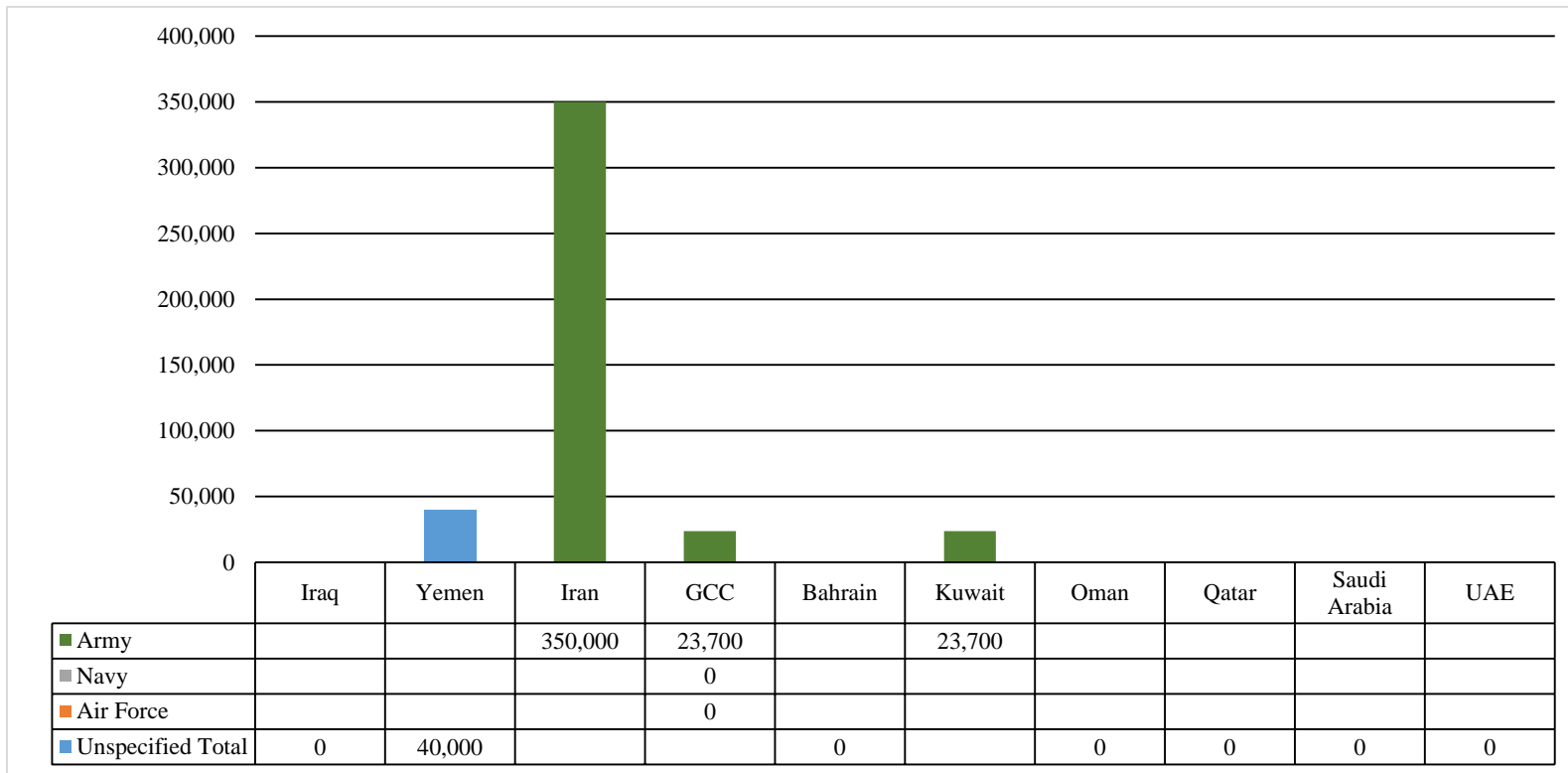
Finally, the future stability and unity of Yemen will have a major impact on how Saudi Arabia and Oman will need to deploy and allocate their forces. The effective collapse of Yemen as a unified state, that takeover of the western part of the country by the Houthi, and the possibility this will lead to expanding Iranian influence and/or become a more serious sanctuary for extremist forces like Al Qa'ida in the Arabian Peninsula could have a serious impact on the future balance.

Figure V.1: Total Army and Land Manpower of Gulf States—Active and Paramilitary Manpower – Part One



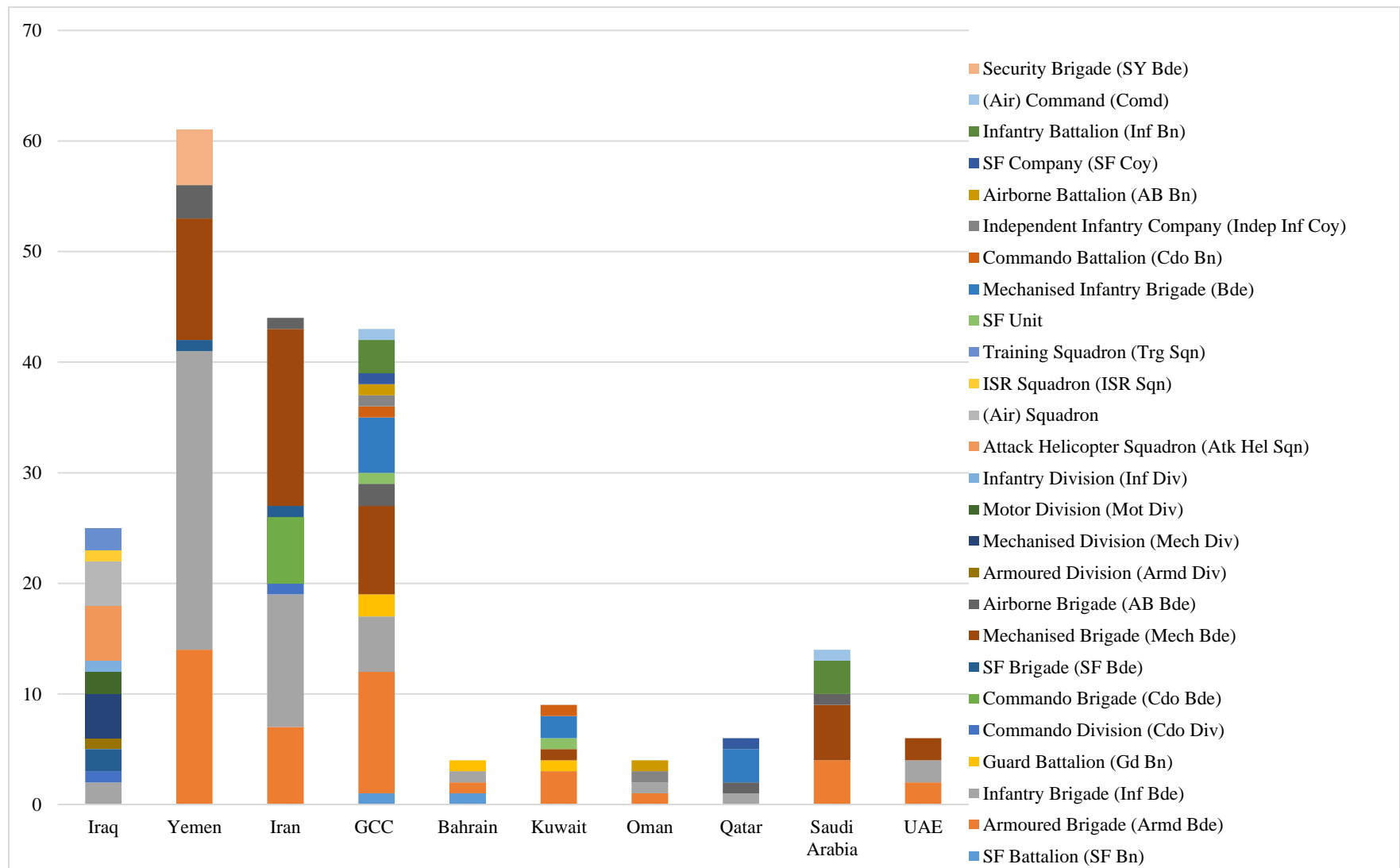
Source: Based on Chapter Seven: Middle East and North Africa,” in The Military Balance, International Institute for Strategic Studies, 2015, p. 303-362, material form IHS Jane’s as adjusted by the authors.

Figure V.1: Total Army and Land Manpower of Gulf States—Reserve Manpower – Part Two



Source: Based on Chapter Seven: Middle East and North Africa,” in The Military Balance, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure V.2: National Differences in the Land Force Structure of the Gulf States – Part One



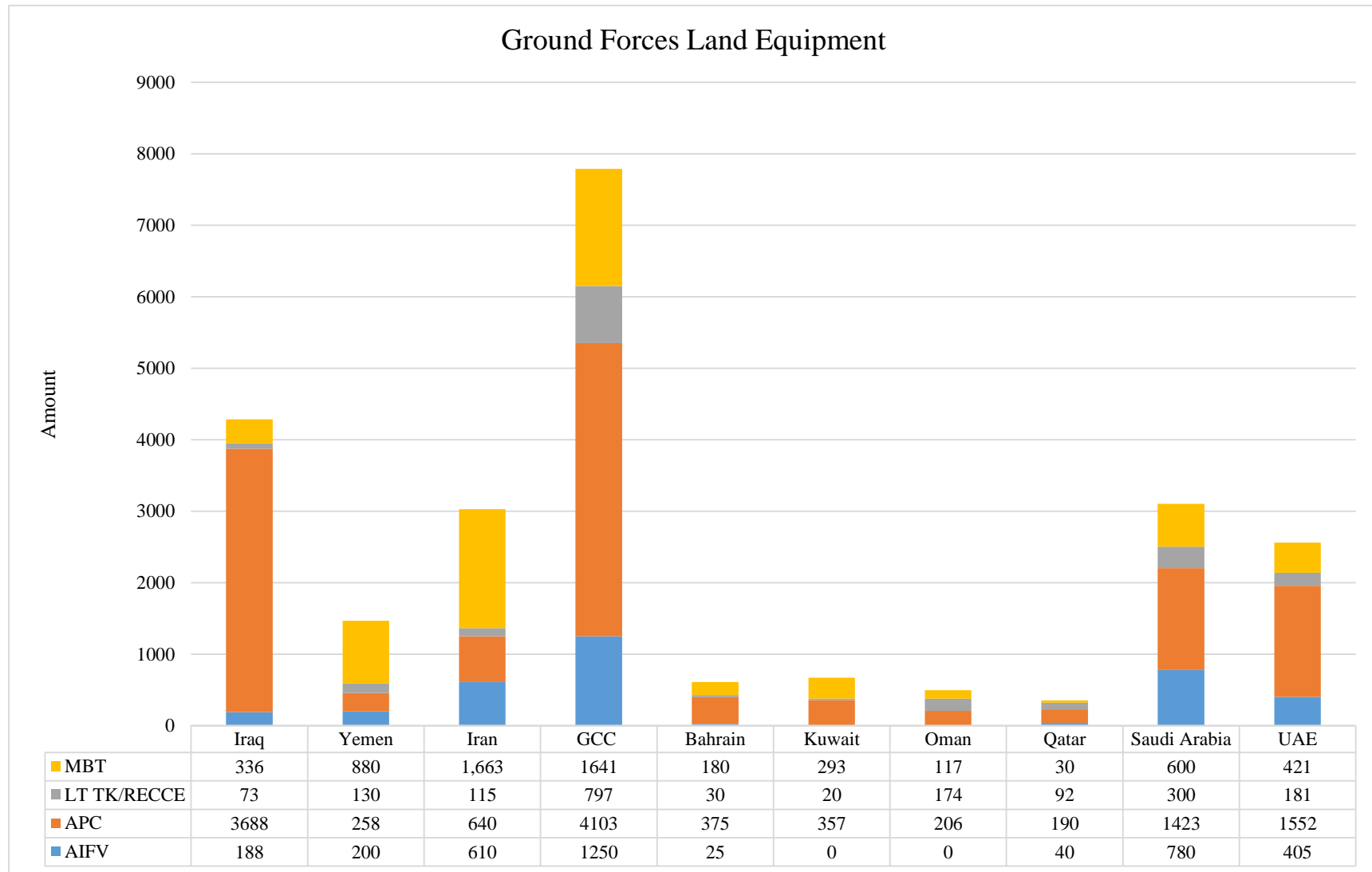
Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure V.2: National Differences in the Land Force Structure of the Gulf States – Part Two

Units (Size & Type)	Iraq	Yemen	Iran	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Armored Division (Armd Div)	1								
Mechanised Division (Mech Div)	4								
Motor Division (Mot Div)	2								
Infantry Division (Inf Div)	1								
Commando Division (Cdo Div)	1		1						
Armored Brigade (Armd Bde)		14	7	1	3	1		4	2
Mechanized Infantry Brigade (Mech Bde)		11	16		3		3	5	2
Infantry Brigade (Inf Bde)	2	27	12	1		1	1		2
Commando Brigade (Cdo Bde)			6						
SF Brigade (SF Bde)	2	1	1						
Airborne Brigade (AB Bde)		3	1				1	1	
Security Brigade (SY Bde)		5							
Infantry Battalion (Inf Bn)								3	
Airborne Battalion (AB Bn)						1			
Guard Battalion (Gd Bn)				1	1				
Commando Battalion (Cdo Bn)					1				
SF Battalion (SF Bn)				1					
SF Unit					1				
Independent Infantry Company						1			
SF Company							1		

Source: Based on Chapter Seven: Middle East and North Africa,” in The Military Balance, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors

Figure V.3: Main Battle Tanks and Other Armored Vehicle Strength



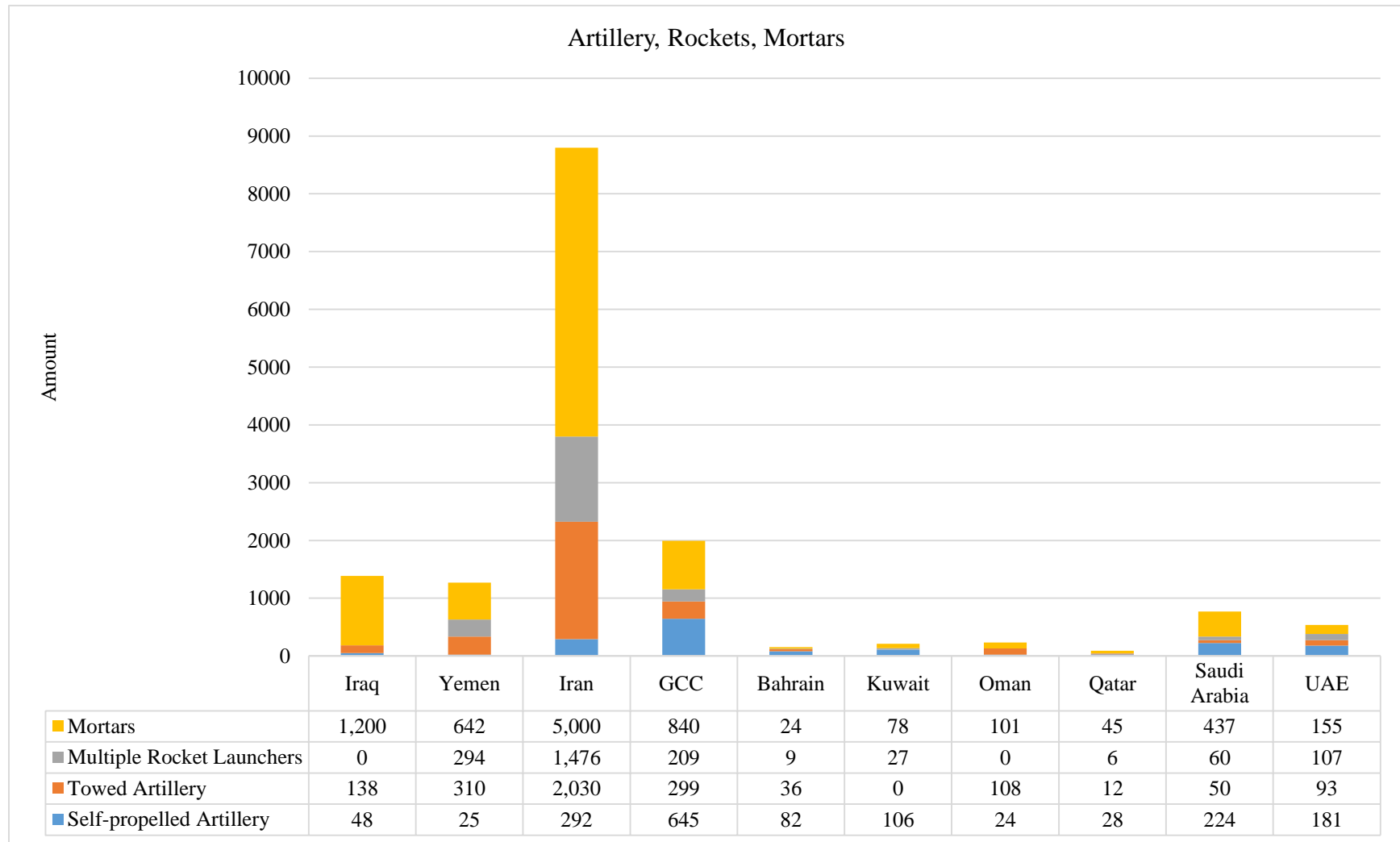
Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure V.4: Main Battle Tank Suppliers By Operating Country and Production Years

Recipient Country/Country Group	Type of Main Battle Tank	Years of Production	Country of Production
Qatar, Saudi Arabia, UAE	AMX-30	1966-Present	France
Iran	<i>Chieftain</i>	1946-1979 (Iran); 1946-2012 (World)	United Kingdom
Oman,	CR2 <i>Challenger</i>	1990-2000	United Kingdom
Saudi Arabia,	M1A2/A2S <i>Abrams</i>	1980-Present	United States of America
Iran Oman,	M60A1	1961-1979 (Iran); 1961-1997 (World)	United States of America
Bahrain, Oman, Saudi Arabia	M60A3/A3S	1961-1997	United States of America
Kuwait	M-84	1985-Present	Yugoslavia, Croatia
UAE	OF-40 Mk2 <i>Lion</i>	1981-Present	Italy
Iran	T-62	1961-1980	Union of Soviet Socialist Republics
Iran	T54/T55/Type 59/ <i>Safir-74s</i>	1947-1979 (Iran) 1947-Present (World)*	United States of America Iran
Iran	<i>Zulfiqar</i>	1996-Present	Iran
UAE	340 <i>Leclerc</i>	1995-2007	France

*Iran has modified the T54/T55/Type 59 MBT and renamed it the *Safir-74S*, which it produces locally through the Defense Industries Organization (DIO), Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure IV.5: Total Artillery, Rockets, and Mortars



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure IV.6: Iran's Reliance on Aging and Mediocre/Obsolescent Land Weapons

MBT 1,663+: 150 M60A1;

100 *Chieftain* Mk3/Mk5; 540 T-54/T-55/Type-59/*Safir-74*; 168

M47/M48 (**480 T-72Z? 75+ T-62? 150 Zulqifar?**)

LT TK 80+: 80 *Scorpion*;

RECCE 35 EE-9 *Cascavel*

AIFV 610: 210 BMP-1; 400 BMP-2 with 9K111

APC (T) 340+: 200 M113; BMT-2 *Cobra*

APC (W) 300+: 300 BTR-50/BTR-60; *Rakhsh*

SP 292+: **155mm** 150+: 150 M109;; **175mm**

22 M107; **203mm** 30 M110

TOWED 2,030+; **105mm** 150: 130 M101A1;; **155mm** 205: 120

GHN-45; 70 M114; 15 Type-88 WAC-21; **203mm** 20 M115

AIRCRAFT • 10 Cessna 185; 2 F-27 *Friendship*; 4 *Turbo Commander* 690 **PAX** 1 *Falcon* 20

ATK 50 AH-1J *Cobra*

TPT 173: **Heavy** 20 CH-47C *Chinook*; **Medium** 25 Mi-171;

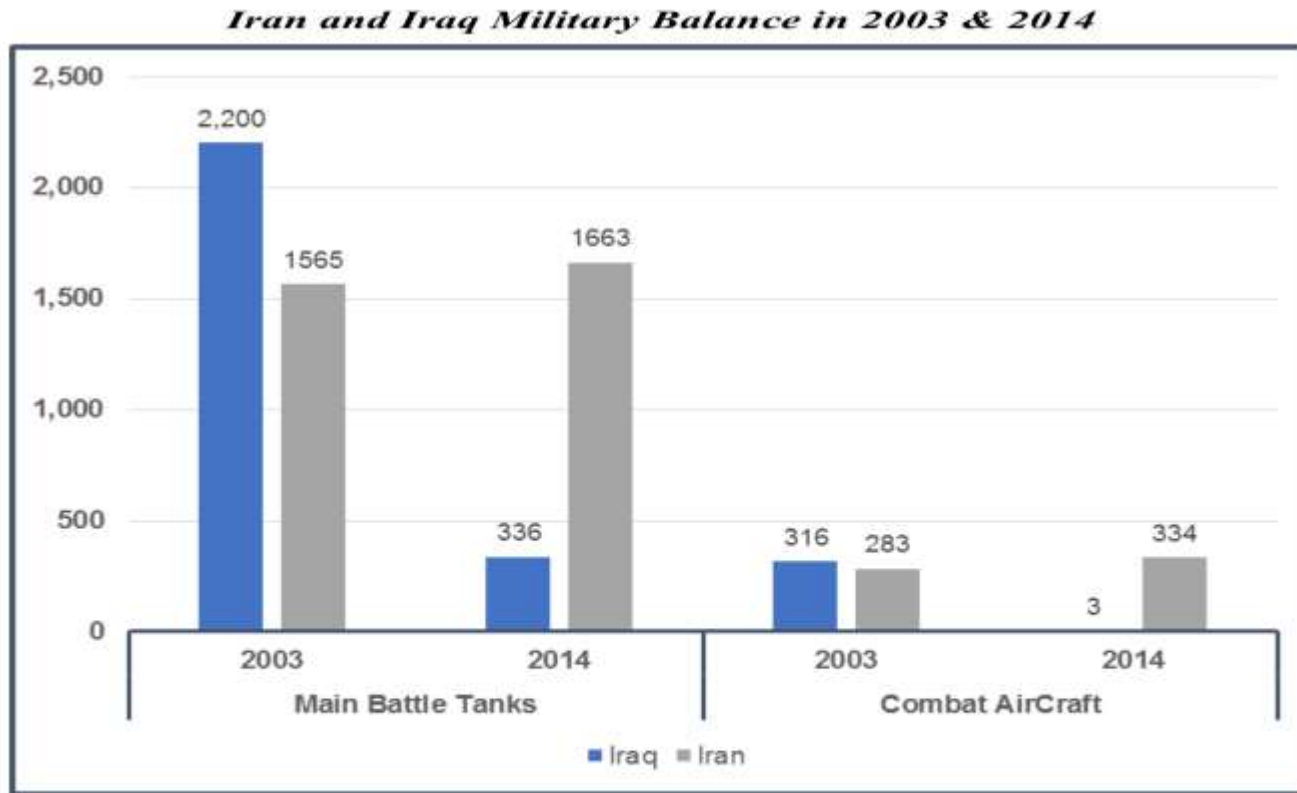
Light 128: 68 Bell 205A (AB-205A); 10 Bell 206 *Jet Ranger*

(AB-206); 50 Bell 214

MANPAD 9K36 *Strela-3* (SA-14 *Gremlin*); 9K32 *Strela-2* (SA-7 *Grail*)‡; **SP** 180: **23mm** 100 ZSU-23-4; **57mm** 80 ZSU-57-2

Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure IV.7: The Impact of the US Invasion and Islamic State on the Iran-Iraq Balance – Part One



	Main Battle Tanks		Combat Aircraft	
	2003	2014	2003	2014
Iraq	2,200	336	316	3
Iran	1,565	1,663	283	334

Source: Based *The Military Balance*, International Institute for Strategic Studies, 2003 and 2015, and material from IHS Jane's, as adjusted by the authors.

Figure IV.7: The Impact of the US Invasion and Islamic State on the Iran-Iraq Balance – Part Two

Category	2003			2014		
	Iraq	Iran	Force Ratio	Iraq	Iran	Force Ratio
Active Manpower	424000	513000	4:5	271400	523000	1:2
Reserve Manpower	650000	350000	19:10	0	350000	NA
Main Battle Tanks	2200	1565	7:5	336	1663	1:5
AIFVs	1300	815	8:5	188	610	1:3
APCs	2400	590	4:1	3688	640	6:1
Towed Artillery	1900	2085	9:10	138	2030	1:20
Self-Propelled Artillery	150	310	1:2	48	292	1:6
Multiple Rocket Launchers	200	889	1:5	some	1476	NA
Combat Aircraft	316	283	11:10	3	334	1:100
Attack Helicopters	100	85	6:5	0	50	NA
Major SAM Launchers	225	205	11:10		529	NA

Source: Based *The Military Balance*, International Institute for Strategic Studies, 2003 and 2015, and material from IHS Jane's, as adjusted by the authors.

VI. Naval Forces

Naval power in the Gulf is of critical importance to the GCC, Iran, and Iraq; and to the many other economies outside the Gulf that depend on the stable flow of Middle Eastern oil exports. The Gulf States are dependent on both the stable flow of exports for a key part of their income, and, equally, on the steady flow of shipping to Gulf ports. Outside economies -- especially those in Asia -- are dependent on petroleum exports from the Gulf, and would suffer from the global increase in petroleum prices that would come from any major interruption in the flow of Gulf exports. Sustained naval conflict would have a major impact on the entire global economy.

Sea Power, Scenarios, and Joint Warfare

As is the case with land, air, and missile forces; sea power is only one dimension of the balance of military forces. A naval conflict could take the form of limited raids by sea, or a low level war of attrition that only involved naval or seaborne attacks, but even this kind of war would almost certainly include significant land-based ISR activity and the use of maritime patrol aircraft and UAVs. Any significant level of this will affect the flow of shipping as well as the security of Gulf facilities, ports, and offshore petroleum installations—as well as defense and deterrence against amphibious raids and attacks—and is likely to involve joint air-sea warfare. It will produce a scenario-specific mix of sea, air, and missile power, and may well include marines, naval guards or some element of land forces.

There is no way to predict the level of escalation that would be involved. The spectrum of conflicts involving naval forces can range from low level naval clashes -- and low level, asymmetric wars of attrition -- to major sea-air-missile conflicts. In most cases involving significant conflict, land-based airpower and mixes of land-based and satellite ISR and C4I/BM capabilities are likely to play a critical role. Ports, offshore facilities, islands, key petroleum facilities, and key infrastructure facilities like desalination make attractive target bases for sea, air, and missile operations.

As **Map VI.1 to Map VI.4** show, many Gulf petroleum facilities and ports are vulnerable to combinations of sea and airpower, particularly in the area near the Strait of Hormuz.

Land combat may also be involved. At high levels of escalation, Iran might try to use its ground forces to offset the GCC and the US advantage in air and sea power. It might use them to try to dominate Iraq, to create a threat along the Saudi border, or to drive across the Shat al Arab and seize Kuwait. It might also seek to use support of non-state actors in countries like Yemen to put pressure on Saudi Arabia and the GCC states.

Such scenarios could involve complex and unpredictable mixes of conventional forces, irregular or asymmetric forces, militias, and hostile non-state actors. The conventional balance of power might well prove to be largely irrelevant, and most serious levels of actual war fighting or deterrence are likely to be shaped by the combined impact of sea power, airpower, and missile power. Ideology, religion, and internal sectarian, ethnic, and tribal differences can play a critical role under such conditions.

As is the case with land, air, and missile forces, the role of US naval and other power projection forces, and those of other outside powers like Britain and France – is likely to be equally important. This is particularly true in any scenarios that involve large-scale combat or that pose a significant threat to the smooth flow of oil exports. Other powers might contribute money, weapons, advisors, and political support. The ability to add foreign non-state actors like Hezbollah, or embed key elements of “train and assist forces” like the Iranian Al Quds Force provides Iran with the ability to provide an asymmetric response to these conventional threats.

Map VI.1: Gulf Oil Fields and Target Areas



Source: EIA, "World Oil Transit Chokepoints," DOE, November 2014, <http://www.eia.gov/countries/regions-topics.cfm?fips=wotc&trk=p3>

Map VI.2: Seapower and the Strait of Hormuz



280 km long, 50 km wide at narrowest point.

Traffic lane 9.6 km wide, including two 3.2 km wide traffic lanes, one inbound and one outbound, separated by a 3.2 km wide separation median

Threats include:

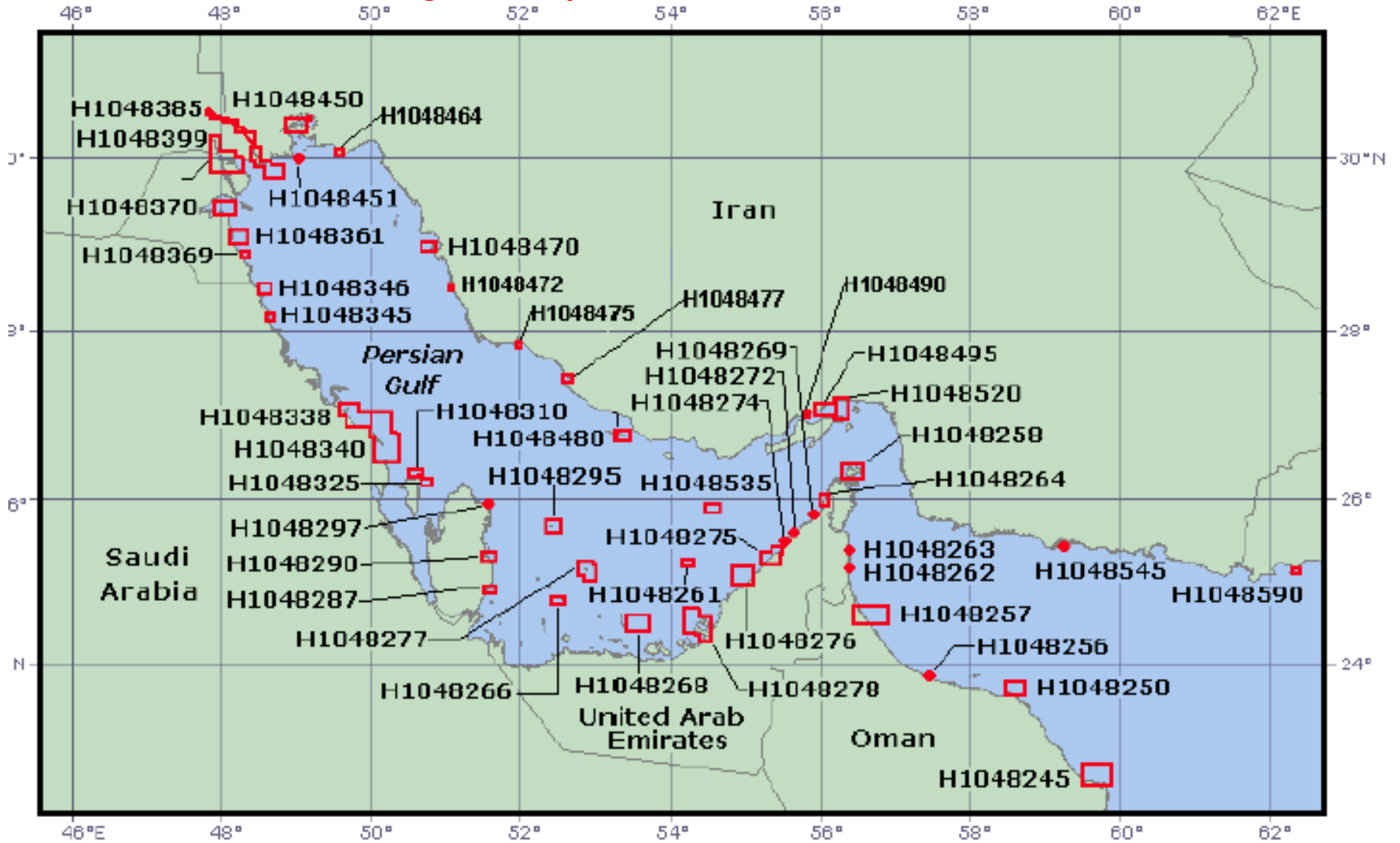
- Antiship missiles now have ranges up to 150 km.
- Iranian long-range land-based anti-ship missiles near Strait.
- Smart mines, guided/smart torpedoes,
- Floating mines, small boat raids, harassment.
- Covert as well as overt sensors.

Map VI.2: Saudi Energy Infrastructure: A Gulf-Red Sea Targeting Case Study



Source: EIA, "Saudi Arabia, Country Analysis Brief," DOE, September 10, 2014, p. 11

Map VI.4. : Key Gulf Ports and Harbors



Source: US NGA

The Less Quantifiable Elements of Sea Power

Comparisons of naval manpower, force structure, and force strength still matter. As is the case with every element of military power, however, the more easily quantifiable measures of naval force strength do not compare many critical elements of real world sea power and combat capability.

- Training and large scale, realistic naval and joint warfare combat exercise performance.
- Combat experience and actual time at sea.
- Readiness.
- Sustainability, endurance, and replenishment capability.
- Motivation and morale.
- Intelligence, surveillance, and reconnaissance capability. (ISR)
- Targeting and smart munitions capabilities.
- Command, control, communications, computer, and battle management capabilities (C4I/BM)
- Political leadership and unity.
- Interoperability and common doctrine, training, and leadership for allied forces.

The effective use of sea power presents special challenges to Gulf navies in all these areas. Iran's Navy and the naval branch of its Revolutionary Guards are the only regional naval forces with meaningful combat experience. Even that experience is limited, however, and consists largely of taking losses during the Iran-Iraq War and the "tanker war" with the US in 1987-1988. Iran has, however, since attempted to develop an effective large-scale exercise effort for joint sea-air warfare and develop a significant capability for asymmetric warfare. It also has increasingly attempted to project naval power in to the Indian Ocean area and beyond.

While US and other experts feel that Iran's exercises show that Iran still has significant limitations, and often exaggerates the scale and nature of its exercises, as well as the success of some weapons tests, they also feel that Iran's exercises sometimes show considerable flexibility and ability to adapt and innovate. Iran has also tailored in exercise and readiness activity to confront the GCC states, US, and other allies with a naval, air, and missile threat to "close the Gulf" to the flow of shipping. The GCC and US could almost certainly counter this threat in any actual conflict, but cannot ignore the leverage that it gives Iran and its deterrent impact.

No other GCC or Gulf Navy has significant combat experience in naval warfare or joint warfare involving naval forces. Outside experts do feel, however, that the joint exercises held by the US 5th Fleet and other outside navies – and broader USCENTCOM-led joint warfare exercises—are helping to improve the professionalism of Gulf navies. They also feel that the UAE is steadily improving its naval and joint warfare capability, as well as naval proficiency and readiness.

Outside experts do praise individual elements of each of the GCC navies. They note, however, that most of these navies are small, do not train and exercise at the levels needed, have limited joint warfare capabilities, and often spend only limited time at sea. Some experts also feel that GCC navies tend to buy ships that are loaded with weapons and technology to the point where they will be difficult to fight, and one commented that many large GCC surface warfare ships have "more glitter than guts."

The Saudi Navy presents particular problems because it is the largest Arab Gulf Navy, but has never received the same resources as the other Saudi forces. The combat readiness of the Saudi fleet in the Gulf is estimated to be mediocre, and the readiness of the Saudi Red Sea fleet is estimated to be poor. Plans have existed for some years to improve Saudi naval capabilities but have never been properly executed.

The balance is also affected by the fact that Iran is the only Gulf Navy to have a separate naval air branch, the GCC states have never developed an integrated maritime patrol aircraft, UAV, and sensor capability, and that even those GCC Air Forces that have a significant naval surveillance capability – like the Saudi AWACS – do not give the mission proper emphasis. This might not matter if – as seems likely -- the US deployed such capabilities, but even then, GCC navies would often lack the C4I/BM capability and level of interoperability to make proper use of US capabilities. In general, a force cannot fight in ways it does not properly practice, exercise, and prepare for in peacetime.

Naval Manpower

Figure VI.1 shows the manpower strength of each Gulf Navy. Iran has by far the largest numbers – its sea forces manpower totals 35,600, compared with a total of 21,200 for the GCC states. Iran also has large marine forces and Iran is the only Gulf country with a dedicated naval aviation branch.

There is no reliable way to use unclassified data to break down the elements of Iranian naval strength by mission and function – or to assess manpower training and quality -- but Iran's large naval and marine forces have been partly driven by Iran's emphasis on asymmetric naval warfare, while the comparatively low totals for GCC states reflect the fact they have tended to rely on US naval power and they have emphasized their airpower or sea power.

Overall Surface Ship Strength

The individual Gulf navies have very different structures, and once again, the GCC navies have had a major advantage in their ability to modernize and acquire advanced weapons and technology. Iran has attempted to compensate by creating a different force mix best suited for asymmetric or irregular warfare that emphasizes small patrol craft, submarines, and mine warfare force capability.

Figure VI.2 summarizes the overall ship strength of Gulf navies. The Gulf navies have an advantage in modern surface warfare ships. Saudi Arabia alone has seven major surface ships, compared to Iran's four.²¹ The GCC navies, however, have no submarines, about half the number of Iran's submersibles, and a limited number of mine hunters relative to Iran's mine forces.

Figure VI.3 and VI.4 show that the GCC's destroyers, frigates, and cruisers not only outnumber Iran's forces of major surface combat ships, but also outperform Iran's and are relatively new, as. For example, Saudi Arabia's destroyers are only thirteen years old; Iran's 'destroyers' are thirty-four years old, but have been upgraded domestically ever since. However, what is unclear is whether Iran's upgrades are conducive to the ship, which is highly unlikely, and even if the upgrades are conducive, whether they improved on Iran's

force deficiencies, mentioned above. Furthermore, the GCC has the ability to send their ships to their Western manufacturers for repairs and upgrades if and when needed.

In terms of firepower, the data on the armament of Iranian and GCC vessels shown in **Figure VI.3** and **Figure VI.4** indicate that Iran's ships are less well armed than those in the GCC. Furthermore, **Figure VI.5** shows that Iran's fleet has many of the same age and capability problems as its land forces and air force.

Iran's force mix has been partly shaped by the impact of sanctions and international isolation. It has been forced to rely on domestic and Russian, and Chinese produced naval technology, as well as keep outdated vessels in service, and is one of the factors leading to their strategy. The GCC has not been hindered by such limitations. **Figure VI.3: Part One** shows that the bulk of Iran's frigates were commissioned in 1968—when the Shah was still ruler of Iran and friendly to the United States and the West—and their most recent frigate, the *Jamaran*, while commissioned in 2010, is based on a 1971 design. Most of Iran's missile patrol boats and craft, however, are more recent and based on more recent design plans.

The GCC and other Arab Gulf and Red Sea navies have limits of their own. **Figure VI.6** shows the source country of GCC naval vessels. It provides a broad warning the GCC navies have the same lack of integration and interoperability as other Gulf forces. The same is true of much of their doctrine and training, and seapower-related aspects of their C4I/BM and ISR capabilities

Overloading ships with combat systems can also be a weakness in GCC naval forces. For example, the Al Riyadh destroyer is equipped with 8 MM-40 Exocet Block II anti-ship missiles, 16 Vertical Launch System Aster SAMs, 4 single 533mm Anti-Submarine torpedo tubes with torpedoes, and a 100mm gun. The original La Fayette destroyer, from which Al Riyadh is designed, is only equipped with 8 MM-40 Exocet Block II anti-ship missiles, 1 100mm gun, 2 20mm F2 guns, and 1 Crotale CN2 CIWS.

Not only did the Saudi Royal Navy remove their close-in weapon system (CIWS)—which would counter Iran's military strategy—they added more missile launchers and torpedoes, which add weight making maneuverability much more difficult. Pitted against small, maneuverable Iranian craft that depend on close combat by necessity, these destroyers could prove to be easy targets for the Iranian Navy. Saudi Arabia is not the only GCC navy to have done this to its destroyers, frigates, and smaller craft. The UAE has also added to their corvettes. The Mubarraz class corvette, based off the German Lurssen TNC-45, has an additional six SAM launchers, adding to the weight of the corvette making it much less maneuverable.

Patrol Boats and Asymmetric/Irregular Warfare

Figure VI.7 highlights the differences between Iran's holdings of patrol boats and craft, and those of GCC naval forces. It shows that Iran has created a large force of small ships that are easy to disperse and conceal, harder to detect when at sea, and can be used to swarm or attack larger ships with anti-ship missiles, guns or in suicide attacks as expendable losses. Iran only possesses four frigates, or destroyers; yet maintains sixty-five smaller craft armed with Anti-ship Missiles (AShMs) and rocket launchers.

This force mix has been driven to some extent by necessity. Iran has had limited access to outside sources of modern surface combat ships, and weapons systems and sensors. As is the case with its army and other services, the bulk of Iran's frigates were commissioned in 1968—when the Shah was still ruler of Iran and friendly to the United States and the West. Even Iran's most recent frigate, the *Jamaran*, was commissioned in 2010, but based on a 1971 design. Iran has also been forced to maintain its older craft “without the ability to send them to foreign ship repair yards or overhaul facilities.”²² Their poor condition led the ONI to conclude that Iran's navy has “significant” readiness problems.²³

This helps explain why most of Iran's missile boats are far more recent designs than its major surface ships and a 2012 report by *IHS Jane's Defense* states that Iran has calculated that using “small, high-speed craft, with rocket launchers, torpedoes, and mines to ‘swarm’ around US warships in maritime guerrilla ‘hit and run attacks’, while anti-ship missiles were launched from shore...” is the most effective way to counter larger U.S. sea craft, asymmetrically countering the U.S.'s overwhelming advantage in firepower and technology.²⁴

At the same time, part of Iran's preference for smaller combat vessels is due to the Iran-Iraq War (1980-1988) when “the IRGCN's (Iranian Revolutionary Guard Corp: Navy) small boat attacks established it as a legitimate entity and viable threat, and solidified the primacy of the IRGCN's asymmetric tactics.”²⁵ In contrast, Iran had little success when its larger surface ships clashed with the United States, which possesses the most technologically advanced military in the world. Iran learned during the US *Operation Praying Mantis* in 1988 that any sustained, classical engagement with the U.S. Navy would result in Iranian defeat.²⁶

When the U.S. destroyed much of Iraq's military in 1991, and then the invasion in 2003, Iran calculated that “its forces must be able to withstand such an initial attack in order to fight back.”²⁷ An incident that occurred in the Gulf between Iran and the UK Royal Navy in March 2007 provides an example of this aspect of Iran's application of asymmetric strategy. On March 23, 2007 Iran's navy surrounded 15 members of the Royal Navy and seized them at gunpoint while the Royal Navy personnel were inspecting a merchant ship, suspected of smuggling in the Shatt al-Arab waterway off the Iraq-Iran coast.

An asymmetric strategy also allows Iran to compensate for the limits on its airpower but rapidly and easily dispersing its forces relies on its long coast and favorable geography. **Figure VI.8** shows that Iran has a wide range of bases it can use to disperse its forces and its smaller ships can conceal themselves near the shore in Gulf islands as well.

Iran's reliance on smaller patrol boats and craft, however, poses problems. They suffer from endurance, operating range, armor, and accuracy deficiencies and weaknesses. These weaknesses require Iran's smaller craft to have close proximity to their targets, with little protection for their crew, as well as required operation close to shore or in shallow waters.²⁸ Iran can deploy its larger surface ships in the Gulf of Oman, Indian Ocean, and even the Mediterranean in peacetime, but they would be very vulnerable to US air, missile, and sea power in war.

Submarines, Submersibles and Anti-Submarine Warfare

Iran's focus on asymmetric warfare also helps explain Iran's purchase of three Russian submarines, and large numbers of small submersibles. The 'submarine balance' now clearly favors Iran over the GCC at least in numbers, as **Figure VI.9** illustrates. Only the UAE and Saudi Arabia possess small submersible and they only possess a total of 12 swimmer delivery vehicles (SDVs), compared to Iran's 8 SDVs, 17 diesel-electric midget submarines (SSW), 1 coastal (SSC) submarine, and 3 large hunter-killer (SSK) *Taregh (Tareq)* class submarines. Iran's *Taregh (Tareq)* class submarines are the only major submarines in Gulf navies. They give Iran some capability to counter the US surface presence in the Gulf, and a covert way to attack shipping and combat ships in the region without being as exposed to detection and attacks by airpower and anti-ship missiles.²⁹

The *Tareghs* are Russian made *Kilo* class submarines first acquired them in the 1990s, and include the *Taregh-901*, *Noor-902*, and the *Yunes-903*. They were upgraded in 2006 by Russia and equipped with six single torpedo tubes.³⁰ According to the Nuclear Threat Initiative (NTI) only two of the *Taregh* class submarines are operational at any one time, which some suggest may indicate Iran's inability to staff a fully competent submarine crew, their excessive caution for the preservation of their only heavily armed submarines, or the inability for three of their *Taregh* submarines to effectively maneuver and coordinate with one another in the shallow Persian Gulf waters.³¹

A number of sources like the NTI also reports that the *Taregh's* utility in the Gulf is limited because they "require a depth of at least 164 feet and can therefore only access about one third of the Gulf."³² The potential restrictions on submarine operations are shown in **Map VI.5**, where the white areas in the Gulf provide a rough picture of the areas where submarines might find this kind of depth. It is unclear, however, that calculations based on operating criteria for conventional naval warfare would apply to Iran's use of submarines in the Gulf, where the risk of detection and anti-submarine warfare might be limited.

There are many asymmetric scenarios where Iran might calculate that it would be enough to create some degree of covert operation and deniability. If such depth calculations are correct, however, the areas in the Gulf where Iran *could* deploy such subs would be outside the Strait of Hormuz and along its coast between the end of the Mehran River and Bandar-e 'Abbas (Bandar Abbas), and in the center of the Gulf. What is equally important, Iran *would not be able to properly* deploy and use its larger submarines effectively immediately along the coast of Saudi Arabia, Bahrain, Qatar, and the United Arab Emirates.

It could, however, combine the use of submarines with Iran's new cruise missile forces like the, Klub-S which are "designed to hit an adversary's surface ships, land targets, and submarines."³³ This could support an Iranian defensive asymmetric strategy and the goal of protecting Iran from amphibious invasion. Iran also could deploy its submarines outside the Gulf, and use them to threaten or attack larger ships in a much wider operating areas.

In any case, Iran has invested in a range of smaller submarines and submersibles to complement its *Taregh* submarines. These include SSW (midget) submarines, specifically 16 *Qadir* (also *Ghadir*) and 1 *Nahang* midget submarines with 2 single 533mm torpedo tubes.

These small submarines operate in shallow waters, giving them access to much of the Persian Gulf, and have an additional uses: mine laying for anti-shipping operations, and Special Forces insertion into enemy territory.

Iran also uses 8 SDV (swimmer delivery vehicles) submarines to support its coastal warfare operations. Not only do these SDVs lay mines and transport special operations forces, but they also have reconnaissance purposes.³⁴ Though Iran's SSW submarines theoretically have access to the majority of the Persian Gulf, what is unclear is their endurance and ability to travel across the Gulf and back. Iran's SDV submarines, however, are limited to coastal waters and cannot travel across the Persian Gulf, but that doesn't necessarily mean they can't be transported by Iran's other vessels.

In light of Iran's advancement of its submarine program, both Saudi Arabia and the UAE have discussed the acquisition of small to medium submarines as a counter to Iran's potential threats in the Gulf littoral waters.³⁵ According to IISS, Oman possesses 2 Mk 8 SDVs and the UAE has an estimated 10 SDV submarines—with no other details provided.³⁶ In both 2006 and 2013 Saudi Arabia was reported to be in negotiations with the German company, ThyssenKrupp, to buy 5 Type 209 submarines, “followed long-term by up to 25 submarines in a €12 billion (\$13.58 billion) deal.”³⁷ However, Thyssen Krupp and the Saudi Arabian government denied such a project existed.

According to IHS Jane's, the Saudi Navy wants to obtain a submarine in order to protect sea lanes.³⁸ Yet, IHS Jane's also suggests that the shallow waters of the Gulf may outweigh the incentives on acquiring subsurface capabilities, including interdiction.³⁹ Many naval experts also question whether Saudi Arabia and other GCC navies should acquire submarines rather than more anti-submarine warfare (ASW) capabilities for their surface vessels, helicopters and patrol aircraft. They also question why GCC navies should seek to develop capabilities that the US and other allied navies can provide, particularly when outside blue water navies have more limits in dealing with Iran's patrol boats and mine warfare capabilities. This may explain why the Saudi and UAE navies are currently investing in better ways to counter Iran's attack submarines and submersibles.⁴⁰

Mine Warfare

Figure VI.10 shows the number of dedicated mine warfare ships in Gulf navies. It is somewhat misleading, however, in that Iran can use almost any vessel to drop mines and place free floating mines, a capability it demonstrated during its “Tanker War” with the US Navy in 1987-1988. GCC navies face the challenge of detecting, sweeping and/or destroying mines with a mix of dedicated sensors, mine hunters and sweepers, helicopters, and underwater swimmers. This is a far more challenging task – as recent US-led exercises have shown – particularly given the complex currents in parts of the Gulf and the amount of concealing bottom clutter in many areas.

According to IHS Jane's:

Iran is considered to be strong in its asymmetric, irregular, and proxy warfare capability. With a focus on building and using smart mines, midget submarines, light fast-attack watercraft, anti-ship missiles, light guided weapons, and other effective

asymmetric tools, the IRGC and its Qods elite Force have been successful in its covert or open operations overseas on many occasions.⁴¹

Only Iran, Saudi Arabia, and the UAE possess the capability to lay mines, and all of them have modern maritime mines. Iran. However, has also emphasized building its own smart mines that have sensors that can detect different sizes and types of ships, and Iran's arsenal of sea mines was estimated at being at least 2,000 in 2013. That estimate may be far too low, however, and has risen from Iran's domestic production of mines.

Iran has imported smart mine technology from China, as well as developed its own.⁴² In addition to bottom moored contact mines (mines anchored to the bottom of the sea, at depths where submarines or even surface ships might hit them), Iran has imported Chinese MC52 sea-rising mines.⁴³ These mines are usually a rocket or torpedo, released when they detect a passing ship. The shallow waters of the Persian Gulf make mining an effective tool for Iran to use to combat its foes and deter an invasion, while combating a much more powerful force.

The presence of such mines is particularly dangerous considering the amount of maritime traffic in the Gulf on a daily basis, and the narrow shipping channels that travel through the Strait of Hormuz.⁴⁴ While mine warfare only had a limited effect in disrupting Iraqi and Iranian trade during the Tanker War, most naval experts feel that mines remain an "effective tactic for Iran to use against a more powerful opponent."⁴⁵

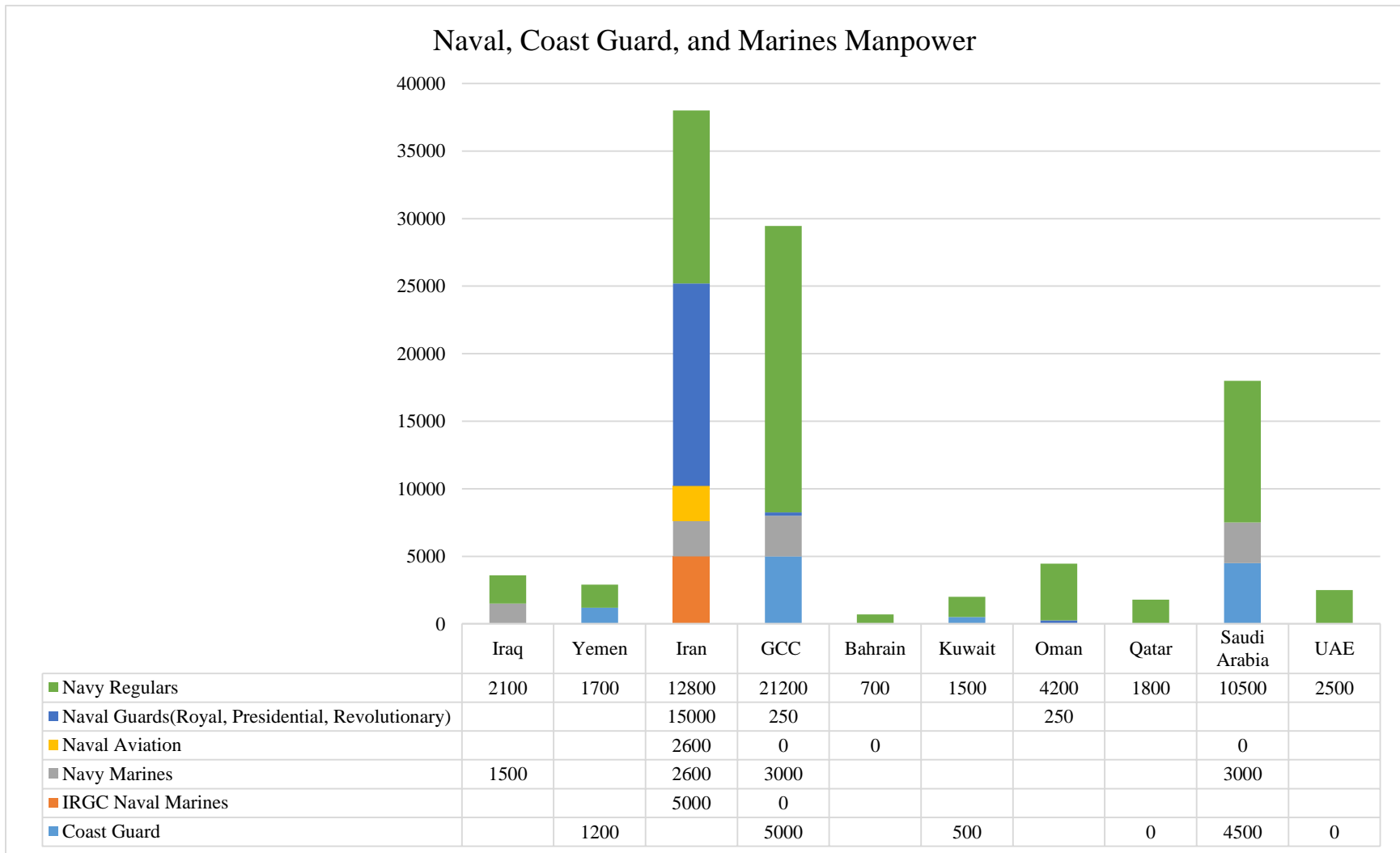
The US and UK have forward deployed mine warfare ships and strongly encouraged its GCC allies to improve their mission capabilities in mine warfare as a result, but with only mixed results in the case of Gulf forces.⁴⁶ Both Saudi Arabia and the United Arab Emirates have mine laying capabilities and have expressed interest in procuring Mince Countermeasure Vehicles (MCMVs).⁴⁷ Additionally, Saudi Arabia has looked into equipping their helicopters with anti-submarine warfare capabilities in an effort to counter Iran's larger submarines.

Amphibious Warfare

Iran and the Arab Gulf states have a large number of amphibious craft. These holdings are shown in **Figure VI.11**, and show that they could conduct small amphibious raids on coastal, island, and offshore facilities throughout the Gulf. These assets are not large enough, however, to mount a major amphibious invasion or attack, and Iran would confront major problems in using its amphibious assets unless it had a totally permissive environment or could establish some form of effective air cover.

Iran does, however, also have large ferries it could use to deploy significant infantry and armored forces across the Gulf if it had a permissive environment – something that would probably require a major coup in a Gulf country like Bahrain.

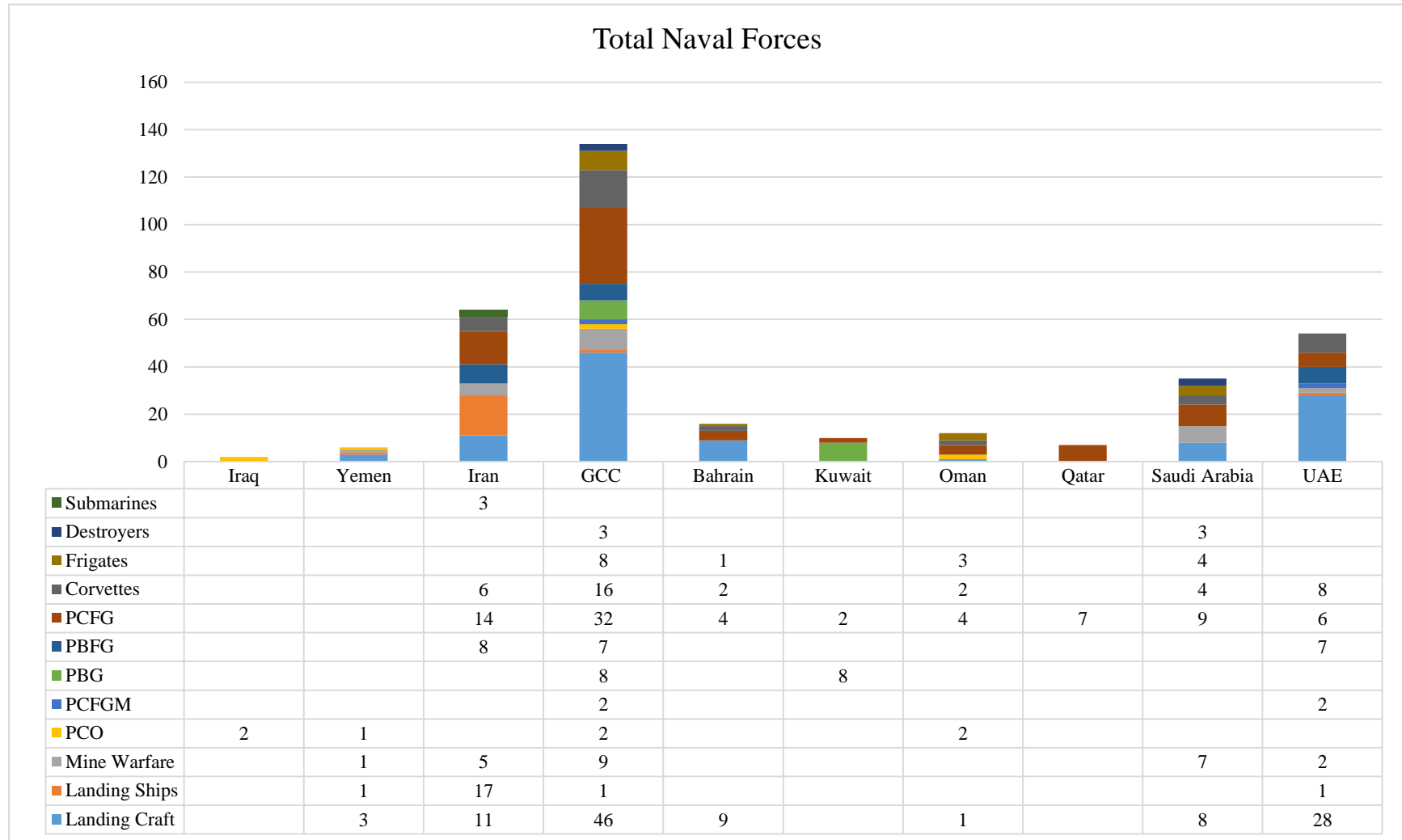
Figure VI.1: Naval, Coast Guard, and Marine Manpower



Note: The figures for Iran include both the regular Navy and the Naval Branch of the Iranian Revolutionary Guards Corps, which is 20,000, some 5,000 of which are shown in the totals for Marines. the Iranian regular navy has 18,000 personnel plus 2,600 in Naval Aviation and 2,600 more marines.

Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VI.2: Gulf Naval Vessels by Country



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VI.3: Iran's Surface Naval Forces

Amount	Name/Class	Tonnage	Function	Arms	Manufacturer	Year Manufactured or Commissioned
1	<i>Jamaran</i> /UK Vosper Mk 5	1,500 tons	Frigate	2 twin launchers with C-802 AShM; 2 launchers with SM-1 SAM; 2 triple 324mm Mk 32 ASTT torpedo launchers	Iran	2010,
3	<i>Alvand</i> /UK Vosper Mk 5	1,100 tons	Frigate/Destroyer	2 twin launchers with C-802 AShM; 2 triple Mk32 324mm ASTT; 1 114mm gun	United Kingdom	1971
2	<i>Bayandor</i> /US PF-103	900 tons	Missile Boat (Corvette)	2 twin launcher with C-802 AShM; 2 triple 324mm Mk 32 ASTT torpedo launchers; 1 76mm gun	United States	1963
6	<i>Zolfaghar</i> (<i>Peykaap III/IPS-16</i> mod)	Approx. 15 tons	Missile Boat	2 single launchers with C-701, and C-704 AShMs	Iran	2010
25	<i>Peykaap II</i> (IPS-16)	15 tons	Missile Boat (Coastal Patrol Craft)	2 single launchers with C-701 AShM; 2 single 324mm Triple-Tube (TT) torpedo launcher	Iran (claimed); North Korea (suspected)	2002
5	<i>China Cat</i> /C-14	19 tons	Missile Boat (Fast Attack Craft)	2 twin launcher with C-701 Anti-Ship Missile (AShM)	China	2000
4	<i>China Cat</i> /C-14	19 tons	Missile Boat (Fast Attack Craft)	2 single launcher with C-701 AShM	China	2000
14	<i>Kaman</i> /FRA Combattante II	234-265 tons	Missile Boat (Fast Attack Craft)	1-2 twin launcher with C-802 AShM; 1 76mm gun	France	1977
10	<i>Thondor</i> /Type 021 (PRC <i>Houdong</i>) Missile Boat	205 tons	Missile Boat (Fast Attack Craft)	2 twin launchers with C-802 AShM; 2 twin AK230 CIWS	China (Copy of Soviet Osa-I)	Unknown. Based on 1965 Soviet design.
3	<i>Taregh</i> /RUS Type 877EKM	<u>Surfaced</u> : 2,300-2,350 tons <u>Submerged</u> : 3,000-3,950 tons	Tactical/Attack Submarine	6 single 533mm TT	Russia	1982
1	<i>Fateh</i>	<u>Surfaced</u> : 527 tons	Tactical Submarine	4 torpedo tubes	Iran	2014

		<u>Submerged</u> : 593 tons				
16	<i>Qadir</i> (also, <i>Ghadir</i>)	120 tons	Midget Submarine	2 single 533mm TT	Iran	2007
1	<i>Nahang</i>	350-400 tons	Midget Submarine	Mine laying capabilities; claimed to have AShMs ⁴⁸	Iran	2006
5	<i>Al Sabehat</i>	n.k.	Special Forces Delivery Vehicle	Mine-laying capacity	Iran	2000
2	<i>Hejaz</i>	614 tons, 2,274 tons fully loaded	Amphibious Landing Ship	Mine-laying capacity	Iran	1985 (re-classed in 2000)
2	MIG-S-5000	unknown	Commercial Amphibious Landing Ship	Mine-laying capacity	Iran	1985 (re-classed in 2000)

Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure VI.4: GCC's Surface Naval Forces

Amount	Country of Ownership	Name/Class	Function	Arms	Manufacturer	Year Commissioned
3	Saudi Arabia	<i>Al Riyadh/La Fayette</i>	Destroyer	2 quad launchers with MM-40 <i>Exocet</i> Block II AShM; 2 8-cell VLS with <i>Aster</i> 15 SAM; 4 single 533mm ASTT with F17P HWT; 1 100mm gun	France	2002
4	Saudi Arabia	<i>Madina/F-2000</i>	Frigate	2 Quad launcher with <i>Otomat</i> Mk AShM; 1 octuple launcher with <i>Crotale</i> SAM; 4 single 533mm ASTT with F17P HWT; 1 100mm gun	France	1985/1986
1	Bahrain	<i>Sabha/US Oliver Hazard Perry</i>	Frigate	1 Mk13 GMLS with SM-1MR SAM/RGM-84 C <i>Harpoon</i> AShM; 2 triple 324mm Mk32 ASTT with Mk46 LWT; 1 <i>Phalanx</i> Block 1B CIWS	United States	1996
3	Oman	<i>Al-Shamikh</i>	Frigate	2 quad launchers with MM-40 <i>Exocet</i> Block III AShM; 2 sextuple launchers with VL MICA SAM; 2 DS 30M CIWS; 1 76mm gun	United Kingdom	2013
4	Saudi Arabia	<i>Badr/US Tacoma</i>	Corvette	2 quad Mk140 launchers with RGM-84C <i>Harpoon</i> AShM; 2 triple 324mm ASTT with Mk 46 LWT; 1 <i>Phalanx</i> CIWS; 1 76mm gun	United States	1981

9	Saudi Arabia	<i>Al Siddiq</i> /US 58m	Armed Patrol Boat	2 twin Mk140 launchers with RGM-84C <i>Harpoon</i> AShM; 1 <i>Phalanx</i> CIWS; 1 76mm gun	United States	1980
2	Bahrain	<i>Al Manama</i> /GER Lurssen 62m	Corvette	2 twin launchers with MM-40 <i>Exocet</i> AShM; 1 76mm gun	Germany	1987
4	Bahrain	<i>Ahmed el Fateh</i> /GER Lurssen 45m	Fast Attack Patrol Boat	2 twin launchers with MM-40 <i>Exocet</i> AShM; 1 76mm gun	Germany	1984
2	Bahrain	<i>Al Jarvin</i> /US <i>Swift</i> FPB-20	Patrol Boat	n/a	United States	
2	Bahrain	<i>Al Riffa</i> /GER Lurssen 38mm	Patrol Boat	1 twin launcher with MM-40 <i>Exocet</i> AShM	Germany	1982
1	Kuwait	<i>Al Sanbouk</i> /GER Lurssen TNC-45	Patrol Boat/ Missile Boat	2 twin launchers with MM-40 <i>Exocet</i> AShM; 1 76mm gun	Germany	1984
1	Kuwait	<i>Istiqlal</i> /GER Lurssen FPB-57	Fast Attack Patrol Boat	2 twin launchers with MM-40 <i>Exocet</i> AShM; 1 76mm gun	Germany	2005
10	Kuwait	<i>Al Nokatha</i> /US Mk V <i>Pegasus</i>	Patrol Boat/Special Operations Craft	7.62mm Gatling gun; .50 caliber Machine Guns	United States of America	2012
8	Kuwait	<i>Um Almaradim</i> /FRA P-37 BRL	Fast Attack Patrol Boat	2 twin launchers with <i>Sea Skua</i> AShM; 1 sextuple launcher	France	1998
2	Oman	<i>Qahir Al Amwaj</i>	Corvette	2 quad launchers with MM-40 <i>Exocet</i> AShM; 1 octuple launcher with <i>Crotale</i> SAM;	United Kingdom	1996

				1 76mm gun; 1 helicopter landing platform		
4	Oman	<i>Dhofar</i>	Armed Patrol Boat	2 quad launchers with MM-40 <i>Exocet</i> AShM	United Kingdom	1982
4	Qatar	<i>Barzan/UK Vita</i>	Fast Attack Craft	2 quad launchers with MM-40 <i>Exocet</i> Block III AShM; 1 sextuple launcher with <i>Mistral</i> SAM; 1 <i>Goalkeeper</i> CIWS; 1 76mm gun	United Kingdom	1996, 1998
3	Qatar	<i>Damsah/FRA Combattante III</i>	Fast Attack Craft	2 quad launchers with MM-40 <i>Exocet</i> AShM; 1 76mm gun	France	1982, 1983
3	UAE	<i>Baynunah</i>	Corvette	2 quadruple launchers with MM-40 <i>Exocet</i> Block III AShM; 1 8-cell Mk 56 VLS with RIM-162 ESSM SAM; 1 21-cell MR49 GMLS with RIM 116B SAM; 1 76mm Gun	France, UAE	2010, 2012
1	UAE	<i>Abu Dhabi</i>	Corvette	2 quadruple launchers with MM-40 <i>Exocet</i> Block III AShM; 1 76mm Gun	Italy	2011
2	UAE	<i>Muray Jib/GER Lurssen 62m</i>	Corvette	2 quadruple launchers with MM-40 <i>Exocet</i> Block III AShM; 1 76mm Gun; 1 octuple launcher with <i>Crotale</i> SAM; 1 <i>Goalkeeper</i> CIWS; 1 helicopter landing platform	Germany	1990, 1991

2	UAE	<i>Granthoot</i>	Corvette	2 quadruple launchers with MM-40 <i>Exocet</i> Block III AShM; 2 triple launchers	Italy	2012
2	UAE	<i>Mubarraz</i> /GER Lurssen TNC-45m	Corvette	2 twin launchers with MM-40 <i>Exocet</i> AShM; 2 triple launchers with VL <i>Mica</i> SAM; 1 76mm gun; 1 helicopter landing platform	Germany	1990
6	UAE	<i>Ban Yas</i> /GER Lurssen TNC-45	Fast Attack Craft	2 twin launchers with MM-40 <i>Exocet</i> Block III AShM;	Germany	1980
7	UAE	<i>Al Bazam</i> / <i>Ghannatha</i> mod	Patrol Boat	4 single launchers with <i>Marte</i> Mk2/N AShM	Sweeden	2012

Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure VI.5 Iranian Reliance on Aging/Mediocre Naval Systems**FSGM**

- **2 *Jamaran* (UK Vosper Mk 5 with 2 twin launcher with CSS-N-4 *Sardine* anti-ship missile 2 launcher with SM-1 SAM, 2 triple 324mm ASTT, 1 76mm gun, 1 hel landing platform)**

FSG 4

- **3 *Alvand* (UK Vosper Mk 5) with 2 twin l launcher with CSS-N-4 *Sardine* anti-ship missile, 2 triple 324mm ASTT, 1 114mm gun**
- **1 *Bayandor* (US PF-103) with 2 twin launcher with C-802 anti-ship missile, 2 triple 324mm ASTT, 2 76mm gun**

FS

- **1 *Bayandor* (US PF-103) with 2 76mm gun**

PCFG

- **13 *Kaman* (FRA *Combattante II*) with 1–2 twin launcher with CSS-N-4 *Sardine* anti-ship missile**

MSI

- **2 *Riazi* (US *Cape*)**

LSM

- **3 *Farsi* (ROK) (capacity 9 tanks; 140 troops)**

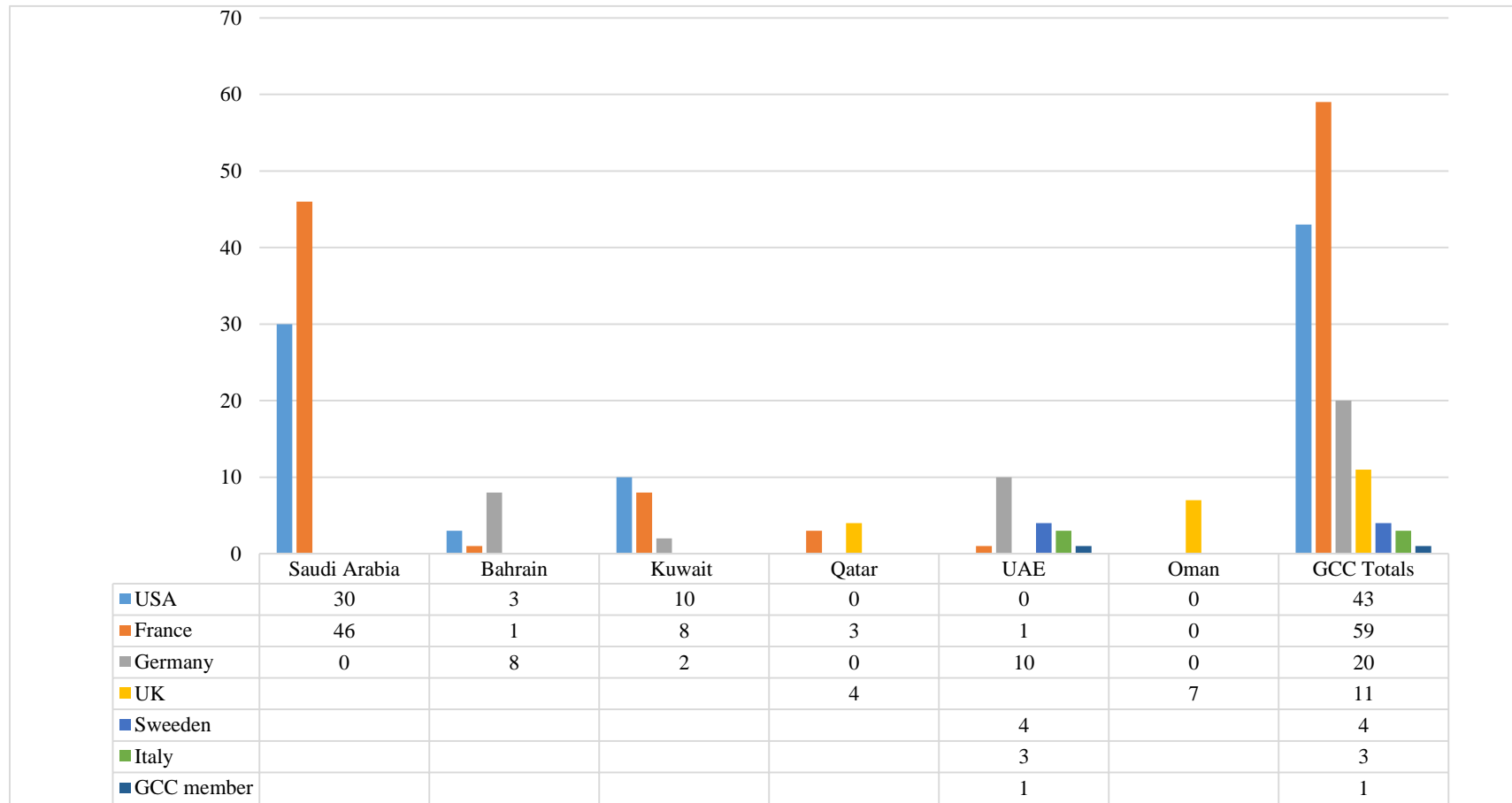
LST

- **4 *Hengam* each with up to 1 helicopter (capacity 9 tanks; 225 troops)**

LSL

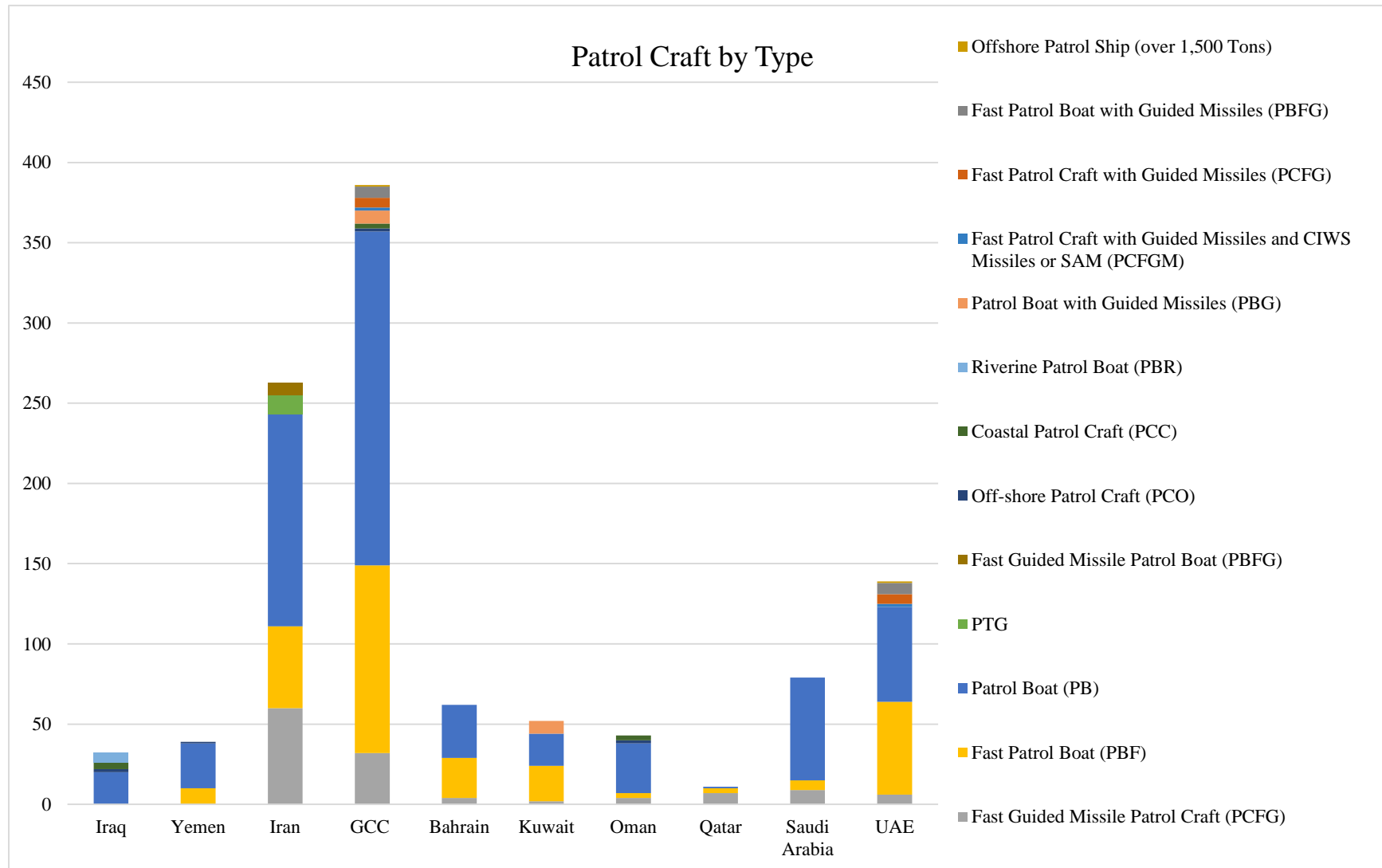
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Figure VI.6: Source of Armed Western Made Naval Ships by Manufacturer



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VI.7: Patrol Craft – Part One



Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure VI.7: Patrol Craft – Part Two

	Iraq	Yemen	Iran	GCC	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Fast Guided Missile Patrol Craft (PCFG)			60	32	4	2	4	7	9	6
Fast Patrol Boat (PBF)		10	51	117	25	22	3	3	6	58
Patrol Boat (PB)	20	28	132	208	33	20	31	1	64	59
PTG			12	0						
Fast Guided Missile Patrol Boat (PBFG)			8	0						
Off-shore Patrol Craft (PCO)	2	1		2			2			
Coastal Patrol Craft (PCC)	4			3			3			
Riverine Patrol Boat (PBR)	6			0						
Patrol Boat with Guided Missiles (PBG)				8		8				
Fast Patrol Craft with Guided Missiles and CIWS Missiles or SAM (PCFGM)				2						2
Fast Patrol Craft with Guided Missiles (PCFG)				6						6
Fast Patrol Boat with Guided Missiles (PBFG)				7						7
Offshore Patrol Ship (over 1,500 Tons)				1						1

Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

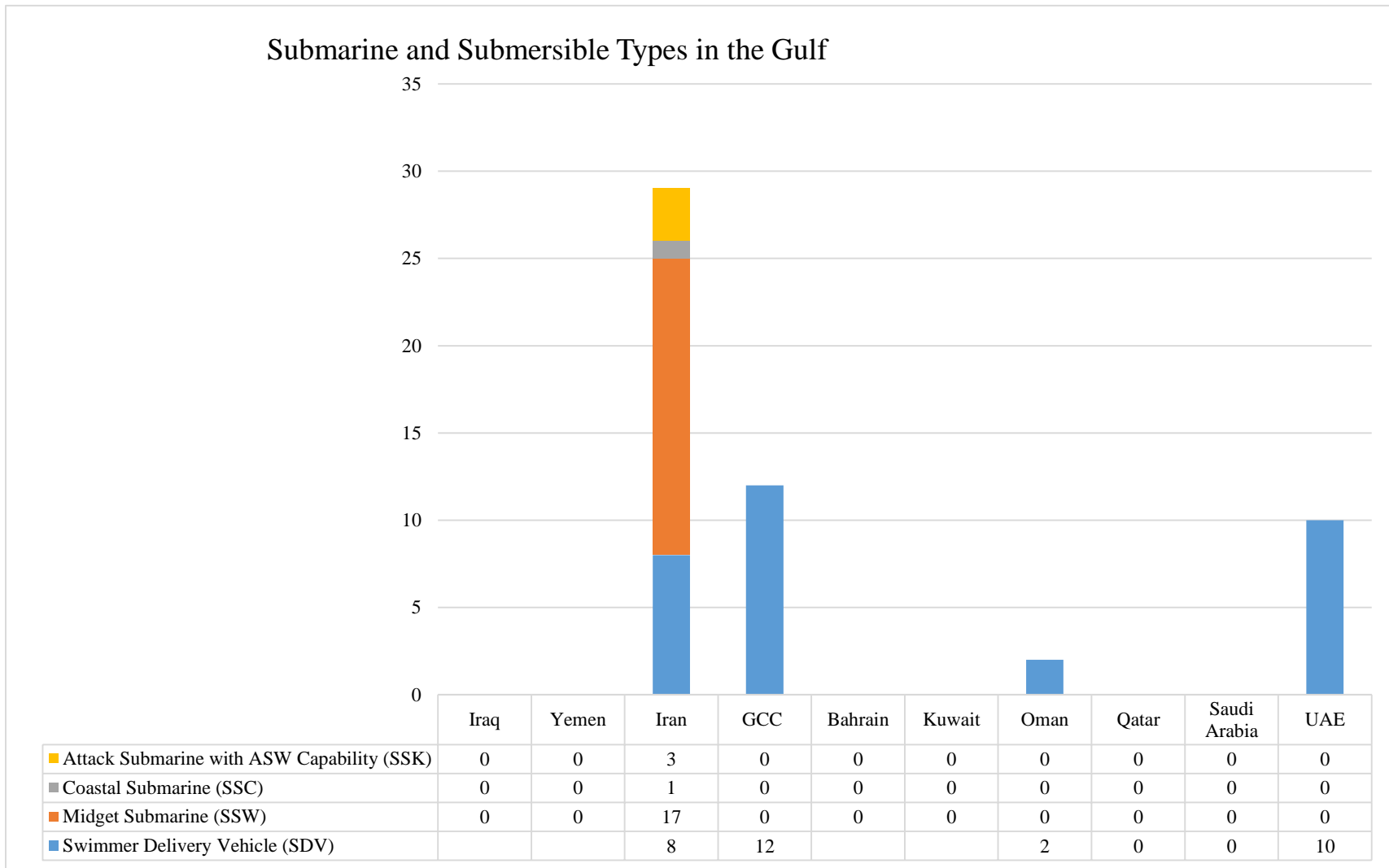
Figure VI.8: Iranian Military Installations Inside and Outside the Gulf

- **Bandar-e Khomeini (30°25'41.42"N, 49° 4'50.18"E)**
- **Bandar-e Mahshahr (30°29'43.62"N, 49°12'23.91"E)**
- **Khorramshahr (30°26'2.71"N, 48°11'34.25"E)**
- **Khark Island (29°14'48.01"N, 50°19'48.88"E)**
- **Bandar-e Bushehr (28°58'2.58"N, 50°51'50.74"E)**
- **Asalouyeh (27°27'21.08"N, 52°38'15.55"E)**
- **Bandar-e Abbas** (Naval base: 27° 8'35.79"N, 56°12'45.61"E; IRGCN missile boat base: 27° 8'30.91"N, 56°12'5.58"E; IRGCN torpedo & MLRS boat base: 27° 8'21.13"N, 56°11'53.28"E; Hovercraft base and nearby Naval air strip: 27° 9'15.68"N, 56° 9'49.97"E)
- **Jask (25°40'40.90"N, 57°51'4.54"E)**
- **Bostanu (27° 2'58.22"N, 55°59'3.22"E)**
- **Chabahar**
- **IRGCN base. It is the farthest east of all of Iran's military port facilities.**
- **Qeshm (26°43'10.09"N, 55°58'30.94"E)**
- **Sirri Island (25°53'40.20"N, 54°33'7.82"E)**
- **Abu Musa (25°52'22.32"N, 55° 0'38.62"E)**
- **Occupied by Iran but claimed by the UAE. Suspected to house a small number of IRGCN forces. Also known to house HAWK SAMs and HY-2 "Silkworm" anti-ship missiles.**
- **Greater Tunb and Lesser Tunb (GT: 26°15'54.33"N , 55°19'27.75"E; LT: 26°14'26.08"N, 55° 9'21.18"E)**

Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

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Figure VI.9: The ‘Submarine and Submersible Balance’



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Map VI.5: Depth of the Gulf

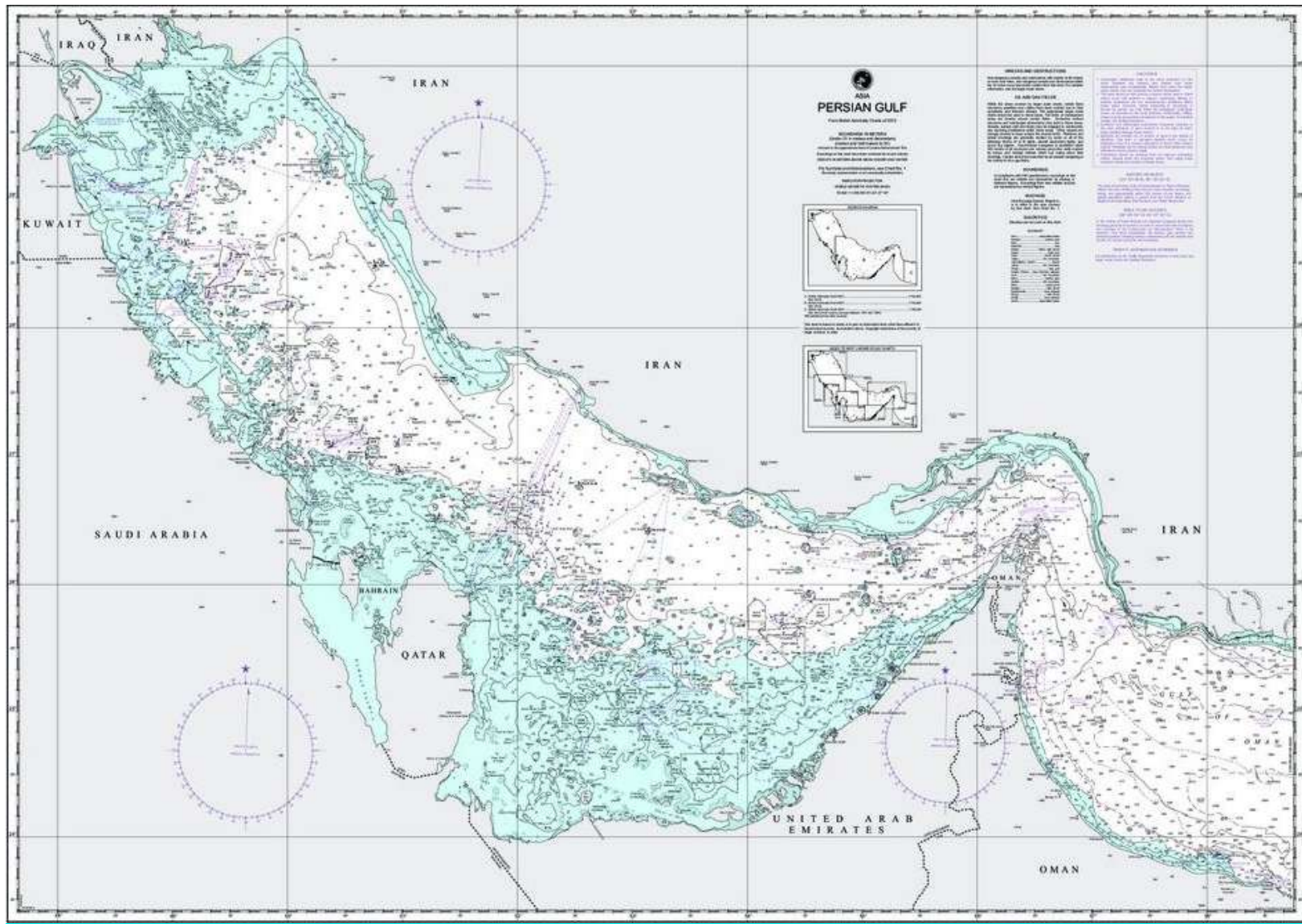
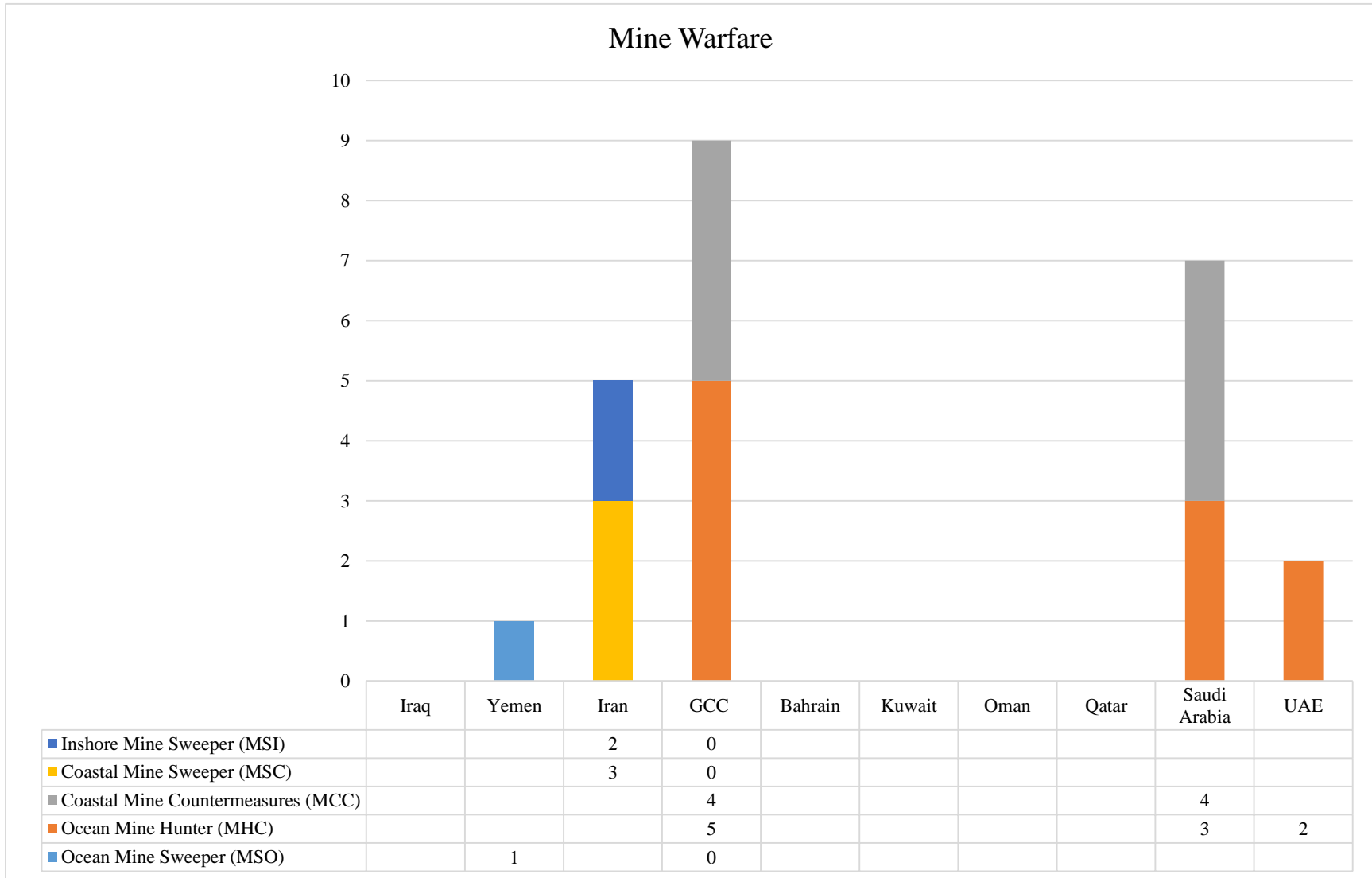
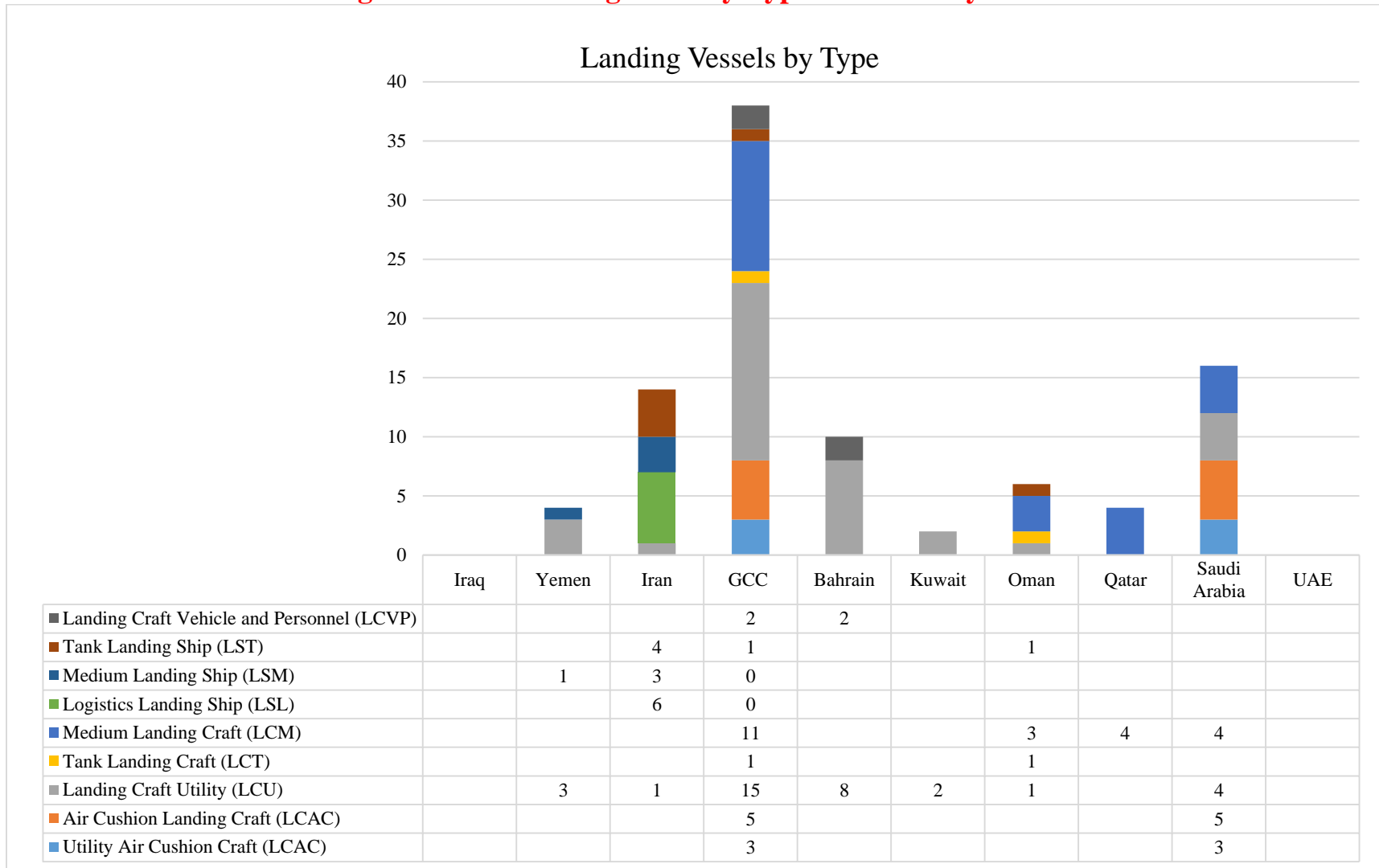


Figure VI.10: Mine Laying Capabilities



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VI.11: Landing Craft by Type and Country



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

VII. Air and Air Defense Forces

Airpower plays a key role in most potential scenarios in the Gulf, even those involving relatively low-level land and sea conflict. It involves a wide range of different capabilities from precision strike to ISR to strategic and tactical airlift. And, it involves rapid theater-wide strike and mobility, and is the area where outside powers like the US can most rapidly deploy additional forces in to the Gulf area. As is the case with so many other aspects of the Gulf balance, the role of outside powers can be as important as the balance of local forces.

The impact of airpower in joint warfare has also changed radically with the steady increase in the range and precision of air-launched weapons, improvement in airborne and satellite targeting and other ISR functions, and improvements in airborne command and control systems like the AWACS. Airpower and air combat technology once evolved more slowly in the Gulf than in European, Asian, and Arab-Israeli conflicts. In spite of large Iranian and Iraqi air forces and of surface-to-air missile forces, airpower still played a relatively limited role in the Iran-Iraq War, and one that had not evolved strikingly since the Korean and Vietnamese Wars.

That situation has change strikingly since the Iraqi invasion of Kuwait in 1990. Changes in precision strike, beyond-visual range air-to-air combat and ISR capabilities for both fixed and rotary wing aircraft made US, GCC, and allied airpower far more effective in the First Gulf War (1991). Changes in air tactics and technology had a major impact in containing Iraq during 1992-2002, in decisively defeating Iraq in 2003, in counterinsurgency combat in Iraq, 2004-2010, and then in Coalition strikes against ISIS in 2014-2015.

These changes also made aircraft and air munitions performance steadily more important relative to aircraft numbers. At the same time – as later chapters show – airpower evolved to include a steadily widening range of capabilities for both air and joint warfare. Changes in land and sea-based ballistic and cruise missile forces, and the introduction of both unmanned aerial vehicles (UAVs) and unmanned combat aerial vehicles (UCAVs) added further new dimensions to air warfare. Changes in ISR and C4I/BM capabilities have continued to steadily improve targeting capability, the ability to manage complex coalition air and joint warfare operations, and task and re-task aircraft in flight.

Land and sea based surface-to-air and anti-missile defense systems also steadily evolved in capability, and came to play an even more important role in air and missile combat. Air defense in the broader sense now mixes advances in airborne control and warning, aircraft radar and avionics capabilities for both line of sight and beyond visual range air-to-air combat, and surface-to-air missile defenses in ways that continue to evolve as quickly as fixed and rotary wing air strike capabilities.

Airpower, Scenarios, and Joint Warfare

As is the case with land, sea, and missile forces; airpower is only one dimension in the balance of Gulf military forces. A naval conflict could take the form of limited raids by sea, or a low level war of attrition that only involved naval or seaborne attacks, but even this kind of war would almost certainly include significant land-based ISR activity and the use of maritime patrol aircraft and UAVs. Any

significant level of naval conflict that affected the flow of shipping as well as the security of Gulf facilities, ports, and offshore petroleum installations -- as well as defense and deterrence against amphibious raids and attacks – is likely to involve joint air-sea warfare. It will produce a scenario-specific mix of sea, air, and missile power, and may well include marines, naval guards or some element of land forces.

Map VII.1 highlights the key air space that would be involved in a conflict between Iran and the Arab Gulf states. The spectrum of conflicts involving naval forces in the Gulf can range from low level naval clashes -- and low level, asymmetric wars of attrition – to major sea-air-missile conflicts. There is no way to predict the level of escalation that would be involved in given scenarios. In most cases involving significant naval conflict, however, land-based airpower and mixes of land-based and satellite ISR and C4I/BM capabilities are likely to play a critical role. Ports, offshore facilities, islands, key petroleum facilities, and key infrastructure facilities like desalination will also make attractive target bases for sea, air, and missile operations.

Land combat may also be involved. At high levels of escalation, Iran might try to use its ground forces to offset the GCC and the US advantage in air and sea power. It might use them to try to dominate Iraq, to create a threat along the Saudi border, or to drive across the Shatt al Arab and seize Kuwait. It might also seek to use support of non-state actors in countries like Yemen to put pressure on Saudi Arabia and the GCC states.

As the previous series of maps has shown, Iran has more strategic depth than most of the Gulf states in terms of air power. **Map VII.2** shows that many key urban targets are located a considerable distance from the Gulf and outside air space while many Arab Gulf states concentrate their critical targets along the Gulf coast, and Saudi Arabia and Oman are the only Arab Gulf states that have matching depth in terms of air space and air bases. Moreover, all of the Arab Gulf states except Oman have the special vulnerability of being dependent on the security of their desalination plants – sources of water for which they have no immediate alternative.

At the same time, **Map VII.3** shows that Iran's key energy facilities do not have that strategic depth, and Arab Gulf and US air and cruise missiles strike power can reach a wide range of critical Iranian targets, including oil export facilities that are critical to Iran. The EIA reports that,

- Pre-sanctions, Iran exported approximately 2.2 million bbl./d of crude oil. Iranian Heavy Crude Oil is Iran's largest crude export followed by Iranian Light. In 2011, Iran's net oil export revenues amounted to approximately \$95 billion. Oil exports provide half of Iran's government revenues, while crude oil and its derivatives account for nearly 80 percent of Iran's total exports.
- Kharg Island, the site of the vast majority of Iran's exports, has a crude storage capacity of 20.2 million barrels of oil and a loading capacity of 5 million bbl./d. Lavan Island is the second-largest terminal with capacity to store 5 million barrels and loading capacity of 200,000 bbl./d. Other important terminals include Kish Island, Abadan, Bandar Mahshar, and Neka (which helps facilitate imports from the Caspian region).
- Iran is the second-largest oil consuming country in the Middle East, second only to Saudi Arabia. Iranian domestic oil demand is mainly for diesel and gasoline. Total oil consumption was approximately 1.8 million bbl./d in 2010, about 10 percent higher than the year before. Iran has limited refinery capacity for the production of light fuels, and consequently imports a sizeable share of its gasoline supply (Imports 300,000 bbl/d).

of gasoline per day.). Iran's total refinery capacity in January 2011 was about 1.5 million bbl./d, with its nine refineries operated by the National Iranian Oil Refining and Distribution Company (NIORDC), a NIOC subsidiary.

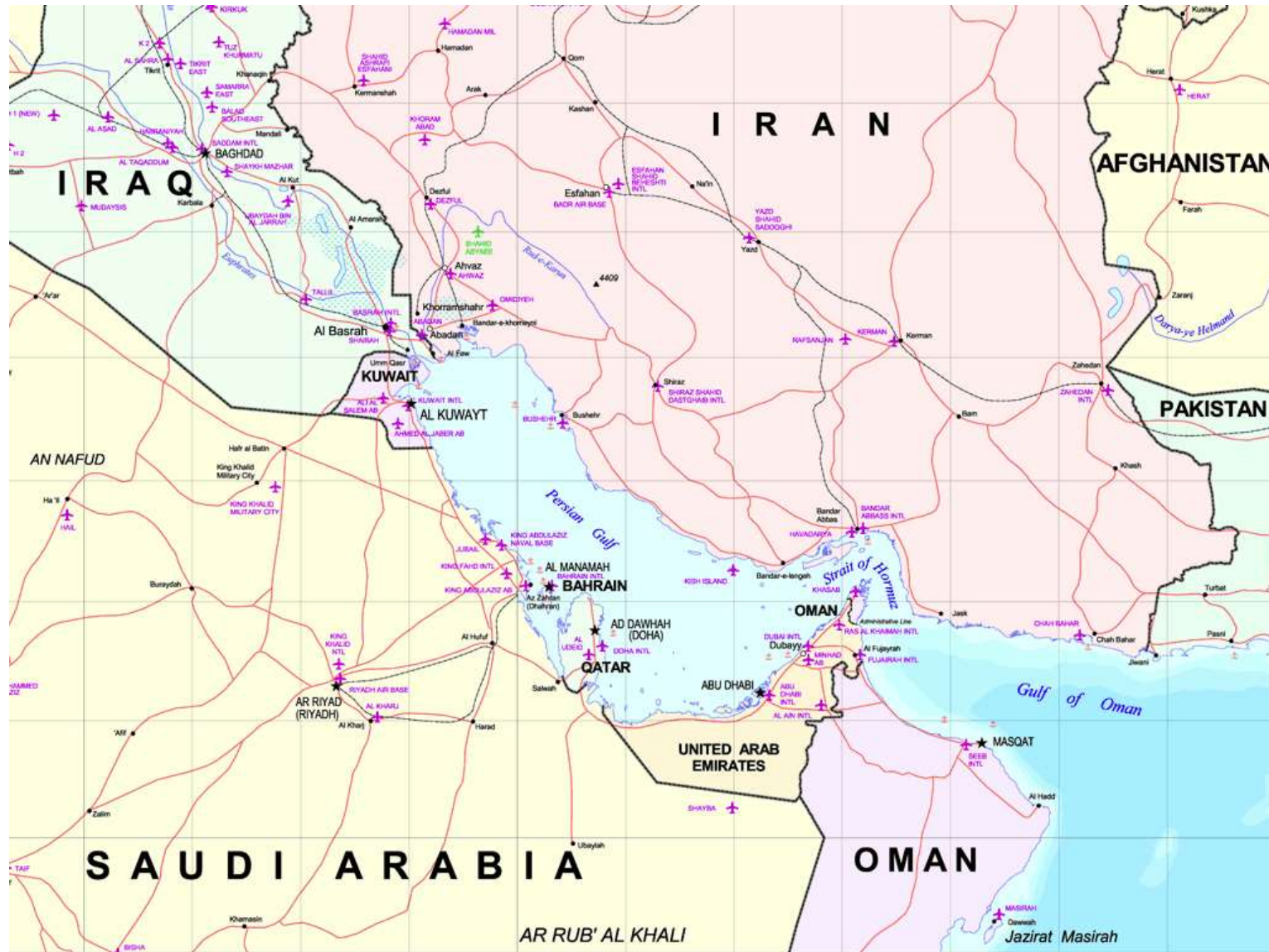
- Refineries and gas distribution critical to economy. Are highly vulnerable.
- Natural gas accounts for 54 percent of Iran's total domestic energy consumption.
- Key aspects of power grid, are highly vulnerable. Today's precision strike assets allow conventional strikes to knock out key, repairable links or create long term incapacity. They have become "weapons of mass effectiveness."
- EIA reports some power plants are running as low as 10 percent of their nameplate capacity as Iran's electricity infrastructure is largely in a state of dilapidation and rolling blackouts become endemic in summer months. The amount of generation lost in distribution is a central indicator of the disrepair of the electricity network, with upwards of 19 percent of total generation lost during transmission.
- Key road bridges, tunnels, overpasses, tunnels to limit logistic and transport movement.
- Rail system vulnerabilities.
- Limited and vulnerable air defense system with only one modern and very short-range air and cruise missile defense system. Will remain vulnerable to stealth, cruise missiles, and corridor suppression of enemy air defenses unless can get fully modern mix of radars, C4I/BM assets, and S-300/400 equivalent.
- Facilities for imports of food and product.
- Naval embargo presents issues in maritime law, but can halt all Iranian traffic, "inspect" all incoming shipping. In a conflict, can use smart mines to limit access all ports
- Halt all civil aviation traffic.

Map VII.4 shows that Iran and the Gulf states have a wider range of military airbases to use for dispersal, longer range operations, and operations in Syria and Yemen -- even if one ignores commercial airports that are not used as military bases, and unoccupied or low-grade dispersal facilities.

The end result is that any scenarios where airpower is used could involve complex and unpredictable mixes of conventional forces, irregular or asymmetric forces, militias, and hostile non-state actors. The conventional balance of power might well prove largely irrelevant, and most serious levels of actual war fighting or deterrence are likely to be shaped by the combined impact of seapower, airpower, and missile power. Ideology, religion, and internal sectarian, ethnic, and tribal differences can play a critical role under such conditions.

As is the case, with land, air, and missile forces, the role of US naval and other power projection forces, and those of other outside powers like Britain and France – is likely to be equally important. This is particularly true in any scenario that involves large-scale combat or that pose a significant threat to the smooth flow of oil exports. At the same time, other outside powers and non-state actors might contribute money, weapons, advisors, and political support. The ability to add foreign non-state actors like the Hezbollah, or embed key elements of "train and assist forces" like the Iranian Al Quds Force.

Map VII.1: Key Operating Areas in Iranian and Arab Gulf Airspace



Source: Congressional Research Service & Wikipedia, https://www.google.com/search?q=CRS+Persian+Gulf&tbm=isch&imgil=9rA8kke_

Map VII.2: Iran's "Strategic" Depth in Air Space



Source: CIA

Map VII.3: Iran's Vulnerable Petroleum Facilities



Source: US Energy Information Agency

Map VII.4: Key Gulf Airbases



Source: Dr. Abdullah Toukan

The Less Quantifiable Elements of Airpower

Comparisons of air and air defense force manpower, force structure, and force strength do provide important insights into the military balance, as do the assessments of surface-to-surface missile power that follow. Once again, however, the more easily quantifiable measures of force strength do not compare many critical elements of real world combat capability. In the case of airpower, these include:

- Training and large scale, realistic naval and joint warfare combat exercise performance.
- Combat experience, particularly in support of ground and naval forces, interdiction and deep strike and beyond visual range air combat.
- Readiness, particularly in terms of operational availability of aircraft, sortie rate generation capability and sustained generation capability.
- Sustainability of air combat assets.
- Combinations of avionics and precision strike systems, and realistic range and exercise training.
- Training, avionics and munitions for air-to-air combat, particularly all-weather (AWX) and beyond visual range (BVR) combat
- Suppression of enemy air defense (SEAD) training, avionics, and munitions.
- Anti-ship sensors, avionics, and munitions
- Real world capabilities for electronic intelligence (ELINT), signals intelligence (SIGINT), and electronic warfare (EW) capability.
- Real world secure communications and data link capability,
- Real world capability to provide airborne tanker and refueling capability.
- Real world capability to provide effective air command and operations center capability at the national and GCC levels.
- Motivation and morale.
- Intelligence, surveillance, and reconnaissance capability. (ISR)
- Targeting and smart munitions capabilities.
- Command, control, communications, computer, and battle management capabilities (C4I/BM)
- Political leadership and unity.
- Interoperability and common doctrine, training, and leadership for allied forces.

Air Force and Air Defense Manning

Total Air Force and Air Defense manning is shown in **Figure VII.1**. Such data provide a crude indication of the relative scale of Gulf Air Forces, but little else. It is the quality and training of key personnel like aircrews, maintenance crews, surface-to-air missile operators, and C4I/BM/ISR that counts, rather than total numbers. These standards vary significantly by country. Outside experts feel the UAE set the highest standards in the GCC, followed by Saudi Arabia. Iran's standards are mixed, but have been shaped to some extent by necessity. Flying and maintaining Iran's aging air fleet requires competence.

Total Air Force Strength and Combat strength by Aircraft Category and Mission

Figure VII.2 shows total combat aircraft by country and is a more valid measure of force strength. **Figure VII.3** shows similar total force strength data by aircraft primary mission and category. One key aspect of this Figure, however, is questionable. It makes a

distinction between “fighter” (IDF/AWX) and fighter ground attack (FGA) that no longer seems realistic. Almost all of the combat aircraft listed can be used in both the air defense and strike/attack modes.

As noted above, aircraft and munitions quality are also critical, however, and aircraft numbers can be misleading. Sortie generation rates and the ability to generate sorties over time determine real world capability in serious air combat, not inventory numbers. Israel, for example, was able to consistently generate far higher sortie numbers over time in past Arab-Israeli conflicts than Egypt and Syria, and operate its sorties with much higher effectiveness.

Outside experts feel that the UAE has relatively high capability sortie generation capability, and Saudi Arabia is close. Other GCC standards vary by country and aircraft type. Iran faces major challenges because of the age of many of its aircraft, and access to spare parts and repair equipment, as well as problems introduced by Iranian designed and built upgrades, which vary in reliability. Outside estimates put GCC operational availability rates at 75-85%, and Iranian rates at 50%-60%. Iran’s ability to sustain sorties over time is also believed to be low compared to GCC and US standards.

Modern Combat Aircraft and Munitions Strength

Figure VII.4 provides a break out of the more modern combat aircraft in the Gulf. This Figure deliberately exaggerates Iranian capability by including its aging F-4D/Es and F-14s in the total, along with its older export versions of the Mig-29 and Su-24. This has been done to illustrate the best elements of the Iranian Air Force, but all of Iran’s aircraft have distinctly lower performance capability in air combat and strike missions than the F-15s, F-16s, Mirage 2000s, Tornados, and Typhoons in GCC forces.

In real world terms, Iran has not been able to modernize its air force in the face of sanctions and other barriers to modern arms imports and simply is not competitive with GCC air forces. It is even less competitive against a US force equipped with stealth fighters and bombers, and far more advanced ISR, AWACS, and SEAD aircraft and other systems. These limits to its air force and land-based air defenses are summarized in **Figure VII.5**.

The GCC air forces have also generally taken advantage of their superior access to modern aircraft avionics and munitions to steadily upgrade their precision strike and air-to-air combat capabilities in ways Iran has not been able to match. There is no easy way to summarize these differences, since they require country-by-country data and simulation, but a number of outside experts feel that avionics and munitions place as serious a limit on Iran as airframe age.

Countries like Saudi Arabia and the UAE are also acquiring very advanced long-range precision strike munitions like the Storm Shadow (French name is SCALP EG). This is a “fire and forget” cruise missile with a 300-kilometer range in low altitude flight and that uses a combination of inertial, GPS, and TERPROM guidance with terminal guidance using imaging infrared DSMAC, and which has optional hard target kill warheads. It can be fired by the Tornado, Typhoon, and Mirage 2000. For most practical mission purposes in the Gulf in a conflict with Iran, it is equivalent to the US Tomahawk. It also illustrates just how critical assessing air launched munitions has become. They are now as critical in terms of mission capability as the airframe used to fire them.

At the same time, GCC air forces face some of the problems in terms of integration and interoperability affecting land and naval forces, and the limited reaction times in conducting air combat and strike missions mean the need for common tactics, combat training, large-scale exercise experience, aircraft and munitions mission capability, advanced IFF, and fully integrated ISR and C4I/BM is urgent.

Air Force and Land Force Attack and Armed Helicopters

All Gulf forces have rotary wing mobility, but capability varies sharply by country as does tactical employment doctrine and exercise performance. Relative strength in armed and attack helicopters is shown in **Figure VII.6**, and is becoming another major new aspect of the Gulf balance.

Iran was the first Gulf nation to focus on creating a force of rotary wing combat systems, and bought an extensive force of armed and attack helicopters under the Shah. As is the case with its fixed wing aircraft, however, Iran has since had major problems in modernizing such aircraft and keeping them operational. Helicopters present a major challenge in maintenance time, part replacement, and ground crew skills in comparison to most fixed wing aircraft.

In contrast, the GCC states have access to the latest and most capable attack helicopters like the AH-64, advanced munitions and avionics, and can obtain contract maintenance and support if necessary. This provides some GCC land forces with a significant advantage in rapid strike, deep strike, and combat reinforcement capability.

Naval Armed Helicopters and Air Capability

A number of the GCC states and Iran have armed naval helicopters for attacking surface ships, supporting helicopter raids and troop/special forces missions, and mine warfare. Some have limited anti-submarine warfare capabilities. These forces are shown in **Figure VII.7**. Mission capability, readiness, and sustainability, however, are an issue in GCC forces. Iran's systems are obsolescent, but have been modified and upgraded.

GCC naval fixed wing capabilities are limited, and the GCC does not have a meaningful integrated maritime patrol or surveillance capability. It would be forced to rely on the US in a serious naval combat. Oman has one squadron of SC.7 3M Skyvan maritime patrol aircraft. Saudi E-3s does have an advanced maritime surveillance capability but it is unclear how effective the Saudi Air Force is in using it. The UAE has a Joint Aviation Command that includes one squadron with AS332F Super Puma and AS565 Panther armed helicopters for anti-submarine warfare missions. It is reported to have some maritime patrol aircraft, but their status is unclear.

Iran is the only Gulf Navy that formally has a separate Naval Aviation branch. The IISS *Military Balance* for 2015 indicates that this command has 2,600 personnel and is equipped with 3 P-3F Orion maritime patrol aircraft, PAX 3 Falcon 20 electronic intelligence aircraft and 5 Do-228; 4 F-27 Friendships; and 4 Turbo Commander 680 light transports, as well as the helicopters shown in **Figure VII.7**.

ISR, C4I/BM, and AWACS Capabilities

Advances in intelligence, surveillance, and reconnaissance (ISR), command, control communications, computer and battle management systems (C4I/BM), and especially in airborne warning and air control systems (AWACS) are steadily changing the nature of every aspect of air operations and long range strike operations. Improving ISR assets steadily improve the ability to understand and target enemy operations at every level of combat, and to target and re-task air operations in near real time.

The US has a global lead in these capabilities, and is the only power currently affecting the Gulf balance that can draw on a full range of satellite, advanced airborne intelligence and surveillance platforms, UAVs, and stealth assets and has shown that “fusion” systems that integrate a wide range of different intelligence and reconnaissance assets are major force multipliers and essential in efficiently allocating strike aircraft and cruise missile for deep strike and interdiction missions. It has shown that such capabilities can sharply reduce the number of aircraft and missions needed to accomplish a given objective as well as rapidly allocate airpower where it is most needed, improve battle damage assessment, cope with the limited target profiles of non-state actors, and attack unconventional mixes of targets to limit logistics, maneuver, and sustainability capabilities.

Israel has many elements of such capabilities in could use in preventive strikes against Iran, however, and GCC and other allied Arab states can make use of US data, along with outside power like Britain and France in a wide range of air combat scenarios. Many of the GCC states, Jordan, and Egypt, as well as Britain and France, have or are acquiring significant capabilities of their own, as well as more advanced data handling and secure communications that have the *potential* to share such data. It is far from clear, however, how such capabilities are evolving, and the unclassified reporting available to date indicates that Saudi Arabia and the UAE are the only GCC states making a major effort to develop more advanced capabilities and the necessary tactics and interoperability to make full use of the data the US can share. In the interim, many air forces would have to rely heavily on air reconnaissance, forward observers and air controllers, other intelligence sources, and/or on-board observation and avionics to plan and execute air strikes.

Air-to-air combat, and beyond-visual-range (BVR)/all weather (AWX) combat is a different story. Saudi Arabia has long acquired the E-3 AWACS for airborne warning and managing air-to-air combat, as well as intelligence collection and maritime time surveillance. Other GCC states are acquiring their own more advanced intelligence, reconnaissance, and AWACS type aircraft. An unclassified estimate of GCC and other Gulf holdings of dedicated ISR, C4I/BM, and AWACS capabilities is shown in **Figure VII.8**.

Iran is also developing its capabilities. An IHS Jane’s reported in 2014 and 2015 that Iran has made significant progress in building an airborne early warning system, but that this system which involves small, low altitude attack fighters and the relocation of SAMs is unlikely to produce a national defense system.⁴⁹

Iran had extensive plans to purchase airborne early warning and control systems (AEW&Cs, or AWACS) under the Shah, but, the 1979 revolution prevented the delivery of many of these systems.⁵⁰ The only dedicated aircraft reported by the IISS are an upgraded version of the aging RF-4E, and two to three operational P-3MP Orion maritime patrol, intelligence aircraft it bought at the time of Shah but

has since heavily modified. Iran has, however, upgraded some civil aircraft -- including three Falcon 20s -- with at least limited ELINT and SIGINT capability. It is also developing UAVs for such missions.

The nature of national air control and operations centers is unclear. Saudi Arabia acquired an advanced facility from the US and operated it effectively during the first Gulf War in 1991. It has since upgraded its technical capacity significantly but has not fully exploited its capability to improve air operations, manage joint warfare operations with its land and air operations, or maintain readiness to deconflict air and surface-to-air missile operations. The UAE has developed some capability, but GCC air forces would be heavily dependent on the US Combined Air operations Center in Qatar for some C4I/B<M capabilities. Iran does have an air defense command center and regional centers to try to coordinate air force, army and land-based air defenses, and Revolutionary Guard forces, but unclassified data on their capabilities are too limited to make even a summary assessment.

Unmanned Aerial Vehicles (UAVs) and Unmanned Combat Aerial Vehicles (UCAVs)

Unmanned Aerial Vehicles (UAVs) and Unmanned Combat Aerial Vehicles (UCAVs) represent one of the most rapidly evolving aspects of the Gulf balance. Many of the GCC states are acquiring or examining the purchase of such systems. The US has systems that range from small UAVs that can be used at the platoon level by ground forces to long-range, high endurance UAVs and UCAVs that can reach anywhere in Gulf, and that have stealth variants. It has extensive experience in using such systems in both intelligence and combat in Afghan and Iraq and covering Iran. Iran is both deploying UAVs and UCAVs experimenting with a wide range of additional systems.

A rough estimate of Iran's systems is shown in **Figure VII.9**, but there is no clear way to assess this aspect of the balance, particularly because the number and character of UAV and UCAV platforms is only a small part of the story. The far less visible capability to allocate such resources, use the data they collect, alter operations and targeting, and provide the C4I/BM to fire the ordnance on UCAVs is equally critical.

UAVs and UCAVs are most valuable to the extent they are integrated into the overall intelligence and strike planning of given users, and it is unclear how Iran and the Arab Gulf state will do. So far, the US is the only country for which there are clear data on how UAVs and UCAVs can alter combat, and some US reporting has tended to exaggerate the capability to create ISR fusion systems that can make effective use of UAV sensor data, and provide the targeting to ensure that UCAVs can be used to kill hostile state and non-state actors and do so with minimal civilian losses and collateral damage.

These problems have been compounded by the fact that non-state actors like the Islamic State and Al Qaida routinely attempt to use civilians and civilian facilities as human shields against such attacks, make exaggerated claims about civilian casualties, and attempt to portray UCAVs as a special category of weapons. In practice, any use of artillery in built up areas, especially in area fire or fire beyond line of sight has long been a far more lethal killing mechanism in causing civilian casualties and collateral damage. Both fighters and armed helicopters have limited time and ability to discriminate targets even with the most advanced vision aid and avionics now available especially when using precision guided ordnance at a distance.

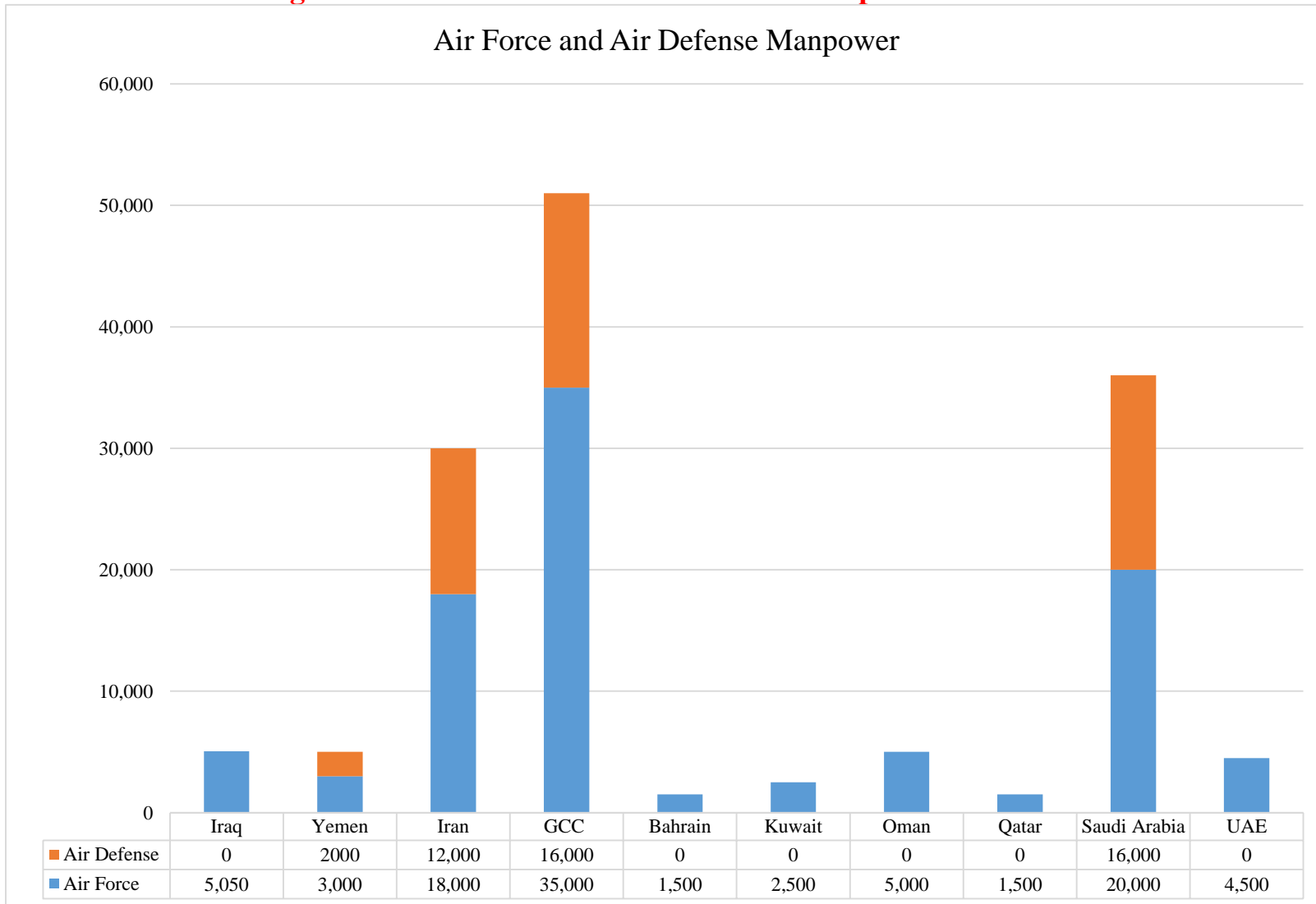
It is clear that UAVs and UCAVs are becoming a critical new part of the regional military balance, and real world efforts to achieve something approaching a “revolution in military affairs,” but it is far from clear how current procurement efforts and concepts for using such systems will translate into operational realities.

Suppression of Enemy Air Defense (SEAD) Capabilities

The ability to attack or survive land-based air defenses is another critical aspect of modern air warfare, and is a critical aspect of US land and carrier based air operations. The GCC state, Jordan, and Egypt have all sought to develop capabilities that could be used to counter Iranian sensors, air combat, and surface-to-air missile capability. Several GCC countries have acquired modern electronic countermeasure (ECM), electronic counter-countermeasure (ECCM), and other electronic warfare pods for their fighters. Saudi Arabia has acquired anti-radiation missile like the Alarm and the UAE has acquired the AGM-88 HARM. It is not clear, however, what assets most have or how combat effective they would be. It seems likely that in many scenarios, they would be heavily dependent on the US for the SEAD mission.

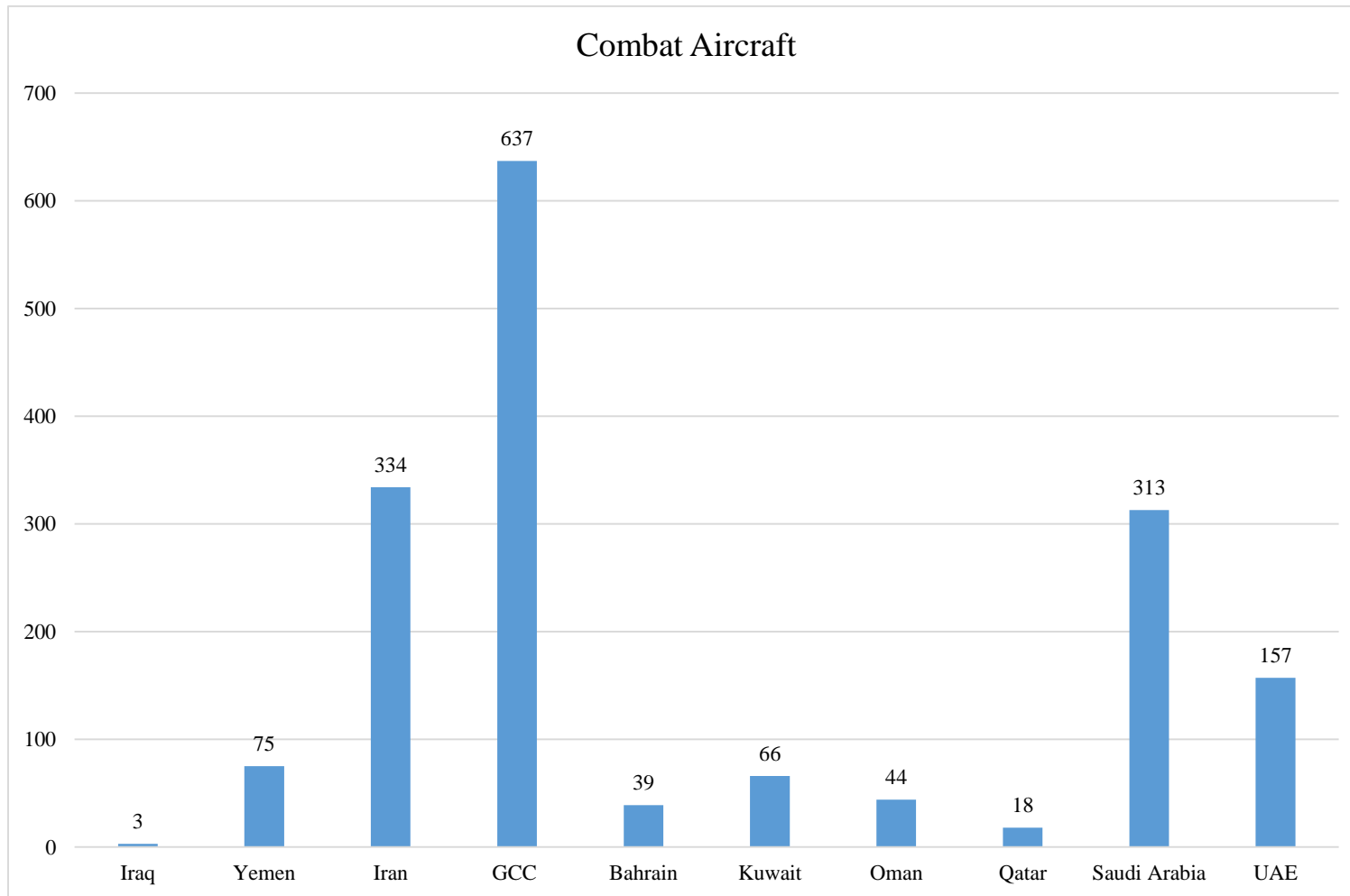
Iran has sought to develop such capabilities, but they seem limited. It has acquired Russian KH-58 (AS-11 Kilter) anti-radiation missiles.

Figure VII.1: Air Force and Air Defense Manpower in the Gulf



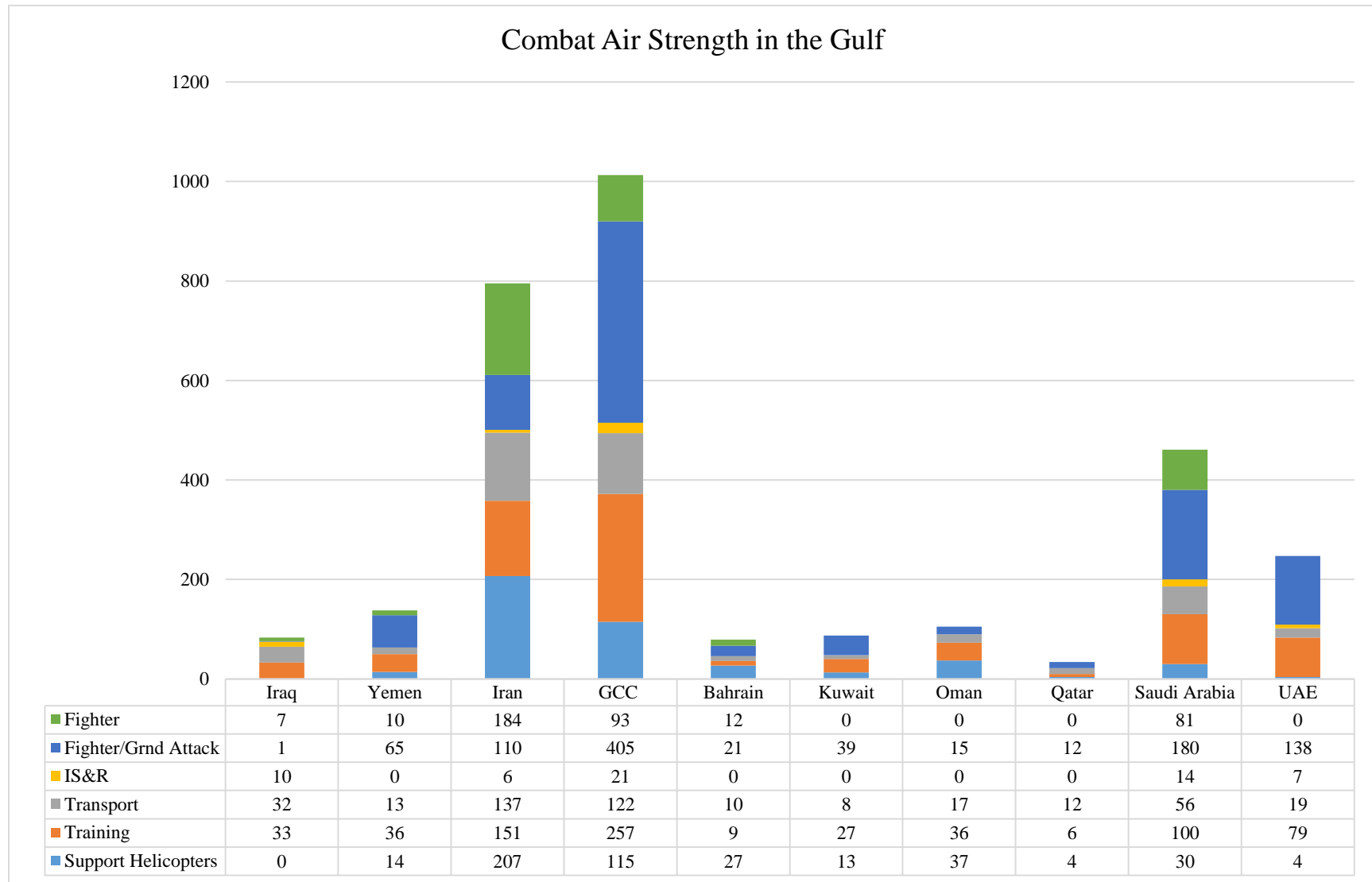
Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure VII.2: Total Gulf Combat Aircraft



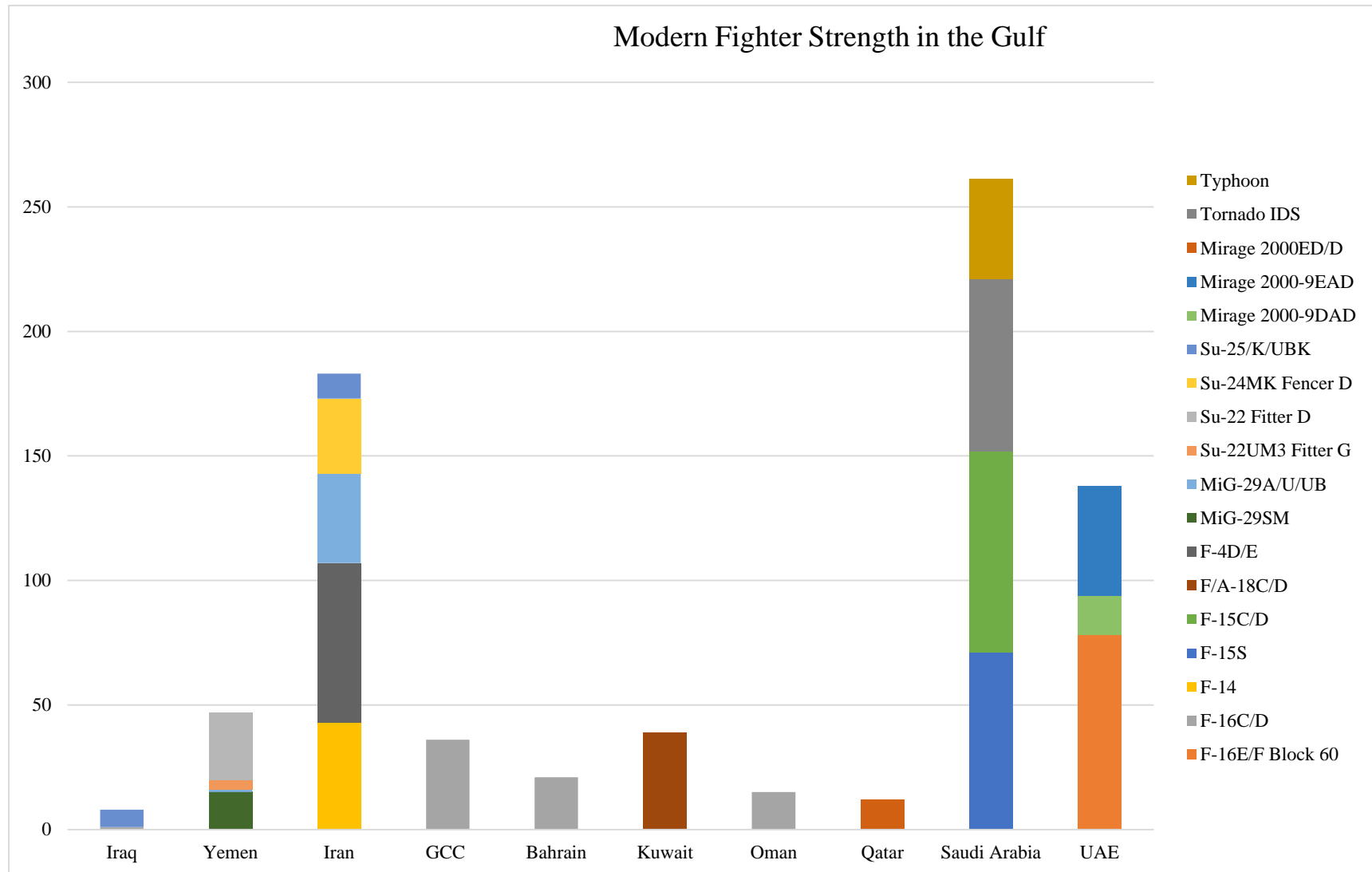
Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VII.3: Gulf Combat Air Strength by Category and Mission



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VII.4: Modern Combat Aircraft Strength in the Gulf – Part One



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VII.4: Fighter Strength in the Gulf – Part Two

	Iraq	Yemen	Iran	GCC	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
F-5B/E/F		10		12	12					
F-16E/F Block 60										78
F-16C/D	1			36	21		15			
F-14			43							
F-15S									71	
F-15C/D									81	
F/A-18C/D						39				
F-4D/E			64							
MiG-21		15								
MiG-21U		3								
MiG-29SM		15								
MiG-29A/U/UB		1	36							
Su-22UM3 Fitter G		4								
Su-22 Fitter D		27								
Su-24MK Fencer D			30							
Su-25/K/UBK	7		10							
Mirage 2000-9DAD										16
Mirage 2000-9EAD										44
Mirage 2000ED/D								12		
Tornado IDS									69	
Typhoon									40	

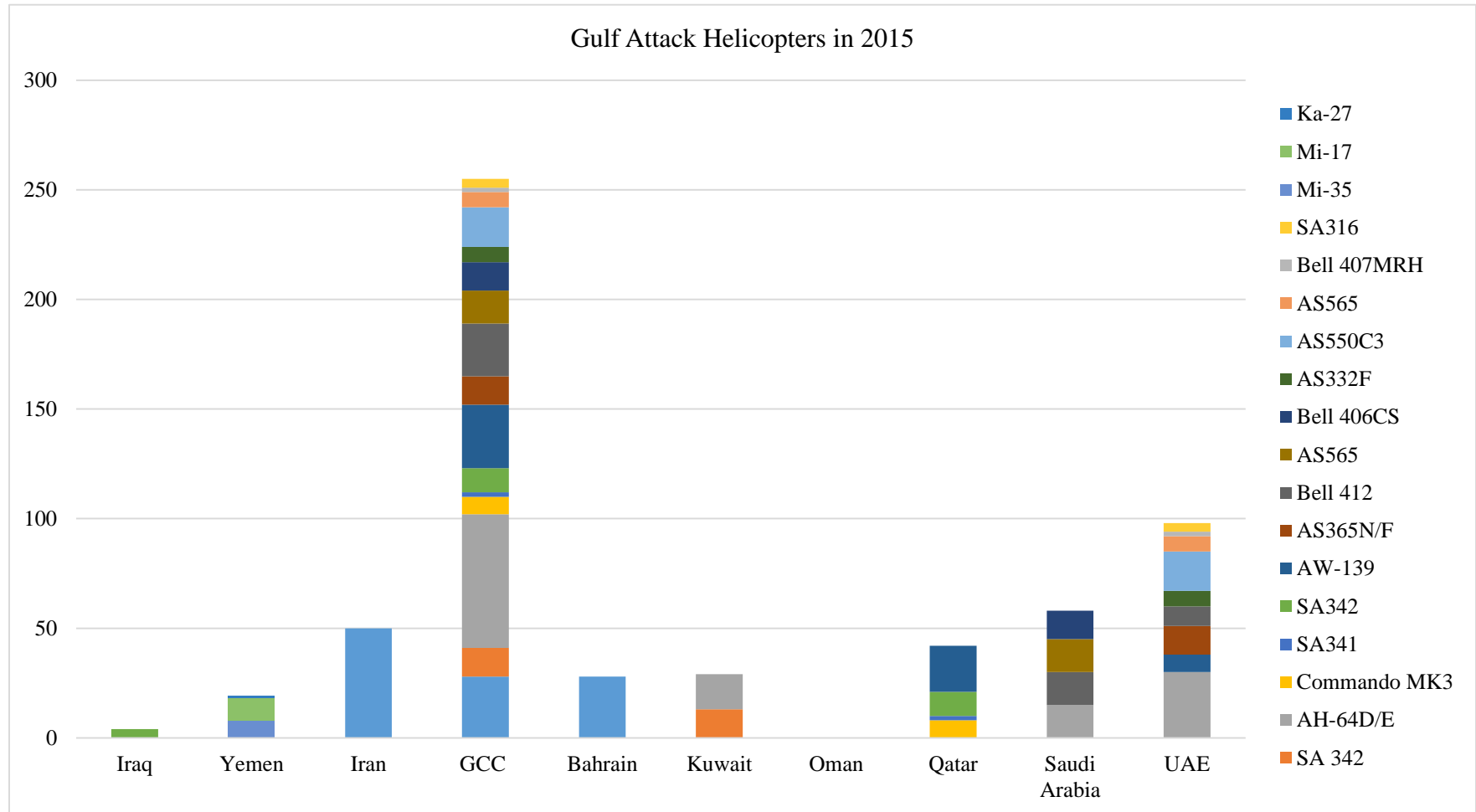
Source: Based on Chapter Seven: Middle East and North Africa,” in The Military Balance, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VII.5: Iranian Reliance on Aging/Mediocre Systems/Air

- **FTR 184+:** 20 F-5B *Freedom Fighter*; 55+ F5E/F *Tiger II*; 24 F-7M *Airguard*; 43 F-14 *Tomcat*; 36 MiG-29A/U/UB *Fulcrum*; up to 6 *Azarakhsh* reported.
- **FGA 110:** 64 F-4D/W *Phantom II*; 10 *Mirage* F-1E; 30 Su-24MK *Fencer D*; Up to 6 *Saegheh* reported.
- **ATK 10:** 7 Su-25K *Frogfoot*; 3 Su-25UBK *Frogfoot* (Including 4+ Su-25K/UBK deployed in Iraq; status unclear)
- **ASW 5:** 5 P-3MP *Orion*
- **ISR 6+:** RF-4E *Phantom II*
- **TKR/TPT 3:** e1 B-707; e2 B-747
- **TPT 117:**
 - **Heavy:** 12 Il-76 *Candid*;
 - **Medium:** e19 C-130E/H *Hercules*;
 - **Light:** 11 An-74TK-200; 5 An-140 (Iran-140 *Faraz*) (45 projected); 10 F-27 *Friendship*; 1 L-1329 *Jetstar*; 10 PC-6b *Turbo Porter*; 8 TB-21 *Trinidad*; 4 TB-200 *Tobago*; 3 *Turbo Commander* 680; 14 Y-7; 9 Y-12; PAX 11: 2 B-707; 1 B-747; 4 B-747F; 1 *Falcon* 20; 3 *Falcon* 50.
- **HELICOPTERS**
 - **MRH: 2 Bell 412**
 - **TPT 34+:**
 - **Heavy:** 2+ CH-47 *Chinook*;
 - **Medium:** 30 Bell 214C (AB-214C);
 - **Light:** 2+ Bell 206A *Jet Ranger* (AB-206A); some *Shabaviz 2-75* (Indigenous versions in production); some *Shabaviz* 2061.
 - *Jet Ranger* (AB-206A); some *Shabaviz 2-75* (Indigenous versions in production); some *Shabaviz* 2061.

Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure VII.6: Air Force and Land Force Attack and Armed Helicopters – Part One



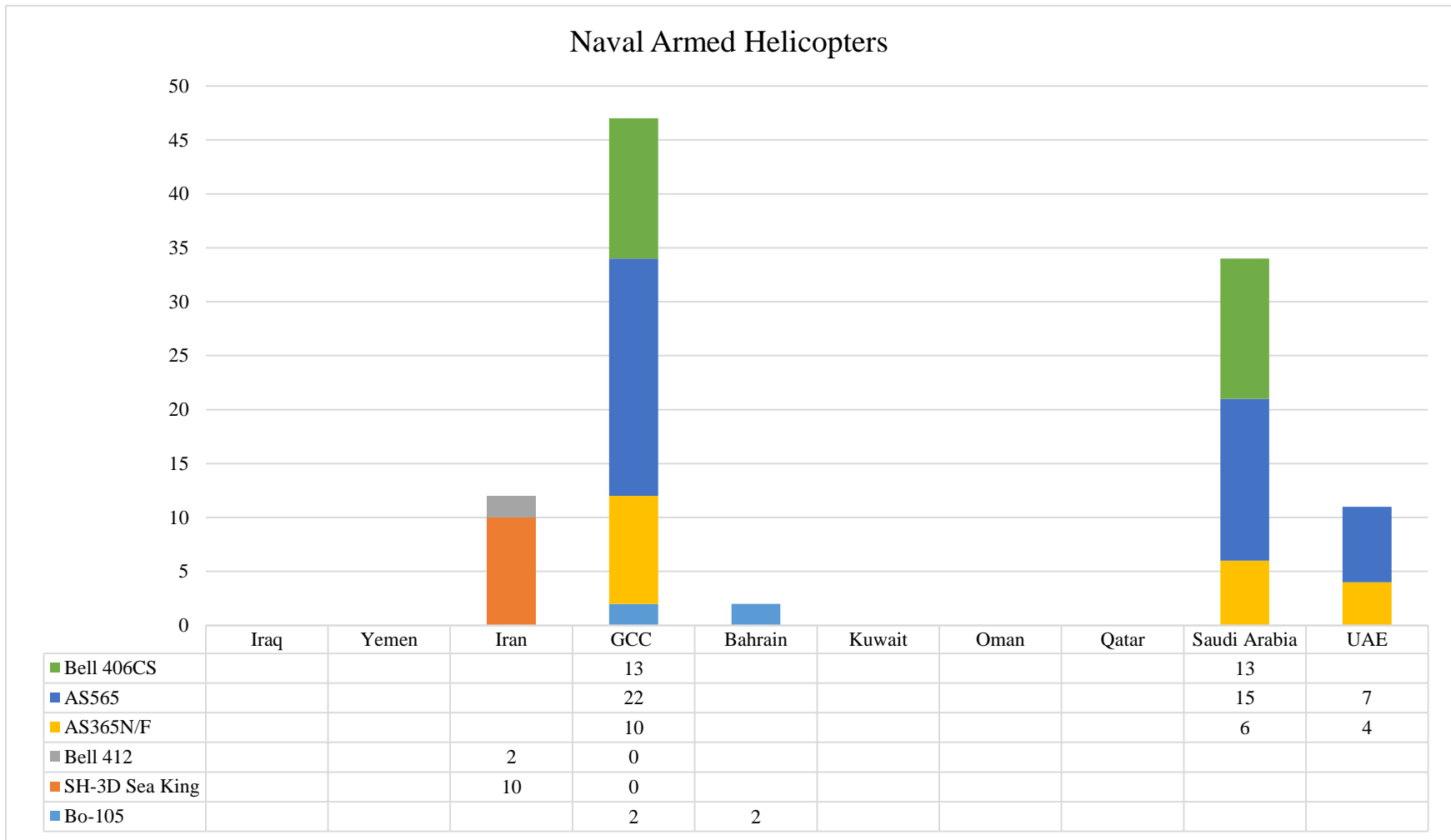
Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure VI.6: Air Force and Land Force Attack and Armed Helicopters – Part Two

Attack Hel	Iraq	Yemen	Iran	GCC	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
AH-1E/F/J			50	28	28					
SA 342				13		13				
AH-64D/E				61		16			15	30
Commando MK3				8				8		
SA341				2				2		
SA342	4			11				11		
AW-139				29				21		8
AS365N/F				13						13
Bell 412				24					15	9
AS565				15					15	
Bell 406CS				13					13	
AS332F				7						7
AS550C3				18						18
AS565				7						7
Bell 407				2						2
SA316				4						4
Mi-35		8								
Mi-17		10								
Ka-27		1								

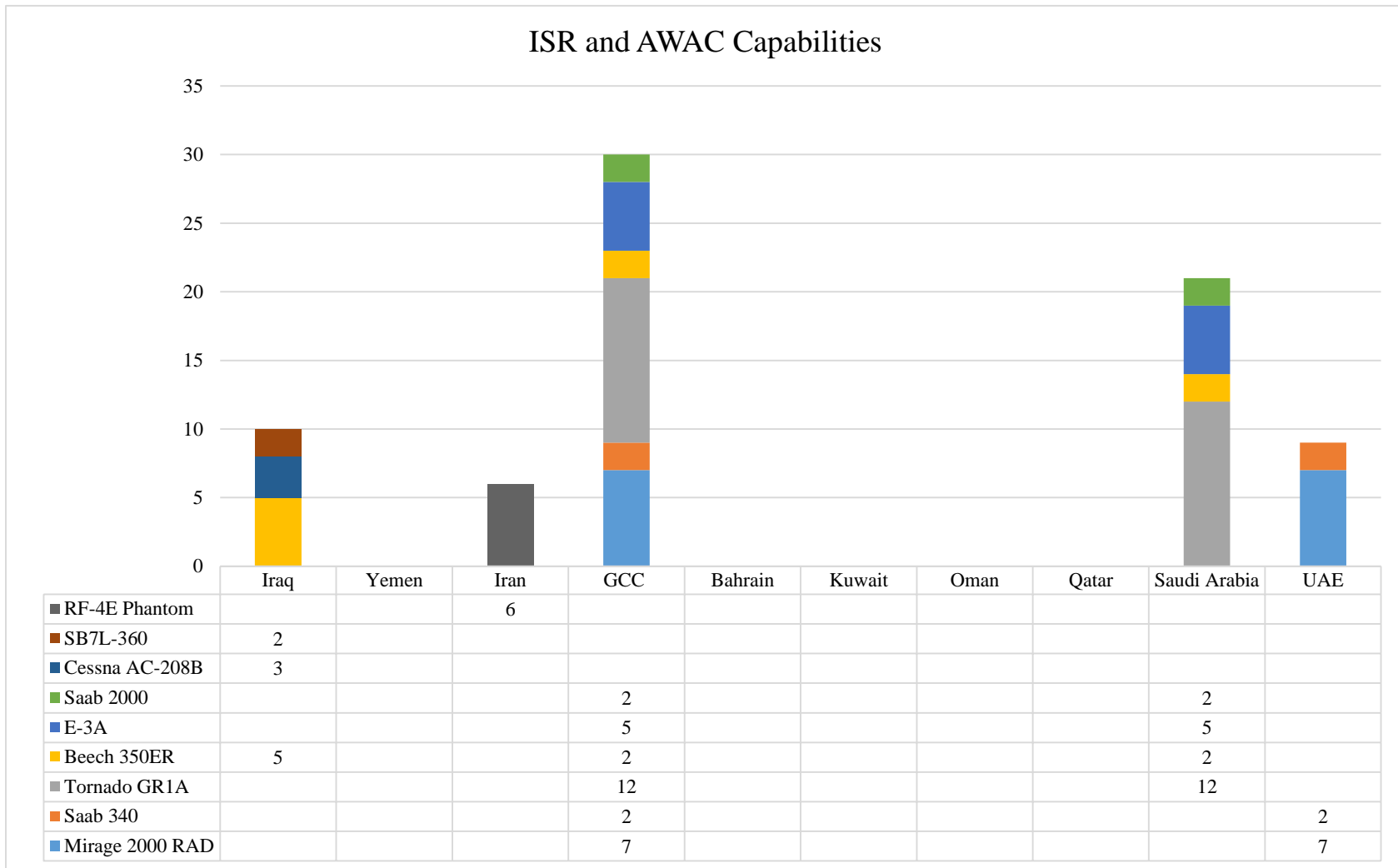
Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

Figure VI.7: Naval Armed Helicopters



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VII.8: ISR and AWACS Capabilities



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VII.9: Iranian UAV Projects /Assets

Name	Translation	Date of usage	Weapons, payload	Range (km) and Ceiling (ft.)	Specifications	Purpose
Fotros (Petros)	“Peter,” “Fallen Angel”	November 2013-Present	Air to surface missiles; hellfire missile derivative ⁵¹ ; anti-tank missiles	R: 2,000 C: 25,000	Can remain aloft for 16-30 hours; ceiling of 25k feet. Able to cover much of the Middle East, including Israel	Reconnaissance, and missile strikes ⁵²
Ababil and variants (B, S, T, II, III, and V)	“Swallow”	1986-present	The Ababil-T variant is armed with an explosive warhead. Its use, however, ensures total destruction of the UAV. ⁵³	R: 100-150 C: 5,000-14,000 ⁵⁴	Pneumatic or rocket boosters ⁵⁵	The primary purpose of the Ababil series is ISR. Historically, Iran deployed this family of UAVs during the Iran-Iraq War, and has provided some to the Iraqi government for ISR missions against ISIL. ⁵⁶
Mohajer Series (1-4)	“Immigrant”	Late 1980s-present	RPGs	R: 150 C: 15,000 ⁵⁷	Max Speed: 120mph; Launched off rail and assisted by rocket booster.	ISR; Used in Syrian Civil war by Assad; a variation was used by Hezbollah in 2006 war with Israel. The most recent variation

						is said to be able to generate maps for military and civilian purposes ⁵⁸
Karrar	“Striker”	August 2010-Present	Can carry a single bomb or two anti-ship missiles	R: 970-1000 C: 40,000 (est.)	Turbojet-propelled	Long-range reconnaissance and attack; Based on the BQM-126 target drone ⁵⁹
Yasir (Yaseer)	“Expedient”	2009	Electro-optical or infrared camera.	C: 16,000	Reverse engineered U.S. Scan Eagle. ^{60, 61} Able to operate 16 hours.	ISR
H-110 Sarir	“Throne”	2013-Present	Air to air missiles	*Unknown	Speculative stealth capabilities	ISR and combat
Hazem series		2012-Present	Can be equipped with missiles	Short, medium, and long range	Stealth; not originally designed for carrying missiles, but the Hazem 3 may be equipped with them; rocket propelled	Bombing and reconnaissance ⁶²
Shahed 129	“Witness”	Sept. 2012-present	8 bombs or smart missiles	R: 1,700m C: 24000	24 hour non-stop flight capability; similar to U.S. Predator and Reaper drones	Combat

Hamaseh	“Epic”	May 2013-present	Missiles and rockets	High altitude and range ⁶³	HALE (High Altitude Long Endurance); Purported stealth capabilities, but structurally impossible.	Reconnaissance and combat
Ra’ad 85	“Thunder,” “Thunder Bolt”	Sept. 2013-present		R: 100 C:	Suicide drone “capable of destroying fixed and mobile targets” ⁶⁴	
Nazer	“Observer”				Small chopper drone;	Reconnaissance and border patrol (drug trafficking)
Sadeq ⁶⁵	“Sincere”	Sept. 2014-present	Air-to-air missiles		Sent aloft by launcher;	
RQ-170 variant	“Sentinel”	May 2014-present			Stealth; copy of U.S. made system.	

*R/S: Reconnaissance / Surveillance; **ISR: Intelligence / Surveillance / Reconnaissance

Land-Based Air Defense Forces

Land-based air defenses form a critical part of modern air combat operations as well as performance a steadily more important role in defending ground forces, in dealing with cruise missiles and UAVs, and providing ballistic missile defense capability. They are also another area where the GCC and US have a major advantage over Iran. Most of Iran's systems date back to the time of the Shah or are based on Vietnam War era Russian and Chinese systems. While Iran has had more freedom in acquiring modern radars and sensors, and dual use C4I/BM systems, it also lags behind the GCC states and US in these areas.

Land-Based Air Defenses, Scenarios, and Joint Warfare

Land-based air defenses fall into three major categories: Systems that defend ground forces and ships, medium and long-range air defense systems that provide air defense over wide areas, and medium and long-range defense systems that provide both air and missile defense. Each needs to be judged separately on a country-by country basis in the Gulf, and in the context of enemy stealth and SEAD capabilities as well.

In broad terms, each GCC country except Oman and Kuwait have a significant number of short-range systems to defend its ground forces, and Kuwait and Oman have some modern systems. Each also seems to have a different doctrine, level of training, and set of engagement criteria – problems that affect longer-range systems as well. Given the broad superiority over Iran that the GCC has in modern combat aircraft, the man portable air defenses (MANPADs), short range air defense missiles (SHORADS), and anti-aircraft guns (AA guns) in Gulf forces seem adequate for most scenarios. It is important to note, however, that none of these systems would defend against one area where Iran's land forces have a significant advantage: Its large number of artillery rockets.

Iran has a significant capability in MANPADs, SHORADS, and AA guns as well, but some of its systems are approaching obsolescence, and have little real capability against an aircraft armed with modern stand-off precision strike missiles and guided bombs. Iran has sought for years to obtain more advanced Russian systems like the S-300 and S-400 – which provide far more capable SAM and some missile defense capability. Russia has so far denied it such arms transfers, however, and China has not sold its more advanced systems. Iran has claiming to be able to produce its own equivalent by modifying or upgrading its copies of older Russian systems like the S-200, but there is no current evidence that it has succeeded.

The end result is that GCC has a striking advantage in longer-range surface-to-air missiles (SAMs). With the except of the very short range TOR-M, all of its major SAMs are now dated, obsolescent, and derived from systems where the US has developed successful countermeasure in the past. Iran has modified some of these systems, and they can scarcely be ignored, but Iran badly needs to upgrades its SAMs and acquire systems with missile defense capability like the US Patriot PAC-3.

The Less Quantifiable Elements of Land-Based Air Defense

Once again, however, the more easily quantifiable measures of force strength do not compare many critical elements of real world airpower and combat capability.

- Training and large scale, realistic, joint warfare combat exercise performance.
- Readiness based on actual exercise tests and firings against simulated targets.
- Missile reserves, reload, and fire rates.
- Sustainability of assets.
- Combinations of sensors and precision strike systems.
- Effective rules of engagement and deconfliction capability.
- Command, control, communications, computer, and battle management capabilities (C4I/BM)
- Real world secure communications and data link capability,
- Real world capability to provide effective air command and operations center capability at the national and GCC levels.
- Motivation and morale.
- Intelligence, surveillance, and reconnaissance capability. (ISR)
- Interoperability and common doctrine, training, and leadership for allied forces.

One of the most serious issues is the capability to integrate the sensors and kill capability of SAM fire units with effective national and regional command and control and sensor systems, and manage the overall defense system in ways that limit vulnerability to the full mix of SEAD options in enemy forces. The GCC states have an advantage in access to technology and weapons, but some have failed to develop fully effective national systems for managing and deconflicting air, AA, and SAM operations. As is the case with all aspect of GCC air operations, the lack of full integration of air and air defense sensors, battle management and combat systems also seriously degrade the potential capability of GCC air defense forces.

Iran, in contrast, faces major problems in working around its lack of access to modern technology and advance weapons systems. In a 2012 and 2015 analysis of Iran's air defenses, IHS Jane's concludes that Iran continues to develop its land-based air defenses d, but is:

“unlikely to seek to develop a fully integrated nationwide air defense system...Instead, it seems to prefer a point defense strategy, with forces located around key strategic centers such as Tehran, Esfahan, Kharq Island, Bandar Abbas and Bushehr.”⁶⁶

Iran also faces more of a sensor and C4I/BM challenge than the GCC states. Iran's size, combined with its mountainous terrain, create numerous barriers to radar coverage and the integration of Iran's systems.

Air Defense Manning

Total air defense manning is shown in **Figure VII.10**. Such data again only provide a crude indication of the relative scale of dedicated land based air defense forces and are largely irrelevant since they do not measure the size of either the ground forces operating shorter

range systems, or the manning of SAM forces in countries that integrate their longer-range SAM and missile defense systems into their armies, air forces, or guards.. The exact status of Iran's air defense force is unclear but a 2012 IHS report indicates that Iran established an Air Defense Force to "enhance the state of readiness of deployed units."⁶⁷ Saudi Arabia is the only GCC member to have a separate air defense force .

Air Defense Forces and Weapons

Figures VII.11 and VII.12 show the land-based air defenses in each Gulf state, and summarize the capability of the key SAM systems. As is discussed in the chapter on missile defenses, the systems in most GCC forces are being steadily upgraded with the Patriot PAC-2 and PAC-3 long-range systems, and Qatar, Saudi Arabia, and the UAE have all expressed an interest in acquiring wide area theater missile defense systems like the US THAAD or the SM series. Oman is the only GCC country that does not presently have longer-range air defense missiles

Iran is reported to possess 16 battalions with longer-range MIM-23B I-HAWK (Homing all the way Killer)/*Shahin* surface to air missile (SAM) launchers and more than 150 missiles. It is also reported to have 45 S-75 Dvina (SA-2 Guideline); 10 S-200 Angara (SA-5 Gammon) very long range SAM systems,; and 29 9K331 modern *Tor-M1* (SA-15 Gauntlet) short-range point defense missiles.

Iran relies heavily on three of these systems. The *Shahin* SAM is reverse engineered from the US made MIM-23 missile sold to Iran prior to the 1979 revolution. In 2009, then-Iranian Defense Minister, Brig. Gen. Mostafa Mohammad-Najjar, announced that the missile was capable of reaching targets at a range of 40km (24.85 miles) at supersonic speeds, while "targeting enemy aircraft and helicopters intelligently."⁶⁸ Iran claims that the SAM was "successfully" tested in 2011. However, some experts question whether the *Shahin* was actually tested, as opposed to firing remanufactured missiles delivered by the United States.⁶⁹

The S-200 system is a long-range system originally designed to counter bombers flying at medium to high altitudes, with a theoretical range of up to 300km (186 miles) and maximum altitudes of 20,000m (12 miles) when properly maintained. According to IHS Janes, the S-200s are positioned around Tehran and the northern border, Esfahan, Bandar Abbas (where many of Iran's important naval craft are stationed), and Bushehr.⁷⁰ Furthermore, Iran was said to have upgraded this SAM system and claimed that they could be linked with other radar systems, providing the ability to track stealth aircraft.⁷¹

Finally, Iran also possesses *Tor-M1s* (SA-15 Gauntlet), which are road-mobile shelter-mounted SAMs. They are modern Russian systems designed for low-to-medium altitude targets ranges from aircraft to cruise missiles, and are stationed to provide point defense for vital military targets.⁷²

Iran is also reported to have more than five squadrons of older shorter range SAM launchers including the FM-80 (*Crotale*), the *Rapier*, the *Tigercat*, the FIM-92A *Stinger*, and the 9K32 *Strela-2* (SA-7 *Grail*).

The FM-80 (*Crotale*) is the Iranian copy of the Chinese reverse engineered copy of the French *Crotale* SAM system. It is a low-altitude system. The missiles are launched from the bed of a truck, or from an independent trailer, possessing the capability to launch either two or four missiles, respectively.⁷³ This system is reported to be able to track very low altitude targets and have a range of 20 kilometers.⁷⁴

The *Rapier* SAM system was made by the United Kingdom and entered into service in 1971. While Iran has not had the ability to upgrade this SAM system from the manufacturer itself, has successfully tested eight of these systems after a complete rebuild and local upgrade suggesting a more comprehensive plan to produce the *Rapier* locally.⁷⁵ The *Rapier* has a range of 6,500 meters (4 miles) and can reach speeds of Mach 2.⁷⁶

In addition to the *Rapier*, Iran also owns a host of *Tigercat* SAMs. The *Tigercat* land-based SAM system is identical to its sea platform, the *Seacat*. This missile is considered to be very old. In fact, the British replaced their *Tigercat* platforms with the *Rapier* in the late 1970s.

Tigercat SAMs are not the only outdated SAMs that Iran possesses. They also possess the S-75 *Volhov* (SA-2 *Guideline*) which is a Soviet era, Soviet grade SAM designed to strike high-altitude targets. It's most notable use was downing the U.S. U2 spy plane in 1960 by the Soviet Union. It has a range of about 30km (19 miles) and can reach altitudes of 60,000 feet (11 miles).⁷⁷

While Iran's air defenses are impressive, they are older and have not been upgraded by their manufacturers raising concerns that they could malfunction, unlike GCC air defenses. According to IISS, the GCC possesses sixteen batteries with 96 *Patriot* PAC-2 and PAC-3 missiles, seventeen batteries with *Shahine*/AMX-30SA missiles, sixteen batteries with upgraded MIM-23B I-HAWK missiles, and 73 units with *Crotale*/*Shahine* missiles used for static defense.

The *Patriot* missile is an advanced American-made SAM. It can they intercept incoming enemy aircraft, but the PAC-2 variation—the variation owned by Saudi Arabia—has the ability to “intercept a hostile ballistic missile during war.”⁷⁸

Saudi Arabia has over 40 *Crotale* systems, and these Saudi systems have been significantly upgraded in comparison to Iran's. In 2010, Saudi Arabia was exploring the option of upgrading their *Crotale* systems to the Mk 3. GCC forces also have 400 *Avenger*, and 73 *Shahine*. The *Avenger* system is a low-level air defense system, equipped with eight stinger missiles, each with a range of 4.8km (3 miles).

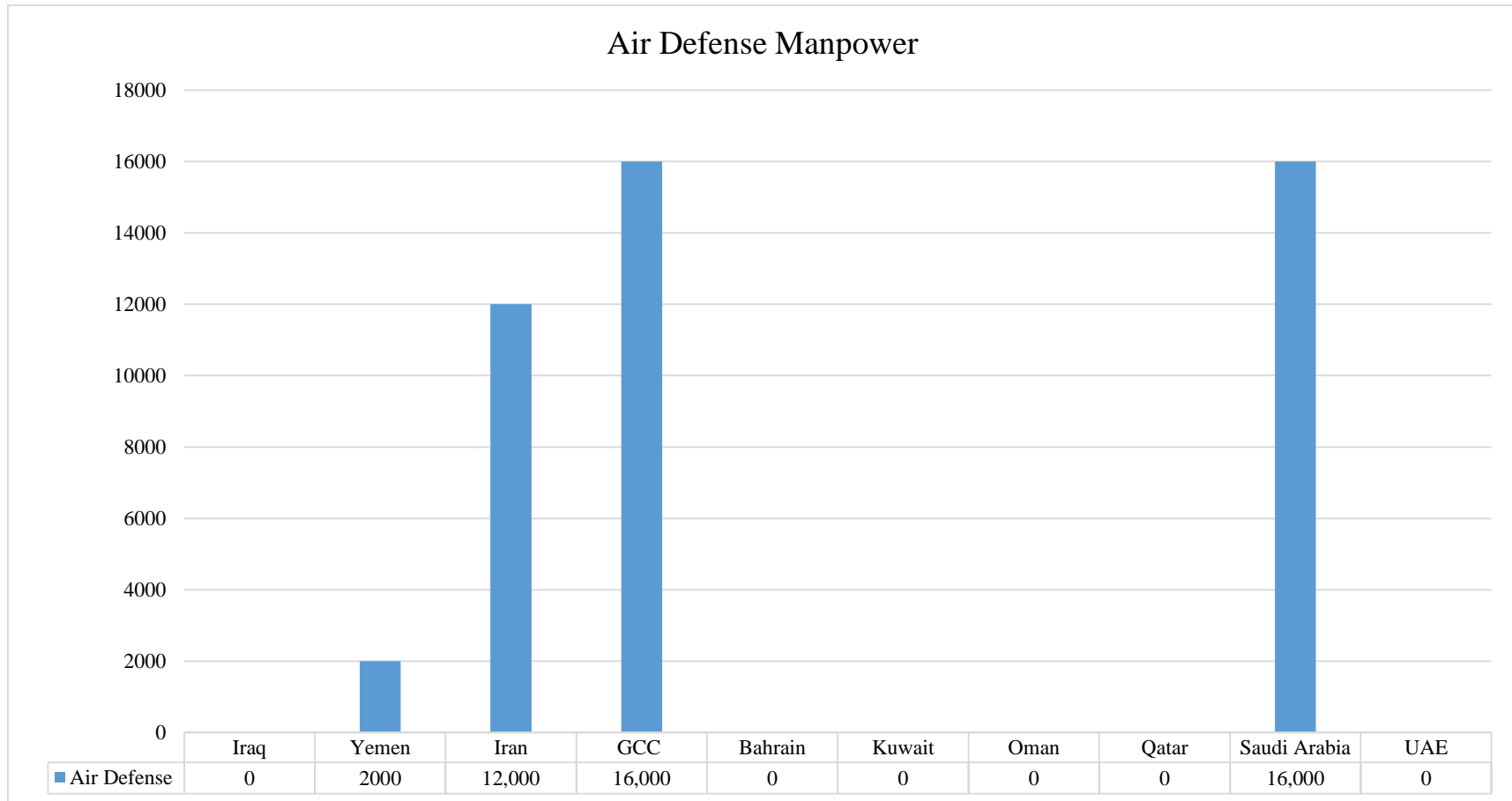
The *Shahine*/AMX 30 is a French made armored SAM system. It is equipped with six R460 SAMs, with a range of 11.8km (7.3 miles) and can reach targets up to 6km (3.7 miles) in altitude. It can “keep up with armored units;”⁷⁹ and its armor allows it to be placed near the front lines to directly engage incoming enemy aerial bombing runs.

While the total numbers of missiles for these systems are very uncertain, and vary sharply by country and system, one estimate indicates that the GCC possesses over 1,805 SAMs compared to Iran's 552+ largely antiquated Russian, Soviet, and Chinese made —missile.⁸⁰

As **Figure VII.11** shows, each of the Gulf states also has a mix of short-range air defense missiles (SHORADS), manportable air defense missiles (MANPADs) and anti-aircraft (AA) guns to protect its ground forces and dispersed operating areas. The GCC systems are

generally more modern, but once again there is a lack of standardization in weapons type, doctrine, training, real world IFF capability and rules of engagement and de-confliction methods. There is also little data on GCC and Iranian live-fire training and realistic exercise training.

Figure VII.3: Air Defense Manpower



Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

VI.9: Gulf Land-Based Air Defense Systems

Country	Major SAM	Light SAM	AA Gun
Bahrain	(6) IHAWK	RBS-70 FIM 92A Stinger (7) Crotale	(24) Guns (12) Orlikon 35mm (12) L/70 40mm
Iran	(16/150) IHAWK (3/10) SA-5 (45) SA-2 Guideline	SA-7/14/16/24, HQ-7 (29) SA-15; Some QW-1 Vanguard (Misaq 1) and QW-11 (Misaq 2); HN-54 (29) TOR-M1; Some HN-5 (30) Rapier; Some FM-80 (Ch Crotale) 15 Tigercat; Some FIM-92A Stinger	(1,700) Guns ZSU-23-4 23mm ZSU-57-2 57mm ZPU-2/4 23mm ZU-23 23mm M-1939 37mm L/70 S-60 57mm Some Oerlikon
Kuwait	(24) IHAWK Phase III (40) Patriot PAC-2	Aspide Starbust Stinger	12 Oerlikon 35mm
Oman	None	(2) Mistral SP (34) SA-7; (6) Blindfire (20) Javelin; (40) Rapier S713 Martello	(26) Guns (4) ZU-23-2 23mm (10) GDF-(x)5 Skyguard 35mm (12) L-60 40mm

Qatar	None	(10) Blowpipe (12) FIM-92A Stinger (9) Roland II (24) Mistral (20) SA-7	
Saudi Arabia	(16/128) IHAWK (4-6/16-24) Patriot (17/141) Shahine Mobile (2-4/160) PAC-2 Launchers (17) ANA/FPS-117 Radar (73/68) Crotale Shahine	(40) Crotale (500) Stinger (ARMY) (500) Mistral (ADF) FIM-43 Redeye (ARMY) (500) Redeye (ADF) (73-141) Shahine Static FIM-92A Stinger (ARMY) (M998/M1097 Avenger (ADF)	(1,220) Guns (92) M-163 Vulcan 20mm (30) N-167 Vulcan 20mm (NG) (850) AMX-30SA 30mm (128) GDF Orlikon 35mm (150) L-70 40mm (store) (130) M-2 90mm (NG)
UAE	(2/31) IHAWK	20+ Blowpipe (20) Mistral Some Rapier/Crotale/ 70/Javelin/SA-18/Pantsir-S1	(62) Guns (42) M-3VDA 20mm SP (20) GCF-BM2 30mm

Source: Based on "Chapter Seven: Middle East and North Africa," in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors.

VI.10: Key Gulf Land-Based Air Defense System Performance

Air System	Defense	Associated Warning/Acquisition Radars	Early	Associated Tracking & Guidance Radars	Missile Ranges (km) Altitude (ft)	In Service Date
SA-2		Spoon Rest D (P-18) Flat Face A (P-15)		Fansong A/B	Max (km): 40 Min (km) : 8 Altitude (ft): 3,000 to 90,000	1971 Upgraded
SA-3		Flat Face B (P-19) Squat Eye		Low Blow	Max (km) : 30 Min (km) : 6 Altitude (ft): 150 to 160,000	1971
SA-6		Long Track (P-40) Height Finder: Thin Skin B (PRV-9)		Straight Flush	Max (km): 24 Min (km) : 4 Altitude (ft): 50 to 45,000	1973
SA-8		Flat Face B (P-19) Long Track (P-40) Height Finder: Thin Skin B (PRV-9)		Land Roll	Max (km) : 15 Min (km) : 0.2 Altitude (ft): 40 to 40,000	1982
SA-5		Back Trap (P-80) Tall King C (P-14) Spoon Rest D (P-18) Height Finder: Odd pair (PRV-13) Odd Group (PRV-16)		Square Pair	Max (km) : 250 Min (km) : 20 Altitude (ft): 1,500 to 130,000	1983
IHAWK		AN/MPQ-50 AN/MPQ-55(PIP II)/62 III) Range only Radar	PIP	AN/MPQ-57 (PIP II)/61 (PIP III)	Max (km): 35 Min (km): 3 Altitude (ft): 0 to 55,000 ft	1971

Patriot PAC-2	AN/MPQ-53 Phased-Array Radar Carries out Search, target detection, track and identification, missile tracking and ECCM functions	AN/MSQ-104 Engagement Station (ECS)	Control	Max (km): 70 Min (km): 3 Altitude (ft): 80,000	1990
Patriot PAC-3	AN/MPQ-65 Sweeps the sky for enemy threats and determine whether incoming object is an aircraft, missile, or UAV	AN/MSQ-104 Engagement Station (ECS)	Control	Max(km): 20 against ballistic missile Altitude (ft): 79,500	2003
S-300	9S457ME Command Post	9S15M2 all-around surveillance radar; 9S19ME sector-surveillance radar		Max (km): 200 Altitude (ft): 98,425	1978
S-400	92N6E (multifunctional radar)	96L6E/30K6E		Max (km): 60 Min (km): 5 Altitude (ft): 98,425	2007
THAAD	AN/TPY-2 Radar, SBX sea-based radar	“THAAD radar”		Max (Km) 200+	Designed: 1987 Produced: 2008
Standard SM-3	AN/SPY-1	Aegis weapon system		Max (km): 2500 Min (km): 700 Altitude (ft):	2010

Source: Based on “Chapter Seven: Middle East and North Africa,” in *The Military Balance, 2015*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

VIII. Surface-to-Surface Missiles

Iran has placed a major emphasis on surface-to-surface missiles and long-range artillery rockets, Saudi Arabia has purchased Chinese surface-to-surface missiles and several GCC states have some long-range artillery rockets. These forces are summarized in **Figure VIII.1**, *but estimates are extremely uncertain, differ sharply by source, and do not show as of dates or provide an indication that the estimator has a clear picture of Iranian rocket and missile production and deployment levels.*

At present, the Iranian and Saudi missile forces, and long-range artillery rockets, have limited lethality because they rely on conventional warheads, and have limited accuracy and reliability. Iran, however, is seeking to create precision-guided surface-to-surface missiles and may be seeking nuclear-armed missile warheads. Both developments would radically change the lethality of Iran's forces, which now are more terror weapons suited for fire into large populated areas, large critical infrastructure and petroleum facilities, or large military bases where the lack of ability to hit a point target would be partly offset by the political signals sent by such attacks, and the psychological impact.

US and possibly Iranian cruise missiles present a different kind of threat. US cruise missiles were first used in the region during the first Gulf War in 1991, and showed they had a high degree of precision and reliability and could inflict serious damage with minimal risk of collateral damage and civilian casualties. They were equally effective against Iraq in 2003, and in attacks on the Korashan Group in Syria in 2014. They confront Iran with a serious threat to all of its critical targets that are not underground or sheltered.

The unclassified data on Iran's cruise missiles do not indicate the degree of testing and proven performance capability, but Iran is believed to be deploying a growing family of medium and long range cruise missiles. Like the US, it also has long-range armed drones or Unmanned Combat Aerial Vehicles, although again, reliable performance data are lacking.

Iran's growing missile threat has led most GCC countries to buy some form of point defense anti-missile systems like the PAC-3. The US has deployed wide area missile defense ships to the Gulf, and Qatar and the UAE are examining purchases of wide-area threat defense systems like THAAD or the SM-3. Iran has sought variants of the Russian and Chinese S-300 and S-400 that have some capability for missile defense but has not been able to obtain them. It has, however, bought advanced Russian short-range TOR-M air defenses that have considerable capability to defend against cruise missiles.

Saudi Missile Forces

Saudi Arabia has a small ballistic missile arsenal it originally bought as a result of the missile exchanges during the Iran-Iraq War, and after the US refused to transfer its Lance missile. While reports differ, IHS Jane's and the IISS report that the Saudi force is operated by a separate branch of the Royal Saudi Air Defense Forces (RSADF) that is called the Royal Saudi Strategic Missile Force. The NTI only reports that Saudi missiles are operated by the Royal Saudi Air Defense Forces (RSADF). The Saudi missiles are reported to be a mix of the Chinese Dongfeng-3 (DF-3; NATO: CSS-2), and Dongfeng-21 (DF-21; NATO: CSS-5). Both Chinese systems were originally designed to have nuclear payloads, but were modified to deliver conventional warheads before their sale to Saudi Arabia.⁸¹

The DF-3 is an old missile design with limited accuracy. Furthermore, the NTI reports that Saudi Arabia has never tested the DF-3 as an operational system, which would be critical to ensuring its reliability, estimating its real-world lethality and accuracy, and providing proper training. Similarly, it reports that Riyadh is dependent upon China to maintain and operate the DF-3, which further limits the missile's military utility.⁸²

The NTI also reports Saudi Arabia purchased a somewhat more accurate Dongfeng-21 (DF-21; NATO: CSS-5) ballistic missile from China in 2007. Some sources report a CEP of as low as 30 meters, but it is unclear there is any data to support this estimate and it seems to be the theoretical accuracy of the guidance platform and not the actual missile. The NTI reports that Saudi Arabia released a photo of officials holding scale models of three different missiles in July 2013, including the DF-3 and two unknown missiles. Almost a year later in April 2014, Saudi Arabia displayed its DF-3 missiles in public for the first time during a major military parade.⁸³

The NTI reports that the DF-3 is a road mobile, liquid fuelled, medium-range ballistic missile (MRBM) with a range of 2500km, Saudi Arabia deploys the DF-3 at two confirmed sites: Al-Joffer, northwest of Riyadh, and As-Sulayyil, southwest of Riyadh. The NTI also reports that Sean O'Connor identified two additional DF-3 launch sites in 2009 at Rawdah, 280 km west of As-Sulayyil, and in the far northwestern desert region. O'Connor released a new report in July 2013 that identified another potential missile base at al-Watah with two launch pads oriented towards Israel and Iran to expedite the launch process by providing guidelines for placing a so it could target a given area.⁸⁴

WIKIPEDIA reports that these Saudi forces are based as follows:

- Modern underground ballistic missile base with number 544 which was built in 2008 - the Al-Watah ballistic missile base...in the rocky central part of Saudi Arabia, some 200 km southwest of the capital city of Riyadh. The base has extensive storage and underground facilities. It also includes administrative buildings, two launch pads, a communications tower and seven gates leading to the underground facilities. Fortified depots for launchers lie behind the secondary checkpoint in the ravine area.
- A partially underground base Rawdah (Raniyya) under the number 533 lies 550 km south-west from the capital and 23 km south of city Ranyah </ref name=baselist>. Tunnel across the rocky ridge has two entrances which have coordinates (21°3'33"N 42°53'2"E) and (21°3'16"N 42°52'52"E), base itself: 21°2'59.3"N 42°52'36.8"E. At the 21°2.42'N 42°52.43'E one can clearly see old Chinese missiles DF-3 (probably for training). The missiles themselves are located a short distance away within a secured complex. The administrative and support complexes are outside the security perimeter:
- The oldest base is the Al Sulayyil ballistic missile base,, also known as Wadi ad-DawasirIt was built by Chinese in 1988, and is 450 km southwest of the capital. The Al Jufayr (Al Hariq) base is approximately 70-90 km south of Riyadh). Another unconfirmed base called Ash Shamli and number 566, may exist in the desert (27°15'49"N 40°03'14"E or 27°39'52"N 40°14'14"E) roughly 750 km north-west of the Saudi capital. The older bases have similar characteristics, suggesting that all Saudi bases are similar.. Each complex has two missile garrisons (one in the North and another in the South) with another area serving housing, maintenance and administrative functions.

The IISS reported in its 2015 Military Balance that Saudi Arabia had a separate Strategic Missile Force with some 2,500 personnel, 10 DF-3 missile launchers and 40 missiles, and an unknown number of DF-21 launchers and missiles.⁸⁵

Iranian Missile Forces

Iran has a wide range of artillery rockets and missiles ranging from short-range tactical systems like multiple rocket launchers to short and medium range artillery rockets and cruise missiles, and short to long-range ballistic missiles. Iran's family of artillery rockets and shorter-range missiles give Iran a wide mix of capabilities. Iran's shorter-range systems include a family of artillery rockets that supplement its tube artillery forces, and provide a major increase in area fire capability in terms of both range and volume of fire. They could also compensate in part for Iran's limited close air support capability, particularly in a defensive mode.

There are varying reports on Iran's holding of longer-range artillery rockets, but key types and their ranges include the Fajr 1-Type 63-BM-12 (8 kilometers), H-20 (unknown distance), Falaq 1 (10 kilometers), Oghab/Type 83 (34 -45 kilometers), Fajr 3 (43 kilometers), and Fajar 5 (75-80 kilometers). Iran's shorter-range artillery rockets may have limited military value -- given the lack of any near-term prospect of an outside invasion -- but Iran's longer-range artillery rockets can be used in harassment fire and as weapons of intimidation against targets across the Iranian border in Iraq and Kuwait. The longest range systems could be used against targets in the other Southern Gulf states.

The key types of Iranian missiles and their range is shown in **Figure VIII.2** to **Figure VIII.4**. Iran's shorter-range missile systems include a wide variety of systems, and again reports vary sharply as to types, numbers, and performance. Iran sometimes announces missile programs, names, and ranges that are questionable, but its short-range ballistic missiles (SRBMs) seem to include the Naze'at (100–130 km), Zelzal family (Zelzal-1 (150 km), Zelzal-2 (210 km), Zelzal-3 (200–250 km), Fateh-110 (200–300 km), Shahab-1, Scud B (350 km) Shahab-2, Scud C, Hwasong-6 (750 km), and Qiam 1 (700–800 km).

To put these ranges in perspective, any system with a range of 200 kilometers can strike from a position on Iran's Gulf coast at a target on the Southern Gulf coast that is immediately across from it. Iran can also, however, disperse many of its shorter-range missiles away from positions directly opposite a target in the Southern Gulf and still fire from sites deliberately chosen to disperse its missiles. Iran's longer-range systems can be widely dispersed and still used against targets on the Southern Gulf Coast.

Such strikes would normally have serious limits. The limited lethality and accuracy of most of Iran's rockets and shorter-range ballistic missiles mean that most Iranian missiles cannot hit a point target and would not produce significant damage if fired into an area target. They lack advanced precision guidance systems or terminal homing capabilities that could make them more political weapons and sources of intimidation than effective war fighting systems – except for the systems Iran is beginning to equip with GPS guidance systems. Some experts feel, however, that less accurate and reliable systems might be used in large volleys against key area targets, and that Iran is developing the capability to use GPS guidance for the larger and long-range systems – improvements that would greatly increase their lethality.

The Broader Strategic Value of Iran's Short Range Rockets and Missiles

Iran has shown that even short-range artillery rockets can have a strategic impact and be used in irregular warfare and as an indirect form of power projection. Iran has played a major role in helping Hamas and the Palestinian Islamic Jihad create a major pool of steadily improving rockets that it can conceal, disperse and fire against Israel, and that Israel cannot easily seek out and destroy even in a land invasion.

Israel has responded with defensive systems like Iron Dome and is developing systems to deal with larger and longer-range rockets like David's Sling and improved versions of the Arrow. It has also steadily improved its ISR capability and tactics and training to use air strikes and land raids to attack launch sites and missile storage facilities.

Israel, however, was not able to suppress the threat from Gaza in 2014. In spite of a massive air campaign and a land invasion, the IDF estimated that the Palestinians had fired some 3,000 out of 10,000 rockets they held before the fighting started, the IDF had destroyed a total of roughly 3,000-4,000 rockets in combat, and 3,000-4,000 remained. Moreover, the Palestinians had been steadily able to improve the range and payload of their rockets with outside aid during 2008-2014.

Iran and Syria have transferred far larger forces of rockets and guided missiles to the Hezbollah in Lebanon. Hezbollah claimed to have an inventory of 33,000 by 2006, fired some 3,970 rockets into Israel from southern Lebanon, killing 44 Israeli civilians and 118 soldiers.⁸⁶ US experts felt that Hezbollah had some 33,000 rockets and missiles as of July 2014. Israel's official estimate was some 40,000 largely short-range systems – and some Israeli experts put the total at 100,000, while sources like Iran tracker put the total at 40,000 to 50,000.⁸⁷

Virtually all sources agree that the Hezbollah has significant holdings of rockets and missiles like the Zelzal 2 (Range of 100-300 kilometers, 600 kilogram warhead, solid fuel), possibly some Scud missiles, and 12 or more anti-ship guided missiles. There are also reports that Iran and Syria have transferred longer-range versions of the Iranian Zelzal like the Zelzal 2, and Syrian M300/M302 and M600, with GPS guidance to the Hezbollah, which would greatly increase Hezbollah capability to carry out lethal strikes against targets in Israel.⁸⁸

Uzi Rubin, a key developer of Israel's missile defense program warned in January 2014 that, "The Iranians took the Zelzal 2 and turned it into a guided rocket. The third generation of it contains a homing sensor and a GPS. The Syrians can have this capability, too, to create a fully guided M-600 rocket with a GPS... Hezbollah will seek to import such guided weapons."⁸⁹

Ehud Barak warned on March 25, 2014 that, "We will continue to see many more missiles, a lot more accuracy, and within five years the missile will reach a maximum level of accuracy that will allow them to choose which building in Israel to hit. These means will proliferate, and will be cheaper for terror organizations like Hezbollah and Hamas in Gaza... In the future we will see terrorism backed by science and technology... Somewhere in a small lab, hostile elements sit planning the future weapon of mass destruction. This is an unprecedented terrorism potential... We can't wait until the threat is realized, as the gap will be difficult to close."⁹⁰

The end result is that Iran has the ability to put pressure on Israel from two fronts without taking direct responsibility for its actions or a high risk of retaliation, and transfer a relatively low-cost threat that forces Israel to purchase far more expensive missile defenses – with exchange ratios where Israeli’s defensive missiles are far more costly than the systems held by Hamas and Hezbollah.

Iran’s Medium and Long-Range Missile Systems

Iran’s medium and long-range missile systems include a wide range of medium-range ballistic missiles (MRBMs) that can cover the range from Iran to targets across the Gulf, and throughout the areas near Iran’s borders. There is no clear dividing line that defines the military role of such medium-range systems from Iran’s longer-range or intermediate-range ballistic missiles (IRBMs) that Iran can use to attack strategic area targets.

The end result is to give Iran a constantly evolving family of missiles that have the range to attack virtually any target in Israel, the Levant, the Gulf and Arabian Peninsula, Turkey, Pakistan and part of Central Asia, and targets in Southern Russia and Europe. These systems give Iran a longer-range strike capability that its aging air force largely lacks. Iran’s combat aircraft have the potential range-payload to strike deep beyond the Gulf, but they lack the performance, numbers, and enablers to operate effectively in large numbers of sorties against the US and Southern Gulf mix of fighters, strike aircraft, enablers, and surface-to-air missiles.

Iran also announced fewer tests and specific details regarding its missile developments over the last few years. As this report makes clear, there also are many conflicting reports about the names and range of such missiles, and conflicting unclassified reports about key aspects of individual missile systems.

The key uncertainties involved are:

- Iran’s testing of missiles and rockets and their accuracy and reliability, the operational realism of such testing, and Iran’s perceptions of its progress versus the reality. Limited tests under “white suit” conditions can produce a greatly exaggerated picture of capability, particularly if success is exaggerated to the political leadership.
- The warhead and fusing design, of Iran’s rocket and missile forces and the real world lethality of unitary high explosive warheads under operational conditions, and of any cluster munitions Iran may have for such systems. A unitary conventional missile warhead that relies on a near surface burst can have only 30-60% of the lethality of a bomb with a similar payload because the closing velocity vectors much of the explosive force upwards.
- The relative accuracy of the missile and targeting systems relative to high value targets and the ability to launch or “volley” enough systems to compensate for limited accuracy against point and area targets.
- The strength and quality of US, Gulf, Israeli and other missile defenses.
- Iranian perceptions of the risk of counterstrikes by Gulf and Israeli air forces, and US and Israeli missiles.
- The actual political, psychological, and retaliatory behavior of targeted countries and their allies.

Nevertheless, a wide range of reports indicate that Iran’s missiles and missile developments now include a mix of solid and liquid-fuels medium range ballistic missiles (MRBMs) with names and ranges like the Ghadr-110 (2,000–3,000 km), Shahab-3 (2,100 km) (Iran),

Fajr-3 (2,500 km) Ashoura (2,000–2,500 km), and Sejil (2,000–2,500 km). Far more controversially, some experts feel they may include developmental systems like the intermediate range ballistic missiles (IRBMs) like the Shahab-5 or Toqyān 1 (3000–5000 km) and the Shahab-6 or Toqyān 2 (3000–5000 km).⁹¹

Most are still systems that lack advanced guidance systems, do not seem to have had enough tests in their final configuration to establish a high level of reliability or an accuracy based on real-world tests, and have guidance systems that present major problems in attacking point targets or high value parts of area targets without being armed with a nuclear weapon. As a result, much of Iran's missile force is more a weapon of intimidation than a war fighting tool. Such missiles can, however, hit large area-sized targets, and disrupt military and economic operations, and civil life.

Yet, systems that rely on conventional warheads and lack high accuracy or terminal guidance still have military value. They present the constant risk of a lucky hit – which increases with multiple firings. The very fact Iran deploys such missiles, forces states in the region to buy missile defenses, consider civil defense programs, and potentially halt petroleum exports and other economic activity from vulnerable area targets.

Accordingly, they partly compensate for the fact that Iran has not been able to compete with the US and its Arab neighbors in modernizing its airpower and surface-to-air missile defenses. They also help compensate for the fact that Iran's land and naval forces also face many limits in terms of modernization, equipment strength, and readiness, but Iran's missiles and rockets give it added strike capabilities at every level for land and naval tactical warfare to the ability to threaten states throughout the region with long range missiles.

Iran's longer-range missiles and space developments missiles have political and strategic value as well. The inability to predict how and when Iran will use them, how quickly they will evolve into more accurate and lethal systems, and know their operational impact until they are used gives them both deterrent value and makes them weapons of intimidation.

Iran gains strategic leverage from developmental programs that could someday enable it to launch missiles that can strike the US, as well as all of Europe and Russia. It is still unclear that Iran actually intends to deploy a real ICBM or IRBMs that can cover all of Europe and Russia. Iran is, however, developing boosters for what it claims are space purposes that create the potential to deploy a future ICBM.

Any Iranian long-range IRBM or ICBM would require an extraordinarily effective guidance system and level of reliability to have any real lethality with conventional warheads, even if it could be equipped with a functional GPS guidance platform. It would probably require nuclear warheads in order to compensate for critical problems in accuracy, reliability, and warhead lethality. Iran would also face problems in conducting anything approaching a suitable test program at the ranges involved. Iran can, however, still gain visibility and political leverage simply by assembling the components of an ICBM or a booster for a satellite launch vehicle. It can also potentially push the US into expensive additional investments in missile defense and preemptive strike capabilities.

Possible Ongoing Cruise Missile Development Efforts

Iran is also developing a family of cruise missiles, longer-range air-launched systems, and Unmanned Aerial Vehicles (UAVs) and Unmanned Combat Aerial Vehicles (UCAVs); that can supplement its ballistic missiles and provide targeting and damage assessment data. It is also seeking to develop satellite reconnaissance, targeting, and damage assessment capabilities, developing better mobile missile launchers, experimenting with missile shelters and silos, and creating less vulnerable and more secure command and control systems using optical fibers and land lines.⁹²

US intelligence reports indicate that Iran is developing longer-range cruise missiles with a land attack capability. According to various reports, some of dubious veracity, it has had access to as many as three advanced cruise missiles that could pose a significant threat to US forces in the region, with one capable of carrying nuclear payloads. These three systems may include the Kh-55 or AS-15A, the SS-N-22 Sunburn, and the SS-N-26. All three were developed by the Soviet Union in the 1980s, the latter two to combat Aegis-equipped ships; if they have been properly maintained and are used correctly, in the confined waters of the Gulf they represent a threat to US ships.⁹³

Twelve Kh-55 missiles may have been transferred to Iran by Ukraine in 2001.⁹⁴ Although the weapon was designed to carry a nuclear warhead, as a conventional weapon it could carry 410 kg of explosive, enough to do substantial damage to a naval vessel. With a maximum speed of Mach .8, a range of 2500 km, and inertial navigation and terrain matching guidance giving it a CEP of 25 m, it is slower but more accurate than any of Iran's ballistic missiles.

The Kh-55 was designed as air-launched cruise missiles, and while Iran may have adapted them for ground launch, so far there have been no public demonstrations of these missiles. The system was designed as a ground-attack system and is unlikely to be effective against moving vessels unless Iran has upgraded its seeker system. Given Iran's difficulty fabricating parts for its ballistic missile program, and the need to develop suitable power plants and guidance packages, Iran is unlikely to have reverse-engineered this or any other cruise missile. There are no indications that Iran has test-fired a Kh-55 or any cruise missile with similar characteristics in recent drills.

If Iran could eventually make use of these systems or reverse engineer them, they could represent a serious threat. Their range would allow Iran to target Israel, the entire Gulf, and Southeastern Europe from bases well within Iran. While the missile was originally armed with nuclear weapons, it is unlikely that Iran would be able to develop a 410 kg nuclear device in the near future (see below). The Kh-55's main danger comes from precision and long range. Although far more accurate than any ballistic missile currently in Iran's inventory, its relatively small payload (410 kg vs. 1000 kg for most SRBMs) and vulnerability to anti-missile weapons limits its effectiveness in hitting hardened and defended targets.

There are also unconfirmed reports that Iran received eight SS-N-22 Sunburns from Russia early in the 1990s.⁹⁵ The Sunburn is larger and heavier than the Kh-55, with a maximum speed of Mach 2.5 at high altitudes and 2.1 at low altitudes. It carries a 300-320 kg warhead and has a maximum range of 160 km. Its guidance package uses inertial navigation and data links for launch and mid-course flight, with

the final approach controlled by the missile's radar. This weapon was designed to be a carrier-killer for Soviet bombers, and for its time would likely have been highly effective against US anti-missile defenses. It is unknown if Iran has managed to improve on these weapons or has only been able to refurbish its current stock, and with the exception of a 2006 image of a Sunburn-like missile being fired from an Iranian frigate, there are no public data on their current status.

The SS-N-26 is another systems sometimes reported to be in Iranian forces. The SS-N-26 was designed to be a lighter, cheaper version of the SS-N-22. While some reports claim that it was publicly displayed in 1993, it is unknown if Iran has received any shipments of this missile. It has a longer range than the Sunburn but carries a lighter payload - 300 km vs. 160 km and 250 kg vs. 300-320 kg. It can be launched from submarines, surface ships, aircraft, and land batteries. If Iran actually has any, they are likely stationed on mobile launchers around the Strait of Hormuz. With the exception of a passing reference in *Missile Threat*, however, there is no indication that Iran has access to these weapons and intelligence experts do not feel they are a current threat.

In addition to these cruise missiles, Iran also has several hundred C-801, C-802, and SSC-3 missiles. These weapons have shorter ranges (50 km, 120 km, and 80 km), slower speeds (Mach .85, .85, and .9), and generally smaller warheads (165 kg, 165 kg, and 513 kg). All three carry some form of inertial guidance or autopilot combined with radar for the attack phase. All are based on designs that date from the 1960s or 1970s, although the Chinese production runs that Iran likely had access to from the 1980s and 1990s.

Iran does claim to have upgraded its speedboats and patrol craft to launch more advanced cruise missiles.⁹⁶ Observers of recent naval exercises have not publicly verified such claims. The mounting of the C-700 and C-800 series of weapons on small vessels is confirmed, however, and presents a real threat. It is also one where US and allied navies and air forces must attack the moment such a missile launch becomes likely in order to minimize the threat of a successful strike on a US or allied ship.

Iran may have the Chinese HY-4 (C-601, Fl-4 Silkworm; NATO designation CSSC-7 Sadsack), although reports in this regard are unconfirmed. The HY-4 has a range of 135-150 km, a maximum speed of Mach .8, and a 513 kg warhead. It is a lighter version of the HY-2 Silkworm (2,000 kilograms versus 3,000 kilograms) with a turbojet sustainer with solid-fuel booster, a speed of Mach 0.8. There are reports that turbojet has had power and reliability problems.

According to Global Security, it has an, "autopilot for mid-course guidance and a J-band (10-20 GHz) monopulse active radar seeker for the terminal phase. A radio altimeter allows the cruise height to be adjusted between 70 and 200 m and the terminal phase involves a high angle dive attack. It is equipped with a 500 kg warhead, which is probably semi-armor-piercing."

It is normally air-launched, but a version is available that can be ship-launched, While it seems to be longer-range maximum range than the C-801, C-802, or SSC-3, none pose the same level of risk to military vessels that the SS-N-22 and SS-N-26 do. China is reported to have developed a longer-range version with an up to 300-kilometer range, but not to have put it into production.

Finally, Iran has claimed it was going to deploy a new long-range land attack missile. The *New Straits Times* reported on April 1, 2013 (<http://www.nst.com.my/latest/iran-to-unveil-new-cruise-missile-1.141722>) that,

Iranian Deputy Defense Minister Mehdi Farahi announced that a new domestically manufactured cruise missile with a range of 2,000 kilometers will be unveiled in the near future, Iran's Mehr News Agency (MNA) reported. Farahi also said that the cruise missile, named the Meshkat (Lantern), can be launched from land-based and sea-based missile systems, adding that the missile can also be fired by fighter jets.

In addition, he said that Iran has built or is building 14 types of cruise missiles, including Zafar, Nasr, Qader, and Ghadir missiles. Elsewhere in his remarks, Farahi said that in the field of missile technology, the Defense Ministry has focused its efforts on increasing the precision, radar-evading capability, and operational range of domestically manufactured ballistic missiles.

On the United States plan to build missile defense shields in the region, he said, "They are making some efforts and some claims, most of which are false, exaggerated, and have no basis in fact." He also said, "We hope that no incident will take place, but if a conflict occurs, they will see that their claims are ineffective."

This would be a far more ambitious cruise missile strike system that Iran has deployed to date. The Zafar missile is a short-range anti-ship cruise missile designed for mounting on speed boats and small craft. The Noor seems to be a larger anti-ship cruise missile with a range of 130 to 1270 kilometers.

The Qader has variously been reported as an upgrade to the Shahab 3, as an unpowered electro-optically guided 2,000 pound glide-bomb, as a cruise missile with a range of up to 200 kilometers that can be used against ships and land targets, and as identical to the Meshkat - illustrating the problems in characterizing Iran's forces using unclassified sources.

One problem that helps create much of this confusion is poor translation and transliteration of Farsi into English and Roman lettering. For instance, while poor transliteration may lead one to believe that the same name is being used to designate a 200km anti-ship cruise missile and a ballistic missile derived from the Shahab 3, a proper translation from the Farsi reveals that the anti-ship cruise missiles English name is "Capable" and the ballistic missiles name is "Intensity." Unfortunately for those who do not understand Farsi, those two Farsi words sound similar.

A land attack capable attack version of the Qader anti-ship cruise missile called does seem to be the same system that the US Director of National intelligence identified as a new land attack capability in April 2013. However, a similarly named Ghadir has been reported as a smaller anti-ship cruise missile that can also be used against land targets, and the same name is used for midget submarines.

Iran may not have been able to activate its KH-55s as operational systems, or reverse engineer them, but it does seem to be developing the capability to produce and deploy long range cruise missiles. The key point is that Iran has not shown it has been able to activate its KH-55s or reverse engineer them, but does seem to have developed enough long-range cruise missile technology and production capability to deploy such systems in the future.

During the IRGC-ASF exhibition in May 2014, the IRGC unveiled the "Ya Ali" land attack cruise missile, which has a reported range of 700km. IHS Jane's notes that it is similar to the Chinese YJ-62 (export designation C-602) and may use a version of the Tolou turbojet that is already in use with Iran's long range anti-ship cruise missiles. The wings do not retract into the missile body, suggesting that the

missile cannot be launched from a container.⁹⁷ Little is known about the Ya Ali and it does not appear to have been shown outside of the May 2014 IRGC exhibition.

It is clear that that Iran is continuing to develop some new cruise missiles, although most of its public focus is on naval systems. Tasnim news agency reported that Rear Admiral Habibollah Sayyari, the Commander of the Iranian Navy, stated in late November 2013 that Iran planned to new cruise missiles during military exercises in January 2014. He stated the Velayat-92 exercises would be Iran's largest yet, and would be held in northern part of the Indian Ocean and neutral waters, Tasnim news agency reported, "The newest cruise missiles will be tested during these exercises, aside from that, we will also test new weapons." He also talked about new unmanned aerial vehicles (UAV) and said that Iran would demonstrate a new phased array radar named "Asr."⁹⁸

These statements came days after Iran had reached its nuclear agreement with the P5+1, but were tied to National Navy Day in Iran which occurs on November 28th, and celebrates Operation Morvarid of 1980, an Iranian Navy victory in the Iran-Iraq war. Sayyari also said that new military vessels and aircraft were planned to enter service, that the Navy would step up manufacture of the Sahand destroyer and that a 28th fleet of warships, comprised of Alborz and Bandar Abbas warships, along with the Younes/Kilo-class submarine, had been sent on a 70-day mission to in the Indian Ocean and would go to the Gulf of Aden and the Red Sea, and would dock in a number of ports in India, Sri Lanka, and Oman.⁹⁹

The Near-Term Impact of the Iranian Missile Threat

Iran's existing missile forces give it the capability to attack targets in the Gulf and near its border with conventionally-armed, long-range missiles and rockets. Iran can attack targets in Israel, throughout the region, and beyond with its longest-range ballistic missiles. However, the short-term risks posed by Iran's current conventionally armed rockets and missiles should not be exaggerated.

Most are relatively short-range systems, and have limited accuracy and lethality. They can be used as artillery, limited substitutes for air power, or as weapons of terror or intimidation. While Iran is deploying some systems with GPS guidance, most of Iran's are not accurate and lethal enough to play a substantial role in a conventional war, despite Iran's efforts to upgrade them.

The limited lethality of Iran's current warheads, the severe limits on the real world operational accuracy of most currently deployed systems, and the uncertain reliability of Iran's longer-range systems now combine to limit the impact of missile strikes to almost random hits somewhere in a large area. Even a lucky hit would only produce damage or casualties that would most probably be limited to those resulting from a single 1,000-pound unguided bomb.

Experts debate the extent to which Iran is developing missile systems with basic or advanced penetration aids, and the cumulative uncertainties in trying to estimate the effectiveness of current missile defense systems against Iran's current missile capabilities making any modeling effort highly uncertain. Israel, the Arab Gulf states, and the US are, however, steadily improving their missile defenses and shifting from point defense to wide area defenses.

In the near-term, this combination of real-world limits to the lethality of Iran's missiles and growing missile defenses sharply limits the military effectiveness of Iran's rockets and missiles as long as they are armed with conventional warheads:

- Iran would need to use large numbers of shorter-range rockets as artillery to achieve a major impact on military area targets. The seriousness of such threats will depend in part on Iran's ability to launch rockets and missiles in salvos and volleys, and in the ability to launch "stacked threats" of different types of weapons that complicate the use of missile defenses and suppressive strikes.
- While it is beginning to deploy shorter-range systems with GPS guidance, it would need to use volleys or salvos of short-range missiles and long-range rockets to have even a moderate probability of hitting a high value building or facility in military bases and civil area targets. These are tactics Iran has exercised, but may not yet implemented effectively.
- Iran use of MRBM and IRBM strikes could not be massed effectively in large numbers against longer-range area targets, and they will remain weapons of intimidation that can be used largely psychological or "terror" purposes until they either acquire far better guidance and terminal homing capability and/or terminal homing.

Nevertheless, Iran is making a major effort to deploy more accurate missiles, and there are important indicators that it is developing nuclear warheads and seeking to give its systems penetration aids to counter missile defenses. No nearby state can disregard the fact that Iran can use conventionally armed missiles long-range rockets as terror weapons, and strike against large area targets like petroleum export facilities and cities. No state can disregard the fact that Iran might escalate to the use of such systems because of a conventional war in the Gulf, in reaction to any military threat to its ruling regime, as a response to covert action against the state, or as a method of resolving domestic fissures.

If one considers the full range of Iranian missiles, it is also clear that any assessment of its current military and strategic capabilities must include the entire Gulf, Israel, and US bases in the region. Iran's can threaten every other regional state, including Turkey, Jordan, and Israel, and Iran has shown that it can develop additional threats by transferring longer-range or more precise rockets and missiles to "friendly" or "proxy" forces like the Hezbollah and Hamas or to new friendly state or non-state actors forces in countries like Yemen.

Finally, while no outside source has produce clear indications that Iran has stockpiled anything other than unitary and cluster conventional warheads, Iran is a declared chemical weapons state that has never declared its actual holdings. It is possible that it has chemical warheads, and such warheads could have a major impact in increasing the terror and intimidation effect of Iranian missile strikes even if their real world lethality is limited.

When it comes to assessing to overall military balance in the region, it is also important to note that Iran's rocket and missile forces blur the distinction between ground and air forces. The same is true of any distinction its sea and air-launched systems, and Iran's longer-range systems blur any distinction between missile and air power in both the offensive and defensive roles. There also is no clear separation between the impact of Iran's rocket and missile systems based solely on range. Like efforts to distinguish between "asymmetric" and "conventional" warfare, they are potentially useful in structuring an analysis but they have steadily less real world meaning in terms of both deterrence and warfare.

Shaping the Future Threat: Nuclear Warheads vs. Precision Conventional Warheads

The Iranian missile threat may become far more serious in the future. Left to its own devices, Iran would probably deploy both nuclear-armed missile and highly accurate missiles with conventional warheads. Iran has powerful military incentives to deploy nuclear weapons, and Iran's missile forces give it the potential ability to develop a major nuclear strike force.

Such a nuclear force would greatly strengthen Iran's deterrent capabilities as well as its ability to exercise political leverage on its neighbors. It would increase the risk in any US or regional use of conventional weapons and air power to attack Iran, and to escalate to a serious conventional conflict in response to Iran's use of irregular warfare, and limited war in the Gulf or neighboring states.

It would also trigger a nuclear arms race in the region. Israel has already developed mature nuclear-armed missile forces and can probably pose as much of an existential threat to Iran as Iran could to Israel with any near-term nuclear-armed missile forces it could deploy. It seems certain, however, that Israel will seek to create and maintain an even greater nuclear "edge" over Iran – if it does not launch preventive war. The US has already offered its regional allies "extended deterrence" and the same kind of security guarantees it gave its NATO allies against Soviet technical nuclear forces. Saudi Arabia already has ballistic missiles of its own and might be able to acquire nuclear warheads from a country like Pakistan.

Short of some form of regional nuclear and missile arms control agreement, the end result could well mean a constant race to develop larger nuclear forces, warheads with larger nuclear warheads, missiles with more accuracy and penetration aids, better missile defenses, less vulnerable basing and deployment systems and the ability to launch-on-warning (LOW) or launch under attack (LUA). What Albert Wohlstetter once called the "delicate balance of terror" between the US and USSR and NATO and Warsaw Pact could become the "unstable balance of terror" in the Gulf and Middle East.

At the same time, Iran's existing missile forces serve many other purposes and precision guided missiles could post a major new strategic threat, and Iran's missile will become more lethal over the coming half-decade even if Iran does not get nuclear weapons.

Iran's current missile already becoming somewhat more lethal as they are equipped with cluster munitions and better fusing -- although their lethality will still be limited by their range-payload limits, and a lack of accuracy if this was the only area of improvement. Even substantial volleys of missiles and rockets with better conventional warheads against area targets would still be limited in real world lethality, and would be more terror strikes than strikes capable of quickly hitting and destroying key point targets.

If Iran is to make a major advances in missile lethality without arming its missiles with nuclear warheads, it must make advances in one of three other areas: (1) it must either deploy missiles with precision guidance and terminal homing; or (2) deploy missiles with chemical or biological weapons, and enhancing command and control to launch semi-accurate volleys – potentially in "stacked" arrays of different missiles from different launch sites.

Iran is already taking the first step in giving its conventionally armed missiles more accuracy. Iran is deploying short-range systems with GPS guidance and has said publicly that it is seeking to provide its missiles with precision guidance and/or terminal homing

warheads, and with countermeasures to ballistic missile defenses. It already has deployed at least one missile with GPS guidance and begun to experiment with cruise missiles.

A number of sources indicate that its systems with greatly improved guidance include production of the Zelzal-2 as a guided rocket, and development of the Ya Ali land attack cruise missile, the Zelzal-3 ballistic missile, and the Raad-301 precision guided bomb. Iran has also claimed to have demonstrated that it has a near precision strike capability by attacking a simulated airfield -- although satellite photos of the target area indicate it simulated at least some of its accurate missile hits by using explosive devices at the scene.

A truly reliable precision strike capability would make Iran's missiles capable of targeting key military, petroleum, power, and water facilities with enough accuracy to destroy them with a credible conventional payload. It would radically alter the lethality of Iran's longer-range systems against high value military targets and civil targets like key oil product facilities and desalination plants - creating the equivalent of "weapons of mass effectiveness." Iran would also run far less risk of catastrophic escalation in retaliation to either the threat of using its missiles, or carrying out limited strikes, if it could use missile forces with conventional warheads in strategic attacks rather than nuclear warheads.

There is no evidence as yet that Iran has such capabilities for most of its systems and no certainty that it can acquire them in the near future. Iran has, however, made claims that imply it already has such accuracy, and a number of Israeli experts believe it is developing such systems.

As for the second option, Iran does not seem to be arming its missile forces with other weapons of mass destruction. No key source has yet claimed that Iran is actively pursuing deploy chemical or biological warheads to give its missiles more lethality -- although Iran did have short-range, chemically armed rockets in the past.

This option also needs to be kept in perspective. Chemical and biological missile warhead would have an immediate impact as terror weapons, but making them highly lethal is another story. It is easy to exaggerate the lethality of chemical missile warheads under real world operational conditions. Dispersing a chemical agent effectively is a major challenge, and chemical cluster weapons present serious timing and height of burst problems. Mounting chemical and biological weapons on longer ranged ballistic missiles also requires to warhead to survive the harsh re-entry environment that could degrade the effectiveness of the weapon if it is not shielded properly. It might well take a substantial volley of shorter-range rocket to have a major effect, and such a strike could remove all limits to a conflict and might still produce limited damage to critical targets.

Biological weapons can theoretically be as - or more - lethal than fission nuclear weapons and Iran has all of the technology and manufacturing capability needed to make such weapon. Effective dispersal is, however, even more difficult than with chemical weapons, and developing and testing such a warhead presents serious technical problems, could only have its lethality fully validated by human or primate testing, and presents the political problem that such a threat might not be credible until Iran's capability was proven. Moreover, the very threat that Iran was arming its missiles with biological weapons could trigger massive preventive strikes and any use of such warheads would eliminate any barriers to counterstrikes with nuclear weapons.

Missiles, Political and Psychological Warfighting, and Wars of Intimidation

Missile warfighting can be as important in political and psychological terms as military terms.. Iran can use its longer-range artillery rockets and missiles to copy Saddam Hussein's strategy in using missile attacks during the Iran-Iraq War and the first Gulf War 1991. Missile forces also have political dimensions that help Iran fight "wars of intimidation" even in peacetime.

At a minimum, Iran's growing missile forces increase its deterrent and defensive ability to deter attack on Iran and compensate for its weaknesses in airpower. More broadly, Iran can use its missiles politically and strategically, and not simply to damage targets. Selective firings and "volleys" of conventionally armed, unguided long-range missiles and rockets can be used as political symbols or terror weapons.

Iran might use its missiles to strike Israel after an Israeli preventive strike, or to strike at Israel in some other contingency where it felt the political symbolism inside Iran and the Arab and Islamic worlds were worth the cost. Iran could hope that conventional missile strikes on Israel would lead to limited Israeli retaliation, leading in turn to political pressure on Arab states to reduce ties to the US. Strikes on Arab states would bring the costs of war home to populations that are ill prepared for conflict, raising the penalties for Gulf publics that have rarely had to face the personal risks stemming from regional instability.

As was demonstrated during the "war of the cities" during the Iran-Iraq war, by the use of the Scud missile during the Afghan War, and by the Iraqi Scud attacks on Israel and Saudi Arabia during the Gulf War in 1991, missile strikes can have a powerful propaganda impact that vastly exceeds their actual warfighting effect - at least initially. There were reports during the Iran-Iraq War of civilians and officials fleeing Tehran. Iraqis, Israelis, Saudis, and Coalition forces also routinely took shelter during missile attacks, and the Israeli press report many cases of individuals that effectively panicked in 1991 - although perhaps more from fear that missiles might have chemical weapons than out of a fear of missiles or conventional warheads per se.

Even a few Iran missile strikes on either Israel or Saudi Arabia might also be seen by Arab states as a demonstration of Iran's willingness and capability to escalate even further, and growing future ability to strike with far more effectiveness. Iran could pick on one or a few Arab states, and seek to divide Arab states from each other. Moreover, Iran can use even token or failed missile strikes for internal political propaganda purposes.

Iran might also use missile strikes as a counter to any US, Gulf, or other conventional air or cruise missile strikes on Iranian military, civil, or infrastructure targets. Such a response might be deliberate, or escalate out of an incident in the Gulf or some other form of military clash. There are no clear boundaries between conventional and irregular/asymmetric warfare, and no clear steps on the escalation ladder that deter the use of one form of force against another, or the level and mix of land-air-sea-missile force that will be used. Iran has historically been a relatively cautious power focusing on regime survival, but history is a clear warning that even the most cautious power can suddenly become locked into a massively escalating conflict.

Regardless of the current limits to the lethality of Iran's missile forces, the psychological impact of Iran's ability to launch a sudden, massive missile barrage on regional population centers and military installations should not be underestimated. Neither should the possibility of a lucky hit producing enough casualties or highly visible damage to have a lasting psychological impact - what might grimly be called the "World Trade Center effect." Iran's ability to launch a large volume of missiles over a period of days with little warning before the first round of launches gives Iran leverage and makes such missiles a weapon of intimidation. Even if - and perhaps especially if - they are never used, Iran's missiles also have the capability to intimidate and leverage Iran's neighbors, and to force the US and its regional allies to devote resources to missile defense.

Missile and long-range rocket attacks can boost Iranian morale. In the face of limited, attrition-like conflict between Iran and the US and GCC, ballistic strikes provide Iran with the chance to show its public that it is prosecuting the war and inflicting casualties on the other side. Framed as retaliation for a combination of sabotage, assassination, sanctions, and potentially overt strikes, ballistic missiles demonstrate to the Iranian population that its government is capable of repaying the suffering it has undergone.

As the exports of Iranian artillery rockets and shorter-range missiles have shown, Iran's missiles also have a growing political, strategic and psychological impact outside Iran. Current Iranian doctrine seems to stress building up the risk and reality of allied and proxy attacks around the world, Hamas and Hezbollah rocket and missile strikes already have had a major impact on Israel's military posture, and "third party" missile strikes may be a growing problem for the US and its Arab allies in the future.

At the same time, it should be noted that many of the political psychological effects of ineffective missile strikes, however, wore off relatively quickly. There were not enough missile firings to sustain a high degree of popular fear, and people were soon reported to be going to their roofs at night to "watch the show." There is simply too much empty area in a given urban complex or large military base for largely random strikes to either produce critical damage or kill enough people to shock or intimidate the population. Limited by the number of TELs and static launching sites, Iran may be unable to continue a bombardment campaign for an extended period of time in the face of Arab or US airstrikes.

Putting Iran's Missile and Nuclear Programs in Perspective

It is difficult to predict how aggressive Iran would become in exploiting its nuclear capability if Iran did acquire nuclear-armed missiles. Iran has so far been cautious in initiating any use of force that might threaten the survival regime. Its best strategy would be to limit its use of nuclear missile forces to pressure, deter, and intimidate.

Iran is, however, clearly involved in an active competition with the US and with its Arab neighbors in an effort to win strategic influence and leverage. Iran faces US and Arab competition for influence and control over Iraq, the emerging threat of the Islamic State, and growing uncertainty over the future of its alliance with the Assad regime in Syria and the Hezbollah in Lebanon. Iran also still seems to see American influence behind all of these steadily growing pressures.

Iran has long sought to develop asymmetric military capabilities and forces that can challenge US encroachment in “its” region. Iran has threatened in the past to use such forces to “close” the Gulf, and has carried out major exercises targeted against the US and less directly at the GCC states. It has also described many of its exercise exercises as a response to Israeli or American threats and “aggression”.

While Iran has normally been careful to avoid any major threats and military incidents, to avoid provocative military steps, and to limit the risk of military confrontation; it is not clear that Iran would show the same restraint in using its full range of asymmetric warfare capabilities if it could arm its missile forces with nuclear weapons or if its missile forces developed a precision strike capability. Iran might then be more willing to take risks in using its other irregular warfare capabilities to try to force more favorable compromises, persuade the Iranian people they do face real foreign enemies, show how serious the impact could be on the global economy, or simply punish other powers.

Military history is also a warning that restraint in peacetime does not necessarily last in a crisis or limited conflict. The history of war is not the history of rational bargainers. Tempers can grow short, given units can overreact, situations can be misunderstood, and one nation’s view of how to escalate rarely matches another’s once a crisis begins. Iran could escalate to major rocket and missile strikes because of miscalculations on both sides of a future clash or lower level conflict.

The Challenges if Iran Deploys a Nuclear-Armed Missile Force

The risks to Iran in deploying a nuclear armed missile forces are increased by the fact that an Iranian effort to create a survivable and effective nuclear-armed or precision strike missile forces would take years to deploy, and would present other kinds of challenges in the process. Iran cannot become a meaningful nuclear power overnight, and Iran does not exist in a “nuclear vacuum.”

Iran faces technical challenges in creating and deploying nuclear-armed missiles and in ensuring they would not be subject to preemption or counterforce nuclear strikes. Much would depend on the reliability of the missiles, and real-world accuracy could still be a problem. Moreover, Iran might well have a very limited stockpile of nuclear weapons for some years after it first began to deploy such weapons, and creating a survivable and effective force would pose problems of a different kind.

Long before Iran could deploy a meaningful nuclear-armed missile force, Iran’s efforts to acquire nuclear weapons could lead to US or Israeli preventive attacks on both its nuclear and missile facilities and forces. If the current P5+1 talks fail, President Obama and other senior US officials have made it clear that US policy sees Iran’s acquisition of nuclear weapons as “unacceptable.” Both Israel and the US have repeatedly stated that they are planning and ready for military options that could include preventive strikes on at least Iran’s nuclear facilities and, and that US strikes might cover a much wider range of missile facilities and other targets.

Such preventive strikes would present risks for the attacker as well as Iran They might trigger a direct military confrontation or conflict in the Gulf with little warning. They might also lead to at least symbolic Iranian missile strikes on US basing facilities, GCC targets or

Israel. At the same time, it could lead to much more serious covert and proxy operations in Lebanon, Iraq, Afghanistan, the rest of the Gulf, and other areas.

Furthermore, unless preventive strikes were reinforced by a lasting regime of follow-on strikes, they could trigger a much stronger Iranian effort to actually acquire and deploy nuclear weapons and/or Iranian rejection of the Nuclear Non-Proliferation Treaty (NPT) and negotiations. The US, in contrast, might see it had no choice other than to maintain a military over-watch and restrike capability to ensure Iran could not carry out such a program and rebuild its nuclear capabilities or any other capabilities that were attacked.

A preventive war, however, is only part of the threat Iran will face. As has been touched upon earlier, Israel is a mature nuclear power that already has a thermonuclear-armed missile forces with considerable counterstrike capability. Israel's ability to destroy Iranian cities and population centers already makes Israel an existing existential threat to Iran. At least initially, Iran could only secure its evolving forces by relying on launch-on-warning (LOW) or launch-under-attack (LUA). This, however, would push Israel into shaping a nuclear force posture designed to react to any Iranian use of nuclear forces – or even an Iranian threat – by launching an all-out nuclear attack with a force posture that would almost be designed to lead both sides to miscalculation or over-reaction.

Any Iranian threat to use nuclear weapons against other regional targets might well lead to similar retaliation if the US should ever implement its offer of “extended deterrence.” Iran would also face the prospect that actually acquiring nuclear weapons might provoke a Gulf power like Saudi Arabia to seek nuclear-armed missiles from Pakistan, and any nuclear armed neighboring states would almost certainly respond to any nuclear attack in kind.

These risks will increase if Iran deploys missiles with weapons of mass destruction even if it does not use them. Iran faces the grim fact that its missiles can make a war far more damaging and lethal, cannot win either any arms race in which the US takes part, or any process of escalation that involves the US and Israel.

Iran's actions have almost certainly already provoked Israel into developing the capability to target thermonuclear warheads on every major Iranian city, creating an “existential” threat to Iran long before Iran will pose one to Israel. Saudi Arabia and the GCC states may well have the option of turning to Pakistan for nuclear-armed missiles, and senior Saudi officials have said Saudi Arabia has examined nuclear options. The US has also officially offered its regional friends and allies “extended deterrence” of the kind it once provided to Europe during the Cold War - essentially confronting Iran with an open-ended threat of US retaliation.

Even if Iran does go nuclear as part of this aspect of its competition with the US and its Gulf neighbors, it is far from clear that it will not suffer more than any nation or nations it attacks. No one can downplay the psychological and political impact of even the threat of nuclear strikes, the deterrent impact it might have in limiting a response to Iran's use of asymmetric warfare, or the risk of some “accident” or miscalculation. The worst moments in history rarely occurred because of accurate calculations by rational bargainers.

This is why success in the current negotiations between the P5+1 and Iran would probably be of significant strategic benefit to Iran. It would eliminate Iran's nuclear option, but the end result could do more to ensure Iran's overall security than Iranian nuclear-armed

missiles. Once Iran tests a nuclear device or claims to have nuclear weapons, it will also enter a very different world of risks. Iran's missiles will be seen by many Israelis as "existential" risks the moment Iran has – or even claims to have – nuclear weapons. It is Iran, however, that will face the most immediate threat from Israel of preventive war, preemption, or massive retaliatory

At the same time, the failure of such negotiations would have a negative impact on the US and its regional allies as well. The end result is that if the P5+1 negotiations – or some form of negotiations – fail, Israel, the US, and Arab states cannot choose between preventive war and containment. Unless Iran fundamentally changes its present course, the choice is between preventive strike and containment, or containment alone. Preventive strikes may be able to delay Iran for a given period of time, but if Iran seeks to rebuild its nuclear capabilities, Israel, the US, and the Arab countries will have to strengthen their missile and other defenses, develop great retaliatory capabilities and/or restrike every new Iranian effort to move towards nuclear weapons.

No amount of US or Gulf military containment effort can alter the fact that a nuclear arms race already exists between Israel and Iran - albeit one where only Israel now has a nuclear strike capability. The practical problem this raises for Iran - and for stabilizing this arms race - is that it will face a possible Israeli first strike option until it can secure its nuclear armed forces.

The end result could well be forces that initially push Iran towards a concealed or breakout deployment, followed by phase where it would have to launch on warning or under attack until it has a survivable force. Iran would then, however, have to compete with powers with far larger stockpiles and boosted and thermonuclear weapons until it can create a more sophisticated force of its own. This confronts Iran with the reality that it at least initially faces a high-risk arms race, and is then likely to become trapped in a steady race to increase its forces, find ways to secure them against counterforce strikes, find ways to compete in missile defense and still find itself confronting an escalating mix of Israeli, US, and Gulf nuclear and conventional strike capabilities superior to any force Iran can deploy.

The Possible Challenges from an Iranian Conventionally-Armed Precision Strike Missile Force

The outside response is likely to be far less threatening if Iran succeeds in deploying precision strike missile systems with conventional warheads, but the end result would still be a regional arms race which Iran is unlikely to win. Once again, Iran cannot act in a vacuum. As full analysis shows, outside powers have a major advantage in overall air warfare capability, combat aircraft, and surface-to-air missiles. Iran's target base is at least as vulnerable as that of its Gulf neighbors. The Arab Gulf states already have missile defenses for many key targets, the US is deploying missile defense ships with wide area missile defense capability, and nations like the UAE and Qatar have already indicated that they may buy land-based wide area missile defenses like THAAD.

Unless Russia or China alter their policies to sell Iran virtually any advanced weapons technology it wants, the Arab Gulf states, Israel, and the US will have an overwhelming advantage in many areas of air and missile strike capability and missile and air defense. Every major Iranian improvement in its missile forces will trigger an overall set of counter efforts by the US and the other states in the region.

Iran may be able to gain some political leverage by exploiting the risk of a conflict, but it will progressively increase the probable damage to Iran if a conflict actually occurs. Iran will also then face a military situation where Israel retains a nuclear option and Iran

does not. It seems unlikely that Israel would ever initiate the use of nuclear weapons against Iran in response to any probable scenario in a world where Iran did not deploy nuclear-armed forces, but Israel might well adopt a preemptive or launch on warning strategy if Iran did deploy nuclear weapons and showed any sign of actively preparing to use them.

US Missile Forces

The US does not formally deploy missiles to the Gulf, but showed in the first Gulf War in 1991 that its seaborne cruise missile forces could be extremely effective against Iraq, and it has since repeated such strikes in the Gulf region through 2014. As unclassified US sources indicate, the US has demonstrated that the US Tomahawk Block IV missile can,¹⁰⁰

...circle for hours, shift course instantly on command and beam a picture of its target to controllers halfway around the world before striking with pinpoint accuracy. Tomahawk can be launched from a ship or submarine and can fly into heavily defended airspace more than 1,000 miles away to conduct precise strikes on high-value targets with minimal collateral damage. The Tomahawk is a highly accurate, GPS enabled precision weapon that has been used over 2,000 times in combat, and flight tested more than 500 times.

During the NATO-led effort against the regime of Libyan leader Moammar Gadhafi in 2011, Tomahawk played an instrumental role in the operation. One submarine fired more than 90 missiles at a variety of targets, and the USS Barry fired the 2,000th Tomahawk in combat. The latest variant (Tomahawk Block IV) includes a two-way satellite data-link that enables the missile to be retargeted in flight to preprogrammed, alternate targets. In 2013, Raytheon delivered the 3000th Tomahawk Block IV missile to the U.S. Navy. The Block IV design was initiated as both a cost savings and a capability improvement effort.... Planned upgrades to the Tomahawk Block IV include: upgraded communications, a more powerful warhead, and a new seeker designed to hit moving targets at sea or on land in darkness and all kinds of weather.

The U.S. Navy and Raytheon Company (NYSE: RTN) conducted two successful flight tests on Jan. 27 and 29. The first flight test demonstrated a [Tomahawk](#) cruise missile which was synthetically guided to hit a Mobile Ship Target (MST). The second flight test demonstrated a reduced mission planning time in a realistic "call for fire" scenario. In the first test, a Tomahawk Block IV cruise missile fired from the destroyer *USS Kidd (DDG 100)* flew a pre-planned mission until a surveillance aircraft sent real-time target information to the Joint Network Enabled Weapons Mission Management Capability (JNEW-MMC) located at Naval Air Warfare Center – Weapons Division (NAWC-WD), China Lake. The JNEW-MMC provided updated data to the missile in flight before it successfully struck the MST. This demonstration is the first step toward evolving Tomahawk with improved network capability and extends its reach from fixed and mobile to moving targets. In the second test, the *USS Kidd (DDG 100)* launched another Tomahawk Block IV missile on a "call-for-fire" mission in support of shore-based Marines staged on San Nicolas Island. Using GPS navigational updates, the missile performed a vertical dive to impact on San Nicolas Island, scoring a direct hit on the target designated by the Marines.

Raytheon Company successfully completed a passive seeker test designed for a Tomahawk Block IV cruise missile using company-funded independent research and development investment. The captive flight test, using a modified Tomahawk Block IV missile nose cone, demonstrated that Raytheon's advanced, next-generation, multi-function processor can enable the cruise missile to navigate to and track moving targets emitting radio frequency signals. For the test, the nosecone of a Tomahawk Block IV missile was equipped with passive antennas integrated with Raytheon's new modular, multi-mode processor, and fitted to a T-39 aircraft. Flying at subsonic speed and at varying altitudes, the aircraft simulated a Tomahawk flight regime. The passive seeker and multi-function processor successfully received numerous electronic signals from tactical targets in a complex, high density electromagnetic environment. A Raytheon-funded active seeker test with the company's new processor inside a Tomahawk nosecone is planned for early next year. That event will demonstrate the processor's ability to broadcast active radar as well as passively receive target electromagnetic information – a critical step in enabling the missile to strike moving targets on land and at sea.

The U.S. Navy has conducted more than 70 successful Tomahawk Block IV flight tests since 2006. The cruise missile has been employed in combat more than 2000 times since it was introduced. Tomahawk a key weapon used by U.S. and British forces in defeating integrated air defense systems and striking high value fixed and mobile targets in support of national policy.

These developments illustrate the steady improvement in cruise missile capability and the fact that focusing on aircraft or ballistic missiles lone does not provide an adequate picture of the Gulf military balance. As note earlier, Saudi Arabia and the UAE also acquiring the long-range, air launched Storm Shadow, and both Russia and China are developing hypersonic cruise missiles that may affect the Gulf balance in the future.

The Impact of Retaliatory Threats and Retaliation

Regardless of how or why Iran uses its missile and other delivery system, Iran cannot operate in an environment where there will be no response. As has been discussed earlier, Iran faces far superior air strike forces and air and missile defense forces.

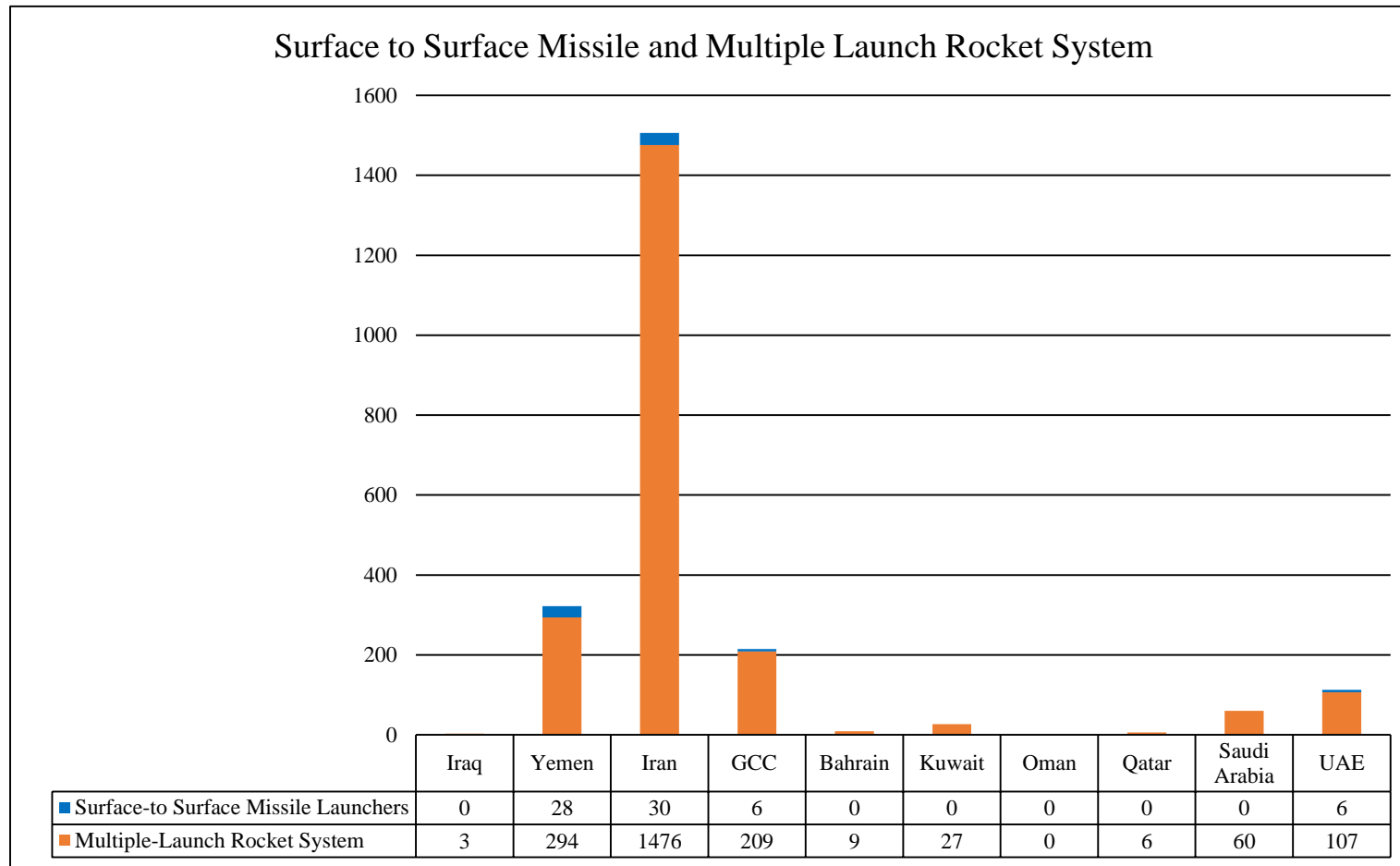
Israel has a wide range of retaliatory and escalatory options, including nuclear-armed ballistic and sea-launched cruise missiles. Saudi Arabia already has long-range, conventionally armed Chinese missiles that can strike area targets in Iran, and the UAE has some SCUD-B missiles (likely equivalent to Shahab-1s). There are questions about the status, reliability, readiness, and accuracy of the Saudi and Emirati missiles, but these same questions apply to Iran's forces. This raises the specter of any missile "war of the cities" of the kind observed between Iran and Iraq.

Iran faces the risk of steadily more capable retaliation by US strike fighters and bombers with "stealth capability and by the best air forces of the Gulf as states like Saudi Arabia and the UAE acquire steadily better strike fighters with may be less likely to initially have a terror impact on civilian populations, they provide a far more effective strike and targeting capability that Iran can do little to reduce. In the near-to-midterm, Iran's forces and critical infrastructure are is becoming more vulnerable to Southern Gulf air forces as they acquire missile defenses and become less vulnerable to Iranian missiles.

Any Iranian use of long-range missiles against another Gulf state also presents a serious escalatory risk to Iran. Even one such missile firing would effectively escalate to a level where the US would have no clear limits on its use of air and cruise missile power to strike at strategic targets in Iran. Iran's major cities are as vulnerable in terms of power, water, and fuel supplies as the cities of the southern Gulf, and Iran's refineries and certain key links in its ports and transport systems are highly vulnerable as well. Iran cannot possibly win a contest in escalation with its current conventional forces and conventionally armed missiles, and such a contest could spiral into an asymmetric or unconventional war that is costly and destructive for all sides.

Moreover, the first time Iran uses even a conventionally armed missile, it may create conditions that lead to some form of US guarantees and "extended deterrence." The US has stated that it will not accept an Iran with nuclear weapons, but even if does, this scarcely offers Iran security or freedom from preemption and retaliation. Should Iranian nuclear efforts prompt Riyadh to develop its own nuclear program, as was mentioned previously, this would only increase the risks of escalation if Iran uses its ballistic missiles.

Figure VIII.1: Gulf Surface-to-Surface Missile Launchers



Source: Based on Chapter Seven: Middle East and North Africa,” in The Military Balance, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure VIII.2: Major Iran Missile Forces – Part One**Hildreth Estimate 2010**

	Shahab-1	Shahab-2	Shahab-3	Ghadr-1	Sejjil-2	Khalij Fars	Fateh-110	Zelzal-1/2/3
Range (km)	300-315	375-700	800-1300	1100-2500	1800+	300	200-400	125/200/ 150-400
Payload (kg)	1000	1000-730	1000	1000-750	1000	650	500	600
CEP (m)	450-1000	50-700	190-2500	1000	Unknown	<50	100-300	100-3000
Number in Service	200-300	100-200	25-100	25-300	Unknown	Unknown	Unknown; likely in hundreds	Unknown; likely in thousands
Launchers	18	18 (same as Shahab-1)	6-20	6-20 (same as Shahab- 3)	Unknown	Unknown	Unknown	Unknown
Fuel	Liquid	Liquid	Liquid	Liquid	Solid	Solid	Solid	Solid

Source: Steven A. Hildreth, Iran's Ballistic Missile and Space Launch Programs, *Congressional Research Service R42849, December 6, 2012, p. 15*

Figure VIII.2: Major Iran Missile Forces – Part Two**Israeli INSS Estimate 2013**

Missile Type	Launcher Numbers	Missile Numbers	Comments
SS-1 (Scud B)	20	300	-
SS-1 (Scud C)	20	100	-
Shehab 2	-	-	Probably similar to Syrian Scud D
Shehab-3/3B, Ghadir	10	300	-
BM-25	-	18	Operational Status unknown.
Tondar-69 (CSS 8)	16	-	-
Qiam-1	-	-	Liquid fuel
Fateh-100	-	-	-
Shehab 3B/Ghadir development	-	-	Includes new RV, believed in production.
Ashura/Sejjil	-	-	Solid propellant.

Source: INSS, “Iran-Strategic“, *Middle East Military Forces*, 2/1/2103, <http://inss.web2.moonsite.co.il/uploadimages/SystemFiles/iran.pdf>, p. 7.

IISS Estimate 2014

Iranian Army holdings of Shahin-1/Shahin-2; Nazeat; Oghab

IRGC Holdings of:

1 SRBM brigade with *Shahab-1/2*

- 18+ launchers: some *Fateh 110*; 12-18 *Shahab-1/2* launchers (€200–300 missiles)

1 MRBM brigade with *Shahab-3*; *Ghadr-1*; *Sajjil-2* (in development)

- 12+ launchers: 12+ *Shahab-3/Ghadr-1*; some *Sajjil-2*

Some units with Short-range *Zelzal* surface-to-surface missiles

Source: IISS, “Iran,” *Military Balance*, 2014, pp. 319-320

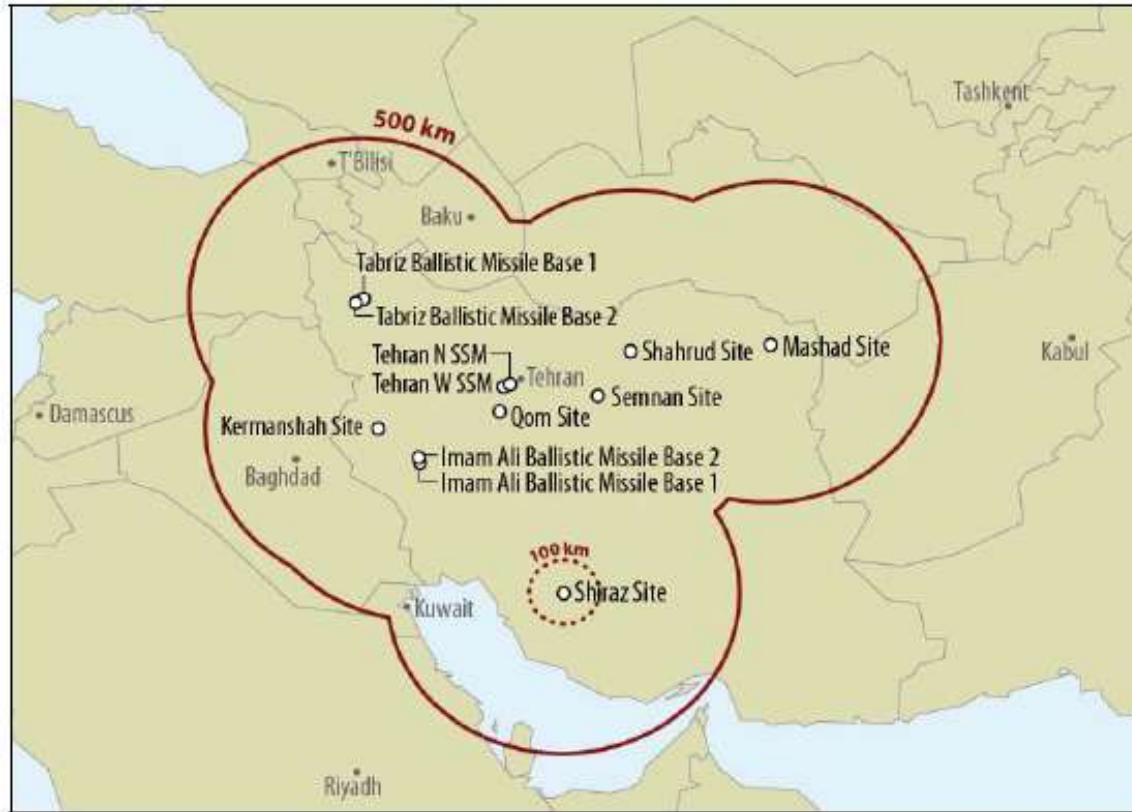
Figure VIII.2: Major Iran Missile Forces – Part Three

IHS Jane's 2013

System	Number	Range (KM)	Mission and Comments
FROG 7 Rocket	250		battlefield rocket
Oghab	250		battlefield missile
Shahin-2	250		battlefield missile
Nazeat/Iran 130	500		battlefield missile
Fateh 110	na	200+	ballistic missile
Fateh A-110 (Mersad)	na	250	ballistic missile
Fateh-110-D1	na	250	ballistic missile
Tondar 69	200		ballistic missile
Shahab-1 (SS-1c 'Scud B')	250	300	ballistic missile, 1000 Kg warhead
Shahab-2 (SS-1d 'Scud C')	50	500-600	ballistic missile, 800 Kg warhead
Shahab-3 (No-dong 2)	25		ballistic missile
Shahab 3A	na	1,500-1,800	uncertain variant
Ghadr 1	na	1,800	uncertain variant
Shahab 3B	na	2,000-2,500	uncertain variant
Sejjil-2	na	2,000	developmental, 1000 Kg warhead
BM-25	18?		ballistic missile
Qiam 1	na	700	ballistic missile

Source: IHS Jane's "Iran, Strategic Weapons," *Sentinel Series*, 2013, pp. 6-9

Figure VIII.3: Estimated Range of Iranian Shorter-Range Missile Forces



Source: Steven A. Hildreth, *Iran's Ballistic Missile and Space Launch Programs*, Congressional Research Service R42849, December 6, 2012.

Figure VIII.4: Estimated Range of Iranian Long-Range Missile Forces



Source: Steven A. Hildreth, *Iran's Ballistic Missile and Space Launch Programs*, Congressional Research Service R42849, December 6, 2012.

IX. Missile Defenses

The GCC states are placing a growing emphasis on missile defenses as Iran uses longer range artillery rockets and a growing family of missiles to extend the strike range of its land, air, and sea forces, and to compensate for the weaknesses in its air forces. The US and its allies not only must deal with the current threat posed by Iranian artillery rockets and missiles, but with the future threats of increasing accuracy, terminal guidance, increased reliability, targeting capability, and layers of different types of fire units in sufficient numbers for volleys to overcome defenses and make up for limits on accuracy and lethality.

- **Figure IX.1** shows the current strength of the ballistic missile defense forces in the Gulf region.
- **Figure IX.2** provides a diagram of integrated missile defense.
- **Figure IX.3** illustrates how missile defense would function.

The Hawk and Patriot PAC Systems

Many of the GCC states operate MIM 23B I-Hawk and MIM J/K versions of the Hawk surface-to-air missile system that have limited anti-ballistic missile capabilities if operated in a point defense mode to try to protect a specific target. They also deploy PAC-2 (MIM 104C) and the PAC-3 (MIM 104F) versions of a more advanced Patriot SAM system that can defend a wider – but still limited – area. Most Gulf States have greatly improved versions of the Patriot missile defense system that can defend against Iran’s Shahab-1 and Shahab-2s, and have some capability against high-speed closures from larger missiles like the Sejil-2 and Shahab-3. The PAC 2 GEM provides greatly improved missile defense capability relative to earlier Patriots, and can also be used for air defense. A number of GCC states are acquiring PAC-3 capabilities for the PATRIOT missile defense systems.

Several Gulf states have – or will acquire – the PAC 3 version of the Patriot system.¹⁰¹ Unlike the PAC-2 variant, the PAC-3 is a smaller missile that can accommodate 16 missiles per launcher rather than four and offers “more advanced radar and electronics systems” as well as “hit to kill” capabilities, whereas the PAC-2 uses a “proximity fuse.”¹⁰² This system is designed only for the missile defense role can be used “against short-range ballistic missiles, large-caliber rockets, and air-breathing threats.”¹⁰³

It is far more maneuverable in intercepting missile warheads than the previous Patriot missile series, including the PAC 2 GEM –. The PAC 3 has a more advanced hit-to-kill warhead, has a much greater range, and an advanced Ka-Band seeker that can detect and home in on the missile warhead. Unclassified estimates give the PAC-3 a maximum ballistic missile intercept range of 15 kilometers and the improved PAC-3 MSE a range of 22 kilometers.

The US Missile Defense Agency (MDA) states that the PAC 3:¹⁰⁴

- Provides simultaneous air and missile defense capabilities as the Lower Tier element in defense of U.S. deployed forces and allies.

- Works with THAAD to provide an integrated, overlapping defense against missile threats in the terminal phase of flight. Jointly, these systems engage the threat by forming a multi-tier theater defense against adversary missile threats using peer-to-peer engagement coordination, early warning track data, and battle management situational awareness.
- Contributes to the entire system's situational awareness by transmitting precision cueing data to other theater elements while simultaneously protecting system assets against short-range ballistic missiles, large-caliber rockets, and air-breathing threats.
- ...provides detection, track, and engagement of short-range ballistic missiles and cruise missiles. These engagements are further enhanced by networked remote sensors that supply early warning data to increase the probability of success.
- ...has added Upper-Tier Debris Mitigation capability to mitigate the excessive radar load and potential missile waste caused by debris from upper-tier intercepts.

The US Role in Encouraging Integrated and Wide Area Missile Defense

The US provides the GCC states with satellite warning of Iranian missile launches and the probable target, and has long pressed the GCC states to develop integrated missile defenses. So far, however, the GCC has not made serious progress in creating an integrated system, although the US can provide some integrated operational capability from its missile defense destroyers.

The most serious problem with GCC missile defenses, however, is that a truly effective missile defense requires more capable “theater” missile defense systems that can protect a much wider area. Saudi Arabia has shown an interest in such systems, and the NTI has reported that various media reports indicate Saudi Arabia is considering buying Aegis guided missile destroyers. So far, however, Qatar and the UAE are the only Arab Gulf states that have indicated that they will order a wide area defense system like the Terminal High Altitude Area Defense (THAAD).

Arab Gulf Missile Defense Systems and the Use of the US PAC-3 and THAAD Systems

THAAD, like PAC-3, offers “hit-to-kill” capabilities. It is able to intercept ballistic missiles in the last segment of their flight, but is a wide area missile defense system. The ability of the system to intercept missiles at high altitude – including above the Earth's atmosphere – makes it a potentially effective system to intercept nuclear, chemical, or biological-tipped missiles.¹⁰⁵ This system will offer additional protection to these countries and US facilities and assets within them by working synergistically with PATRIOT PAC-3 and Aegis systems already in the region.¹⁰⁶ According to Lockheed Martin, “[t]he system [THAAD] has a track record of 100% mission success in flight testing.”¹⁰⁷

Qatar has asked to purchase two fire units, 12 launchers, 150 interceptors, and associated radar units, spare parts, and training. The UAE requested 48 interceptors, nine launchers, and associated spare parts and training.¹⁰⁸ Qatar has requested the sale of two THAAD units with 12 launchers, 150 missiles, plus parts, training, and logistic support at a potential cost of \$6.5 billion. Possible arms transfer plans are being briefed to other Gulf states.¹⁰⁹

THAAD has a range greater than 200 kilometers and a speed of over Mach 8.24 or 2.8 km/s. It began deployment in the US Army in 2012. It is an advanced missile defense system capable of shooting down a ballistic missile both inside and just outside the atmosphere and is designed to defend against asymmetric ballistic missile threats. It uses hit-to-kill technology whereby kinetic energy destroys the incoming warhead, and its high altitude intercept reduce the effects of enemy weapons of mass destruction before they reach the ground. The system has four major components:¹¹⁰

- **Launcher:** Truck mounted, highly mobile, able to be stored; interceptors can be fired and rapidly reloaded.
Interceptors: Eight per launcher.
- **Radar:** Army Navy/Transportable Radar Surveillance (AN/TPY-2) – Largest air-transportable X-band Radar in the world searches, tracks, and discriminates objects and provides updated tracking data to the interceptor.
- **Fire Control:** Communication and data-management backbone; links THAAD components together; links THAAD to external Command and Control nodes and to the entire BMDS; plans and executes intercept solutions.

According to its manufacturer, THAAD,¹¹¹ “can accept cues from Aegis, satellites, and other external sensors to further extend the battle space and defended area coverage, and operates in concert with the lower-tier Patriot/PAC-3 system to provide increased levels of effectiveness.

The Need for Full Integration and Interoperability

GCC forces also need to deal with their lack of true integration and interoperability. This is particularly critical in case of air and missile defenses, where the short flight times over the Gulf, concentration of key targets in the Gulf or near the coast, risk of Iran penetrating through the “edges” of national air defense systems, and problems in deconflicting air and surface-based defense systems all combine to create a clear need for a truly integrated air and missile defense system. While the failure to create such a system is the fault of the leaders of the GCC states, and not their militaries, it does significantly degrade the real-world capability of this aspect of Gulf forces. While a shared common air picture, based on a fiber-optic communication system, has been developed for use by the Gulf states, it is not suitable for missile defense.¹¹²

Once again, however, Iran cannot compete with the GCC states in this aspect of military capability, much less the combined capabilities of GCC and US forces. Most GCC states also have a wide range of relatively advanced short-range vehicle mounted and man-portable surface-to-air missile systems or SHORADs.

In addition to missile defense developments, the US has taken steps to enhance the air and maritime security capabilities of each friendly state to protect against threats from the air, land, and sea. The US has also offered Nonproliferation, Anti-terrorism, Demining and Related Programs (NADR) assistance to many of the states most vulnerable to instability – such as Yemen and Bahrain.

US Ship-Launched Theater Missile Defense Systems – The Standard SM Series

The US is also supporting the GCC states by deploying anti-missile defense ships with the Standard wide area defense missile. The full performance capabilities of such US missile defense systems are classified, but it is clear that a modified SM-3 destroyed a US satellite at an altitude of 130 nautical miles (240 kilometers), and some sources put its maximum, range at 114-230 miles.¹¹³ The US has already begun to deploy advanced missile defense destroyers in the Gulf and will upgrade to the Standard SM-6 beginning in 2015. The new US strategy announced in January 2012 called for four advanced guided missile defense destroyers - with wide area ballistic missile defense coverage - to be based in Rota, Spain that can be used to defend Europe and Israel, and the US has stationed two US Navy Aegis anti-ballistic missile cruisers stationed in the Gulf.

The US Missile Defense Agency (MDA) describes US shipborne missile defense capabilities with the SM-3 missile as follows:¹¹⁴

Aegis Ballistic Missile Defense (BMD) is the sea-based component of the Missile Defense Agency's Ballistic Missile Defense System (BMDS). Aegis BMD builds upon the Aegis Weapon System, Standard Missile, Navy and joint forces' Command, Control and Communication systems. The Commander, Operational Test and Evaluation Force, formally found Aegis BMD to be operationally effective and suitable. The Navy embraces BMD as a core mission. In recognition of its scalability, Aegis BMD/SM-3 system is a keystone in the Phased Adaptive Approach (PAA) for missile defense in Europe.

Regional Defense – Aegis BMD Engagement Capability

- Defeats short- to intermediate-range, unitary and separating, midcourse-phase, ballistic missile threats with the Standard Missile-3 (SM-3), as well as short-range ballistic missiles in the terminal phase with the SM-2.
- Flight tests are conducted by Fleet warships. Each test increases the operational realism and complexity of targets and scenarios and is witnessed by Navy and Defense Department testing evaluators.

Homeland Defense – Aegis BMD Long Range Surveillance and Track

- Aegis BMD ships on Ballistic Missile Defense patrol, detect and track ballistic missiles of all ranges – including Intercontinental Ballistic Missiles and report track data to the missile defense system. This capability shares tracking data to cue other missile defense sensors and provides fire control data to Ground-based Midcourse Defense interceptors located at Fort Greely, Alaska and Vandenberg Air Force Base, Calif. and other elements of the BMDS including land-based firing units (Terminal High Altitude Area Defense, Patriot) and other Navy BMD ships.

Deployment

- As of November 2012, there are 26 Aegis BMD combatants (5 cruisers [CGs] and 21 destroyers [DDGs]) in the U.S. Navy. Of the 26 ships, 16 are assigned to the Pacific Fleet and 10 to the Atlantic Fleet. In response to the increasing demand for Aegis BMD capability from the Combatant Commanders, the MDA and Navy are working together to increase the number of Aegis BMD capable ships. Such efforts consist of upgrading Aegis DDGs to the BMD capability, incorporating Aegis BMD into the Aegis Modernization Program and new construction of Aegis BMD DDGs.

International Efforts

- Aegis BMD is the first missile defense capability produced by the MDA that has been purchased by a military ally. Japan's four KONGO Class Destroyers have been upgraded with BMD operational capabilities.

- SM-3 Cooperative Development Program is the joint U.S.-Japan development of a 21-inch diameter variant of the SM-3 missile, designated SM-3 Block IIA, to defeat longer range ballistic missiles. Deployment begins in 2018.

Future Capabilities

- Engagement of longer range ballistic missiles.
- Improving existing early intercept capability.
- Enhanced terminal capability against short and medium range ballistic missiles.
- Aegis Ashore.
- Increased number of ships and missiles.
- More maritime ally involvement

Given time, the US can also rush additional surface-to-air missile defense units into the Gulf or other friendly regional states, and the US Army will be able to deploy THAAD or SM-3 to SM-6 wide area missile defenses once it acquires and integrates such systems into its forces.¹¹⁵

Turkish and other Related Missile Defense Efforts

In September, 2011 the US and Turkey reached an agreement whereby a missile defense radar site will be constructed some 435 miles from the Turkey-Iran border.¹¹⁶ While Iran's missiles have not been stated as the exclusive target of the system, it will greatly enable the US' ability to detect and intercept an Iranian missile launch.

This radar station is an element of the larger US-driven European Phased Adaptive Approach to missile defense, which is comprised of four phases:¹¹⁷

Phase one: the construction of the aforementioned radar system in Turkey as well as the stationing of three Aegis anti-ballistic missile cruisers in the eastern Mediterranean.

Phase two: the deployment of a ballistic missile defense interceptor site at Deveselu Air Base in Romania scheduled for 2015.

Phase three: the installation of a land-based interceptor site in Poland and the deployment of a more advanced Standard Missile-3 (SM-3) interceptor scheduled for 2018.

Phase four: the deployment of more advanced SM-3 interceptors in 2020 to enhance the ability to counter MRBMs and potential future ICBMs missile threats to the US from the Middle East through the deployment of more advanced SM-3 interceptors.

Israeli Missile Defense Systems

Israel is not part of many aspects of the Gulf military balance, but it has declared that it will not accept any Iranian development and deployment of nuclear weapons, including nuclear armed missiles, and its growing missile defenses are designed primarily to counter

the Iranian missile threat. Israel, it first deployed its Arrow missile defense system in 2000, and has integrated them with its Patriot defense systems. It has deployed two Arrow batteries. Their complement of missiles and fire units is not clear, but each fire unit holds six Arrow missiles, and Israel may be deploying a third battery.

Israel has upgraded its system to use the Arrow 2, Mod 4, with US financial and technical assistance. It tested the system in intercepts at altitudes as high as 40 and 60 kilometers, at speeds of up to Mach 9, and at ranges of 90-135 kilometers. The Arrow 2 is designed for intercepts above the stratosphere, in order to ensure that the effects of hitting nuclear, chemical, and biological weapons do not affect the Israeli populations. It uses a blast-fragmentation warhead, rather than hit-to-kill. Israel is developing an Arrow 2, Mod 5 to integrate lower altitude missile defense into a layered missile defense using its new Arrow 3.

Israel plans to deploy the Arrow 3 system in 2014 to provide a full exoatmospheric interception capability. The full details of the system are not available, but it is designed to intercept far outside Israeli territory and eliminate the risk of a nuclear, chemical, and biological weapon affecting the territory where the warhead is intercepted and destroyed.

These Israeli defenses inevitably affect the Gulf since they limit Iran's ability to pose a real world threat to Israel along with Israel's nuclear-armed missile forces. Israel is also developing two other systems, however, which may provide a model for upgrading mid-term Gulf missile defenses.

The Israel Iron Dome or Iron Cap system is a mobile system that – like the Arrow – is partially US-funded under the United States–Israel Missile Defense Cooperation and Support Act (H.R. 5327). It is designed to defend against mortars, short-range artillery rockets and missiles firing from ranges of 4 to 70 kilometers, as well as VSHORAD Missiles System (up to 10 kilometers, and discriminate against those that would hit key populated or infrastructure targets. The system has four major components: Mobile detection and tracking radar - multi-mission radar (MMR); battle management and control unit, sensors, and mobile missile firing unit (MFU) with 20 “TAMIR” interceptors.

Its manufacturer, Rafael, is seeking to expand the system to defend against firings up to 250 km and allow it to simultaneously intercept rockets and missiles come from different directions. Iron dome is also capable of anti-aircraft operations against targets flying up to 10,000 meters. It was used extensively against rockets being fired from the Gaza in 2012, and Israel claimed it achieved about 90% success against the rockets that would have hit population centers out of some 400 fired during this period.¹¹⁸

The second system is David's Sling or Magic Wand – a system in joint development by Raytheon and Rafael. It is a possible replacement for the IHawks in the IDF, and is an anti-ballistic and anti-cruise missile system with a range of 40 to 300 kilometers. It will use a larger, two-stage missile “Stunner” missile with both radar and electro-optical nose-cone sensors. It is in the final development stage and is due to be deployed in 2013 or 2014.¹¹⁹

While it is unlikely that Arab Gulf states will ever buy Israeli systems, they might buy similar systems made in the US. More importantly, Israel's shorter range systems illustrate what may be the shape of things to come in the Gulf as Iran makes more long-range artillery rockets and missiles that can fire across the Gulf or directly into neighboring states like Iraq and Kuwait.

The US and Gulf states may also adapt the missile and rocket suppression tactics that the Israeli air force first developed to use against Hezbollah rockets during the war between Israel and the Hezbollah in 2006.¹²⁰ Israel developed a mix of sensors and on-call strike fighter equipped with precision guided missiles that were often able to take out rocket launchers after their first firing. These tactics have grown steadily more sophisticated since that time, and Israel has shown that missile defense can be combined with anti-missile offense in ways the US and Arab Gulf air forces are well equipped to adopt.

Iranian Missile Defenses

As has been discussed in Chapter I, Iran currently has no missile defense capabilities, and Russia and China are Iran's only potential sources of direct sales of missile defense systems. Iran has shown in the past it is well aware that it would take major deliveries of a new integrated air defense system based around the S-300 or S-400 surface-to-air missiles to begin addressing Iran's strategic vulnerabilities to an aerial campaign. So far, however, neither Russia nor China has proved willing to sell the Russian version or Chinese modified version of such systems.

Russia halted the sale of modern S-300PMU1 (SA-20 Gargoyle) long range SAMs in 2010, and has since refused since then to reopen the deal. Although a future shift in Russian policy – or Chinese sale of its version – represents a potential risk, this leaves a critical gap in Iran's conventional capabilities that reinforces its weakness in airpower.

Iran has claimed it is compensating by upgrading its S-200 missile series and by building its own equivalent of S-300/S-400 called the Bavar 373, but its claims to date seem to be sharply exaggerated:¹²¹

- “With the changes being made to this system by our experts, the S-200 will be able to deal with threats at medium altitudes in addition to (threats) at high altitudes.” Brigadier General Farzad Esmaeili, commander of the Khatam-ol-Anbiya Air Defense Base, announced in late September s announced that Iran is upgrading the S-200 long-range surface-to-air missile system.

He also said that after the upgrade of the missile system, it will be renamed because the system will undergo systemic and structural modifications and will be used as a medium-to-high altitude missile system. He stated this would eliminate the need to use medium-altitude missile systems, such as the Ra'ad (Thunder) air defense system, in the areas where the upgraded S-200 will be deployed.

Esmaeili also said on September 7, 2012 Iran was building a missile system more advanced than the Russian S-300 missile system, and that missile system, named the Bavar 373 (Belief 373), would replace the need for the S-300 missile system. Tehran Times, September 28, 2012.

<http://tehrantimes.com/politics/101865-iran-upgrading-s-200-air-defense-system>.

- The IRGC displayed its new, domestically designed Ra'ad air medium ranged air to surface missile system during the annual military parade on Friday, which it said was designed to hit US aircraft, and which it said can be equipped with 'Taer' (Bird) missiles, which can trace and hit targets 50km in

distance and 75,000 feet in altitude. “The system has been built in a bid to confront US aircraft and can hit targets 50km in distance and 75,000 feet in altitude,” Commander of the IRGC Aerospace Force Brigadier General Amir Ali Hajizadeh. September 21, 2012.

Open source intelligence suggests that Iran has only deployed limited upgrades of its Soviet-era SA-5/S-200 medium to high altitude long-range surface-to-air missiles. The NPO Almaz S-200 Angara/Vega/Dubna (Russian Ангара\Вера\Дубна), is called the SA-5 or Gammon by NATO. Upgraded versions of the SA-5/S-200s have been tested since 2008, but there are few unclassified data to support ambitious, and probably grossly exaggerated, Iranian claims for either upgrading the SA-5/S-200 or building its own versions of the S-300/S-400.¹²² While the upgraded system may be more effective than the old SA-5/S-200, it is unlikely to pose a significant threat to American or Israeli aircraft as a long-range air-denial weapon.

As for the developmental Bavar-373 (Belief-373) system, Brigadier General Farzad Esmaili, a commander of the Iranian army’s air defense force said to reporters in Tehran on the National Day of Air Defense on September 3, 2012. He stated that the said the system was “30 per cent complete” and that Iran could execute the project without foreign assistance.

“We are through with developing the threat-detection capability of the system, and its sensitive parts have been manufactured in Iran...we have no problem with supplying the missiles needed for this system.”

Esmaili went on to say that he hoped the system would be finished by the end of the Iranian year, which would be March 2013, or by March 2014, and would be a “*powerful rival*” to the Russian surface-to-air system. Iran would deploy up to three different types of missiles, with “*higher capabilities than the S-300 in detecting, identifying and destroying targets.*”

Other Iranian officers and officials have made similar claims:

- “We are through with developing the threat-detection capability of the system and its sensitive parts have been manufactured in Iran. We have no problem for supplying the missiles needed for this system.

With this powerful system in our hand, we would not think of S-300 anymore.

Bavar 373 system is an important and completely indigenous achievement that can be a powerful rival for S-300.” – Brigadier General Farzad Esmayeeli, Commander of Khatam ol-Anbia Air Defense Base, September 3, 2012.

- “Manufacturing Bavar (Belief) 373 Missile System is in progress and all production needs have been supplied domestically.

This project will soon enter its final stage (of production) and it will be much more advanced than the S-300 missile system. The flaws and defects of the (Russian) S-300 system have been removed in the indigenous version of the system and its conceptual designing has finished.” – Brigadier General Farzad Esmayeeli, Commander of Khatam ol-Anbia Air Defense Base, September 22, 2011.

- “It is now several years that our defense industries researchers and experts have been designing a system whose capabilities are way beyond the S-300 missile system.

The system has been designed based on our own operational needs.” – Colonel Mohammad Hossein Shamkhali, Deputy Commander of Khatam ol-Anbia Air Defense Base for Research and Self-Sufficiency Jihad, September 22, 2011.

- Defense minister [Ahmad Vahidi](#) told Iranian media at Sept. 22, 2010 that they will develop a similar domestic system by themselves: “We have planned to build a long-range air defense missile system similar to S-300. By God’s grace and by the Iranian engineers’ efforts, we will reach self-sufficiency in this regard.”
- “If they do not deliver S-300 defensive system to us, we have replacements and we can supply our operational requirements through innovative techniques and different designs.” – General Hassan Mansourian, Deputy Commander of Khatam ol-Anbia Air Defense Base for Coordination, July 6, 2010.¹²³

To put such statements in context, Iran has made many claims for systems it later did not deploy, only deployed in token numbers, or deployed in forms that lacked anything like the capability claimed – such as a radarless version of a supposed SA-6 clone. It is far from clear Iran has the production base required to build a robust air defense network. Moreover, anecdotal unclassified reporting indicates that Iran lacks effective test and evaluation methods and has politicized its technology to the point that it sometimes believes its own rhetoric. Exaggerated claims are a sin common to all weapons developers and military powers, but there are signs that Iran sins more than most.

Some Israeli experts also believe that Iran is developing penetration aids for its surface-to-surface missiles. Some analyses of the Shahab 3 indicate that Iran has taken serious steps to reduce the vulnerability of its missiles to missile defenses – although much of the following analysis of the Shahab is speculative and based on uncertain data,¹²⁴

...the Shahab-3B differs from the basic production variant. It has improvements to its guidance system and warhead, a few small changes on the missile body, and a new re-entry vehicle whose terminal guidance system and rocket-nozzle steering method are completely different from the Shahab-3A’s spin-stabilized re-entry vehicle.

The new re-entry vehicle uses a triconic aeroshell geometry (or ‘baby bottle’ design) that improves the overall lift to drag ratio for the re-entry vehicle. This allows greater range maneuverability that can result in better precision. The triconic design also reduces the overall size of the warhead from an estimated 1 metric ton (2,200 lb.) to 700 kg (1,500 lb.).

The rocket-nozzle control system allows the missile to change its trajectory several times during re-entry and even terminal phase, effectively preventing interceptor guidance via trajectory prediction by early warning radar - a method nearly all long range ABM systems use. As a high-speed ballistic missile and pre-mission fueling capability, the Shahab-3 has an extremely short launch/impact time ratio. This means that the INS/gyroscope guidance would also remain relatively accurate until impact (important, given the fact that the gyroscopes tend to lose accuracy with longer flights). The CEP is estimated to be at 30–50 meters (98–160 ft.) or less.[9] However, the accuracy of the missile is largely speculative and cannot be confidently predicted for wartime situations.[10]

These improvements would greatly increase the Shahab-3B’s survivability against ABM systems such as Israel’s Arrow 2 missile as well as being used for precision attacks against high value targets such as command, control and communications centers

Iranian Counters to Missile Defenses

It is clear that missile defense technology is becoming a key aspect of rocket, ballistic missile, and cruise missile warfare and can have a major impact on Iran’s capabilities. Just as giving Iran’s conventionally armed missiles terminal guidance or sufficient accuracy for small volleys to be used in precision strikes can be fundamental game changers, missile defense can radically alter the impact of rockets and missiles on containment, deterrence and warfighting at every level of combat. Missile defenses also create a highly uncertain duel in terms of future warfighting since real world exchange outcomes between missiles and missile defense systems are unproven in major combat, involve systems with limited real world testing, and involve weapons and technology that is constantly evolving.

At the same time, all of the rocket and missile defenses that have just been discussed present the problem that they are vulnerable to some degree to countermeasures ranging from tactics as simple as oversaturation of the defensive system to highly sophisticated penetration technology.

If, as some Israeli and US experts report, Iran is using relatively simple technologies to make the path of its warheads less predictable to missile defenses, this may have some effectiveness in both reducing the area coverage of missile defenses and their effectiveness even if the warhead is closer to the missile launcher. At the same time, such developments can increase the risk that the warhead will miss its target or tumble in ways that can affect its reliability.

Iran is also claiming to develop missiles with a limited radar cross-section, reducing the reaction time available to anti-missile systems. Like other Iranian claims about improvements in its weapons systems, such an assertion may lack merit and should be treated cautiously. Given Iran's difficulties in producing indigenous rockets and the significant trouble it has had constructing missiles with a range over 2000 km, reliable integration of effective countermeasures is still likely some years away.

Test, evaluation, simulation, and limited exchanges in actual combat are all useful in sources of data for building understanding of what could happen in a potential exchange between Iran's missiles and missile defenses. There still, however, is no clear way to estimate real world defense capabilities since there have been no operational cases of sufficient scale to show the relative effectiveness of the improvement in missile defenses versus Iran's missiles. Real-world success of Iran's efforts to improve its missile countermeasures to missile defenses is both classified and untested against Gulf and US missile defenses. While the US has had the opportunity to test its missile defenses against SCUD missiles similar to Iran's Shahab-1 and Shahab-2 weapons, Iran's modifications to these and its use of newer models renders the statistical relevance of these models insignificant.

No system is likely to be "leak proof," or free from vulnerability to saturation or the exhaustion of its stocks of anti-missile missiles - and any exchange would now be one between missiles and anti-missile which both have unproven and unpredictable performance - but Iran's missile threat grows steadily less credible as these missile defenses improve. Moreover, it is one thing to be threatened by the risk that one nuclear-armed missile gets through to a key target area, and quite another to face the risk a few far less lethal missiles get through.

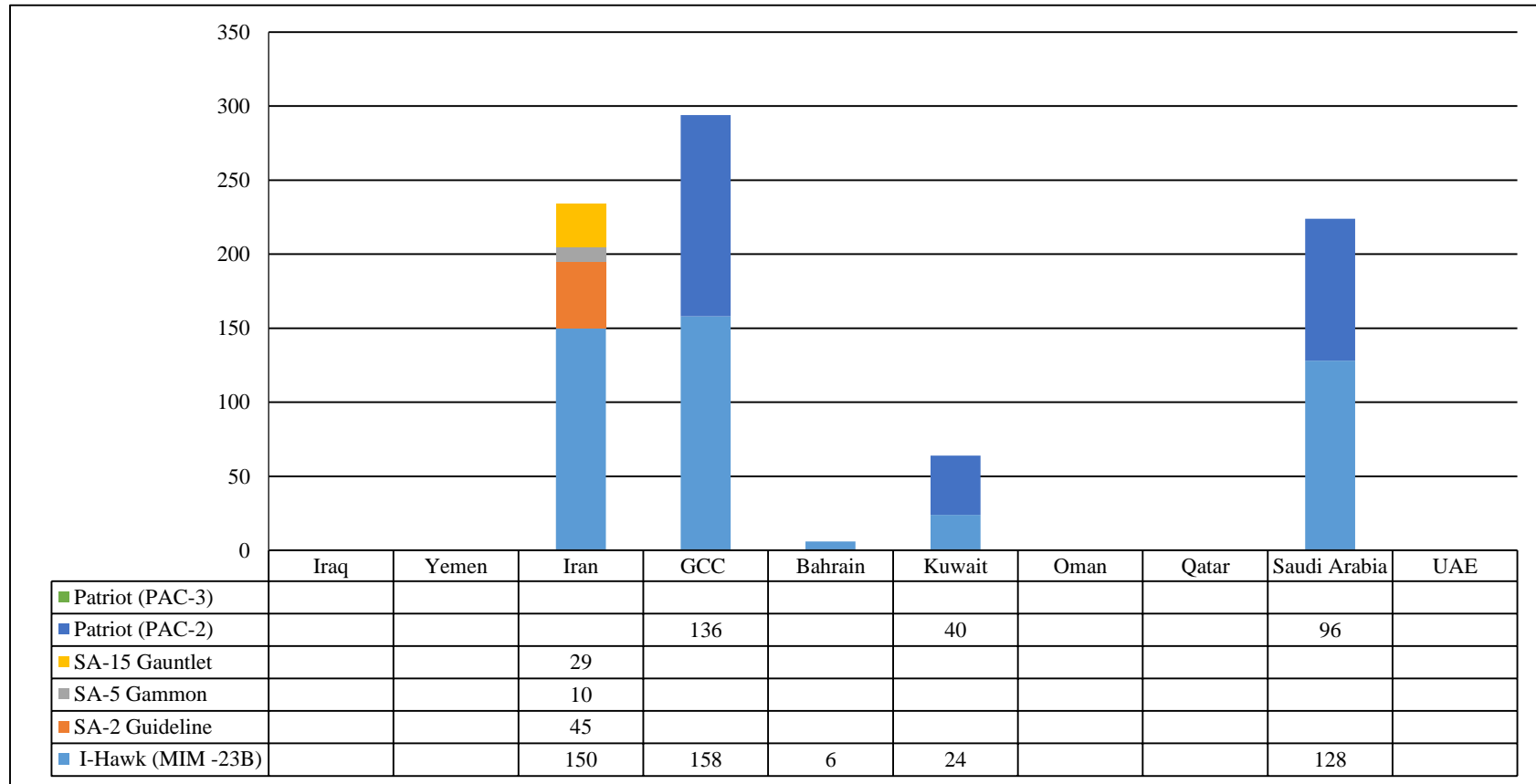
Conventional or even CB-armed missiles will become steadily less credible as "terror" or psychological weapons as missile defenses improve. However, limited salvos and volleys of Iranian missiles, attacks with "stacks" of different missile systems, and attacks with steadily improved accuracy will further challenge missile defenses. Sheer numbers could overwhelm a nascent anti-missile system, and any leakers, even if highly inaccurate, would still have a propaganda or psychological impact.

If worst case estimates are right that Iran estimated possess nearly 1,000 rockets and missiles that could be fired across the Gulf (including shorter range Fateh-110s and Zelzals), defending states would require a massive investment in anti-missile missiles to reduce the number of successful attacks to an acceptable level.

Furthermore, as Iran arms its missiles with more effective conventional warheads, deploys missiles with accurate and reliable terminal guidance, and/or develops long-range cruise missiles with such capabilities - this will also change such war fighting calculations. Key export, power, desalination, and military targets could then become targets or hostages even with extensive missile defenses – particularly if the Southern Gulf states continue to fail to integrate their missile defenses. Iran could target any gaps in effective coverage, target the missile defenses with the fewest reloads and area coverage, and target isolated defenses of more forward targets where stack attacks would do most to saturate any missile defenses.

Similarly, even the credible threat - much less use of - CBRN warheads might dramatically upset the regional balance. Such capabilities would provide Iran with a much more solid deterrent, and a greater capability to exercise a bolder and more aggressive regional foreign policy. Nuclear warheads could also potentially produce enough EMP coverage with airburst on the perimeter of missile defense coverage to seriously compromise both air defense and missile defense radar capabilities.

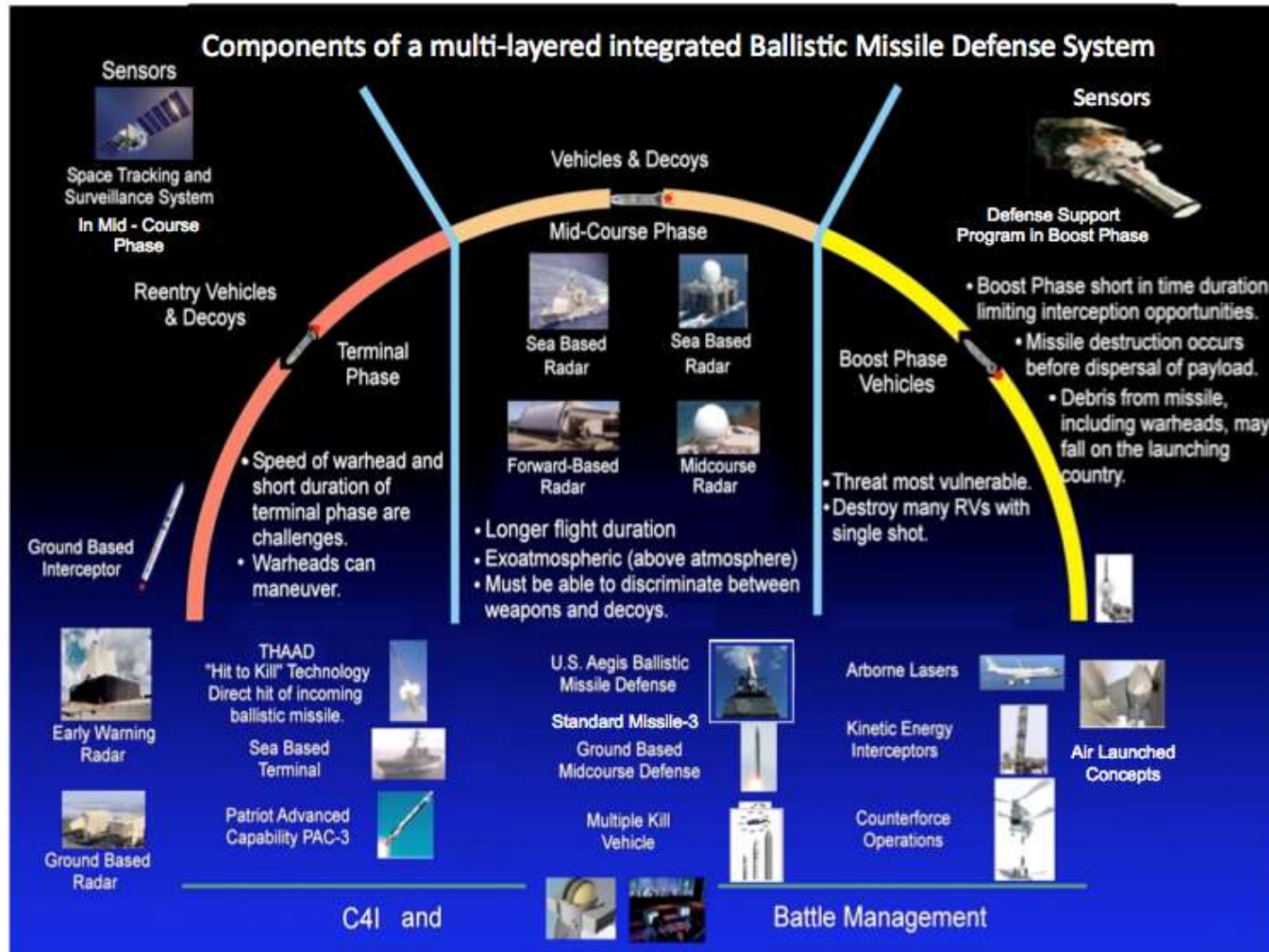
Figure IX.1: Gulf Forces with Some Potential Point or Theater Ballistic Missile Defense Launcher Strength



Note: Only the Patriot PAC 2 and PAC 3 have significant ballistic missile defense capability, and they have relatively narrow coverage against any missile or missile warhead with a high closing velocity. The SA-15 Gauntlet or TOR M1 is very short range and best suited for defense against lower flying missile systems and aircraft. The SA-5 is primarily an air defense system, but Iran claims upgrades with anti-missile capability.

Source: Adapted by Anthony H. Cordesman and Garrett Berntsen from IISS, *Military Balance*, 2014 and material from IHS Jane’s Sentinel series, Global Security, NTI, and Federation of American Scientists .

Figure IX.2: Integrated Missile Defenses



Source: Dr. Abdullah Toukan.

Figure IX.3: Missile Defenses and a Missile War in the Gulf



Source: Dr. Abdullah Toukan.

X. The Potential Threat from Iranian Nuclear Forces

Iran's efforts to create nuclear weapons remain uncertain and controversial, and its nuclear programs are now the subject of intense arms control negotiations with the US and other members of the P5+1. The outcome of these negotiations may come to play a critical role in shaping the regional military balance. If Iran does go nuclear, so will the overall balance of forces in the region. If it does not, the balance is likely to be far threatening, although the risk of asymmetric and conventional conflict will remain, along with the constantly shifting threat from non-state actors.

Iran's Uncertain Search for Nuclear Forces

Iran's leaders, including its Supreme Leader, have repeatedly said that Iran is not seeking nuclear weapons, talked about the horrors of chemical warfare during the Iran-Iraq War, and claimed that Iran no longer maintains stocks of chemical weapons. Yet, such denials could well be an effort to buy time for weapons development and some Iranians who attend various forums of "second track" diplomacy state that the world's indifference to Iraq's chemical weapons attacks on Iran during the Iran-Iraq War, the collapse of the Qaddafi regime after it gave up Libya's covert nuclear weapons programs, and Iran's tensions with many of its Arab neighbors and Israel are all warnings that Iran may need nuclear weapons.

As is discussed shortly, the International Atomic Energy Agency (IAEA) has raised serious question about a wide range of Iran's activities that seems to be weapons related and that Iran had failed to address as of April 2015. Iran has created significant nuclear facilities and the IASEA reports that it at least examined designs for nuclear weapons and nuclear missile warheads. The US intelligence community has said that it has evidence Iran had a major nuclear weapons program through at least 2003, and the International Atomic Energy Agency (IAEA) has raised a long list of questions about suspect Iranian activity that Iran has never resolved.

Iran's Strategic Goals and the Impact of Israel's Nuclear Forces

One of the potential motives for an Iranian nuclear program is Iran's hostility to Israel, and the risk that Iran could become an "existential threat" to Israel has been a key part of the debate over Iran's nuclear programs and the arms control negotiations between Iran and the P5+1. At the same time, Iran is more likely to be deterred by Israel than threaten it, and Iran's constant propaganda attacks on Israel may be more an effort to make Israel the rationale for its military buildup against its Arab neighbors than a serious sign of Iran's hostility to Israel.

The exact status of Israel's nuclear forces is uncertain, but few experts doubt that Israel has steadily upgraded a long-range missile force originally based on French designs and that was upgrade significantly in range-payload capability during the 1980s. Israel is not a party to any major arms control agreement limiting its ability to deploy such forces, including the NPT, CTBT, BTWC, CWC or MTCR. Israel is believed to long have had nuclear weapons, and to have acquired extensive design and test data on such weapons, including boosted and thermonuclear weapons.

There are many different estimates of Israel's nuclear capability. One of the more convincing is an estimate by the Nuclear Threat Initiative that indicates that Israel is, "widely believed to have produced enough weapons-grade plutonium (at a nuclear reactor in Dimona) for 100 to 200 nuclear warheads... Most estimates of Israel's missile capabilities indicate that Israel possesses nuclear-capable medium-range ballistic missiles (MRBM); short-range sub-sonic cruise missiles with advanced capabilities such as non-line of sight targeting (NLOS) and midflight maneuverability; and significant defensive missile capabilities.

Other sources indicate that Israel may have 200-300 nuclear weapons or more, including possible smaller "tactical" designs and systems designed to hit mountain or underground targets.

The NTI assesses Israel's missile forces as including:¹²⁵

- The Jericho-2 or YA-2 missile with a range of over 1,300 kilometers in tests conducted in 18=989, and that continued in development until test flights in 2001. It states that, "A Lawrence Livermore National Laboratory study speculated that a Shavit, if modified and deployed as a ballistic missile, could carry a 1,000 kg warhead 4,850 km or a 500 kg warhead 7,600 km. [54] Using similar analysis, and also assuming that the Jericho-2 performs comparably with the American Minuteman-2 missile of the 1960s, Steve Fetter proposed a 4000km range with an 800kg payload - a range that would encompass "the entire Arab world (plus most of Europe)."
- The Popeye (Have Nap) – a cruise missile designed for precision strike against high-value ground targets such as airfields, bridges, and bunkers. [60] Production began in 1989, and the Popeye has since become a versatile platform that has been modified both for various Israeli military applications and for international customers. "In the summer of 2000 French media reported that Israel's German-built Dolphin submarines had tested 1,500km cruise missiles near Sri Lanka. [63] Some speculate that Israel had tested an upgraded "Popeye Turbo," a missile capable of carrying a nuclear warhead that Israel previously proposed to the United Kingdom (Project "Kaeson"/"Keison"), and had reportedly performed design studies for as early as 1995. [64] The National Air and Space Intelligence Center declared the Popeye Turbo operational in 2002. [65] However, as of 2012 *Jane's* does not list the Popeye Turbo in Israel's missile inventory. "
- The Jericho-3 missile, with "an estimated maximum range between 4,800km and 6,500km, and a 1,000 to 1,300kg payload, would provide Israel with an intermediate-range nuclear strike capability. ...Israeli Defense Radio and other sources reported a Jericho-3 test launch in January 2008...In early 2008, Israeli weapons expert and former Isaac Ben-Israel head of the Israel Administration for the Development of Weapons and the Technological Industry declared that "everybody can do the mathematics ... we can reach with a rocket engine to every point in the world," thus appearing to confirm Israel's new capability...Israeli Ministry of Defense officials said that the 2008 launch represented a "dramatic leap in Israel's missile capabilities."
- "*Jane's* estimates that Israel deploys 50 to 100 Jericho missiles at the Zachariah airbase. However, IKONOS satellite images of Sdot Micha reveal only 23 to 50 missile shelters, implying that the total number of Jericho-1 and Jericho-2 missiles deployed at Zachariah cannot exceed 50...Globalsecurity.org further notes that satellite images have not detected any additional missile shelters in Israel, and that Israel's geographic constraints make construction of additional and more secretive land bases difficult and field deployment highly risky...These factors would imply a much smaller deployment of Jericho missiles than the estimates from *Jane's*. No further information about the Jericho-3 has followed the 2008 flight test and statements."

The NTI summarizes Israel's nuclear weapons holding as follows:¹²⁶

Throughout the 1970s Israel improved its operational nuclear arsenal both quantitatively and qualitatively, perhaps to the point of developing a two-stage nuclear weapon. ...In 1975, news reports claimed U.S. intelligence analysts believed Israel to have produced more than 10 nuclear weapons, as well as the aircraft and missiles to deliver them. ..Israel had received 10 tons of [uranium](#) yellowcake under [International Atomic Energy Agency \(IAEA\)](#)

safeguards from [South Africa](#) in 1965 and continued to receive regular shipments of yellowcake that were stored in Israel and subject to yearly inspections by the South African Atomic Energy Board...In 1976, the two countries reached an agreement to remove these bilateral safeguards – freeing an additional 500 tons of uranium for use in Israel’s plutonium production reactor at Dimona – and South Africa sold an additional 100 tons of uranium to Israel in exchange for 30 grams of tritium. ..

On 22 September 1979, a U.S. Vela satellite detected a double flash of light hundreds of miles off the eastern coast of South Africa. Double flashes are associated with nuclear detonations, where the initial fireball of a nuclear explosion is “rapidly overtaken by expanding hydrodynamic shock wave,” which hides the fireball...A declassified U.S. National Security Council report from October 1979 stated that the intelligence community “ha[d] high confidence, after intense technical scrutiny of satellite data, that a low yield atmospheric nuclear explosion occurred.”...There was no official consensus on who conducted the nuclear explosion, but some U.S. officials admitted that they privately believed that Israel was responsible...Avner Cohen argues that Israel, if indeed developing a [thermonuclear weapon](#), had strong motivation to test in 1979, as development of a two-stage nuclear device typically requires testing in order to ensure the functioning of the trigger (or primary)...

On 5 October 1986, the *Sunday Times* published Mordechai Vanunu’s account of the nuclear activities at Israel’s top-secret Dimona facility...The former Dimona technician’s revelations challenged the steadfastness of nuclear opacity. Vanunu’s claims reinforced some of the U.S. intelligence community’s suspicions, such as the fact that Israel had expanded the [cooling](#) capacity of the Dimona reactor. His testimony also confirmed the existence of the long-suspected reprocessing plant, as well the layout of subterranean levels at Dimona....The credibility of Vanunu’s account was strengthened by the 58 photographs he took of equipment, such as a full-scale model of a [hydrogen bomb](#) and glove boxes where plutonium discs were fashioned into pits....Based on his revelations, some experts estimated that Israel had built between 100 and 200 nuclear weapons of varying yields and complexity....

Israel has also deployed an extensive ballistic missile defense force using a system called the Arrow, and has continued to steadily upgrade its defenses in cooperation with the US, which may soon lead it to deploy the Arrow 3. It also is developing systems like David’s Sling to deal with the threat posed by cruise missiles and short-range systems.

“Existential threats” are little more than a recipe for suicide when an opponent begins a nuclear arms race with a nuclear monopoly and mutual suicide when both sides have nuclear forces and the best possible outcome is mutual assured destruction. While Israel has never formally declared that it is a nuclear power, Iran and every Arab power have long seen its nuclear forces as a key – if undeclared – deterrent to any large-scale attack on Israel. Iranian planners and analysts have made it clear in second track diplomacy that they fully realize Israel can target Iran with nuclear weapons, and do it devastating – if not “existential” – damage. A nuclear-armed Iran missile force would help Iran deter any Israeli use of its present nuclear monopoly -- which now gives Israel nuclear-armed missiles with the range to strike at any target in Iran.

The most Iran can hope to do in countering Iran by going nuclear is to eventually create enough nuclear forces to confront Israel with the equivalent of mutual assured destruction. This will take years at a minimum, and Iran would run initially immense risk in confronting a mature nuclear power like Israel with what well may be prove thermonuclear and boost weapons designs based on French test data with a few untested fission warheads. Even if Israel did not respond with preventive or preemptive attacks, it would almost certainly respond by steadily increasing the size and capability of its nuclear forces, and become deeply engaged in a nuclear arms race with Iran that Israel is very likely to win.

The Arab Gulf States and the Strategic Value of Iranian Nuclear Weapons

In contrast, Iran has far more direct interests in being able to influence, lever, deter, and dominate its Arab neighbors. Iran might well be able to establish a nuclear monopoly relative to Arab states that it could maintain for years, continue to more than, any Arab acquisition of nuclear weapons once (and if) that occurred, and counter any US agreement to provide its Arab allies with “extended deterrence.” Nuclear warheads would give Iran’s missile forces far more deterrent capability, and possibly create a nuclear barrier to Arab Gulf and US air and cruise missile strikes at Iran.

It is unclear that the risk Iran would use its nuclear weapons would be enough to deter the Arab Gulf states and the US from attacking Iran’s conventional and asymmetric forces in a crisis or lower level war, but this is possible. Certainly, it might limit the level at which either the Arab Gulf states and the US would take the risk of escalating in response to a given level of Iranian attack or use of force. It might well, however, help deter any Gulf Arab or US conventional air and missile strikes on Iran, and limit their retaliation against Iran’s use of lower levels of force. It would certainly act as a deterrent to the already limited risk of outside invasion.

Iran also exists in a nuclear “neighborhood.” Israel is not its only challenge, and Iran might well calculate that Pakistan would see any Iranian nuclear capability as a major increase in Iran’s nuclear capabilities – a calculation that Iran again has little reason to publicize and where it may feel a focus on Israel will limit the Pakistani reaction as well as Turkish and Arab incentives to seek nuclear weapons.

Enrichment Issues

Part of the problem in assessing the impact of Iran’s nuclear weapons on the balance is that much of the debate over Iran’s capability has been over how soon it might get enough fissile material to assemble one weapon, and not over when it could assemble a meaningful force, what that force would look like, whether it would trigger preventive strikes against it, and how the Arab Gulf state, Israel, the US, and its other neighbors would react. One weapon does not make a nation a nuclear power, particularly an untested device.

Similarly, the negotiations over a potential arms control agreement focused on a relatively narrow range of issues relating to Iran’s various nuclear enrichment efforts and its ability to acquire fissile material at the known facilities shown in **Figure X.1**. These issues included potential limits, controls, and inspection arrangements dealing with

- The number of centrifuges,
- The development of more advanced centrifuges,
- The level of Uranium enrichment and the size of Iran’s stockpiles,
- The potential use of the new reactor at Arak to produce Plutonium,
- How soon Iran could use any of these to get enough material to produce a nuclear device,
- The extent to which any agreement dealing with all of these issues is enforceable,

- How long an agreement will be in force, and
- The incentives to Iran for reaching an agreement, especially the extent to which UN, US, and EU sanctions will be lifted, and the timing of such action.

These are important issues, but they are only part of the problem in ensuring that Iran does not acquire a meaningful nuclear weapons capability and inventory, and removing the incentives for other regional states to seek nuclear weapons in ways that could reshape the military balance. They also focus relatively narrowly on how Iran could approach an initial “break out” point by acquiring some form of fissile device, rather than its ability to actually produce and deploy nuclear weapons. In many studies or critiques the focus has been so limited that it only dealt with how soon Iran could get enough fissile material to produce one major fissile event, and not Iran’s ability to actually produce a meaningful amount of nuclear bombs and missile warheads.

Looking Beyond Enrichment and Plutonium

It is important to remember that the primary goal for Gulf security is not to roll back Iranian enrichment technology, but rather to prevent Iran from actually producing and deploying nuclear weapons. Any agreement that convincingly keeps Iran from building and deploying nuclear weapons would meet the security needs of the Gulf states, other regional powers, and the US and other members of the P5+1. An agreement – or continuing negotiation process that delays Iranian enrichment activity but allowed Iran to conduct centrifuge development and complete the design of a nuclear weapon would not.

The impact of collapse of negotiations – or the conclusion that Iran is simply stalling and seeking to break out of sanctions – raises different issues in assessing the balance. It would immediately raise the issue of how close Iran really is to developing, producing, and deploying nuclear weapons and a nuclear force. It would have to look beyond the issue of fissile material and consider the reaction time the US and its allies would have to use preventive strikes, create new defenses, and/or create a suitable deterrent.

In all three cases, the question arises as to how far Iran has moved towards a bomb, whether it would need to carry out a major fissile test or tests, how much covert research and development activity it still needs, and how well the US and its allies can detect such actions and future covert fissile material production efforts – key considerations in judging IAEA inspection and verification capabilities as well,

These are all issues that the US has never publically addressed and that are critical in assessing an agreement: how far has Iran gotten in nuclear weapons design, how much necessary development work could it covertly do in spite of any agreement, and what is the US estimate of how long Iran would need to develop and deploy nuclear weapons versus simply produce fissile material?

Key IAEA Findings on Iran’s Nuclear Weapons Efforts

Iran has repeatedly failed to comply with past UN and the IAEA resolutions and requests. The military annex to a key IAEA report issued on November 8, 2011 raised critical questions about Iran’s past weapons-related efforts that Iran has so far refused to address, and remains the best summary of the issues involved – issues that were largely ignored in the public negotiations over a possible arms

control agreement. This IAEA report was entitled *Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran*. Its weapons annex summarized the key issues surrounding Iran's actual efforts to develop a nuclear weapon.¹²⁷

In summary, the IAEA report:¹²⁸

- Describes Iran's lack of cooperation with the IAEA regarding heavy water at the Iran Nuclear Research Reactor (IR-40) at Arak. Although the Agency was allowed access to the site on October 17, 2011, it has not been permitted access since then. According to Iran, operation of the IR-40 reactor is due to commence by the end of 2013. Although the Agency has not been permitted access to the Heavy Water Production Plant (HWPP) since August 17, 2011, satellite imagery has indicated that the HWPP appears to be in operation. Lastly, to date Iran has not allowed the Agency access to the heavy water stored at the Uranium Conversion Facility (UCF) to take samples.
- Provides a description of the IAEA's knowledge of the Uranium Conversion Facility (UCF) as of October 18, 2011. It reflects that Iran is continuing enrichment and heavy water production at the site in contravention of international demands and regulations. It indicates that as of October 18, 2011, the Agency observed the ongoing installation of the process equipment for the conversion of UF₆ (uranium hexafluoride) enriched to 20% into U₃O₈ (triuranium octoxide).
 - Provides an introduction and summary of the possible military dimensions of Iran's nuclear program. Importantly, it indicates that Iran has not engaged the IAEA substantively regarding the military dimensions of its program since August 2008, and it stresses the following:
 - Efforts, some successful, to procure nuclear related and dual-use equipment and materials by military-related individuals and entities.
 - Efforts to develop undeclared pathways for the production of nuclear material.
 - The acquisition of nuclear weapons development information and the documentation from a clandestine nuclear supply network.
 - Work on the development of indigenous nuclear weapon design, including the testing of components.

The report stated that the Agency had "serious concerns regarding possible military dimensions to Iran's nuclear program." It:¹²⁹

- Provides a historical overview of the possible military dimensions of Iran's nuclear program. It reveals that the IAEA discovered that Iran's program has roots going back nearly 40 years, and that it has had ongoing undeclared R&D program for nuclear testing, experimentation, uranium conversion, enrichment, fabrication, and irradiation activities, including the separation of plutonium. Moreover, it reports that Iran admitted to engaging in undeclared activities at clandestine locations, and procured nuclear material via a clandestine supply network.
- Reflects what the IAEA believes to be the structure of Iran's nuclear production, which is thought to involve the participation of a number of research centers, government bodies, universities, and committees, all of which operate under the Ministry of Defense Armed Forces Logistics (MODAFL). Moreover, it indicates that the program's nuclear activity was consolidated under the AMAD Plan in the late 1990s and early 2000s, although it was halted in 2003.
- Provides the IAEA's knowledge of Iran's nuclear procurement activities relevant to nuclear weapons production, many of which were allegedly undertaken by private front companies. For instance, Kimia Maadan, a private Iranian company, was a company for chemical engineering operations under the AMAD Plan, while also being used to help with procurement for the Atomic Energy Organization of Iran (AEOI).

Among the equipment procured relevant to nuclear weapons production include high-speed electronic switches and spark gaps (useful for triggering and firing detonators); high-speed cameras (useful in experimental diagnostics); neutron sources (useful for calibrating neutron measuring equipment); radiation detection and measuring equipment (useful in a nuclear material production environment); and training courses on topics relevant to nuclear explosives development (such as neutron cross section calculations and shock wave interactions/hydrodynamics).

- Describes the IAEA's knowledge of Iran's attempts to acquire nuclear material relevant to nuclear weapons production. It also emphasizes that Iran only declared a number of facilities once the IAEA was made aware of their existence by sources other than Iran. Taken with Iran's additional past efforts to conceal nuclear activity, this reality creates more concern about the possible existence of further undeclared nuclear facilities, material, and activities in Iran.
- Provides the IAEA's analysis of Iran's alleged ongoing efforts to acquire nuclear components for use in an explosive device. It reiterates that Iran received documents that describe the processes for the conversion of uranium compounds into uranium metal and the production of hemispherical enriched uranium metallic components, which are integral in the production of a rudimentary fission device. Additionally, the Agency indicates that during a 2007 interview with a member of Iran's clandestine supply network, it was told that Iran had been provided with nuclear explosive design information. Lastly, this portion of the report stresses that the Agency is concerned that Iran may have obtained more advanced design information than the information identified in 2004.
- Discusses the IAEA's knowledge of Iran's R&D into and acquisition of "safe, fast-acting detonators, and equipment suitable for firing the detonators," an integral component to constructing an implosion type nuclear device. It indicates that the Agency discovered that Iran had developed fast-functioning detonators known as "exploding bridgewire detonators" (EBWs) during the period 2002-2003 as safe alternatives to previous detonator technology it had developed. Moreover, in 2008, Iran told the Agency that before the period 2002-2004, it had already achieved EBW technology. It also provided the Agency with a short, undated document in Persian, which was understood to be the specifications for a detonator development program, and a document from a foreign source that showed the example of a civilian application in which detonators fired simultaneously. Iran, however, has not explained its own need or application for such detonators.
- Describes development of a multipoint initiation system, which is used to reshape the detonation wave into a converging smooth implosion to ensure uniform compression of the core fissile material to supercritical density. As such, it is a vital component of a fission weapon. According to the Agency, Iran has had access to information on the design concept of a multipoint initiation system that can be used to initiate a high explosive charge over its surface effectively and simultaneously. This information was reportedly supplied to the IAEA by a Member State.
- Discusses Iran's efforts to evaluate the theoretical design of an implosion device using computer simulations, as well as high explosive tests referred to as "hydrodynamic experiments" in which fissile and nuclear components may be replaced with surrogate materials. According to information provided, Iran has manufactured simulated nuclear explosive components using high density materials such as tungsten. Such experiments have also been linked to experiments involving the use of high-speed diagnostic equipment, including flash X-ray, to monitor the symmetry of the compressive shock of the simulated core of an explosive device. Such experiments would have little, if any, civilian application, and represent a serious source of concern regarding the potential weaponization of Iran's nuclear program.
- Provides an overview of the IAEA's knowledge of Iran's studies that focus on modeling of spheres, components, and neutronic behavior indicating investigation into a nuclear warhead. Moreover, the Cordesman/Gold Iran & The Gulf Military Balance 18.7.13AHC 80 Agency has acquired information that indicates Iran has conducted studies and done calculations relating to the state of criticality of a solid sphere of uranium being compressed by high explosives. Such efforts provide an additional indication of the potential weaponization of Iran's nuclear program.

- Discusses Iran's research and development into neutron initiators, which, "if placed in the center of a nuclear core of an implosion type nuclear device and compressed, could produce a burst of neutrons suitable for initiating a fission chain reaction." Iran has yet to explain its objectives and capabilities in this field.
- Discusses what the IAEA perceives as Iran's efforts to "have planned and undertaken preparatory experimentation which would be useful were Iran to carry out a test of a nuclear explosive device." It also indicates that these efforts directly reflect those undertaken by declared nuclear-weapon states. These indicators could perhaps point to a potential Iranian nuclear weapons test in the future.
- Reflects what the IAEA perceives as a structured Iranian program to carry out "engineering studies to examine how to integrate a new spherical payload into the existing payload chamber which would be mounted in the re-entry vehicle of the Shahab 3 missile." Such explorations into warhead development provide a key indicator that Iran's program is military in nature.
- Describes Iran's efforts at developing "a prototype firing system that would enable the payload [a nuclear warhead on a Shahab 3 missile] to explode both in the air above a target, or upon impact of the re-entry vehicle with the ground." It presents further indication that Iran is at least considering the possibility of installing nuclear warheads on its existing arsenal of Shahab 3 missiles.
- Provides an overview of the different bodies and projects that constitute the Iranian nuclear program.
- Provides an analysis of the likely payload of an Iranian missile, given the above indicators. It shows that Iran's R&D into its ballistic missile and nuclear programs reflect a probable effort to develop both nuclear warheads and an effective delivery vehicle thereof.
- The IAEA report also provides insight into the foreign sources that supplied Iran with nuclear equipment and technical know-how. One of these sources was referred to as a "clandestine nuclear supply network," purported to be the now-disbanded A.Q. Khan network. According to the report, Iran admittedly had contact with the network in the late 1980s and early 1990s. The document also asserts that this network supplied Iran with technical know-how regarding the production of neutron initiators and spherical hemispherical enriched uranium metallic component, neither of which have any real civilian application.

Weapons Design Data

According to the IAEA, Iran did admit to having received a 15-page document that provided detailed instructions for the construction of components critical to building a nuclear device. This document, known as the "uranium metal document" was also provided to Libya, and is known to have been part of a larger package of information that includes elements of a nuclear explosive design.¹¹³ Given the circumstances surrounding Iran's acquisition of the document as well as the well-known role the A.Q. Khan network played in jump-starting nuclear weapons programs in Pakistan, Libya, and North Korea, it remains doubtful that Iran's program is purely peaceful.

The IAEA's report of November 8, 2011 also stated that there were, "...strong indications that the development by Iran of the high explosives initiation system, and its development of the high speed diagnostic configuration used to monitor related experiments, were assisted by the work of a foreign expert who was not only knowledgeable in these technologies, but who, a Member State has informed the Agency, worked for much of his career with this technology in the nuclear weapon program of the country of his origin."¹³⁰

The Institute for Science and International Security (ISIS) later identified this individual as former Soviet weapons engineer Vyacheslav Danilenko. According to the IAEA, Danilenko worked in Iran from 1996 to 2002, returning to Russia in 2002.¹³¹ Moreover, given the

small size and sophistication of a multipoint initiation system the IAEA observed in Iran in 2004, it was likely to have been developed using Danilenko's expertise as a springboard.¹³² Iran's strides in detonator technology are, in all likelihood, the result of Danilenko's technical expertise.

It has been years since the IAEA issued this report, but the IAEA did report in February 2015 that it had not received any serious clarification from Iran, or any meaningful updates from member countries that allowed it to fully update its military annex -- aside from data on a possible weapons simulation text site at Parchin

On November 7, 2014 – some three weeks from the deadline set for negotiating a comprehensive agreement between the P5+1 and Iran, the Director General of the IAEA was forced to issue a report on the *Implementation of the NPT Safeguards Agreement and Relevant Provisions of the Security Council Resolutions in the Republic of Iran* that stated that, “Iran has not provided any explanations that enable the Agency to clarify the outstanding practical measures, nor has it proposed any new practical measures in the next step of the framework of cooperation.”¹³³

Iran did not provide data on key weapons-related issues like its work on the initiation of high explosives that could be used in an implosion weapon or neutron transport calculations. The section on “Possible Military Dimensions” noted that in spite of the fact the IAEA had acquired some additional information since 2011 showing that Iran had a weapons program and/or weapons related activities – such as Iranian activity at Parchin – “In February 2012, Iran dismissed the Agency's concerns largely on the grounds that Iran considered them to be based on unfounded allegations.” In August 2014, Iran again stated that, most of the issues (were) mere allegations and do not merit consideration.”

As of March 2015, Iran had done nothing to refute or explain its actions relating to a weapons program or weapons related research and development, to set the stage for complying with this aspect of a permanent agreement, setting the stage for meaningful inspection, and providing a clear indication of how close it is to a working weapons design and planning for the actual deployment of nuclear weapons on its missiles and aircraft.

While Iran's weapons development efforts are only one part of providing the necessary reaction time, they are clearly the area where the least is known at any public level, where Iran has done the least to comply, and where major questions remain as to whether any agreement could keep Iran from running a covert research and development and planning effort short of serious and clearly detectable fissile event.

The Uncertain Level of Iranian Progress: No News is No News

The US, however, also did comparatively little at the official level to set the stage for understanding Iran's progress and evaluating what is a critical aspect of any arms control agreement – as well as the ability to assess the consequences of a non-agreement. Previous Administrations had long since cancelled the annual Department of Defense unclassified summary of international proliferation activity,

and had not reported regularly on Iranian missile development or the extent to which Iran's long range missile problem is dependent on nuclear warheads because of its inaccuracy and reliability problems.

The most the US did issue an unclassified nine-page summary of a *National Intelligence Estimate on Iran: Nuclear Intentions and Capabilities* on November 7, 2007. That document was issued under the Bush Administration and concluded that,¹³⁴

- We judge with high confidence that in fall 2003, Tehran halted its nuclear weapons program; we also assess with moderate-to-high confidence that Tehran at a minimum is keeping open the option to develop nuclear weapons.
- We judge with high confidence that the halt, and Tehran's announcement of its decision to suspend its declared uranium enrichment program and sign an Additional Protocol to its Nuclear Non-Proliferation Treaty Safeguards Agreement, was directed primarily in response to increasing international scrutiny and pressure resulting from exposure of Iran's previously undeclared nuclear work.
- We assess with high confidence that until fall 2003, Iranian military entities were working under government direction to develop nuclear weapons.
- We judge with high confidence that the halt lasted at least several years. (Because of intelligence gaps discussed elsewhere in this Estimate, however, DOE and the NIC assess with only moderate confidence that the halt to those activities represents a halt to Iran's entire nuclear weapons program.)
- We assess with moderate confidence Tehran had not restarted its nuclear weapons program as of mid-2007, but we do not know whether it currently intends to develop nuclear weapons.
- We continue to assess with moderate-to-high confidence that Iran does not currently have a nuclear weapon.
- Tehran's decision to halt its nuclear weapons program suggests it is less determined to develop nuclear weapons than we have been judging since 2005. Our assessment that the program probably was halted primarily in response to international pressure suggests Iran may be more vulnerable to influence on the issue than we judged previously.

The US government has never issued a public document that updated this limited analysis. The most it has done is to have the Director of National Intelligence (DNI) issue an annual public summary of threats to US national security that provides some broad conclusions about Iran's efforts.

The 2013 report stated that,¹³⁵

We assess **Iran** is developing nuclear capabilities to enhance its security, prestige, and regional influence and give it the ability to develop nuclear weapons, should a decision be made to do so. We do not know if Iran will eventually decide to build nuclear weapons.

Tehran has developed technical expertise in a number of areas—including uranium enrichment, nuclear reactors, and ballistic missiles—from which it could draw if it decided to build missile-deliverable nuclear weapons. These technical advancements strengthen our assessment that Iran has the scientific, technical, and industrial capacity to eventually produce nuclear weapons. This makes the central issue its political will to do so.

Of particular note, Iran has made progress during the past year that better positions it to produce weapons-grade uranium (WGU) using its declared facilities and uranium stockpiles, should it choose to do so. Despite this progress, we assess Iran could not divert safeguarded material and produce a weapon-worth of WGU before this activity is discovered.

We judge Iran's nuclear decision making is guided by a cost-benefit approach, which offers the international community opportunities to influence Tehran. Iranian leaders undoubtedly consider Iran's security, prestige and influence, as well as the international political and security environment, when making decisions about its nuclear program. In this context, we judge that Iran is trying to balance conflicting objectives. It wants to advance its nuclear and missile capabilities and avoid severe repercussions—such as a military strike or regime threatening sanctions.

We judge Iran would likely choose a ballistic missile as its preferred method of delivering a nuclear weapon, if one is ever fielded. Iran's ballistic missiles are capable of delivering WMD. In addition, Iran has demonstrated an ability to launch small satellites, and we grow increasingly concerned that these technical steps—along with a regime hostile toward the United States and our allies—provide Tehran with the means and motivation to develop larger space-launch vehicles and longer-range missiles, including an intercontinental ballistic missile (ICBM).

Iran already has the largest inventory of ballistic missiles in the Middle East, and it is expanding the scale, reach, and sophistication of its ballistic missile arsenal. Iran's growing ballistic missile inventory and its domestic production of anti-ship cruise missiles (ASCM) and development of its first long-range land attack cruise missile provide capabilities to enhance its power projection. Tehran views its conventionally armed missiles as an integral part of its strategy to deter—and if necessary retaliate against—forces in the region, including US forces.

The 2014 statement did not provide further data on Iran's research and development activity and progress in a nuclear weapons design. It did state, however, that,¹³⁶

We continue to assess that **Iran's** overarching strategic goals of enhancing its security, prestige, and regional influence have led it to pursue capabilities to meet its civilian goals and give it the ability to build missile-deliverable nuclear weapons, if it chooses to do so. At the same time, Iran's perceived need for economic relief has led it to make concessions on its nuclear program through the 24 November 2013

Joint Plan of Action with the P5+1 countries and the European Union (EU). In this context, we judge that Iran is trying to balance conflicting objectives. It wants to improve its nuclear and missile capabilities while avoiding severe repercussions—such as a military strike or regime-threatening sanctions. We do not know if Iran will eventually decide to build nuclear weapons.

Tehran has made technical progress in a number of areas—including uranium enrichment, nuclear reactors, and ballistic missiles—from which it could draw if it decided to build missile-deliverable nuclear weapons. These technical advancements strengthen our assessment that Iran has the scientific, technical, and industrial capacity to eventually produce nuclear weapons. This makes the central issue its political will to do so.

Of particular note, Iran has made progress during the past year by installing additional centrifuges at the Fuel Enrichment Plant, developing advanced centrifuge designs, and stockpiling more low-enriched uranium hexafluoride (LEUF6). These improvements have better positioned Iran to produce weapons grade uranium (WGU) using its declared facilities and uranium stockpiles, if it chooses to do so. Despite this progress, we assess that Iran would not be able to divert safeguarded material and produce enough WGU for a weapon before such activity would be discovered. Iran has also continued to work toward starting up the IR-40 Heavy Water Research Reactor near Arak.

We judge that Iran would choose a ballistic missile as its preferred method of delivering nuclear weapons, if Iran ever builds these weapons. Iran's ballistic missiles are inherently capable of delivering WMD, and Iran already has the largest inventory of ballistic missiles in the Middle East. Iran's progress on space launch vehicles—along with its desire to deter the United States and its allies—provides Tehran with the means and motivation to develop longer-range missiles, including an intercontinental ballistic missile (ICBM).

We assess that if Iran fully implements the Joint Plan, it will temporarily halt the expansion of its enrichment program, eliminate its production and stockpile of 20-percent enriched uranium in a form suitable for further enrichment, and provide additional transparency into its existing and planned nuclear facilities. This transparency would provide earlier warning of a breakout using these facilities.

Similarly, the DNI's 2015 threat assessment statement to the Senate Armed Services Committee stated that,¹³⁷

We continue to assess that Iran's overarching strategic goals of enhancing its security, prestige, and regional influence have led it to pursue capabilities to meet its civilian goals and give it the ability to build missile-deliverable nuclear weapons, if it chooses to do so. We do not know whether Iran will eventually decide to build nuclear weapons.

We also continue to assess that Iran does not face any insurmountable technical barriers to producing a nuclear weapon, making Iran's political will the central issue. However, Iranian implementation of the Joint Plan of Action (JPOA) has at least temporarily inhibited further progress in its uranium enrichment and plutonium production capabilities and effectively eliminated Iran's stockpile of 20 percent enriched uranium. The agreement has also enhanced the transparency of Iran's nuclear activities, mainly through improved International Atomic Energy Agency (IAEA) access and earlier warning of any effort to make material for nuclear weapons using its safeguarded facilities.

We judge that Tehran would choose ballistic missiles as its preferred method of delivering nuclear weapons, if it builds them. Iran's ballistic missiles are inherently capable of delivering WMD, and Tehran already has the largest inventory of ballistic missiles in the Middle East. Iran's progress on space launch vehicles—along with its desire to deter the United States and its allies—provides Tehran with the means and motivation to develop longer-range missiles, including intercontinental ballistic missiles (ICBMs).

A careful reading of these words shows that they again focus on enrichment and fissile production, says nothing about Iran's current level of nuclear weapons design and production data, say nothing about the timer it would take for Iran to deploy a meaningful nuclear force, and provide no basis for knowing whether the US intelligence community feels it can detect Iran weapons research and development activity outside the fuel cycle, or whether an agreement would give the IAEA a credible verification activity.

Iran's Weapons Break Out Capabilities

More broadly, the US has never publically addressed the question of Iran's real-world reaction time in moving from acquiring fissile material to actual weaponization and deployment. Some seven years after the last serious US estimate, the most the US has said in unclassified terms seems to be that it believes Iran has not reconstituted a large, visible effort. It has never said that Iran is not conducting covert nuclear weapons research and development activities under another guise, explained Iran's calculations in creating a missile program that currently can only be effective with nuclear weapons, or discussed the problems Iran would face in any conflict in the Gulf or the rest of the region using its obsolete conventional forces without nuclear threat. It also has never defined its estimate of how quickly Iran could actually go from creating fissile material to actually having a weapon.

Fissile Material Does Not Mean Weaponization

This is critical in evaluating both an actual agreement and the risks in continuing to negotiate. Even actual nuclear weapons designers cannot agree on just how difficult it now is to design and manufacture a reliable and deployable nuclear weapon. Reports that Iran may have received significant design data from a number of sources, and reports by the IEA that Iran has been working on the design and key components for fission weapons for years, do not mean that Iran has detailed design data of the kind that allows it to produce an effective implosion weapon. Neither does it mean that it can easily move to develop a family of different weapons ranging from small nuclear weapons to boosted weapons that can be deployed on missiles or as relative light bombs.

North Korea's uncertain tests of fission devices -- which seem to have involved devices far too large for warhead weaponization -- show that getting large yields from a test device remains a major challenge. For new proliferators, India and Pakistan have both made spurious claims about the yields of their tests to disguise what seem to have been at least partial design failures. Even the simpler forms gun devices can present significant problems in terms of reliability and yield.

The US and Iran's neighbors may choose to assume that Iran could rapidly deploy a functioning nuclear weapon once it has sufficient fissile material, but such assumptions can exaggerate Iran's military capabilities, and it is unclear what kind of assumptions are actually correct. Bomb design also involves serious safety and reliability issues, as well as the need to be able to predict yield, the ability to operate in spite of the stress of a missile or air launch, and the ability of fuzing systems to trigger the weapon at the desired height of burst.

It is difficult, however, to go from standard fission implosion weapons to boosted weapons that have much higher yields, potentially raising the explosive force from a purely fissile 20-kiloton weapon to boosted weapons with yield of 100 kilotons or more. These involve key design issues, which include the problems involved in handling tritium and deuterium or solid lithium deuteride-tritide, and the fact that such designs are normally associated with plutonium weapons, not the uranium-based weapons that Iran would construct if it were successful in building a weapon.

How Much is Enough

Much of the unclassified analysis of how soon Iran could get a weapon is tied to weapons and warhead design issues. Many tacitly assume that Iran could assemble a gun device or even nuclear missile warheads without any practical testing or even a fissile event. They also fail to state the assumptions made regarding the amount of material needed per weapon, and the major uncertainties involved.

Such estimates also tend to focus on one estimate of the necessary fissile material without noting the uncertainties in any nominal estimate or the variation by weapons design. Unclassified estimates made in an article on nuclear weapons design by the Federation of American Scientists illustrate the scale of the uncertainties involved -- as well as some of the reasons effective weapons design is so difficult and uncertain without actual testing:¹³⁸

The minimum mass of fissile material that can sustain a nuclear chain reaction is called a critical mass and depends on the density, shape, and type of fissile material, as well as the effectiveness of any surrounding material (called a reflector or tamper) at reflecting neutrons back into the fissioning mass. Critical masses in spherical geometry for weapon-grade materials are as follows:

	Uranium-235	Plutonium-239
Bare sphere:	56 kg	11 kg
Thick Tamper:	15 kg	5 kg

The critical mass of compressed fissile material decreases as the inverse square of the density achieved. Since critical mass decreases rapidly as density increases, the implosion technique can make do with substantially less nuclear material than the gun-assembly method. The "Fat Man" atomic bomb that

destroyed Nagasaki in 1945 used 6.2 kilograms of plutonium and produced an explosive yield of 21-23 kilotons [a 1987 reassessment of the Japanese bombings placed the yield at 21 Kt]. Until January 1994, the Department of Energy (DOE) estimated that 8 kilograms would typically be needed to make a small nuclear weapon. Subsequently, however, DOE reduced the estimate of the amount of plutonium needed to 4 kilograms. Some US scientists believe that 1 kilogram of plutonium will suffice.

...In the gun device, two pieces of fissionable material, each less than a critical mass, are brought together very rapidly to form a single supercritical one. This gun-type assembly may be achieved in a tubular device in which a high explosive is used to blow one subcritical piece of fissionable material from one end of the tube into another subcritical piece held at the opposite end of the tube.

Manhattan Project scientists were so confident in the performance of the "Little Boy" uranium bomb that the device was not even tested before it was used. This 15-kt weapon was airdropped on 06 August 1945 at Hiroshima, Japan. The device contained 64.1 kg of highly enriched uranium, with an average enrichment of 80%. The six bombs built by the Republic of South Africa were gun-assembled and used 50kg of uranium enriched to between 80 percent and 93 percent in the isotope U-235.

Compared with the implosion approach, this method assembles the masses relatively slowly and at normal densities; it is practical only with highly enriched uranium. If plutonium — even weapon-grade -- were used in a gun-assembly design, neutrons released from spontaneous fission of its even-numbered isotopes would likely trigger the nuclear chain reaction too soon, resulting in a "fizzle" of dramatically reduced yield.

...Because of the short time interval between spontaneous neutron emissions (and, therefore, the large number of background neutrons) found in plutonium because of the decay by spontaneous fission of the isotope Pu-240, Manhattan Project scientists devised the implosion method of assembly in which high explosives are arranged to form an imploding shock wave which compresses the fissile material to supercriticality.

The core of fissile material that is formed into a super-critical mass by chemical high explosives (HE) or propellants. When the high explosive is detonated, an inwardly directed implosion wave is produced. This wave compresses the sphere of fissionable material. The decrease in surface to volume ratio of this compressed mass plus its increased density is then such as to make the mass supercritical. The HE is exploded by detonators timed electronically by a fuzing system, which may use altitude sensors or other means of control.

The nuclear chain-reaction is normally started by an initiator that injects a burst of neutrons into the fissile core at an appropriate moment. The timing of the initiation of the chain reaction is important and must be carefully designed for the weapon to have a predictable yield. A neutron generator emits a burst of neutrons to initiate the chain reaction at the proper moment — near the point of maximum compression in an implosion design or of full assembly in the gun-barrel design.

A surrounding tamper may help keep the nuclear material assembled for a longer time before it blows itself apart, thus increasing the yield. The tamper often doubles as a neutron reflector.

Implosion systems can be built using either Pu-239 or U-235 but the gun assembly only works for uranium. Implosion weapons are more difficult to build than gun weapons, but they are also more efficient, requiring less SNM and producing larger yields. Iraq attempted to build an implosion bomb using U-235. In contrast, North Korea chose to use 239 Pu produced in a nuclear reactor.

To fission more of a given amount of fissile material, a small amount of material that can undergo fusion, deuterium and tritium (D-T) gas, can be placed inside the core of a fission device. Here, just as the fission chain reaction gets underway, the D-T gas undergoes fusion, releasing an intense burst of high-energy neutrons (along with a small amount of fusion energy as well) that fissions the surrounding material more completely. This approach, called boosting, is used in most modern nuclear weapons to maintain their yields while greatly decreasing their overall size and weight.

There are many different weapon designs Iran might choose from, many different levels of fissile material requirements, and many different levels of associated risk. Iran might take the risks of producing weapons without actual testing by trusting foreign design data and ignoring key safety and reliability issues. It is also possible that Iran might claim it has nuclear weapons without actually producing them or concluding that it has them in a truly usable form. However, Iran has been cautious in the past about taking any steps that threatened the existence of its regime. It seems equally or more possible that Iran would never seriously weaponize without either full design details or some form of underground or other active testing.

As noted earlier, the IAEA has reported that Iran has had many elements of an R&D and test program that examines the behavior of every other aspect of weapons performance by setting off bomb designs without fissile material and examining the result. The now dismantled facility Iran created at Parchin might well have been designed for the purpose of non-fissile testing on an entire weapons assembly.

A September 2014 report by the Institute for Science and International Security (ISIS) notes that activity at the Parchin facility had started again, raising concerns about Iran's suspected effort to develop a nuclear weapon.¹³⁹

Recent Digital Globe satellite imagery dated August 12, 2014 shows that some activity continues at the Parchin site. As figure 1 shows, new construction material or debris, as well as new dirt or water runoff, appear in front of three buildings in the southern part of the site. Also, light vegetation appears to be growing at the center of the site, including on the protective berm, and the construction material or debris previously identified in front of the suspected test building remains. Finally, the dirt or water runoff and some of the possible construction material that appeared in previous imagery is no longer present in front of the large building in the northern part of the site.

A [May 2014 ISIS Imagery Brief](#) showed several signs of external activity at the site. ISIS noted that possible building material and debris appeared in front of two main buildings at the site. Two trucks or containers had been removed from the area surrounding the suspected high explosives test building, while a larger object, possibly a truck or large container, appeared slightly north of it. Dirt or water runoff was visible in front of the northern building and three vehicles were clearly visible at the south entrance.

Previously, a [February 2014 ISIS Imagery Brief](#) confirmed IAEA reporting of possible building material and debris appearing at the site. All of this activity followed a period of lull at the site (second half of 2013) in which commercial satellite imagery showed no significant visible alterations.

Some experts feel that Iran might also seek to obtain additional design validation data in the future by using subcritical radioactive material in such a test program, a speculation some other experts discount on the grounds it might not produce a reliable indication of full scale fissile event performance.

This makes obtaining accurate estimates of how much design data Iran actually has a critical issue. The UN Panel of Experts report issued in June 2014 did, however, confirm earlier IAEA reports, and stated that,¹⁴⁰

There remain areas of concern regarding the Islamic Republic of Iran's nuclear program and its possible military dimensions. In its report of 20 February 2014, IAEA referred to its 2011 analysis of allegations that the Islamic Republic of Iran has carried out activities relevant to the development of a nuclear explosive device.

Among the issues identified by IAEA in 2011 are concerns about "alleged studies" regarding "how to integrate a new spherical payload into the existing

payload chamber which would be mounted in the re-entry vehicle of the Shahab 3 missile”

...IAEA recently noted that information regarding the Islamic Republic of Iran’s development of a nuclear explosive device “is assessed by the Agency to be, overall, credible” and despite the country’s insistence that the claims are unfounded, “the Agency has obtained more information since November 2011 that has further corroborated the analysis contained in [the annex to the Director-General’s report of November 2011]”... It is not known whether the additional information addresses the integration of a nuclear payload on a delivery vehicle.

As work by Michael Eisenstadt notes that,¹⁴¹

Iran’s weapons design choices will also be influenced by the kind of foreign assistance it has received in the past, and could receive in the future. This includes a Chinese weapons design that it may have received from the AQ Khan network (reportedly a smaller, more advanced design than that the latter provided to Libya); useful insights it might have gleaned from flawed plans for a firing set that the CIA allegedly provided Iran in order to sabotage and delay its weapons program (i.e., Operation Merlin); and assistance it may have received in designing the initiation and conventional explosives system for a nuclear weapon from the Russian scientist Vyacheslav Danilenko. In light of this history, it would be prudent to assume that Iran’s future weapons design efforts will continue to benefit from foreign assistance, despite best efforts by the U.S. and others to prevent it.

This leaves any effort to assess Iran’s actual weaponization capability dependent on public data going back to the IAEA report in November 2011. As noted earlier, the Institute for Science and International Security summarized Vyacheslav Danilenko’s contributions to the Iranian nuclear program, and gave some technical details regarding one aspect of Iran’s nuclear weapons development.

The technical details in the ISIS report give a sense of the progress that Iran was able to make with external assistance:¹⁴²

The IAEA obtained additional information that adds credibility to the conclusion that Danilenko used his technical and practical knowledge and expertise to provide assistance to Iran’s program to develop a suitable initiation system for a nuclear explosive device. The IAEA assessed that a monitoring, or diagnostic, technique described in one of his papers had a remarkable similarity to one that the IAEA saw in material from a member state about a hemispherical initiation and explosives system developed in Iran (see below). This system is also described in the IAEA safeguards report as a multipoint initiation system used to start the detonation of a nuclear explosive.

The IAEA also obtained from member states details of the design, development, and possible testing of what is called in IAEA information the R265 shock generator system, which is a round multipoint initiation system that would fit inside the payload chamber of the Shahab 3 missile tri-conic nose cone. This device involves a hemispherical aluminum shell with an inside radius of 265 mm and wall thickness of 10 mm thick. Outer channels are cut into the outer surface of the shell, each channel one by one millimeter, and contain explosive material. Each channel terminates in a cylindrical hole, 5 mm in diameter, that is drilled through the shell and contains an explosive pellet. The geometrical pattern formed by channels and holes is arranged in quadrants on the outer hemispheric surface which allows a single central point of initiation and the simultaneous detonation of explosives in all the holes on the hemisphere. This in turn allows the simultaneous initiation of all the high explosives under the shell by one exploding bridgewire (EBW). If properly prepared, the R265 constitutes the outer part of an explosively driven implosion system for a nuclear device. The outer radius of the R265 system is 275 millimeters, or a diameter of 550 millimeters, less than the estimated diameter of about 600 millimeters available inside the payload chamber of a Shahab 3 (or the Sejjil-2 missile).

No credible unclassified data currently exist to show just how much outside warhead design data that Iran has received, and this highlights a much broader limit to any unclassified analysis. How much is actually known at the classified level about Iran’s access to serious design data, test program, and test options is obviously uncertain. What, if anything, this says about Iran’s plans and intentions

is another issue. If – as seems likely – Iran has been slowly advancing a nuclear weapons program since the time of the Shah, how much have the US and other intelligence communities learned that they have not made public? Intelligence does need to protect key sources and sensitive methods, but it often uses security to conceal the fact that its analysis is almost all method and “guesstimate” and no source.

This uncertainty regarding public versus unclassified knowledge is also critical to any real world success in implementing a P5+1 agreement or dealing with its failure. Any effort to both halt and characterize Iran’s programs will, after all, be part of an ongoing duel with Iranian efforts to conceal as much as possible. No unclassified analysis can really address this aspect of Iran’s programs. No one can do more than speculate as to what, if anything, Iran has been able to conceal that is not known to either outside intelligence agencies or analysts of the Iranian program.

Judging the Success or Failure of a Final Agreement with Iran

Any meaningful arms control agreement must be based on the principle of “trust but verify.” For all the reasons set forth in this analysis, there is no basis for trust in any aspect of Iran’s weapons related activities. This will evidently be true whether an agreement is reached, whether the negotiations are extended, or whether the negotiations collapse.

At present, however, a successful negotiation would mean that these aspects of an agreement to some kind of classified and non-public annex and focus on fissile material production would rely on some future level of inspection and verification with no agreed baseline as to how far Iran has moved towards designing and being able to produce a nuclear weapon.

Delay would mean going forward with no picture of how far Iran has already gotten, how dependent it is on visible actions like actual fissile or weapons tests for success, and how long Iran would need to develop a meaningful nuclear strike capability. It also would mean going forward without any serious public US assessment of how dependent Iran’s missile program are on deploying nuclear weapons or the extent to which a nuclear-armed force is critical to deterring preventive/preemptive strikes or US and Gulf escalation to major conventional strikes on Iran if Iran should conduct a major military action like using its asymmetric forces to try to bloc petroleum exports out of the Gulf.

At the same time, the lack of such data means that many judgments based solely on Iran’s theoretical ability to acquire fissile material may grossly exaggerate the spend with which Iran can acquire a meaningful nuclear capability, and the need for preventive strikes.

Prevention, Deterrence, and Proliferation

Much depends on both whether an agreement is reached and whether it proves to be effective. An ongoing Iranian nuclear weapons effort could lead to Israeli preventive military strikes, or US preventive strikes under some conditions – radically changing the scenarios for combat in the region and the forces driving every aspect of the regional arms race and the military balance.

A clear indication that Iran was proceeding to develop and deploy nuclear weapons would lead to even more emphasis on missile defenses, might well lead Arab Gulf states to seek nuclear weapons, and might press the US into offering its allies the same kind of

“extended deterrence” that it once offered its allies in Europe. At the same time, preventive strikes might end in driving Iran into far more intense covert nuclear weapons efforts, or to take reprisals in the form of asymmetric warfare, new efforts to win military influence in nations like Syria and Iraq, and new efforts to use the Shi’ite population in nations like Bahrain, Saudi Arabia, and Yemen to pressures those states.

Gulf Nuclear Weapons

It will be several years before Iran can develop and deploy a meaningful nuclear force, but even the possibility of a nuclear armed Iran has already helped persuade the GCC states and the US to developed better theater missile defenses, and led them to see Iran as far more of a potential threat, and consider preventive strikes. Some in the GCC have talked about creating their own nuclear enrichment cycles to support their nuclear power plants – a first step in creating the fissile material for nuclear weapons.

Prince Turki of Saudi Arabia has stated that Saudi Arabia has at least examined the possibility of building its own nuclear weapons or seeking to buy them from a nuclear weapons state like Pakistan. Some senior UAE officials have privately raised the possibility of acquiring nuclear weapons as well. Turkey might also seek nuclear weapons if it confronted a mix of nuclear-armed states like Israel, Iran, and Pakistan

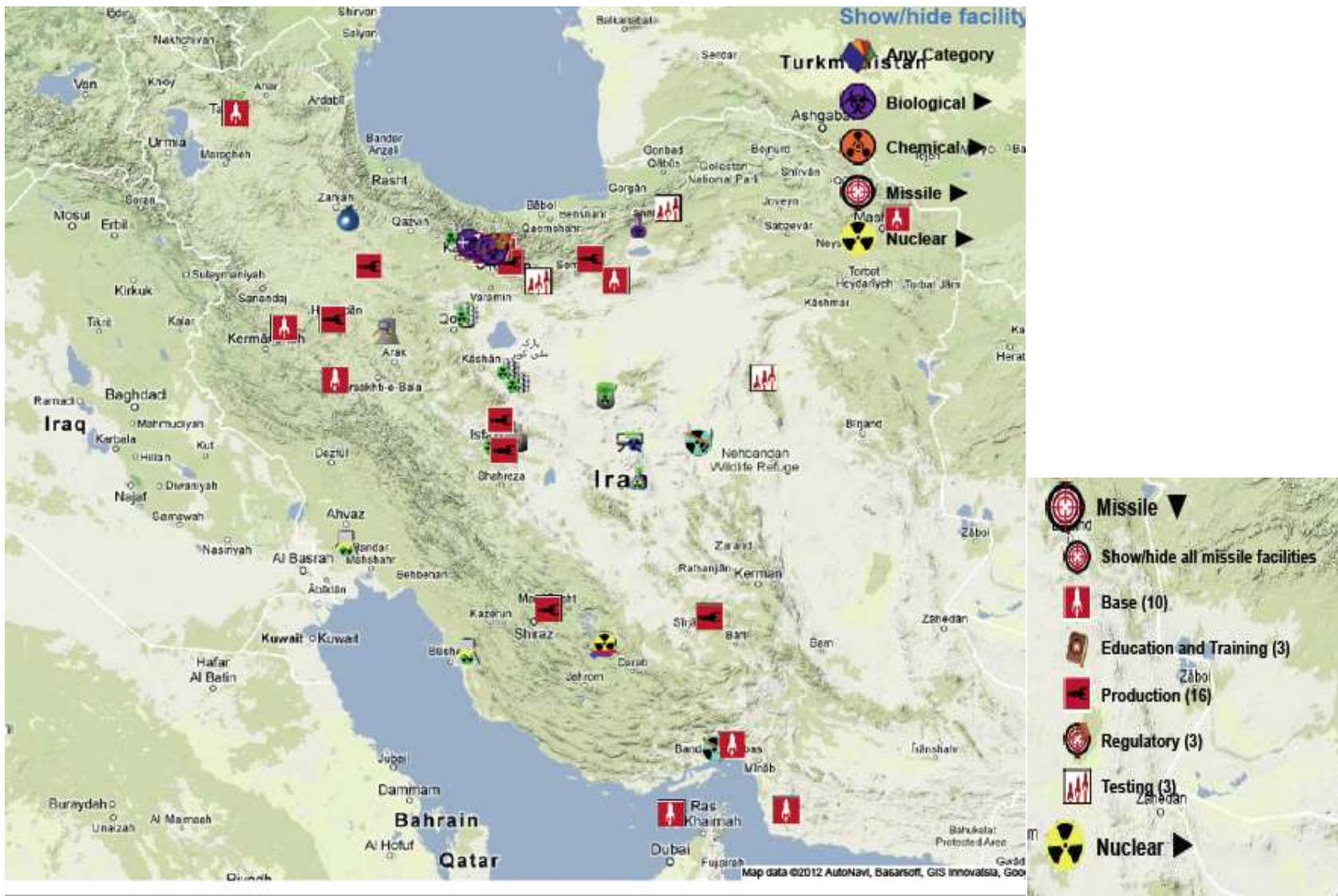
The US Role in Extended Deterrence

There has been discussion between the US and its Gulf allies of the possibility of US security guarantees or “extended deterrence” in an effort to protect these states against Iranian threats. Such efforts could reduce the possibility that some Gulf states would acquiesce to Iranian pressure and limit the threat of proliferation in the event that Iran actually equips its force with nuclear weapons.¹⁴³

Senior US officials have already raised these possibilities in broad terms. Former Secretary of State Hillary Clinton told reports during a trip to Bangkok that, “We want Iran to calculate what I think is a fair assessment that if the United States extends a defense umbrella over the region, if we do even more to support the military capacity of those in the Gulf, it's unlikely that Iran will be any stronger or safer because they won't be able to intimidate and dominate as they apparently believe they can once they have a nuclear weapon.”¹⁴⁴

It is far from clear what form of extended deterrence the US offer, how conditional it would be on Arab Gulf state not pursuing their own nuclear programs, and how such US actions would be seen by Iran and other regional states. What is clear is that the practical choices may be an effective agreement between the P5+1 and Iran, preventive war, or some form of sustained regional nuclear arms race.

Figure X.1: Major Iranian Nuclear, Other WMD, and Missile Facilities



Source: NTI, <http://www.nti.org/gmap/?country=iran&layers>, and <http://www.nti.org/country-profiles/iran/nuclear/>, March 2015

XI. Extremism and Terrorism, and Paramilitary and Security Forces

The security balance in the Gulf has changed sharply as the result of the rise of violent Jihadist elements and violent non-state actors – which now are reshaping the military balance in ongoing wars in Syria, Iraq, and Yemen. In broad terms, the resulting mix of internal threats and outside non-state actors has grown to the point where it poses as serious a threat than the risk of serious military conflict between states.

These are also threats where local regimes must generally take most of responsibility for counter-terrorism and internal security, and for addressing the causes of internal threats and unrest. Outside powers like the US, Britain, and France can help in some aspects of intelligence, counter-terrorism, and train and assist missions, but only local regimes can deal with the fundamental tasks in maintaining and establishing security, and four such regimes – Bahrain, Iraq, Syria, and Yemen – have so far failed to do so.

The Rise of the Islamic State

The sudden rise of the Islamic State in late 2014 and during the first half of 2015 made fundamental changes in the Gulf military balance. What began as a relatively small irregular force that had suffered serious reversals at the hand of other rebel forces in Syria like the Al Nusra front was able in a matter of months to seize much of Western Iraq, and destroy much of the Iraqi Army. It led the US to organize a broad coalition to conduct an air campaign against the Islamic State, and deploy major advisory and assist to rebuild a shattered Iraq Army which had lost so much of its capability that it has not been possible to provide a meaningful assessment of its capability in the previous chapters. It also triggered the build-up of separate Shi'ite militias and Pesh Merga forces to fighting the Islamic State, as well as a growing Iranian advisory presence that supports both the Iraqi military and Shi'ite militias in the field.

The key question in both Iraq and in Syria – and in what is far too often treated as a “war against the Islamic state” -- is how any form of military activity – including even the most effective counterinsurgency operations can bring meaningful stability to either country? Military victories in serious counterinsurgencies are at best a means to a political end, and can actually make things worse if they are not tied to some lasting form of political stability.

At this point, it is unclear how well Iraq will succeed in building a national force or even in maintaining national unity. A wide range of nations is now assisting Iraq – and to some extent the Assad regime in Syria – in fighting the Islamic State. At the same time, it is unclear that the Iraqi central government can overcome the legacy of former Prime Minister Maliki in alienating Iraq's Sunnis and Kurds, just as it is uncertain that it will be possible to bring unity to a Syria divided into an Assad/Alewite-dominated west, increasingly Jihadist Sunni rebels in its more populated center, and the Islamic State dominated east.

The Strategic Challenge in Iraq

The current goal is virtually to rebuild Iraq forces from the ground up to defeat the Islamic State. However, military operations and “train and assist” are not a meaningful not a strategy under these conditions. Warfighting is necessary but it is only a means to an end,

and can only provide marginal benefits unless there is some meaningful strategy to bring broader stability in politics, governance, and development.

Any meaningful and lasting form of “victory” in Iraq means that Iraq must emerge out of the fighting with some solution to its deep divisions between Arab and Kurd, and Sunni and Shi’ite, with a functioning level of government and security, and the ability to move towards some workable path of development. A Shi’ite-led occupation of Sunni areas may be better than an Islamic State occupation, but it will not solve Iraq’s political, governance, security, and stability problems. The Shiite-led fighting around Tikrit has already shown a sharp rise in Sunni and Shiite tensions around a “liberated” Mosul could create ethnic problems that may be as serious as the sectarian ones between Sunni and Shi’ite, as well as spill over into Kurdish areas in Turkey and Syria.

The ethnic challenge is as great as the sectarian challenge. Driving the Islamic State out of the north, will require Iraqi Arabs and Kurds to deal with the fact that the Kurds took advantage of the central government’s earlier losses to the Islamic State to grab more territory around Kirkuk,

Using US and allied airpower to create a situation where a divided, Shiite-led Iraq becomes steadily more dependent on Iran is equally dangerous. So is a of broader more divisions between Sunni and Shi’ite. The same is true of any situation where Turkey sees Iraq’s Kurds as a threat or as an extension of its struggles against its own Kurds by other means – particularly because the past fighting has made it impossible for Turkey to separate the challenge it sees from Iraq’s Kurds from their ties to the Kurds in Syria.

Stability in Iraq also requires careful attention to the economic crisis that Iraq is entering because of unstable politics at every level, a radical decline in petroleum export revenues, the massive impact on its development and economic opportunities caused by yet another round of disrupting and fighting, the collapse of the police and justice system in the troubled areas of the country, and a broader structure of governance that the World Bank rates as one of the worst in the world, and that is some corrupt that Transparency International rates Iraq as the 170th most corrupt nation in world out of 175.

Finding some form of stability means dealing with some 32 million people, millions of which have now been displaced or occupied by extremists, and which is one of the poorest states in the region. The CIA ranked its per capita income at only \$7,100 before the serious fighting began, and this compares with \$12,800 for an Iran under sanctions, and \$31,300 for a relatively stable Saudi Arabia. It is also an extremely young country, where more than 56% of the population is 24 years of age or younger, 16% of the total population and over 25% of young men were directly or indirectly unemployed before the new round of fighting started.

The Strategic Challenge in Syria

The situation in Syria is far worse, and presents the additional problem that it may be impossible to secure Iraq if Syria remains caught up in one of the modern world’s civil wars. Estimates of Syria’s population differ, but the CIA puts it at very close to 18 million and the World Bank at around 20.4 million. There are no reliable estimates of the numbers killed in the fighting, but even the most

conservative estimates at the beginning of 2015 put the total at over 220,000. Wounded normally are at least three times the numbers killed, which would put the number of wounded at 660,000, and create a total of at least 880,000 casualties by January 2015.

The real human tragedy, however, is much broader and involves more than half the population. Estimates by USAID put the total number of Syrians needing assistance at 12.2 million as of December 2014. Some 7.6 million of these Syrians had been displaced inside Syria away from their homes, schools, businesses and jobs. Another 3.8 million had been driven out of the country by January 2015. Estimates of Syrians in combat areas where they could not receive aid reached as high as 4.6 million.

Like Iraq, the World Bank ranked Syria as a badly governed country long before the current fighting, and Transparency International ranked Syria close to Iraq in corruption. The CIA ranked its per capita income at only \$5,100 in 2011 before the fighting began – a level so low that Syria ranked only 159th in the world in per capita income. Syria too is an extremely young country, where more than 53% of the population is 24 years of age or younger, and at least 20% of Syria's youth were directly or indirectly unemployed before the new round of fighting started.

The end result is all too clear from the kind of satellite photos on the *New York Times* website. Syria has literally gone dark as both a country and in every major city. Satellite photos do an equally grim job of showing the physical damage to populated areas where combat has occurred.

Unlike Iraq, however, Syria shows no signs of moving toward any military progress or solution. Various rebel factions and exiles make claims, but the one “moderate” faction the US seriously tried to support and arm has suffered two catastrophic defeats at the hands of the al Nusra Front. Syria is now divided into three armed sections – all of the vicious and violent.

There is an Assad-Alawite dominated government in the Western coastal areas, and which seems to be making slow gains. There is a mix of rebel factions fighting for control of Aleppo and the urban and agricultural belt to the east where the Al Nusra Front and Korashan group – both tied to al Qaeda – dominate a mix of rebel factions. The Islamic State controls the less populated areas from Raqqa and further East into the area around Hasakah and down along the Euphrates to Deir al-Zour and Abu Kamal, but much of the area shown as being under its control in media maps is actually an empty desert.

When one looks at this security situation, the train and assist mission and air campaign in Iraq almost seems to make sense. The one thing that doesn't is either the Obama Administration decade strategy to date and the calls for variations on that theme from its most severe critics.

No major element of Syria's three main groups of warring factions offers hope, security and stability through a military option. Training some 5,000 rebels a year for an unknown mission to support an unknown faction to end in an unknown government seems to make no sense at all, and the more moderate rebel groups in exile seem too weak to be more than a forlorn hope.

As for military options, a buffer zone in the north? For what? It might ease the strain of Syrian refugees in Turkey, how would it create a winning faction that could govern and with what goal? Expand the air campaign to attack Assad's forces? To benefit what faction?

The Al Nusra Front? The same Islamic State groups the US-led Coalition is bombing to the East? Send in US troops? To support what side? To deal with another war where Iran and Iranian –backed factions present a challenge that can only be solved by an outcome that creates a strong and unifying government?

Once again, there is no clear military balance that could achieve a lasting strategic result. Moreover, tactical victory again does not mean any lasting form of political victory or stability. It also may leave massive numbers of Syrians displaced without the ability to return to their homes and businesses, and create a new set of critical security challenges if millions of Syrian refugees become a lasting presence in neighboring states that have little economic and political capability to absorb them.

The Strategic Challenge in Yemen

The situation in Yemen became so volatile by the end of March 2015, that there no longer was any cohesion or structure under the control of Houthi, AQAP, and other non-state actors, or allied with the Houthi. The political crisis in Yemen that divided the country since 2011, steadily deteriorated into civil conflict in the course of 2015, and then into outside military intervention by a Saudi-led coalition that launched air strikes as part of “Operation Decisive Storm” to try to limit the Houthi expansion and to restore Yemen’s elected President, Abed Rabbo Mansour Hadi, to power. Initial reports indicated that this coalition included 10 states – Bahrain (15 aircraft), Egypt (aircraft and naval forces), Jordan (15 aircraft), Kuwait (15 aircraft), Morocco (15 aircraft), Qatar (10 aircraft), Saudi Arabia (100 aircraft), Sudan (15 aircraft, and UAE (30 aircraft) – and the assembly of some 150,000 Saudi military and other security forces near the border with Yemen, and the potential deployment of some 40,000 Egyptian ground troops.

This crisis was so serious that it triggered the Arab League effort in late March 2015 to create a new and broader Arab military coalition described in Chapter I, as well as created a new level of tension between Iran and most of the Arab world. President Hadi described the Houthi as “puppets of Iran, and while President Sissi of Egypt did not name Iran, he stated that it, “spreading its ailment in the body...This (Arab) nation, in its darkest hour, had never faced a challenge to its existence and a threat to its identity like the one it's facing now,” el-Sissi said. "This threatens our national security and (we) cannot ignore its consequences for the Arab identity."¹⁴⁵

Two key sets of non-state actors dominated this set of divisions: Shi’ite Houthi groups, originally centered in the northwest and now in control of much of “North” or western Yemen and its capital at Sanaa, and Al Qaida in the Arabian Peninsula – an affiliate of Al Qaida central and the main terrorist threat to Saudi Arabia – in central Yemen.

Since 2009, there has been a growing conflict between the Yemen’s Shi’ite Houthis and Yemen’s Sunnis, compounded by power struggles and shifting alignments among its Sunni ruling elite, and rising Al Qaida in the Arabian Peninsula (AQAP) influence and control in central Yemen. The political uprisings that grew from 2011 onwards drove Saleh – the former dictator – from power, but replaced him Hadi – an “elected” leader who could not establish order in the capital, much less the nation, and eventually had to flee to Aden and then to Saudi Arabia. Iranian ties to the Houthi grew with time, the US counterterrorism and military advisory presence weakened and then left, and Saudi attempts to bring unity failed to the point where Saudi Arabia began to bomb the Houthi to try to limit their influence, and Saudi Arabia formed an Arab coalition to try to bring order to Yemen and limit Houthi power and Iranian influence.

Yemen does not match the strategic importance of the Gulf, but is still of great strategic importance to the stability of Saudi Arabia and the Arabian Peninsula. Yemen also became the base of Al Qaida in the Arabian Peninsula (AQAP) after Saudi counterterrorism forces largely drove it out of Saudi Arabia. It remains the most powerful terrorist threat to Saudi Arabia and the other Southern Gulf states, and both the State Department and National Counter Terrorism Center report that it is the most active single extremist movement in planning terrorist attacks against the United States. Any serious rise of ISIS in Yemen can only make this worse.

Yemen also poses a more direct threat to Saudi Arabia, Oman, and the other GCC states. Yemen may be a small country, but it has a population of 26.1 million, with one of the highest population growth rates in the world. Nearly 63% of its population is 24 years of age or younger. It is deeply divided between Sunnis (65%) and Shiites like the Houthi (35%). It is incredibly poor, running of water, crippled by a drug oriented Qat economy, and facing a steady decline in its already limited petroleum exports.¹⁴⁶

Even before the slow rise towards civil war after 2011, Yemen was a nation with a doubtful future for anyone who did emigrate or have a source of income from family working outside the country. Its per capita income was only around \$2,500 – ranking only 187th in the world. Its direct unemployment rate was at least 35% -- giving it a global ranking of only 188th in the world -- and youth direct and disguised unemployment was probably around 50%. Its agriculture sector was so unproductive that the CIA estimate it accounted for over 70% of the jobs, but less than 8% of the GDP. More than 45% of the population was calculated to live below a dismally low national poverty line, while the elite 10% accounted for over 30% of national consumption.¹⁴⁷

These steadily deteriorating economic realities rose to a crisis level because of political divisions and fighting, and created one of the world's most fertile grounds for political extremism, terrorism, sectarian struggles between Sunni and Shi'ite and even more intense effort to leave the country and find jobs in Saudi Arabia and the Gulf. Saudi Arabia, and to a lesser extent Oman, face the fact that Saudi Arabia has a 1,458 kilometer border with Yemen and Oman has a 288 kilometer border.¹⁴⁸

Saudi Arabia has faced a major threat from Yemeni illegal immigration, smuggling, and hostile terrorist and political forces for decades. These not only include hundreds of thousands of illegals from Yemen, but other illegals from unstable countries like Somalia, and some of these illegals and extremist move into the other Arab Gulf states. Saudi Arabia already had to try to expel them from the Kingdom when Yemen support Iraq in the Gulf War in 1990 and 1991, and instability in Yemen may well now pose a more immediate threat to Saudi Arabia and the other Arab Gulf petroleum exporting states than the instability in Syria and Iraq.

These strategic pressures explain why Saudi Arabia formed a coalition of more than 10 countries try to restore the Hadi government in March 2015. Saudi Arabia and allies began to conduct air strikes in [Yemen](#) to try to halt the advance of a Houthi militia, and the growing role of Iran, and to support President Abd-Rabbu Mansour Hadi's efforts to restore the role Yemen's elected government, It was joined by United Arab Emirates (UAE), Bahrain, Kuwait, and Qatar. Moreover Egypt, Jordan and Sudan promised forces for the operation, the Sudan pledged ground troops and warplanes, and Pakistan has said it was considering a Saudi request to send ground forces. Some reports say that Morocco will send combat aircraft as well.¹⁴⁹

The United States has given the Arab coalition logistical and intelligence support, but the situation in Yemen may well come to require more than that, and added US combat support as well as US diplomatic pressure on Iran. Once again, the US is finding out that calling for strategic partnership is not a way of avoiding its role as a world power. One cannot establish partnerships without being a partner.

The Houthi, Iran, and the Bab el Mandab

At the same time, the growing ties between Yemen's Houthi Shi'ites and Iran poses another threat to both Saudi Arabia and the US. It potentially could allow Iran to outflank the Gulf, and deploy air and naval forces into Yemen. This threat still seems limited, but it is important to note that Yemen's territory and islands play a critical role in the security of another global chokepoint at the southeastern end of the Red Sea called the Bab el Mandab or "gate of tears."

The EIA describes the energy impact of importance of this chokepoint as follows, and is critical to note that far more is involved than energy: the cost and security of every cargo that goes through the Suez canal, the security of US and other allied combat ship moving through the canal, the economic stability of Egypt, and the security of Saudi Arabia's key port at Jeddah and major petroleum export facility outside the Gulf:¹⁵⁰

The Bab el-Mandeb Strait is a chokepoint between the Horn of Africa and the Middle East, and it is a strategic link between the Mediterranean Sea and the Indian Ocean. The strait is located between [Yemen](#), Djibouti, and Eritrea, and connects the Red Sea with the Gulf of Aden and the Arabian Sea. Most exports from the Persian Gulf that transit the Suez Canal and SUMED Pipeline also pass through Bab el-Mandeb.

An estimated 3.8 million bbl/d of crude oil and refined petroleum products flowed through this waterway in 2013 toward Europe, the United States, and Asia, an increase from 2.9 million bbl/d in 2009. Oil shipped through the strait decreased by almost one-third in 2009 because of the global economic downturn and the decline in northbound oil shipments to Europe. Northbound oil shipments increased through Bab el-Mandeb Strait in 2013, and more than half of the traffic, about 2.1 million bbl/d, moved northbound to the Suez Canal and SUMED Pipeline.

The Bab el-Mandeb Strait is 18 miles wide at its narrowest point, limiting tanker traffic to two 2-mile-wide channels for inbound and outbound shipments. Closure of the Bab el-Mandeb could keep tankers from the Persian Gulf from reaching the Suez Canal or SUMED Pipeline, diverting them around the southern tip of Africa, adding to transit time and cost. In addition, European and North African southbound oil flows could no longer take the most direct route to Asian markets via the Suez Canal and Bab el-Mandeb.

Any hostile air or sea presence in Yemen could threaten the entire traffic through the Suez Canal, as well as a daily flow of oil and petroleum products that the EIA estimates increased from 2.9 MMBD in 2009 to 3.8 MMBD in 2013. Such a threat also can be largely covert or indirect. Libya demonstrated this under Qaddafi when he had a cargo ship drop mines in the Red Sea.

The Rise of the Terrorist and Extremist Threat

The threats in Iraq, Syria, and Yemen – and the disruption of government forces and rise of non-state actors in shaping the balance -- men are the result of ongoing wars between a mix of states and non-state actors. They also involve a wide range of outside actors like the US, Iran, and a mix of other Arab, Sunni governed states. At the same time, there is a different mix of threats from terrorism and extremism that is leading most of the states in the region to restructure their security forces.

The data in **Figure XI.1 and Figure XI.2** provide official US State Department estimates of the recent the growth and nature of part of this terrorist and extremist threat, which became steadily larger following the US invasion of Iraq in 2003, the emergence of Al Qaida in the Arabian Peninsula in Saudi Arabia and Yemen in 2003, and the political upheavals that began in 2011.

These conflicts drove the sharp rise in terrorist activity shown in **Figure XI.1 and Figure XI.2**, along with the tensions between Sunni and Shi'ite in Bahrain, Iraq, Yemen, and to a lesser extent Saudi Arabia. of the Islamic State as a proto-state in Syria and Iraq in 2013-2014, and the steadily accelerating civil war in Yemen in 2014-2015.

Figure XI.3 provides a summary of the database used in the National Consortium for the Study of Terrorism and Responses to Terrorism: Annex of Statistical Information in the US State Department, Bureau of Counterterrorism [Country Reports on Terrorism 2013](#). It provides eight different trend lines for the growing rate of terrorist activity in each country. It also shows just how complex *and different* the patterns of violent extremism are in each country in terms of key actors, levels of violence, casualties, and methods and targets of attack.¹⁵¹

Figures XI.1, XI.12. and XI.3 do, however, focus on terrorism and do not count the full impact of insurgency and civil war. They only cover the period through 2013. They do not reflect the full impact of the broader civil war in Syria, the emergence

There are serious limits to all such data. It is hard to collect reliable information that cover areas under limited government control. Some governments do not report or ask to avoid being reporting in unclassified data. Sources often conflict, and further problems occur because of the difficulty of distinguishing between terrorist casualties and incidents and the impact of regional political upheavals and uncertainties.

Official unclassified reporting often lags a year behind the growth of the threat, and much of it only addresses terrorist movements and the state sponsors of terrorism. It often does not fully cover extremist activity that is not violent, smaller or emerging groups, or the far more serious threat posed by various insurgent groups like the Islamic State and sectarian and other violent militias in nations like Iraq, Syria, and Yemen.

Increases in Paramilitary and Internal Security Forces

There are equal limits to the reporting on the recent build-up of Gulf internal security and paramilitary forces. Estimates by various thinks and commercial risk firms are uncertain at best. The data in **Figure XI.4 and Figure XI.5** only provide a rough indication of the scale of Gulf state efforts to improve counter-terrorism forces, suppress violent internal opposition movements, and increase the size of states security forces throughout the region.

There is no clear way to quantify the elements of regular forces that are devoted to counter-terrorism missions, and many of the changes involve major investments and internal shifts in role of Ministries of the Interior, Information and Justice, as well as in national police forces and non-military intelligence branches that are not reported in unclassified military studies, although they sometimes involve massive expenditures, increase in forces, and low-level combat.

Efforts to improve counterterrorism and internal security capabilities also involve significant shifts in civil politics, the control of foreign labor and immigration, surveillance and control of mosques and religious activity, and civil governance that affects different Islamic sects – particularly the Shi'ite population in Bahrain and Saudi Arabia. The security balance in two other countries – Yemen and Iraq – has been sharply affected by ongoing tensions or conflict between Sunnis, Shi'ites and other religious minorities that are compounded by tribal and regional tensions.

Problems and Challenges in Creating Effective Paramilitary and Internal Security Forces

Some GCC countries like Saudi Arabia and the UAE have made major progress in improving their own internal security and counterterrorism forces, but many regional states face serious problems in establishing effective internal security systems, and all face significant challenges. These problems and challenges include:

- Protection of the regime within sufficient attention to the causes of unrest and the need for reform.
- Overreliance on repressive internal security measures that achieve short-term gains but breed anger and support for violent non-state actors.
- Failure to address discrimination against Shi'ite, Sunnis, and minorities, compounded by tribal rivalries and regional discrimination.
- Abuse of the justice system in terms of detentions, trials, imprisonment, and denial of citizenship.
- Poor training and equipment for handling public demonstrations and crowds.
- Failure to develop an effective balance of control and tolerance over religious preaching and practices, compounded by a failure to engage extremist non-state actors at all of the necessary levels of media, communication, and uses of cell phones and the internet.
- Failure to address to enforce efforts to limit the size of foreign labor coupled to failures to protect foreign labor and ensure there not be future unrest.
- Mixed progress in controlling the flow of money and volunteers to foreign extremists.
- Mixed progress in finding ways to integrate military, paramilitary, and police assets and operations to achieve success without delays and/or the excessive use of force.
- Failure to eliminate delays, corruption, and favoritism in related aspects of the police and justice systems.
- Excessive use of special security legislation and courts to bypass the regular justice system in ways that increase popular anger and support for violent non-state actors.
- Failure to separate out young volunteers and other detainees from hardcore extremists, and to offer an effective path to reintroduce detainees to national society.

Figure XI.5 provides a summary of US State reporting on human rights and rule of law problems in counterterrorism and internal security forces by country. Which illustrates some of the problems that regional power face. It only begins, however, to illustrate the

changing paramilitary and internal security balance, and the sharply rising size and cost of the paramilitary and internal security side of the balance. For security and other reasons, the reporting on such forces and activities is as uncertain and dated as the reporting on the size and activities of non-state actors.

Figure XI.1 Measuring the Comparative Intensity of Gulf and Nearby Terrorist Threats

Ten countries with the most terrorist attacks, 2013

Country	Total Attacks	Total Killed	Total Wounded	Average Number Killed per Attack	Average Number Wounded per Attack
Iraq	2495	6378	14956	2.56	5.99
Pakistan	1920	2315	4989	1.21	2.6
Afghanistan	1144	3111	3717	2.72	3.25
India	622	405	717	0.65	1.15
Philippines	450	279	413	0.62	0.92
Thailand	332	131	398	0.39	1.2
Nigeria	300	1817	457	6.06	1.52
Yemen	295	291	583	0.99	1.98
Syria	212	1074	1773	5.07	8.36
Somalia	197	408	485	2.07	2.46

- The ten countries that experienced the most terrorist attacks in 2013 are the same as those that experienced the most terrorist attacks in 2012. The ranking in terms of total attacks increased for Iraq, the Philippines, and Syria, decreased for Pakistan, Nigeria, Yemen, and Somalia, and remained the same for Afghanistan, India, and Thailand. The number of total attacks increased for nine of the ten countries in Table 2. In Nigeria, the number of total attacks decreased 45 percent between 2012 and 2013; however, the total number killed increased 31 percent.
- Although terrorist attacks occurred in 93 different countries in 2013, they were heavily concentrated geographically. More than half of all attacks (57%) and fatalities (66%), and nearly three-quarters of all injuries (73%) occurred in three countries: Iraq, Pakistan, and Afghanistan.
- By a wide margin, the highest numbers of attacks, fatalities, and injuries took place in Iraq. The average lethality of attacks in Iraq was nearly 40 percent higher than the global average (1.84 killed per attack) and 33 percent higher than the 2012 average in Iraq (1.92).
- The average lethality of attacks in Syria (5.07) and Nigeria (6.06) exceeded the global average by 176 percent and 229 percent, respectively. As in 2012, the average number of people wounded in attacks in Syria in 2013 was particularly high at 8.36. This was 149 percent higher than the global average for injuries (3.36), but 38 percent lower than the average number injured in terrorist attacks in Syria in 2012.
- Among the ten countries that experienced the most terrorist attacks in 2013, the average number killed per attack was lower than the global average for five (Pakistan, India, the Philippines, Thailand, and Yemen), and the average number wounded per attack was lower than the global average for eight (Pakistan, Afghanistan, India, the Philippines, Thailand, Nigeria, Yemen, and Somalia).

Ten perpetrator groups with the most attacks worldwide, 2013

Perpetrator Group Name	Total Attacks	Total Killed	Average Number Killed per Attack
Taliban	641	2340	3.65
Al-Qa'ida in Iraq/Islamic State of Iraq and the Levant	401	1725	4.3
Boko Haram	213	1589	7.46
Maoists (India)/Communist Party of India-Maoist	203	190	0.94
Al-Shabaab	195	512	2.63
Tehrik-i-Taliban Pakistan (TTP)	134	589	4.4
New Peaople's Army (NPA)	118	88	0.75
Al-Qa'ida in the Arabian Peninsula (AQAP)	84	177	2.11
Revolutionary Armed Forces of Colombia (FARC)	77	45	0.58
Bangsamoro Islamic Freedom Movement (BIFM)	34	23	0.68

- Information about perpetrators was reported in source materials for 32 percent of terrorist attacks in 2013. More than 220 organizations were named as perpetrators of terrorist attacks, including 38 organizations that had not previously been identified as perpetrators in the Global Terrorism Database.
- In 34.7 percent of the attacks with information about perpetrator groups, the groups explicitly claimed responsibility. In the remaining attacks, source documents attributed responsibility to a particular group or groups based on reports from authorities or observers.
- Of the attacks for which perpetrator information was reported, more than 20 percent were attributed to the Taliban, operating primarily in Afghanistan. In addition to carrying out the most attacks, the Taliban in Afghanistan was responsible for the greatest number of fatalities in 2013.
- Along with the Taliban in Afghanistan, five other groups carried out attacks that were more lethal than the global average (1.84 people killed per attack) in 2013: Boko Haram, al-Qa'ida in Iraq (AQI)/ Islamic State of Iraq and the Levant, Tehrik-i-Taliban Pakistan (TTP) and al-Qa'ida in the Arabian Peninsula.
- Two organizations that were among those with the most attacks in 2012 are no longer listed on Table 3: the Kurdistan Workers' Party (PKK) and the Corsican National Liberation Front (FLNC). The PKK was attributed responsibility for 15 terrorist attacks in 2013, one of which was lethal. The FLNC, which was responsible for property violence in 2012, did not carry out any attacks in 2013.
- Two organizations from the Philippines that were not among the most active perpetrator groups in 2012 are now on this list: the New People's Army (NPA) and the Bangsamoro Islamic Freedom Movement (BIFM). Although terrorism in the Philippines has increased dramatically in recent years, the average lethality of attacks attributed to these groups is approximately 60 percent lower than the global average. Among the groups on Table 3, only the Revolutionary Armed Forces of Colombia (FARC) caused fewer fatalities per attack than the NPA and the BIFM.

Source: Adapted from National Consortium for the Study of Terrorism and Responses to Terrorism: Annex of Statistical Information, "Statistical Information on Terrorism 2012," US State Department, [Country Reports on Terrorism 2013](#), March 26, 2015.

Figure XI.2: US State Department Description of Terrorist Threats and State Sponsors of Terrorism in or Near the Gulf States:

AL-QA'IDA

State Department

aka al Qaeda; Qa'idat al-Jihad (The Base for Jihad); formerly Qa'idat Ansar Allah (The Base of the Supporters of God); the Islamic Army; Islamic Salvation Foundation; The Base; The Group for the Preservation of the Holy Sites; The Islamic Army for the Liberation of the Holy Places; the World Islamic Front for Jihad Against Jews and Crusaders; the Usama Bin Laden Network; the Usama Bin Laden Organization; al-Jihad; the Jihad Group; Egyptian al-Jihad; Egyptian Islamic Jihad; New Jihad

Description: Designated as a Foreign Terrorist Organization on October 8, 1999, al-Qa'ida (AQ) was established by Usama bin Laden in 1988. The group helped finance, recruit, transport, and train Sunni Islamist extremists for the Afghan resistance. AQ's strategic objectives are to remove Western influence and presence from the Muslim world, topple "apostate" governments of Muslim countries, and establish a pan-Islamic caliphate governed by its own interpretation of Sharia law that ultimately would be at the center of a new international order. These goals remain essentially unchanged since the group's 1996 public declaration of war against the United States. AQ leaders issued a statement in February 1998 under the banner of "The World Islamic Front for Jihad against the Jews and Crusaders," saying it was the duty of all Muslims to kill U.S. citizens, civilian and military, and their allies everywhere. AQ merged with al-Jihad (Egyptian Islamic Jihad) in June 2001. Many AQ leaders have been killed in recent years, including bin Laden and then second-in-command Atiyah Abd al-Rahman, in May and August 2011, respectively. Al-Rahman's replacement, Abu Yahya al-Libi, was killed in June 2012. Leader Ayman al-Zawahiri remained at large.

Activities: AQ and its supporters conducted three bombings that targeted U.S. troops in Aden in December 1992, and claim to have shot down U.S. helicopters and killed U.S. servicemen in Somalia in 1993. AQ also carried out the August 1998 bombings of the U.S. Embassies in Nairobi and Dar es Salaam, killing up to 300 individuals and injuring more than 5,000. In October 2000, AQ conducted a suicide attack on the USS Cole in the port of Aden, Yemen, with an explosive-laden boat, killing 17 U.S. Navy sailors and injuring 39.

On September 11, 2001, 19 AQ members hijacked and crashed four U.S. commercial jets – two into the World Trade Center in New York City, one into the Pentagon near Washington, DC; and the last into a field in Shanksville, Pennsylvania – leaving over 3,000 individuals dead or missing.

In November 2002, AQ carried out a suicide bombing of a hotel in Mombasa, Kenya that killed 15. In 2003 and 2004, Saudi-based AQ operatives and associated violent extremists launched more than a dozen attacks, killing at least 90 people, including 14 Americans in Saudi Arabia. Al-Zawahiri claimed responsibility on behalf of AQ for the July 7, 2005 attacks against the London public transportation system. AQ likely played a role in the unsuccessful 2006 plot to destroy several commercial aircraft flying from the UK to the United States using liquid explosives. AQ claimed responsibility for a 2008 suicide car bomb attack on the Danish embassy in Pakistan that killed six, as retaliation for a Danish newspaper re-publishing cartoons depicting the Prophet Muhammad and for Denmark's involvement in Afghanistan.

In January 2009, Bryant Neal Vinas – a U.S. citizen who traveled to Pakistan and allegedly trained in explosives at AQ camps, was captured in Pakistan and extradited to the United States – was charged with providing material support to a terrorist organization and conspiracy to commit murder. Vinas later admitted his role in helping AQ plan an attack against the Long Island Rail Road in New York and confessed to having fired missiles at a U.S. base in Afghanistan. In September 2009, Najibullah Zazi, an Afghan immigrant and U.S. lawful permanent resident, was charged with conspiracy to use weapons of mass destruction, to commit

murder in a foreign country, and with providing material support to a terrorist organization as part of an AQ plot to attack the New York subway system. Zazi later admitted to contacts with AQ senior leadership, suggesting they had knowledge of his plans. In February 2010, Zazi pled guilty to charges in the U.S. District Court for the Eastern District of New York.

In a December 2011 video, new AQ leader al-Zawahiri claimed AQ was behind the August kidnapping of American aid worker Warren Weinstein in Pakistan. As conditions for his release, al-Zawahiri demanded the end of U.S. air strikes and the release of all terrorist suspects in U.S. custody. Weinstein remained in AQ custody throughout 2012.

Strength: In South Asia, AQ's core has been seriously degraded. The death or arrest of dozens of mid- and senior-level AQ operatives – including bin Laden in May 2011 – have disrupted communication, financial, facilitation nodes, and a number of terrorist plots. AQ serves as a focal point of “inspiration” for a worldwide network of affiliated groups – al-Qa'ida in the Arabian Peninsula (AQAP), al-Qa'ida in Iraq (AQI), al-Qa'ida in the Islamic Maghreb (AQIM), al-Shabaab– and other Sunni Islamist extremist groups, including the Islamic Movement of Uzbekistan, the Islamic Jihad Union, Lashkar i Jhangvi, Harakat ul-Mujahadin, and Jemaah Islamiya. Tehrik-e Taliban Pakistan and the Haqqani Network also have ties to AQ. Additionally, supporters and associates worldwide who are “inspired” by the group's ideology may be operating without direction from AQ central leadership, and it is impossible to estimate their numbers.

Location/Area of Operation: AQ was based in Afghanistan until Coalition Forces removed the Taliban from power in late 2001. Since then, they have resided in Pakistan's Federally Administered Tribal Areas. AQ's regional affiliates – AQI, AQAP, AQIM, and al-Shabaab – work in Iraq and Syria, Yemen, the Trans-Sahara, and Somalia, respectively.

Funding and External Aid: AQ primarily depends on donations from like-minded supporters as well as from individuals who believe that their money is supporting a humanitarian cause. Some funds are diverted from Islamic charitable organizations.

NCTC

Established by Usama Bin Laden in 1988 with Arabs who fought in Afghanistan against the Soviet Union, al-Qa'ida's declared goal is the establishment of a pan-Islamic caliphate throughout the Muslim world. Toward this end, al-Qa'ida seeks to unite Muslims to fight the West, especially the United States, as a means of overthrowing Muslim regimes al-Qa'ida deems “apostate,” expelling Western influence from Muslim countries, and defeating Israel. Al-Qa'ida issued a statement in February 1998 under the banner of “the World Islamic Front for Jihad Against the Jews and Crusaders” saying it was the duty of all Muslims to kill US citizens—civilian and military—and their allies everywhere. The group merged with the Egyptian Islamic Jihad (al-Jihad) in June 2001.

On 11 September 2001, 19 al-Qa'ida suicide attackers hijacked and crashed four US commercial jets—two into the World Trade Center in New York City, one into the Pentagon near Washington, D.C., and a fourth into a field in Shanksville, Pennsylvania—leaving nearly 3,000 people dead. Al-Qa'ida also directed the 12 October 2000 attack on the USS Cole in the port of Aden, Yemen, which killed 17 US sailors and injured another 39, and conducted the bombings in August 1998 of the US embassies in Nairobi, Kenya, and Dar es Salaam, Tanzania, killing 224 people and injuring more than 5,000. Since 2002, al-Qa'ida and affiliated groups have conducted attacks worldwide, including in Europe, North Africa, South Asia, Southeast Asia, and the Middle East.

In 2005, Ayman al-Zawahiri, then Bin Laden's deputy and now the leader of al-Qa'ida, publicly claimed al-Qa'ida's involvement in the 7 July 2005 bus bombings in the United Kingdom. In 2006, British security services foiled an al-Qa'ida plot to detonate explosives on up to 10 transatlantic flights originating from London's Heathrow airport. Also in 2006, al-Zawahiri announced that the Algerian Salafist Group for Preaching and Combat had joined al-Qa'ida, adopting the name al-Qa'ida in the Lands of the Islamic Maghreb. In 2009, extremist leaders in Yemen and Saudi Arabia reportedly announced they had merged to fight under the banner of al-Qa'ida in the Arabian Peninsula.

On 2 May 2011, US forces raided a compound in Abbottabad, Pakistan, resulting in the death of Bin Laden. His death, in addition to significant losses to al-Qa'ida's command structure based in the tribal areas of Pakistan since early 2008, has left the group at its weakest since the fall of the Afghan Taliban in late 2001. In the aftermath of Bin Laden's death, al-Qa'ida leaders moved quickly to name al-Zawahiri as his successor. Since this announcement, regional affiliates have

publicly sworn allegiance and pledged support to him. Al-Qa'ida remains a cohesive organization and al-Qa'ida core's leadership continues to be important to the global movement.

In June 2012, Abu Yahya al-Libi, widely reported to be al-Qa'ida's "general manager," was killed in Pakistan. Despite this and other leadership losses, al-Qa'ida remains committed to conducting attacks in the United States and against American interests abroad. The group has advanced a number of unsuccessful plots in the past several years, including against the United States and Europe. This highlights al-Qa'ida's ability to continue some attack preparations while under sustained counterterrorism pressure and suggests it may be plotting additional attacks against the United States at home or overseas.

AL-QA'IDA IN THE ARABIAN PENINSULA

State Department

aka al-Qa'ida in the South Arabian Peninsula; al-Qa'ida in Yemen; al-Qa'ida of Jihad Organization in the Arabian Peninsula; al-Qa'ida Organization in the Arabian Peninsula; Tanzim Qa'idat al-Jihad fi Jazirat al-Arab; AQAP; AQY; Ansar al-Shari'a

Description: Al-Qa'ida in the Arabian Peninsula (AQAP) was designated as a Foreign Terrorist Organization (FTO) on January 19, 2010. In January 2009, the leader of al-Qa'ida in Yemen (AQY), Nasir al-Wahishi, publicly announced that Yemeni and Saudi al-Qa'ida (AQ) operatives were working together under the banner of AQAP. This announcement signaled the rebirth of an AQ franchise that previously carried out attacks in Saudi Arabia. AQAP's self-stated goals include establishing a caliphate in the Arabian Peninsula and the wider Middle East, as well as implementing Sharia law.

On September 30, 2011, AQAP cleric and head of external operations Anwar al-Aulaqi, as well as Samir Khan, the publisher of AQAP's online magazine, *Inspire*, were killed in Yemen.

Activities: AQAP has claimed responsibility for numerous terrorist acts against both internal and foreign targets since its inception in January 2009. Attempted attacks against foreign targets include a March 2009 suicide bombing against South Korean tourists in Yemen, the August 2009 attempt to assassinate Saudi Prince Muhammad bin Nayif, and the December 25, 2009 attempted attack on Northwest Airlines Flight 253 from Amsterdam to Detroit, Michigan. AQAP was responsible for an unsuccessful attempt to assassinate the British Ambassador in April 2010, and a failed attempt to target a British embassy vehicle with a rocket in October of that year. Also in October 2010, AQAP claimed responsibility for a foiled plot to send explosive-laden packages to the United States via cargo plane. The parcels were intercepted in the UK and in the United Arab Emirates.

In 2012, the Yemeni government carried out a two-month offensive to uproot AQAP from portions of Abyan Governorate, and Yemeni forces eventually regained control over the towns of Zinjibar and Jaar. However, approximately 3,000 land mines, planted by AQAP militants before they fled, killed 72 residents in the aftermath of AQAP's departure. Other AQAP attacks in 2012 targeted the Yemeni military, including a February 2012 suicide car bombing that killed 26 Yemeni soldiers in Hadramawt Governorate.

The FTO designation for AQAP was amended on October 4, 2012, to include the alias Ansar al-Shari'a (AAS). AAS represents a rebranding effort designed to attract potential followers in areas under AQAP's control. AQAP, operating under the alias AAS, carried out a May 2012 suicide bombing in Sanaa that killed 96 people. AQAP/AAS claimed responsibility for the attack, which targeted Yemeni soldiers rehearsing for a parade to celebrate Yemen's National Day, and said the bombing was intended to target the Yemeni military brass. Also in May, press reported that AQAP allegedly plotted to detonate a bomb aboard a U.S.-bound airliner using an improvised explosive device. Though there was no imminent threat to U.S. jetliners, the device, which was acquired from another government, was similar to devices that AQAP had previously used in attempted terrorist attacks.

Strength: Although it is difficult to assess the number of AQAP's members, the group is estimated to have close to one thousand members.

Location/Area of Operation: Yemen

Funding and External Aid: AQAP's funding primarily comes from robberies and kidnap for ransom operations and to a lesser degree from donations from like-minded supporters.

NCTC

Al-Qa'ida in the Arabian Peninsula (AQAP) is a Sunni extremist group based in Yemen that has orchestrated numerous high-profile terrorist attacks. One of the most notable of these operations occurred when AQAP dispatched Nigerian-born Umar Farouk Abdulmutallab, who attempted to detonate an explosive device aboard a Northwest Airlines flight on 25 December 2009—the first attack inside the United States by an al-Qa'ida affiliate since 11 September 2001. That was followed by an attempted attack in which explosive-laden packages were sent to the United States on 27 October 2010. The year 2010 also saw the launch of Inspire magazine, an AQAP-branded, English-language publication that first appeared in July, followed by the establishment of AQAP's Arabic-language al-Madad News Agency in 2011. Dual US-Yemeni citizen Anwar al-Aulaqi, who had a worldwide following as a radical ideologue and propagandist, was the most prominent member of AQAP; he was killed in an explosion in September 2011.

AQAP's predecessor, al-Qa'ida in Yemen (AQY), came into existence after the escape of 23 al-Qa'ida members from prison in the Yemeni capital, Sanaa, in February 2006. AQAP emerged in January 2009 following an announcement that Yemeni and Saudi terrorists were unifying under a common banner, signaling the group's intent to serve as a hub for regional terrorism in Yemen and Saudi Arabia. The leadership of this new organization was composed of the group's amir, Nasir al-Wahishi; deputy amir Sa'id al-Shahri; and military commander Qasim al-Rimi, all veteran extremist leaders. The group has targeted local, US, and Western interests in the Arabian Peninsula, but is now pursuing a global strategy. AQAP elements recently withdrew from their southern Yemen strongholds in June 2012, when Yemeni military forces under new President Abdu Rabbo Mansour Hadi—with the support of local tribesmen—regained control of cities in Abyan and Shabwah that had served as AQAP strongholds since 2011.

AQY operatives conducted near-simultaneous suicide attacks in September 2006 against oil facilities in Yemen, the first large-scale attack by the group. AQY later claimed responsibility for the attack and, in its first Internet statement in November 2006, vowed to conduct further operations. AQY in early 2008 dramatically increased its operational tempo, carrying out small-arms attacks on foreign tourists and a series of mortar attacks against the US and Italian Embassies in Sanaa, the presidential compound, and Yemeni military complexes. In September 2008 the group conducted its largest attack to date, targeting the US Embassy in Sanaa using two vehicle bombs that detonated outside the compound, killing 19 people, including six terrorists.

AQAP is based primarily in the tribal areas outside of Sanaa, which for the most part remain largely outside the control of the Yemeni Government. The US Government has designated AQAP as a Foreign Terrorist Organization.

AL-QA'IDA IN IRAQ**State Department**

aka al-Qa'ida Group of Jihad in Iraq; al-Qa'ida Group of Jihad in the Land of the Two Rivers; al-Qa'ida in Mesopotamia; al-Qa'ida in the Land of the Two Rivers; al-Qa'ida of Jihad in Iraq; al-Qa'ida of Jihad Organization in the Land of The Two Rivers; al-Qa'ida of the Jihad in the Land of the Two Rivers; al-Tawhid; Jam'at al-Tawhid Wa'al-Jihad; Tanzeem Qa'idat al Jihad/Bilad al Raafidaini; Tanzim Qa'idat al-Jihad fi Bilad al-Rafidayn; The Monotheism and Jihad Group; The Organization Base of Jihad/Country of the Two Rivers; The Organization Base of Jihad/Mesopotamia; The Organization of al-Jihad's Base in Iraq; The Organization of al-Jihad's Base in the Land of the Two Rivers; The Organization of al-Jihad's Base of Operations in Iraq; The Organization of al-Jihad's Base of Operations in the Land of the Two Rivers; The Organization of Jihad's Base in the Country of the Two Rivers; al-Zarqawi Network; Islamic State of Iraq; al-Nusra Front; Jabhat al-Nusra; Jabhet al-Nusra; The Victory Front; al-Nusra Front for the People of the Levant

Description: Al-Qa'ida in Iraq (AQI) was designated as a Foreign Terrorist Organization on December 17, 2004. In the 1990s, Abu Mus'ab al-Zarqawi, a Jordanian-born militant, organized a terrorist group called al-Tawhid wal-Jihad to oppose the presence of U.S. and Western military forces in the Islamic world and the West's support for and the existence of Israel. In late 2004, he joined al-Qa'ida (AQ) and pledged allegiance to Usama bin Laden. After this, al-Tawhid wal-Jihad became known as AQI. Zarqawi traveled to Iraq during Operation Iraqi Freedom and led his group against U.S. and Coalition Forces until his death in June 2006. In October 2006, AQI publicly re-named itself the Islamic State of Iraq and has since used that name in its public statements. In 2012, AQI was led by Ibrahim Awwad Ibrahim Ali al-Badri, aka Abu Du'a, who was designated by the Department of State under Executive Order 13224 on October 4.

Since late 2011, AQI has also participated in the Syrian conflict through its alias, al-Nusra Front, which has sought to portray itself as part of the legitimate Syrian opposition. A number of al-Nusra Front's leaders have been members of AQI and its facilitation network that operated in Syria and Iraq from 2004-2011. [In mid-April 2013, al-Nusra leader Muhammad al-Jawlani publicly pledged al-Nusra's fealty to AQ and its leader, Ayman al-Zawahiri.] Al-Nusra works with other U.S. designated terrorist organizations, such as Lebanon based Fatah al-Islam. Al-Nusra Front's base of operations is probably Damascus, but the group mirrors the organizational structure of AQI in Iraq, with regional military, administrative, and local media efforts. On December 11, the Department of State amended AQI's designation to include al-Nusra Front as an alias.

Activities: Since its founding, AQI has conducted high profile attacks, including improvised explosive device (IED) attacks against U.S. military personnel and Iraqi infrastructure; videotaped beheadings of Americans Nicholas Berg (May 11, 2004), Jack Armstrong (September 22, 2004), and Jack Hensley (September 21, 2004); suicide bomber attacks against both military and civilian targets; and rocket attacks. AQI perpetrates the majority of suicide and mass casualty bombings in Iraq using foreign and Iraqi operatives.

Since November 2011, al-Nusra Front has claimed nearly 600 attacks, ranging from more than 40 suicide attacks to small arms and IED operations in major city centers including Damascus, Aleppo, Hamah, Dara, Homs, Idlib, and Dayr al-Zawr. For example, on September 28, 2012, al-Nusra Front claimed responsibility for two suicide car bombs at a military complex in Damascus that killed four and wounded 14, including civilians. On October 3, 2012, the group claimed responsibility for four bombings in Aleppo, including two suicide attacks that killed more than 50 people. Al-Nusra Front followed up those attacks with an October 9 suicide bomb attack on a Syrian Air Force Intelligence compound in a Damascus suburb that killed and wounded at least 100, including civilians.

AQI was also active in Iraq in 2012. In a series of coordinated attacks in March, AQI struck Shia pilgrims in the city of Karbala, set cars on fire near a police headquarters in Kirkuk, and targeted security forces and government officials in Baghdad. In all, AQI struck eight cities in just under six hours, killing 46 people and wounding 200. July was the bloodiest month of AQI attacks in two years, with 325 people killed over the span of multiple bombings and attacks. In August, the Islamic State of Iraq, AQI's political front, released a video detailing a sophisticated attack in March on five locations in Haditha and neighboring Barwana that included dozens of fighters dressed as police commandos. During the raid, AQI fighters killed 27 Iraqi policemen, including two police commanders. In November, at least 166 Iraqi civilians, police, and soldiers were killed in violence across the country, according to the Government of Iraq.

Strength: In Iraq, membership is estimated between 1,000 and 2,000, making it the largest Sunni extremist group in Iraq. Membership in Syria is unknown, though it is likely a small force within the larger Syrian armed opposition.

Location/Area of Operation: AQI's operations are predominately Iraq-based, but it has perpetrated attacks in Jordan. In Syria, al-Nusra Front has claimed attacks in several major city centers. The group maintains a logistical network throughout the Middle East, North Africa, Iran, South Asia, and Europe.

Funding and External Aid: AQI receives most of its funding from a variety of businesses and criminal activities within Iraq.

NCTC

Al-Qa'ida in Iraq (AQI)—also known as the Islamic State of Iraq (ISI)—was established in April 2004 by long-time Sunni extremist Abu Mus'ab al-Zarqawi, who the same year pledged his group's allegiance to Usama Bin Laden. Targeting Coalition forces and civilians by such tactics as vehicle-borne

improvised explosive devices (VBIEDs), suicide bombers, and executions of hostages by beheading and other means, AQI attempted to pressure countries and foreign companies to leave Iraq, push Iraqis to stop supporting the United States and the Iraqi Government, and attract additional cadre to its ranks.

AQI expanded its targeting outside of Iraq in August 2005 by attempting a rocket attack on a US Navy ship in the Port of Aqaba, Jordan, and in November 2005 with the bombing of three hotels in Amman that left 67 dead and more than 150 injured. Al-Zarqawi was killed in a US airstrike on 7 June 2006. The new leader of AQI, Abu Ayyub al-Masri, announced in October 2006 the formation of the Islamic State of Iraq (ISI), led by Iraqi national Abu Umar al-Baghdadi, in an attempt to politicize AQI's terrorist activities and place an "Iraqi face" on their efforts.

In 2007 AQI's continued targeting and repression of Sunni civilians caused a widespread backlash—known as the Sunni Awakening—against the group. The development of the Awakening Councils—composed primarily of Sunni tribal and local community leaders—coincided with a surge in Coalition forces and Iraqi Government operations that denied AQI its safehavens, restricting the organization's freedom of movement and resulting in a decreased attack tempo beginning in mid-2007.

High-profile attacks in 2009 and 2010 demonstrated the group's relevance in the wake of the Coalition withdrawal from Iraqi cities in 2009 and efforts to posture itself to take advantage of the changing security environment, although Abu Ayyub al-Masri and Abu Umar al-Baghdadi were killed in April 2010, marking a significant loss for the organization.

Abu Bakr al-Baghdadi became AQI's next leader, and the group has continued conducting high-profile attacks in Iraq and participating in global violent extremism. The most violent day of attacks claimed by AQI in more than a year occurred on 5 January 2012, when terrorists employing suicide bombers and car bombs killed at least 72 people and wounded at least 147. The group's official spokesperson in January 2012 made vague threats against Americans everywhere.

AQI reaffirmed its support for al-Qa'ida and Ayman al-Zawahiri following Usama Bin Laden's death in May 2011. The arrests the same month of two AQI-affiliated Iraqi refugees in Kentucky highlight the potential threat inside the United States from people associated with AQI.

AL-QA'IDA IN THE ISLAMIC MAGHREB

State Department

aka AQIM; Group for Call and Combat; GSPC; Le Groupe Salafiste Pour La Predication Et Le Combat; Salafist Group for Preaching and Combat

Description: The Salafist Group for Call and Combat (GSPC) was designated as a Foreign Terrorist Organization on March 27, 2002. After the GSPC officially joined with al-Qa'ida (AQ) in September 2006 and became known as al-Qa'ida in the Islamic Maghreb (AQIM), the Department of State amended the GSPC designation on February 20, 2008, to reflect the change. AQIM remains largely a regionally-focused terrorist group. It has adopted a more anti-Western rhetoric and ideology and has aspirations of overthrowing "apostate" African regimes and creating an Islamic Caliphate. Abdelmalek Droukdel, aka Abu Mus'ab Abd al-Wadoud, is the group's leader.

Activities: Since 2007, when AQIM bombed the UN headquarters building in Algiers and an Algerian government building outside of Algiers killing 60 people, AQIM had been relatively quiet and focused on its kidnapping for ransom efforts. In 2011 and 2012, however, AQIM took advantage of the deteriorating security situation in northern Africa to plan and conduct operations. In 2011, AQIM targeted Mauritanian President Muhammad Abdel Aziz and detonated a vehicle-borne improvised explosive device (VBIED) in Nouakchott, injuring nine soldiers, and also claimed responsibility for multiple suicide bomb attacks against Algerian military and police targets, which killed at least 20 people and wounded almost 50 others. In January 2012, Algerian authorities disrupted an AQIM plot targeting

U.S. or European ships in the Mediterranean Sea. Some militants with ties to AQIM were involved in the September 11 attack on U.S. facilities in Benghazi that killed J. Christopher Stevens, the U.S. Ambassador to Libya, and three staff members.

In addition to conducting attacks, AQIM also conducted kidnap for ransom operations. The targets are usually Western citizens from governments or third parties that have established a pattern of making concessions in the form of ransom payments for the release of individuals in custody. In September 2010, AQIM claimed responsibility for the kidnapping of seven people working at a uranium mine in Niger. AQIM released three of the hostages in February 2011, but at the end of 2012, four French citizens remained in captivity.

AQIM continued its kidnapping operations in 2012. In May, AQIM killed a German hostage in Nigeria during a military raid. AQIM was also believed to be behind the December kidnapping of a French engineer in northern Nigeria, an operation that resulted in the death of two Nigerians.

Strength: AQIM has under a thousand fighters operating in Algeria with a smaller number in the Sahel. It is attempting to take advantage of the volatile political situation in the Sahel, especially in Mali, to expand its membership, resources, and operations.

Location/Area of Operation: Northeastern Algeria (including but not limited to the Kabylie region) and northern Mali, Niger, and Mauritania.

Funding and External Aid: AQIM members engaged in kidnapping for ransom and criminal activities to finance their operations. Algerian expatriates and AQIM supporters abroad – many residing in Western Europe – may also provide limited financial and logistical support.

NCTC

Al-Qa'ida in the Lands of the Islamic Maghreb (AQIM) is an Algeria-based Sunni Muslim jihadist group. It originally formed in 1998 as the Salafist Group for Preaching and Combat (GSPC), a faction of the Armed Islamic Group, which was the largest and most active terrorist group in Algeria. The GSPC was renamed in January 2007 after the group officially joined al-Qa'ida in September 2006.

Following its formal alliance with al-Qa'ida, AQIM expanded its aims and declared its intention to attack Western targets. In late 2006 and early 2007, it conducted several improvised explosive device (IED) attacks against convoys of foreign nationals working in the energy sector. AQIM in December 2007 attacked United Nations offices in Algiers with a car bomb and in February 2008 attacked the Israeli Embassy in Nouakchott, Mauritania, with small arms.

AQIM, which operates primarily in the northern coastal areas of Algeria and in parts of the desert regions of southern Algeria and northern Mali, mainly employs conventional terrorist tactics, including guerrilla-style ambushes and mortar, rocket, and IED attacks. Its principal sources of funding include extortion, kidnapping, and donations. AQIM leader Abdelmalek Droukdal announced in May 2007 that suicide bombings would become the group's main tactic. The group claimed responsibility for a suicide truck bomb attack that killed at least eight soldiers and injured more than 20 at a military barracks in Algeria on 11 July 2007, the opening day of the All-Africa Games. In May 2009, AQIM announced it had killed a British hostage after months of failed negotiations. In June of the same year, the group publicly claimed responsibility for killing US citizen Christopher Leggett in Mauritania because of his missionary activities. In 2011, a Mauritanian court sentenced a suspected AQIM member to death, and two others to prison for the American's murder.

In 2010, AQIM failed to conduct the high-casualty attacks in Algeria that it had in previous years. Multinational counterterrorism efforts—including a joint French-Mauritanian raid in July 2010 against an AQIM camp—resulted in the deaths of some AQIM members and possibly disrupted some AQIM activity. In 2011, however, AQIM killed two French hostages during an attempted rescue operation.

In 2012, AQIM took advantage of political chaos in northern Mali to consolidate its control there and worked with the secular Azawad National Liberation Movement (MNLA) to secure independence in Kidal, Gao, and Timbuktu for ethnic Tuaregs. The Islamic militant group Ansar al-Din subsequently formed to support the creation of an Islamic state in Mali ruled by sharia, and a dissident group of AQIM members broke off to form Movement for Unity

and Jihad in West Africa (MUJAO) and support Ansar al-Din. As of early summer 2012, MUJAO was holding two Spanish and an Italian hostage. Separately, AQIM has provided funding and training to members of the Nigerian terrorist group Boko Haram.

AL-SHABAAB

State Department

aka The Harakat Shabaab al-Mujahidin; al-Shabab; Shabaab; the Youth; Mujahidin al-Shabaab Movement; Mujahideen Youth Movement; Mujahidin Youth Movement

Description: Designated as a Foreign Terrorist Organization on March 18, 2008, al-Shabaab was the militant wing of the former Somali Islamic Courts Council that took over parts of southern Somalia in the second half of 2006. Since the end of 2006, al-Shabaab and disparate militias led a violent insurgency using guerrilla warfare and terrorist tactics against the Transitional Federal Government (TFG) of Somalia; the group continues to fight the Government of Somalia. In February 2012, al-Qa'ida (AQ) announced that al-Shabaab leader Ahmed Abdi aw-Mohamed had pledged obedience to Ayman al-Zawahiri and AQ. Al-Shabaab has also developed ties to al-Qa'ida in the Arabian Peninsula (AQAP) and al-Qa'ida in the Islamic Maghreb (AQIM).

In some camps, AQ-affiliated foreign fighters often led the training and indoctrination of the recruits, while rank and file militia fighters from multiple clan and sub-clan factions that are aligned with al-Shabaab are predominantly interested in indigenous issues. The group's foreign fighters were generally intent on conducting attacks outside Somalia but since 2011 have seen their operational capacity reduced due to the military campaign against al-Shabaab. In 2012, al-Shabaab's capability to wage conventional attacks was greatly diminished. Somalia's TFG and its successor, the Federal Government of Somalia (elected indirectly in September) – with the assistance of the AU Mission in Somalia (AMISOM), as well as Ethiopian and allied Somali militia forces – secured areas neighboring Mogadishu and drove al-Shabaab from control of many of its urban strongholds in south-central Somalia. Most notably, the forces drove al-Shabaab from control of the port city of Kismayo on September 28. This led to al-Shabaab's greater reliance on indirect assaults and asymmetrical tactics against AMISOM, Somali, and Kenyan forces. These attacks included the increased use of more sophisticated improvised explosive devices (IEDs).

Activities: Al-Shabaab has used intimidation and violence to undermine the TFG and now the Government of Somalia, forcibly recruit new fighters, and kill activists working to bring about peace through political dialogue and reconciliation. The group has claimed responsibility for several high profile bombings and shootings throughout Somalia targeting AMISOM troops and Somali officials. It has been responsible for the assassination of numerous civil society figures, government officials, and journalists. Al-Shabaab fighters and those who have also claimed allegiance to the group have conducted violent attacks and have assassinated international aid workers and members of NGOs.

In its first attack outside of Somalia, al-Shabaab was responsible for the July 11, 2010 suicide bombings in Kampala, Uganda during the World Cup, which killed nearly 76 people, including one American citizen. Al-Shabaab's attacks continued apace in 2012, and resulted in the deaths of hundreds of people. Among al-Shabaab's most notable 2012 attacks in Somalia were a series of mortar attacks in March against the Somali presidential palace; an April suicide attack targeting Prime Minister Abdiweli Mohamed Ali at Mogadishu's National Theater, which killed five; a May suicide attack at a Café in Dusa Mareb, which killed seven people, including two Somali Members of Parliament; and a violent attack on the town near the Kenyan border in November, which left at least 12 dead. Outside of Somalia, al-Shabaab was also believed responsible for a number of deadly grenade attacks in Kenya.

There were frequent reports of al-Shabaab carrying out amputation of limbs for minor thievery offenses, stoning for suspected adultery, killing converts to religions other than Islam, and forced conscription of child soldiers. Al-Shabaab leaders frequently ordered beheaded corpses to be left in streets as a lesson to local communities. Shabaab forces also engaged in widespread rape and violence against women.

Location/Area of Operation: Al-Shabaab lost full control of significant areas of territory in 2011 and 2012. In September 2012, al-Shabaab lost control of Kismayo, a vital port it used to obtain supplies and funding through taxes. Despite these losses, al-Shabaab continued to control large sections of rural areas in the middle and lower Jubba regions, as well as Bay and Bakol regions, and augmented its presence in northern Somalia along the Golis Mountains and within Puntland's larger urban areas.

Strength: Al-Shabaab is estimated to have several thousand members, including foreign fighters, a force that is augmented by allied clan militias in some areas.

Funding and External Aid: Al-Shabaab saw its income diminish due to the loss of the strategic port cities of Kismayo and Merka; furthermore, it lost a general ability to freely levy taxes in certain urban areas in southern and central Somalia. Al-Shabaab continued to have sufficient financing available, however, including funds from illegal charcoal production and exports from smaller ports along the coast, taxation of local populations and areas under al-Shabaab control, and foreign donations.

Because al-Shabaab is a multi-clan entity, it receives significant donations from the global Somali diaspora; however, the donations are not all intended to support terrorism; but also to support family members.

NCTC

The Harakat Shabaab al-Mujahidin—also known as al-Shabaab, Shabaab, the Youth, Mujahidin al-Shabaab Movement, Mujahideen Youth Movement, and many other names and variations—was the militant wing of the Somali Council of Islamic Courts that took over most of southern Somalia in the second half of 2006. Although the Somali government and Ethiopian forces defeated the group in a two-week war between December 2006 and January 2007, al-Shabaab—a clan-based insurgent and terrorist group—has continued its violent insurgency in southern and central Somalia. The group has exerted temporary and, at times, sustained control over strategic locations in those areas by recruiting, sometimes forcibly, regional sub-clans and their militias, using guerrilla warfare and terrorist tactics against the Transitional Federal Government (TFG) of Somalia and its allies, African Union Mission in Somalia (AMISOM) peacekeepers, and nongovernmental aid organizations. However, the group's insurgency has been challenged over the past year by in-fighting and military pressure that has liberated key towns from al-Shabaab.

Al-Shabaab is not centralized or monolithic in its agenda or goals. Its rank-and-file members come from disparate clans, and the group is susceptible to clan politics, internal divisions, and shifting alliances. Most of its fighters are predominantly interested in the nationalistic battle against the TFG and not supportive of global jihad. Al-Shabaab's senior leadership is affiliated with al-Qa'ida and is believed to have trained and fought in Afghanistan. The merger of the two groups was publicly announced in February 2012 by the al-Shabaab amir and Ayman al-Zawahiri, leader of al-Qa'ida.

Al-Shabaab has claimed responsibility for many bombings—including various types of suicide attacks—in Mogadishu and in central and northern Somalia, typically targeting Somali government officials, AMISOM, and perceived allies of the TFG. The group was likely responsible for a wave of five coordinated suicide car bombings in October 2008 that simultaneously hit targets in two cities in northern Somalia, killing at least 26 people, including five bombers, and injuring 29 others. Al-Shabaab also claimed responsibility for the twin suicide bombings in Kampala, Uganda, on 11 July 2010 that killed more than 70 people. Al-Shabaab's leaders also have ordered their fighters—which include Americans and other Westerners—to attack African Union peace-keeping troops based in Mogadishu. Al-Shabaab is responsible for the assassination of Somali peace activists, international aid workers, numerous civil society figures, and journalists. The group gained additional notoriety by blocking the delivery of aid from some Western relief agencies during the 2011 famine that killed tens of thousands of Somalis.

On 29 February 2008, the US Government designated al-Shabaab as a Foreign Terrorist Organization under Section 219 of the Immigration and Nationality Act (as amended) and as a Specially Designated Global Terrorist entity under Section 1(b) of Executive Order 13224 (as amended). In 2012, the Rewards for Justice program added several al-Shabaab leaders to its site, offering large rewards for information leading to their capture.

SYRIA

Designated in 1979 as a State Sponsor of Terrorism, Syria continued its political support to a variety of terrorist groups affecting the stability of the region and beyond, even amid significant internal unrest. Syria provided political and weapons support to Lebanese Hizballah and continued to allow Iran to re-arm the terrorist organization. The Syrian regime's relationship with Hizballah and Iran appears to have gotten stronger over the course of the conflict in Syria. President Bashar al-Asad continued to be a staunch defender of Iran's policies while Iran exhibited equally energetic support for Syrian regime efforts to put down the growing protest movement within Syria. Statements supporting terrorist groups, particularly Hizballah, were often in Syrian government speeches and press statements.

President Asad continued to express public support for Palestinian terrorist groups as elements of the resistance against Israel. Damascus provided safe haven in Syria for exiled individuals, although the Palestinian groups were subject to the same level of insecurity as the rest of the Syrian population and fighting has fractured their alliances with the Syrian regime. As part of a broader strategy during the year, the regime has attempted to portray Syria itself as a victim of terrorism, characterizing all its armed opponents as "terrorists."

Syria continued to generate significant concern regarding the role it plays in terrorist financing.

Industry experts reported that 60 percent of all business transactions were conducted in cash and that nearly 80 percent of all Syrians did not use formal banking services. Despite Syrian legislation that required money-changers to be licensed by the end of 2007, many money-changers continued to operate illegally in Syria's vast black market, estimated to be as large as Syria's formal economy. Regional *hawala* networks remained intertwined with smuggling and trade-based money laundering and were facilitated by notoriously corrupt customs and immigration officials. This raised significant concerns that some members of the Syrian government and the business elite were complicit in terrorist finance schemes conducted through these institutions.

Syria is a member of the Middle East and North Africa Financial Action Task Force (MENAFATF), a Financial Action Task Force (FATF)-style regional body. Since February 2010, Syria has been publicly identified by the FATF as a jurisdiction with strategic anti-money laundering/combatting the financing of terrorism (AML/CFT) deficiencies for which it has developed an action plan with the FATF to address these weaknesses. Since then, Syria has made limited progress on its AML/CFT regime. In February 2012, Syria was named in the FATF Public Statement for its lack of progress in implementing its action plan, including its need to address the deficiencies by providing sufficient legal basis for implementing its S/RES/1373 obligations and implementing adequate procedures for identifying and freezing terrorist assets, and ensuring that appropriate laws and procedures are in place to provide mutual legal assistance.

In 2012, we continued to closely monitor Syria's proliferation-sensitive materials and facilities, including Syria's significant stockpile of chemical weapons, which we assess remains under the Asad regime's control. There is significant concern, given the instability in Syria, that these materials could find their way to terrorist organizations. We are coordinating closely with a number of like-minded nations and partners to prevent Syria's stockpiles of chemical and advanced conventional weapons from falling into the hands of violent extremists.

ABDALLAH AZZAM BRIGADES

State Department

aka Abdullah Azzam Brigades; Ziyad al-Jarrah Battalions of the Abdallah Azzam Brigades; Yusuf al-'Uyayri Battalions of the Abdallah Azzam Brigades

Description: The Abdallah Azzam Brigades (AAB) was designated as a Foreign Terrorist Organization on May 30, 2012. AAB formally announced its establishment in a July 2009 video statement claiming responsibility for a February 2009 rocket attack against Israel. The group is divided into two branches: the Arabian Peninsula-based Yusuf al-'Uyayri Battalions of the Abdallah Azzam Brigades, named after the now-deceased founder of al-Qa'ida in the Arabian Peninsula; and the Lebanon-based Ziyad al-Jarrah Battalions of the Abdallah Azzam Brigades, named after Ziad al Jarrah, a Lebanese citizen who was one of the masterminds of the September 11 attacks on the United States. In a June 2012 video statement, the group named its leader as Majid bin Muhammad al Majid, a Saudi citizen who is on the Saudi government's list of 85 Most Wanted Terrorists for his links to al-Qa'ida.

Activities: AAB has relied primarily on rocket attacks against Israeli civilians, and is responsible for numerous rocket attacks fired into Israeli territory from Lebanon. These attacks have targeted population centers in Israel and have included incidents such as the September 11, 2009 double rocket attack on Nahariya and an April 2011 rocket attack on Ashkelon. In addition to rocket attacks, AAB carried out a July 2010 suicide bombing attack against the Japanese-owned oil tanker M/V M. Star in the Strait of Hormuz. According to a statement released online, AAB claimed that the attack was carried out by its Arabian Peninsula Branch. AAB has repeatedly articulated its intent to carry out attacks against Western interests in the Middle East. In 2010, for example, the group expressed an interest in kidnapping U.S. and British tourists in the Arabian Peninsula.

Strength: Unknown

Location/Area of Operation: AAB is based in both Lebanon and the Arabian Peninsula.

Funding and External Aid: Unknown

ANSAR AL-ISLAM

State Department

aka Ansar al-Sunna; Ansar al-Sunna Army; Devotees of Islam; Followers of Islam in Kurdistan; Helpers of Islam; Jaish Ansar al-Sunna; Jund al-Islam; Kurdish Taliban; Kurdistan Supporters of Islam; Partisans of Islam; Soldiers of God; Soldiers of Islam; Supporters of Islam in Kurdistan

Description: Designated as a Foreign Terrorist Organization on March 22, 2004, Ansar al-Islam's (AI's) goals include expelling western interests from Iraq and establishing an independent Iraqi state based on Sharia law. AI was established in 2001 in Iraqi Kurdistan with the merger of two Kurdish extremist factions that traced their roots to the Islamic Movement of Kurdistan. On May 4, 2010, Abu Abdullah al-Shafi'i, Ansar al-Islam's leader, was captured by U.S. forces in Baghdad and remains in prison. On December 15, 2011 AI announced a new leader, Abu Hashim Muhammad bin Abdul Rahman al Ibrahim.

Mullah Krekar (aka Najmuddin Faraj Ahmad), an Iraqi citizen and the founder of Ansar al-Islam, continued to reside in Norway on a long-term residence permit. In March 2012, a trial court convicted Krekar of issuing threats and inciting terrorism, and sentenced him to six years in prison. Krekar appealed, and in December an appeals court affirmed his convictions for issuing threats and intimidating witnesses, but reversed his conviction for "inciting terrorism." The appeals court reduced his sentence to two years and 10 months in prison.

Activities: AI has conducted attacks against a wide range of targets including Iraqi government and security forces, and U.S. and Coalition Forces. AI has conducted numerous kidnappings, executions, and assassinations of Iraqi citizens and politicians. The group has either claimed responsibility or is believed to be responsible for attacks in 2011 that killed 24 and wounded 147.

Strength: Though precise numbers are unknown, AI is considered one of the largest Sunni terrorist groups in Iraq.

Location/Area of Operation: Primarily northern Iraq, but also maintains a presence in western and central Iraq.

Funding and External Aid: AI receives assistance from a loose network of associates in Europe and the Middle East.

GAMA'A AL-ISLAMIYYA

State Department

aka al-Gama'at; Egyptian al-Gama'at al-Islamiyya; GI; Islamic Gama'at; IG; Islamic Group

Description: Gama'a al-Islamiyya (IG) was designated as a Foreign Terrorist Organization on October 8, 1997. Once Egypt's largest militant group, IG was active in the late 1970s, but is now a loosely organized network. It formed the Building and Development political party that competed in the 2011 parliamentary elections, winning 13 seats. Egypt-based members of IG released from prison prior to the revolution have renounced terrorism, though some members located overseas have worked with or joined al-Qa'ida (AQ). Hundreds of members who may not have renounced violence were released from prison in 2011. The external wing, composed of mainly exiled members in several countries, maintained that its primary goal was to replace the Egyptian government with an Islamic state. IG's "spiritual" leader, the "blind Sheikh," Umar Abd al-Rahman, is serving a life sentence in a U.S. prison for his involvement in the 1993 World Trade Center bombing. Supporters of al-Rahman have called for reprisal attacks in the event of his death in prison.

Activities: In the 1990s, IG conducted armed attacks against Egyptian security, other government officials, and Coptic Christians. IG claimed responsibility for the June 1995 assassination attempt on Egyptian President Hosni Mubarak in Addis Ababa, Ethiopia. The group also launched attacks on tourists in Egypt, most notably the 1997 Luxor attack. In 1999, part of the group publicly renounced violence.

Strength: At its peak, IG likely commanded several thousand core members and a similar number of supporters. Security crackdowns following the 1997 attack in Luxor and the 1999 cease-fire, along with post-September 11 security measures and defections to AQ, have probably resulted in a substantial decrease in what is left of an organized group.

Location/Area of Operation: The IG maintained an external presence in Afghanistan, Yemen, Iran, the UK, Germany, and France. The IG terrorist presence in Egypt was minimal due to the reconciliation efforts of former local members.

Funding and External Aid: Unknown

HIZBALLAH

State Department

aka the Party of God; Islamic Jihad; Islamic Jihad Organization; Revolutionary Justice Organization; Organization of the Oppressed on Earth; Islamic Jihad for the Liberation of Palestine; Organization of Right Against Wrong; Ansar Allah; Followers of the Prophet Muhammed

Description: Hizballah was designated as a Foreign Terrorist Organization on October 8, 1997. Formed in 1982 in response to the Israeli invasion of Lebanon, the Lebanese-based radical Shia group takes its ideological inspiration from the Iranian revolution and the teachings of the late Ayatollah Khomeini. The group generally follows the religious guidance of Khomeini's successor, Iranian Supreme Leader Ali Khamenei. Hizballah is closely allied with Iran and the two often work together on shared initiatives, though Hizballah also acts independently. Hizballah shares a close relationship with Syria, and like Iran, the group is providing assistance to Syrian regime forces in the Syrian conflict.

Hizballah has strong influence in Lebanon, especially with the Shia community. Hizballah plays an active role in Lebanese politics, and the group holds 13 seats in the 128-member Lebanese Parliament and two seats in the 30-member Council of Ministers. Hizballah's political strength grew in the wake of the 2006 war with Israel and the group's 2008 takeover of West Beirut, though its reputation and popularity have been significantly undermined by the group's active support for the Asad regime.

Hizballah provides support to several Palestinian terrorist organizations, as well as a number of local Christian and Muslim militias in Lebanon. Besides overt political support, support includes the covert provision of weapons, explosives, training, funding, and guidance.

Activities: Hizballah's terrorist attacks have included the suicide truck bombings of the U.S. Embassy and U.S. Marine barracks in Beirut in 1983; the U.S. Embassy annex in Beirut in 1984; and the 1985 hijacking of TWA flight 847, during which a U.S. Navy diver was murdered. Elements of the group were responsible for the kidnapping, detention, and murder of Americans and other Westerners in Lebanon in the 1980s. Hizballah was implicated, along with Iran, in the 1992

attacks on the Israeli Embassy in Argentina and on the 1994 bombing of the Argentine-Israeli Mutual Association in Buenos Aires. In 2000, Hizballah operatives captured three Israeli soldiers in the Shebaa Farms area and, separately, kidnapped an Israeli non-combatant in Dubai. Though the non-combatant survived, on November 1, 2001, Israeli Army Rabbi Israel Weiss pronounced the soldiers dead. The surviving non-combatant and the bodies of the IDF soldiers were returned to Israel in a prisoner exchange with Hizballah in 2004.

Hizballah and a Palestinian group affiliated with al-Qa`ida blamed each other for a May 2011 roadside bomb attack that wounded six Italian soldiers with the UN Interim Force in Lebanon (UNIFIL). Two other attacks against UNIFIL peacekeepers – an attack in late July that wounded six French citizens and a second attack days later that injured three other French soldiers – were believed to have been carried out by Hizballah. Also in 2011, four Hizballah members were indicted by the U.N.-based Special Tribunal for Lebanon (STL), an international tribunal investigating the 2005 assassination of Lebanese Prime Minister Rafik Hariri. The four Hizballah members indicted by the STL were Mustafa Badreddine Salim Ayyash, Assad Sabra, and Hassan Anise. Identified as the primary suspect in Hariri's assassination, Badreddine is believed to have replaced his cousin, Imad Mugniyeh, as Hizballah's top military commander after Mugniyeh's 2008 death. Hizballah denounced the trial and vowed to retaliate, saying the four indicted Hizballah members would not be handed over.

On January 12, Thai police detained a Hizballah operative on immigration charges as he was attempting to depart Thailand from Suvarnabhumi International Airport. He led police to nearly 10,000 pounds of urea-based fertilizer and 10 gallons of liquid ammonium nitrate in a commercial building about 20 miles south of Bangkok. It was unclear if the materials were intended to be used to carry out terrorist attacks in Thailand – possibly against Israeli tourists – or if they were to be transported to another country. The Hizballah operative was awaiting trial at year's end.

In 2012, Hizballah stepped up the pace of its terrorist plotting, and was implicated in several terrorist plots around the world. In Cyprus, a suspected Lebanese Hizballah operative was detained by the Cypriot authorities on July 7 for allegedly helping plan an attack against Israeli tourists in Cyprus. The trial began in September 2012, and on March 21, 2013, a Cyprus court found a Hizballah operative guilty of charges stemming from his surveillance activities of Israeli tourist targets.

In Bulgaria, on July 18, a terrorist attack was carried out on a passenger bus carrying 42 Israeli tourists at the Sarafovo Airport near the Bulgarian city of Burgas. The explosion killed five Israelis and injured 32, and also killed the Bulgarian bus driver. On February 5, 2013, Bulgarian Deputy Prime Minister Tsvetan Tsevtanov, publically linked Hizballah to the Burgas bombing, citing the involvement of two Hizballah operatives in the plot.

Strength: Several thousand supporters and members.

Location/Area of Operation: Hizballah is based in the southern suburbs of Beirut, the Bekaa Valley, and southern Lebanon. However, as evidenced by Hizballah's activities during the course of 2012, the group is capable of operating around the globe.

Funding and External Aid: Iran continues to provide Hizballah with training, weapons, and explosives, as well as political, diplomatic, monetary, and organizational aid; Syria furnished training, weapons, diplomatic, and political support. Hizballah also receives funding from private donations and profits from legal and illegal businesses. Hizballah receives financial support from Lebanese Shia communities in Europe, Africa, South America, North America, and Asia. As illustrated by the Lebanese Canadian bank case, Hizballah supporters are often engaged in a range of criminal activities that benefit the group financially. These have included smuggling contraband goods, passport falsification, trafficking in narcotics, money laundering, and credit card, immigration, and bank fraud.

NCTC

Formed in 1982 in response to the Israeli invasion of Lebanon, Hizballah (the "Party of God"), a Lebanon-based Shia terrorist group, advocates Shia empowerment within Lebanon. The group also supports Palestinian rejectionist groups in their struggle against Israel and provides training for Iraqi Shia militants attacking Coalition forces in Iraq. A Hizballah operative, Ali Musa Daquq, faces US military charges of coming to Iraq to train extremists, and of being responsible for an attack against a military facility in Karbala⁶, Iraq, in January 2007 that left five American soldiers dead.

Hizballah has been involved in numerous anti-US terrorist attacks, including the suicide truck bombings of the US Embassy in Beirut in April 1983, the US Marine barracks in Beirut in October 1983, and the US Embassy annex in Beirut in September 1984, as well as the hijacking of TWA 847 in 1985 and the Khobar Towers attack in Saudi Arabia in 1996. Although Hizballah's leadership is based in Lebanon, the group has established cells worldwide.

Hizballah has participated in the Lebanese government since 1992. With the 2004 passage of UN Security Council Resolution 1559, which called for the disarmament of all armed militias in Lebanon, Hizballah has focused on justifying its retention of arms by casting itself as the defender of Lebanon against Israeli aggression. On 12 July 2006, Hizballah kidnapped two Israeli soldiers, sparking the 2006 war in which Hizballah claimed victory by virtue of its survival; it has since sought to use the conflict to justify its need to retain its arms as a Lebanese resistance force. In May 2008, Hizballah militants seized parts of Beirut in response to calls by the government to restrict Hizballah's secure communications and arms. In negotiations to end the violence, Hizballah gained veto power in the government, and retained its arms and secure communications.

In February 2008, Hizballah's military chief 'Imad Mughniyah was killed by a vehicle bomb in Damascus. Hizballah Secretary General Hassan Nasrallah publicly blamed Israel and continues to promise retaliation. Several Hizballah operations have been disrupted since Mughniyah's death, including the 2008 disruption of a cell in Baku, Azerbaijan, targeting the Israeli embassy there, and the late-2008 disruption of a Hizballah cell in Egypt targeting Israeli tourists and ships in transiting the Suez Canal. Additionally, a Hizballah operation was reportedly disrupted in Turkey in 2009, and in early 2011 Israel warned its citizens of several Hizballah plots against Israeli interests in Turkey, Azerbaijan, Georgia, and Cyprus.

In July 2011 the UN Special Tribunal for Lebanon (STL) indicted four Hizballah members—including a senior Hizballah official—for the assassination of former Lebanese Prime Minister Rafiq al-Hariri, who was killed by a car bomb in Beirut on 14 February 2005. Their trials, which will be held in absentia, are tentatively scheduled to begin on 25 March 2013.

In July 2012, a bomb exploded on a bus in Burgas, Bulgaria, killing six Israeli tourists and a Bulgarian. The Israeli prime minister announced his government had "unquestionable" intelligence indicating Hizballah conducted the attack.

IRAN

State Department

Designated as a State Sponsor of Terrorism in 1984, Iran increased its terrorist-related activity, including attacks or attempted attacks in India, Thailand, Georgia, and Kenya. Iran provided financial, material, and logistical support for terrorist and militant groups in the Middle East and Central Asia. Iran used the Islamic Revolutionary Guard Corps-Qods Force (IRGC-QF) and militant groups to implement foreign policy goals, provide cover for intelligence operations, and stir up instability in the Middle East. The IRGC-QF is the regime's primary mechanism for cultivating and supporting terrorists abroad.

In 2012, Iran was implicated in planned attacks in India, Thailand, Georgia, and Kenya. On February 13, in New Delhi, India, a magnetic bomb placed under the vehicle of an Israeli diplomat's wife exploded, seriously injuring her and three Indian nationals. On February 14, a similar device was discovered under a vehicle belonging to the Israeli embassy in Tbilisi, Georgia, and safely defused. Also on February 14, Thai police arrested three Iranian nationals in connection with explosions in a Bangkok private residence that revealed bomb-making materials and makeshift grenades intended for use in attacks against Israeli targets. On June 19, Kenyan authorities arrested two Iranian nationals in connection with explosives stockpiled for a suspected terrorist attack. According to press reports, the individuals were members of the IRGC-QF.

On October 17, Iranian-born U.S. dual-national Mansour Arbabsiar was arrested by U.S. authorities and pled guilty in a New York court to participating in a 2011 plot to murder the Saudi ambassador to the United States. Arbabsiar held several meetings with an associate whom Iranian officials believed was a narcotics cartel member. This associate, in fact, was a confidential source for U.S. law enforcement. Arbabsiar admitted to working on behalf of the IRGC-QF to carry out the plot. An IRGC-QF officer who remains at large was also indicted. The thwarted plot demonstrated Iran's interest in using international terrorism – including in the United States – to further its foreign policy goals.

In 2012, the IRGC-QF trained Taliban elements on small unit tactics, small arms, explosives, and indirect fire weapons, such as mortars, artillery, and rockets. Since 2006, Iran has arranged arms shipments to select Taliban members, including small arms and associated ammunition, rocket propelled grenades, mortar rounds, 107mm rockets, and plastic explosives. Iran has shipped a large number of weapons to Kandahar, Afghanistan, aiming to increase its influence in this key province.

Despite its pledge to support Iraq's stabilization, Iran trained, funded, and provided guidance to Iraqi Shia militant groups. The IRGC-QF, in concert with Lebanese Hizballah, provided training outside of Iraq as well as advisors inside Iraq for Shia militants in the construction and use of sophisticated improvised explosive device technology and other advanced weaponry.

Regarding Syria, Iran provided extensive support, including weapons, funds, and training to assist the Asad regime in its brutal crackdown that has resulted in the death of more than 70,000 civilians. Iran provided weapons, training, and funding to Hamas and other Palestinian terrorist groups, including the Palestine Islamic Jihad and the Popular Front for the Liberation of Palestine-General Command. Since the end of the 2006 Israeli-Hizballah conflict, Iran has assisted in rearming Hizballah, in direct violation of UNSCR 1701. Iran has provided hundreds of millions of dollars in support of Hizballah in Lebanon and has trained thousands of Hizballah fighters at camps in Iran.

Iran actively supported members of the Houthi tribe in northern Yemen, including activities intended to build military capabilities, which could pose a greater threat to security and stability in Yemen and the surrounding region. In July 2012, the Yemeni Interior Ministry arrested members of an alleged Iranian spy ring, headed by a former member of the IRGC.

Iran remained unwilling to bring to justice senior al-Qa'ida (AQ) members it continued to detain, and refused to publicly identify those senior members in its custody. Iran allowed AQ facilitators Muhsin al-Fadhli and Adel Radi Saqr al-Wahabi al-Harbi to operate a core facilitation pipeline through Iran, enabling AQ to move funds and fighters to South Asia and to Syria. Al-Fadhli is a veteran AQ operative who has been active for years. Al-Fadhli began working with the Iran-based AQ facilitation network in 2009 and was later arrested by Iranian authorities. He was released in 2011 and assumed leadership of the Iran-based AQ facilitation network.

Since 2009, the Financial Action Task Force (FATF) has called for its members and the international community to institute countermeasures to protect their respective financial sectors and the global financial system from the risks – in particular the terrorist financing threat – posed by Iran. In October 2012, the FATF strengthened its language and again called for countermeasures against Iran. Iran has had some limited engagement regarding anti-money laundering/combating the financing of terrorism and has responded to overtures by multilateral entities such as the UN's Global Programme against Money Laundering, but it has failed to criminalize terrorist financing and require that financial institutions and other obliged entities file suspicious transaction reports. Iran has not engaged with FATF and was not a member of a FATF-style regional body.

Iran remains a state of proliferation concern. Despite multiple UNSCRs requiring Iran to suspend its sensitive nuclear proliferation activities, Iran continues to violate its international obligations regarding its nuclear program. For further information, see the Report to Congress on Iran-related Multilateral Sanctions Regime Efforts (February 2013), and the Report on the Status of Bilateral and Multilateral Efforts Aimed at Curtailing the Pursuit of Iran of Nuclear Weapons Technology (September 2012).

JUNDALLAH

State Department

aka People's Resistance Movement of Iran (PMRI); Jonbesh-i Moqavemat-i-Mardom-i Iran; Popular Resistance Movement of Iran; Soldiers of God; Fedayeen-e-Islam; Former Jundallah of Iran; Jundullah; Jondullah; Jundollah; Jondollah; Jondallah; Army of God (God's Army); Baloch Peoples Resistance Movement (BPRM)

Description: **Jundallah** was designated as a Foreign Terrorist Organization on November 4, 2010. Since its inception in 2003, Jundallah, which operates primarily in the province of Sistan va Balochistan of Iran, has engaged in numerous attacks, killing and maiming scores of Iranian civilians and government officials. Jundallah's stated goals are to secure recognition of Balochi cultural, economic, and political rights from the Government of Iran, and to spread awareness of the plight of the Baloch situation through violent and nonviolent means.

Activities: In March 2006, Jundallah attacked a motorcade in eastern Iran, which included the deputy head of the Iranian Red Crescent Security Department, who was then taken hostage. The Governor of Zahedan, his deputy, and five other officials were wounded; seven others were kidnapped; and more than 20 were killed in the attack. An October 2009 suicide bomb attack in a marketplace in the city of Pishin in the Sistan va Balochistan province, which killed more than 40 people, was reportedly the deadliest terrorist attack in Iran since the 1980s. In a statement on its website, Jundallah claimed responsibility for the December 15, 2010 suicide bomb attack inside the Iman Hussein Mosque in Chabahar, which killed an estimated 35 to 40 civilians and wounded 60 to 100. In July 2010, Jundallah attacked the Grand Mosque in Zahedan, killing approximately 30 and injuring an estimated 300.

Strength: Reports of Jundallah membership vary from 500 to 2,000.

Location/Area of Operation: Throughout Sistan va Balochistan province in southeastern Iran and the greater Balochistan area of Afghanistan and Pakistan.

Funding and External Aid: Unknown

KATA'IB HIZBALLAH

State Department

aka Hizballah Brigades; Hizballah Brigades in Iraq; Hizballah Brigades-Iraq; Kata'ib Hezbollah; Khata'ib Hezbollah; Khata'ib Hizballah; Khattab Hezbollah; Hizballah Brigades-Iraq of the Islamic Resistance in Iraq; Islamic Resistance in Iraq; Kata'ib Hizballah Fi al-Iraq; Katibat Abu Fathel al-A'abas; Katibat Zayd Ebin Ali; Katibut Karbala

Description: Designated as a Foreign Terrorist Organization on July 2, 2009, Kata'ib Hizballah (KH) was formed in 2006 and is a radical Shia Islamist group with an anti-Western outlook and extremist ideology that has conducted attacks against Iraqi, U.S., and Coalition targets in Iraq. KH has threatened the lives of Iraqi politicians and civilians that support the legitimate political process in Iraq. The group is notable for its extensive use of media operations and propaganda by filming and releasing videos of attacks. KH has ideological ties to Lebanese Hizballah and receives support from that group and its sponsor, Iran.

Activities: KH has been responsible for numerous terrorist attacks since 2007, including improvised explosive device bombings, rocket propelled grenade attacks, and sniper operations. In 2007, KH gained notoriety with attacks on U.S. and Coalition Forces in Iraq. KH was particularly active in summer 2008, recording and distributing video footage of its attacks.

In June 2011, five U.S. soldiers were killed in a rocket attack in Baghdad, Iraq, when KH assailants fired between three and five rockets at U.S. military base Camp Victory. The group remained active in 2012, but has not conducted an attack on U.S. interests since July 2011.

Strength: Membership is estimated at 400 individuals.

Location/Area of Operation: KH's operations are predominately Iraq-based. In 2011, KH conducted the majority of its operations in Baghdad but was active in other areas of Iraq, including Kurdish areas such as Mosul. KH militants were reportedly in Syria, protecting Shia shrines and fighting alongside Syrian President Asad's troops against Syrian opposition forces.

Funding and External Aid: KH is almost entirely dependent on support from Iran and Lebanese Hizballah.

KURDISTAN WORKERS' PARTY

State Department

aka the Kurdistan Freedom and Democracy Congress; the Freedom and Democracy Congress of Kurdistan; KADEK; Partiya Karkeran Kurdistan; the People's Defense Force; Halu Mesru Savunma Kuvveti; Kurdistan People's Congress; People's Congress of Kurdistan; KONGRA-GEL

Description: Founded by Abdullah Ocalan in 1978 as a Marxist-Leninist separatist organization, the Kurdistan Workers' Party (PKK) was designated as a Foreign Terrorist Organization on October 8, 1997. The group, composed primarily of Turkish Kurds, launched a campaign of violence in 1984. The PKK's original goal was to establish an independent Kurdish state in southeastern Turkey, but in recent years it has spoken more often about autonomy within a Turkish state that guarantees Kurdish cultural and linguistic rights.

Activities: In the early 1990s, the PKK moved beyond rural-based insurgent activities to include urban terrorism. In the 1990s, southeastern Anatolia was the scene of significant violence; some estimates placed casualties at some 30,000 persons. Following his capture in 1999, Ocalan announced a "peace initiative," ordering members to refrain from violence and requesting dialogue with Ankara on Kurdish issues. Ocalan's death sentence was commuted to life imprisonment; he remains the symbolic leader of the group. The group foreswore violence until June 2004, when the group's hard-line militant wing took control and renounced the self-imposed cease-fire of the previous five years. Striking over the border from bases within Iraq, the PKK has engaged in terrorist attacks in eastern and western Turkey. In 2009 the Turkish government and the PKK resumed peace negotiations. However, talks broke down after a PKK initiated attack on July 14, 2011, that left 13 Turkish soldiers dead. Violence in 2011 and 2012 has marked one of the most deadly time periods in the almost 30 year conflict. Widely publicized peace talks between Ocalan and the Turkish government to resolve the conflict began at the end of 2012.

Primary targets have been Turkish government security forces, local Turkish officials, and villagers who oppose the organization in Turkey. The PKK remained active in 2012: on August 20, a car bomb in the southeastern Turkish city of Gaziantep killed nine people, including four children, and wounded in excess of 70. Similar car bombings occurred in both Hakkari province in January, killing one and injuring 28, and Kayseri province in May, injuring 18.

Strength: Approximately 4,000 to 5,000 members; 3,000 to 3,500 are located in northern Iraq.

Location/Area of Operation: The PKK operate primarily in Turkey, Iraq, and Europe.

Funding and External Aid: The PKK receives financial support from the large Kurdish diaspora in Europe and from criminal activity.

KONGRA-GEL (KGK) - formerly the Kurdistan Worker's Party, PKK

NCTC

The Kurdistan People's Congress (KGK, formerly the Kurdistan Worker's Party, PKK) is a Kurdish separatist group primarily active in part of northern Iraq and southeastern Turkey. Composed mostly of Turkish Kurds, the group in 1984 began a campaign of armed violence, including terrorism, which has resulted in over 45,000 deaths. Historically, KGK directed operatives to target Turkish security forces, government offices, and villagers who opposed the group. KGK's imprisoned leader, Abdullah Ocalan, in 2006 publicly called for a KGK "unilateral cease-fire," which in practice meant stopping terrorist attacks and limiting violence to "defensive" attacks against Turkish soldiers and security forces patrolling areas that the KGK considered theirs.

The KGK wages a seasonal insurgency, and has declared cease-fires that coincide with the group's typical drawdown during the winter months, during which time KGK members regroup and train. The KGK urban terrorism wing, the Kurdistan Freedom Hawks (TAK), in 2005 began using terrorist tactics—including suicide bombings—to target Turkish tourist destinations in order to damage the Turkish economy and provide the KGK with plausible deniability for the attacks.

In November 2009, the Turkish Government announced its plan to grant social and economic rights to Turkey's Kurdish population, largely to undercut support for the KGK. This initiative faltered, however, due to public and political opposition. The KGK since 2010 has continued to take an active defense posture against Turkish military operations in southeastern Turkey and northern Iraq, while TAK claimed responsibility for a 2010 attack on a military bus, killing five, and a suicide bombing the same year that wounded 32 in Istanbul. The US Treasury Department in April 2011 designated five KGK leaders under the Kingpin Act, freezing any assets they may have under US jurisdiction and prohibiting US persons from conducting financial or commercial transactions with them.

In July 2011, a clash between Turkish forces and the KGK in Diyarbakir Province resulted in the deaths of thirteen Turkish soldiers, and TAK in September 2011 killed three people in a car bombing in Ankara. A KGK attack in October 2011 killed 24 Turkish troops and was the deadliest incident since 1993. Attacks persisted in 2012, with KGK's armed wing, the People's Defense Force (HPG), killing eight Turkish soldiers and wounding 16 in coordinated attacks in June. KGK also stepped up its kidnapping campaign against Turkish state employees and soldiers, which included the unprecedented abduction of a Turkish parliamentary deputy in August. In addition to its stronghold in northern Iraq, the KGK's Syrian affiliate, the Democratic Union Party (PYD), has increased its presence in northern Syria along the border with Turkey by establishing control in Kurdish areas, resulting in concerns of a heightened threat to Turkey and increased tensions along the border.

LASHKAR I JHANGVI

State Department

aka Army of Jhangvi; Lashkar e Jhangvi; Lashkar-i-Jhangvi

Description: Designated as a Foreign Terrorist Organization on January 30, 2003, Lashkar I Jhangvi (LJ) is the militant offshoot of the Sunni Deobandi sectarian group Sipah-i-Sahaba Pakistan. LJ focuses primarily on anti-Shia attacks and other attacks in Pakistan and Afghanistan, and was banned by Pakistan in August 2001, as part of an effort to rein in sectarian violence. Many of its members then sought refuge in Afghanistan with the Taliban, with whom they had existing ties. After the collapse of the Taliban as the ruling government in Afghanistan, LJ members became active in aiding other terrorists, providing safe houses, false identities, and protection in Pakistani cities, including Karachi, Peshawar, and Rawalpindi. LJ works closely with Tehrik-e Taliban Pakistan.

Activities: LJ specializes in armed attacks and bombings and has admitted responsibility for numerous killings of Shia religious and community leaders in Pakistan. In January 1999, the group attempted to assassinate former Prime Minister Nawaz Sharif and his brother Shabaz Sharif, Chief Minister of Punjab Province. Media reports linked LJ to attacks on Christian targets in Pakistan, including a March 2002 grenade assault on the Protestant International Church in Islamabad that killed two U.S. citizens.

LJ was active in 2011 and 2012. The most notable 2011 attack occurred in December, when an LJ suicide bomber detonated an improvised explosive device in a crowd of Shia mourners in Kabul, killing 48 civilians – including 12 children – and wounding 193. LJ attacks in 2012 ranged from suicide bombings to targeted shootings of ethnic Hazaras. In April, LJ members committed a series of shootings that killed 27 ethnic Hazaras over a two-week period. In June, a suicide bombing on a bus of pilgrims travelling from Iran to Pakistan left 14 dead, and 30 wounded. In September, LJ claimed responsibility for killing seven Shia in Hazarganji, and LJ members were arrested by Pakistani authorities when two explosions in Karachi killed seven, including two children, and wounded another 22. In October, the chief of the LJ Karachi branch, Mehmood Babar, was arrested by Pakistani authorities. Pakistani authorities claimed the arrest of the cell leader and his co-conspirators disrupted operational planning of VBIED attacks on a school and prison.

Strength: Assessed in the low hundreds.

Location/Area of Operation: LJ is active primarily in Punjab, the Federally Administered Tribal Areas, Karachi, and Baluchistan.

Funding and External Aid: Funding comes from wealthy donors in Pakistan, as well as the Middle East, particularly Saudi Arabia. The group engages in criminal activity to fund its activities, including extortion and protection money.

PALESTINE ISLAMIC JIHAD - SHAQAQI FACTION

State Department

aka PIJ; Palestine Islamic Jihad; PIJ-Shaqaqi Faction; PIJ-Shallah Faction; Islamic Jihad of Palestine; Islamic Jihad in Palestine; Abu Ghunaym Squad of the Hizballah Bayt al-Maqdis; Al-Quds Squads; Al-Quds Brigades; Saraya al-Quds; Al-Awdah Brigades

Description: Palestine Islamic Jihad (PIJ) was designated as a Foreign Terrorist Organization on October 8, 1997. Formed by militant Palestinians in Gaza during the 1970s, PIJ is committed to both the destruction of Israel through attacks against Israeli military and civilian targets and the creation of an Islamic state in all of historic Palestine, including present day Israel.

Activities: PIJ terrorists have conducted numerous attacks, including large-scale suicide bombings against Israeli civilian and military targets. PIJ continued to plan and direct attacks against Israelis both inside Israel and in the West Bank and Gaza. Though U.S. citizens have died in PIJ attacks, the group has not directly targeted U.S. interests. PIJ attacks between 2008 and 2011 were primarily rocket attacks aimed at southern Israeli cities, and have also included attacking Israeli targets with explosive devices. 2012 saw no deviation from PIJ terrorist tactics. The group is thought to be behind a large number of the record setting 2,300 plus rockets launched from Gaza towards Israel. Additionally, on November 21, 2012, PIJ operatives, working with HAMAS, detonated a bomb on a bus in Tel Aviv, leaving 29 civilians wounded.

Strength: PIJ has fewer than 1,000 members.

Location/Area of Operation: Primarily Gaza with minimal operational presence in the West Bank and Israel. The group's senior leadership resides in Syria. Other leadership elements reside in Lebanon and official representatives are scattered throughout the Middle East.

Funding and External Aid: Receives financial assistance and training primarily from Iran.

Source: State Department reporting is excerpted from US State Department, "Chapter 2, Country reports," *Country Reports on Terrorism 2012*, May 30, 2013, <http://www.state.gov/j/ct/rls/crt/2012/>. NCTC data are excerpted from "Counterterrorism Calendar 2013," US National Counterterrorism Center (NCTC),

Figure XI.3: State Department Estimates of Trends in Terrorism, 1970-2013 Bahrain—Part One

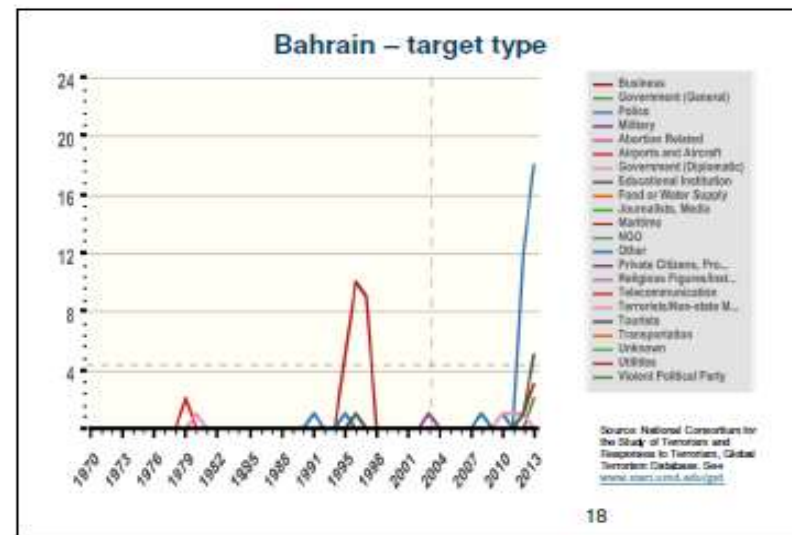
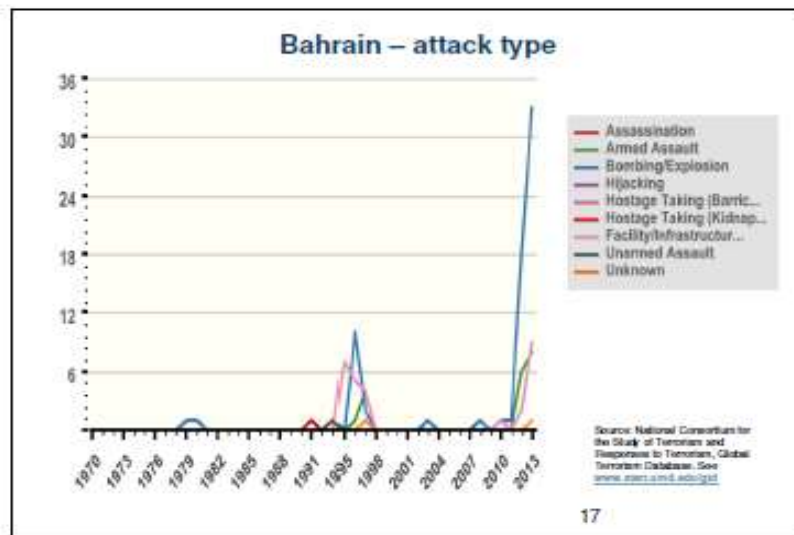
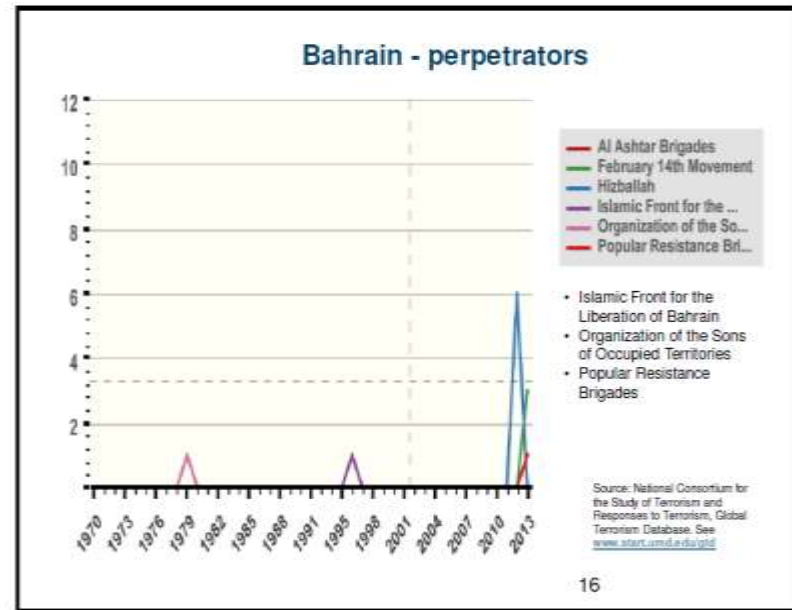
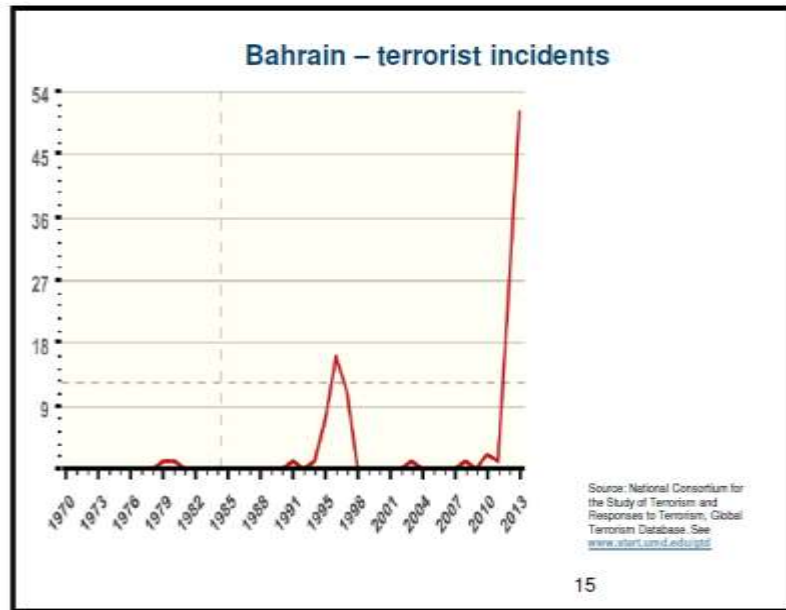


Figure XI.3: State Department Estimates of Trends in Terrorism, 1970-2013 Bahrain—Part Two

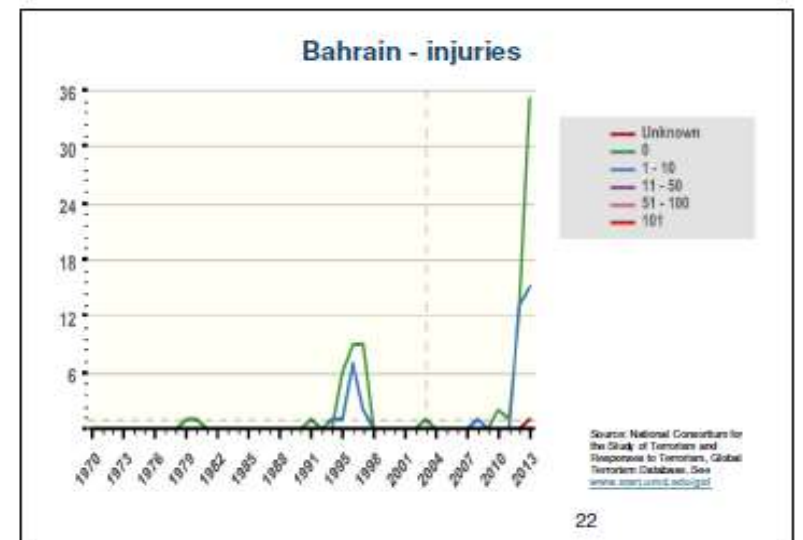
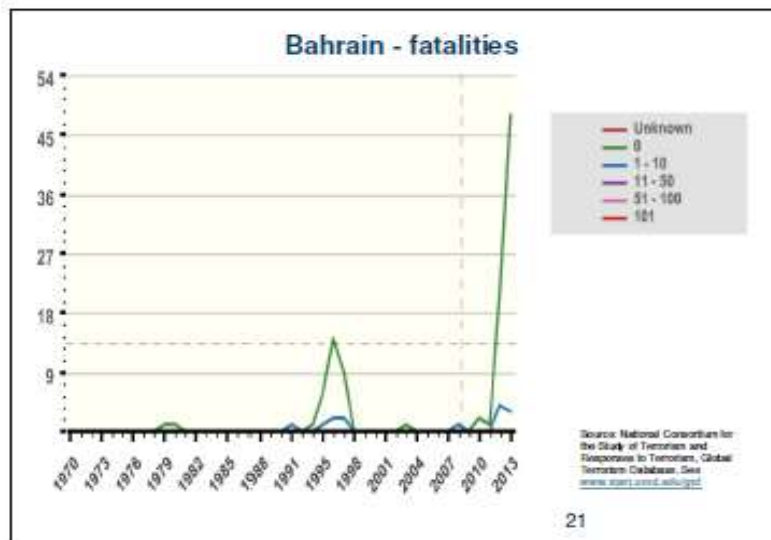
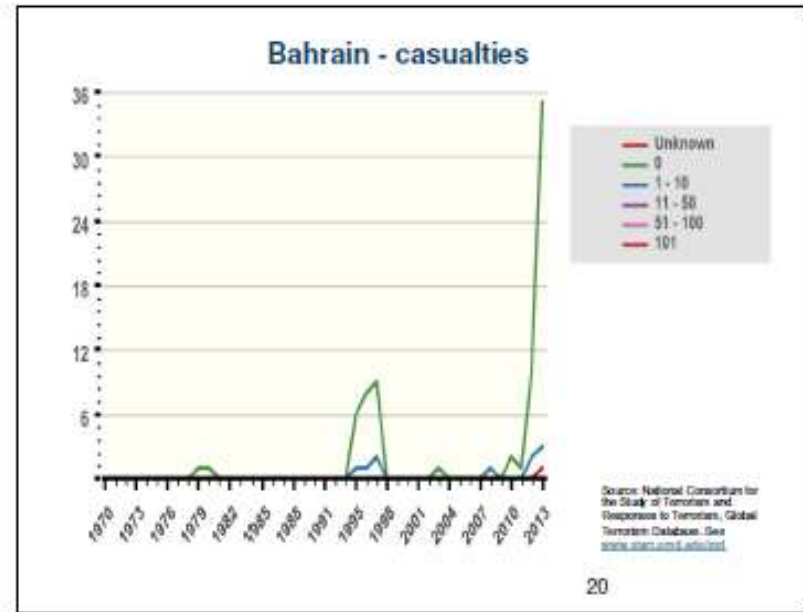
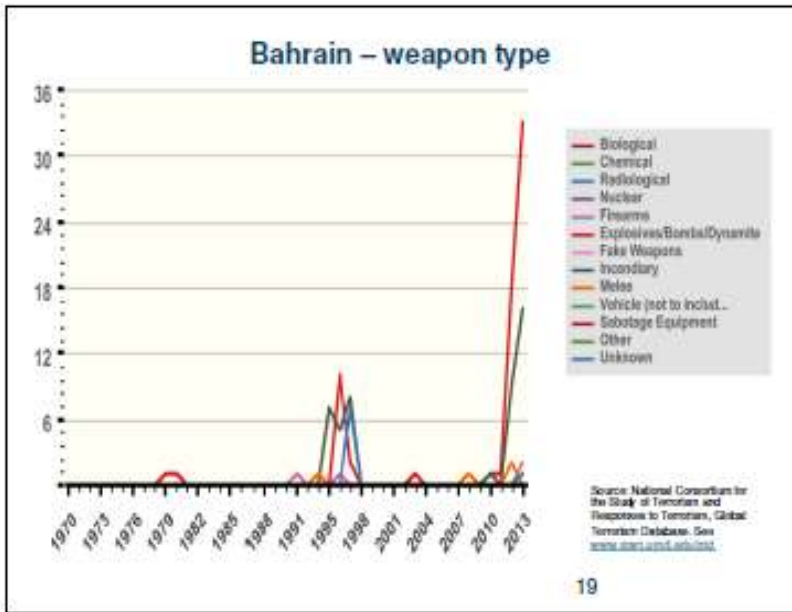


Figure XI.3: State Department Estimates of Trends in Terrorism: 1970-2013 Kuwait—Part One

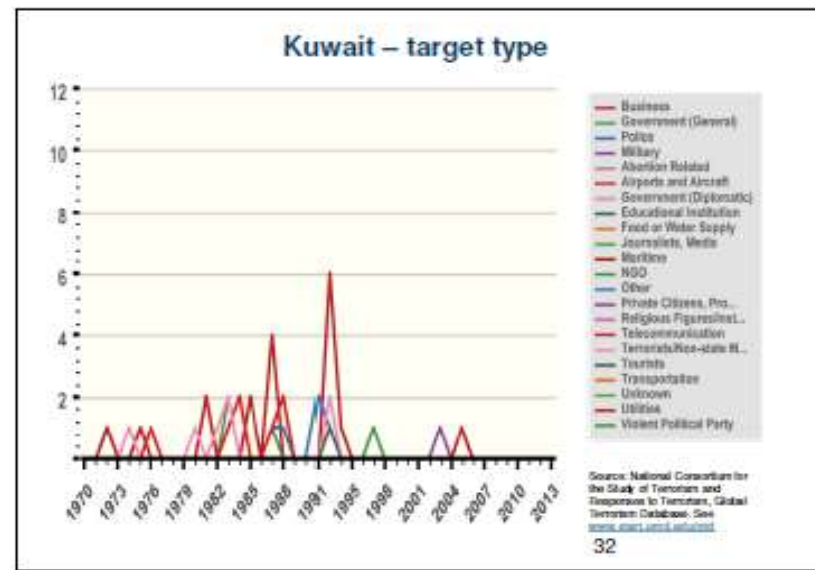
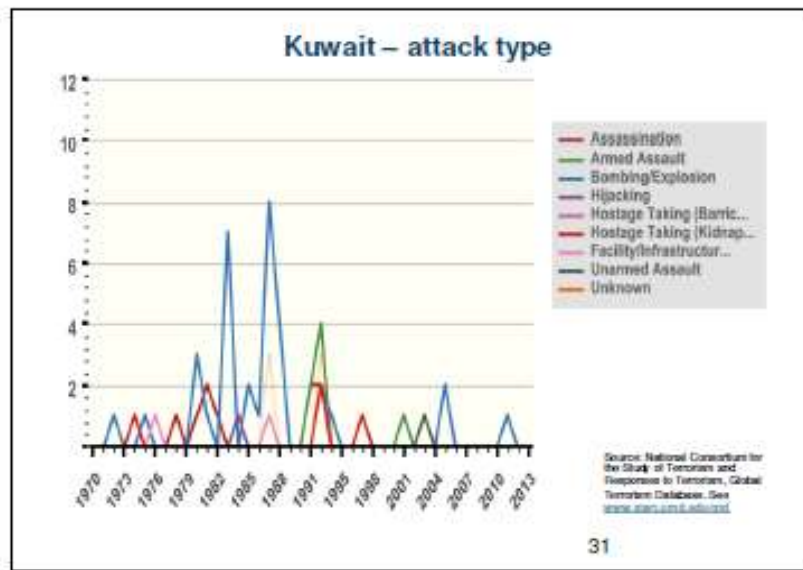
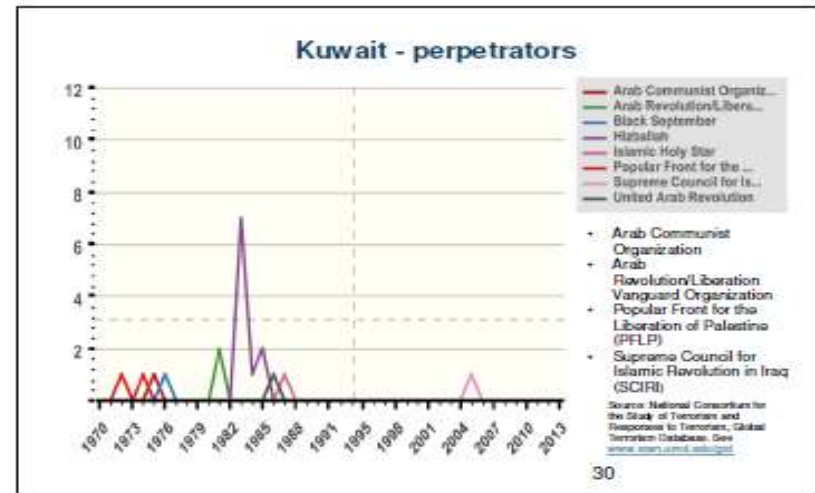
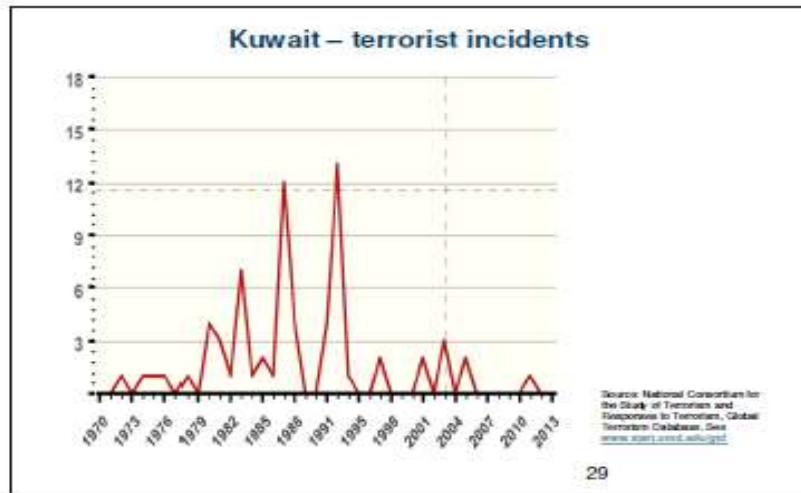


Figure XI.3: State Department Estimates of Trends in Terrorism: 1970-2013 Kuwait—Part Two

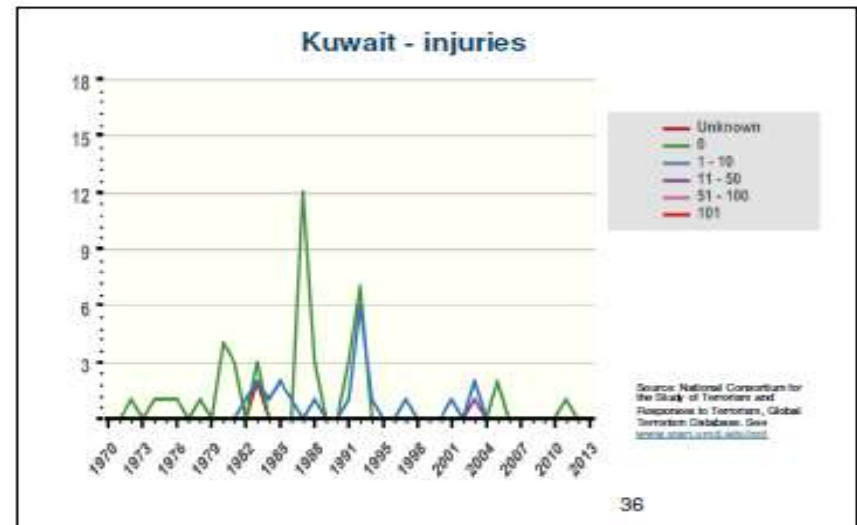
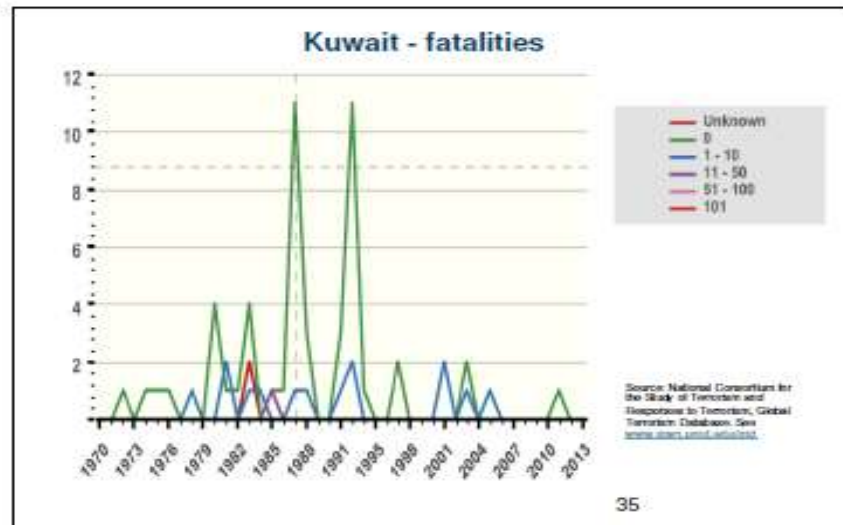
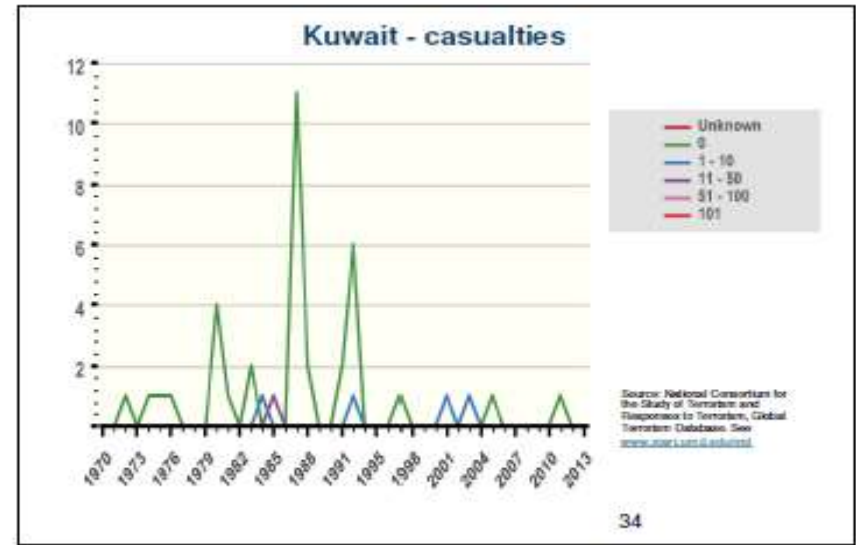
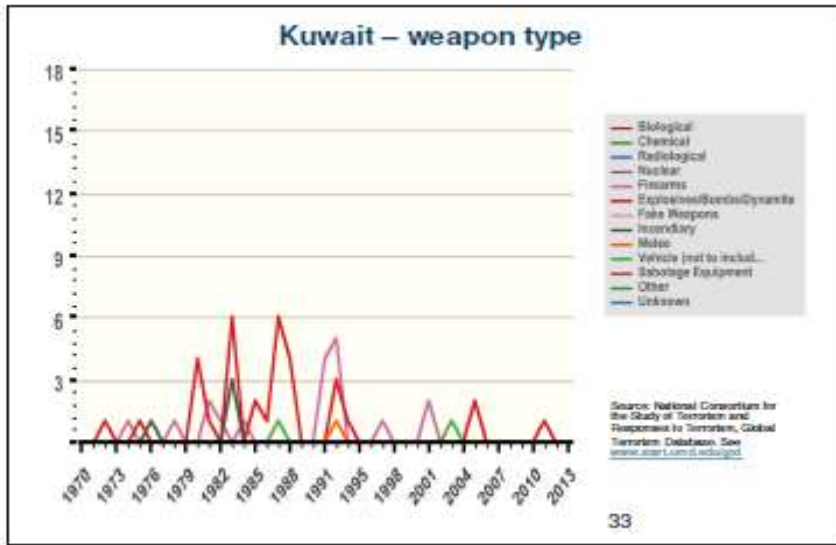


Figure XI.3: State Department Estimates of Trends in Terrorism: 1970-2013 Qatar—Part One

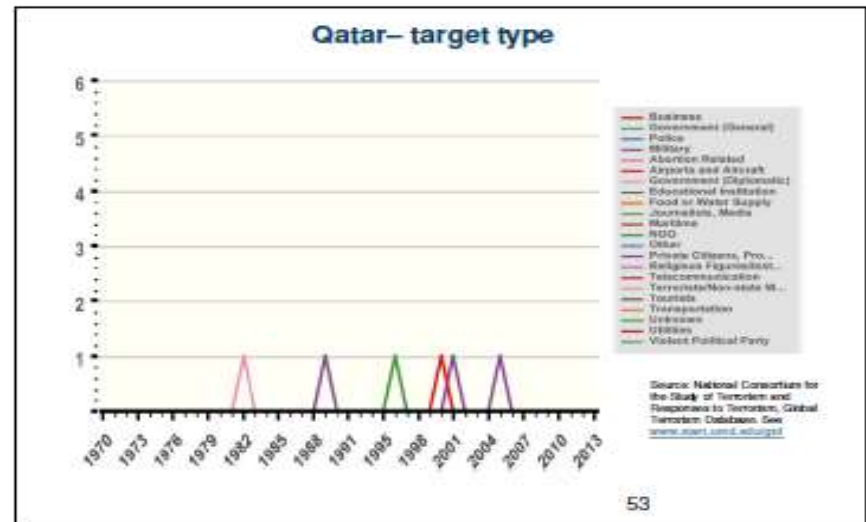
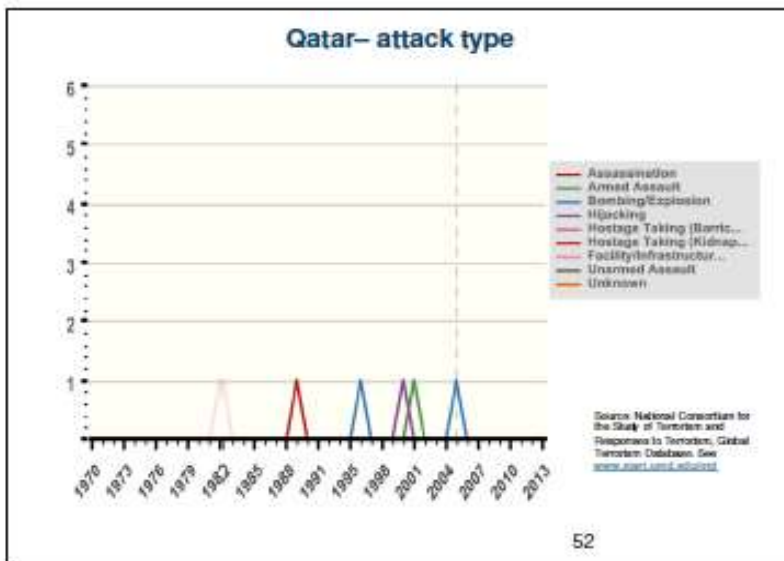
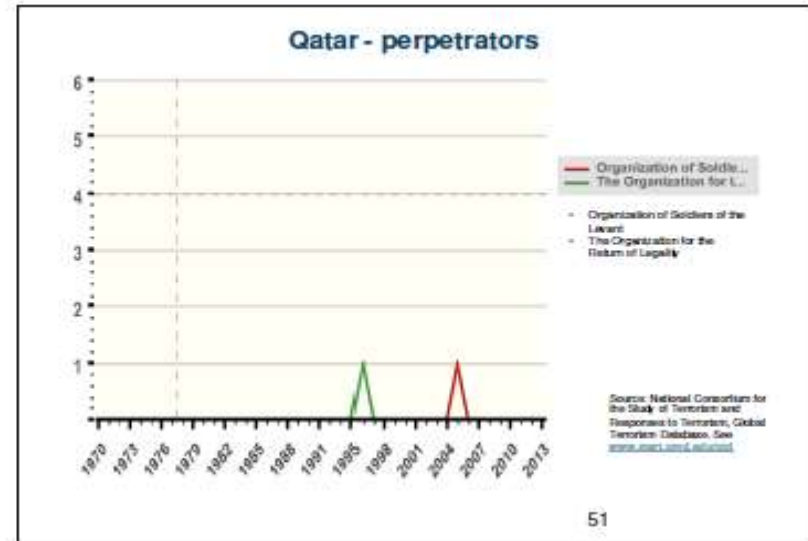
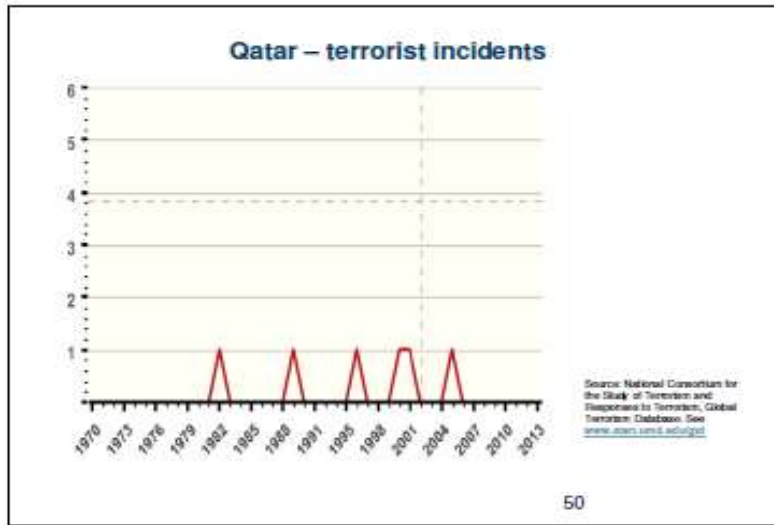


Figure XI.3: State Department Estimates of Trends in Terrorism, 1970-2013—Qatar—Part Two

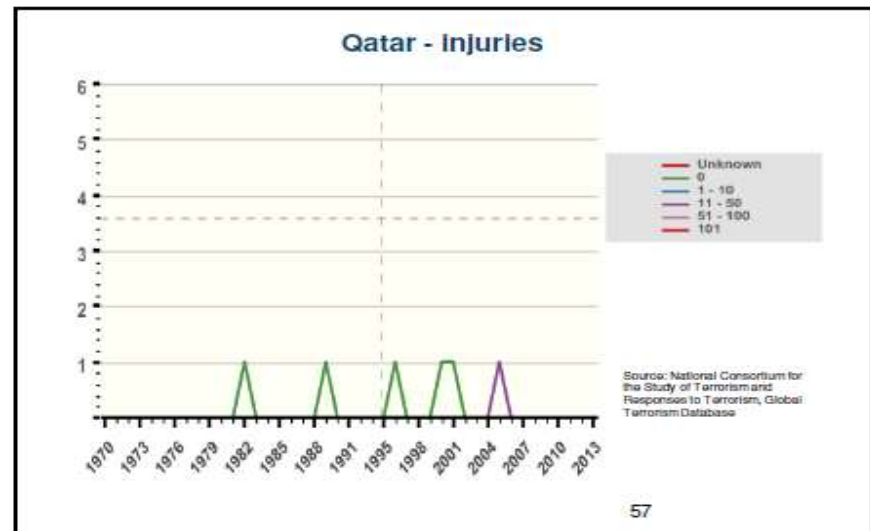
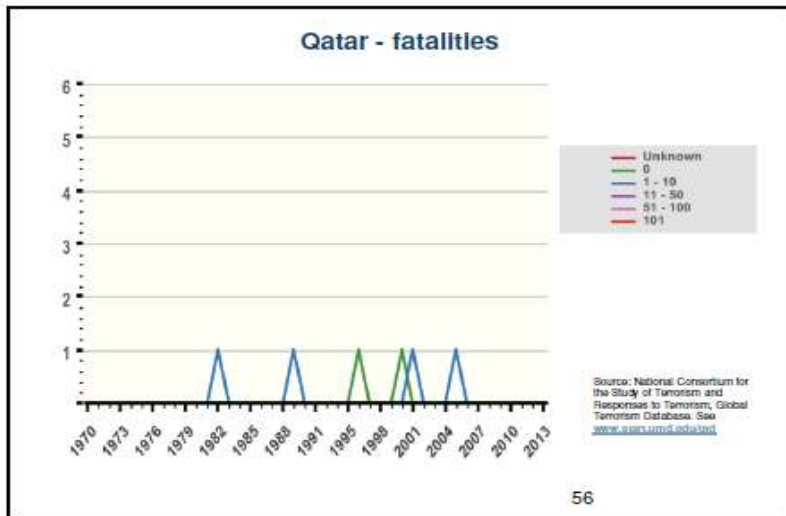
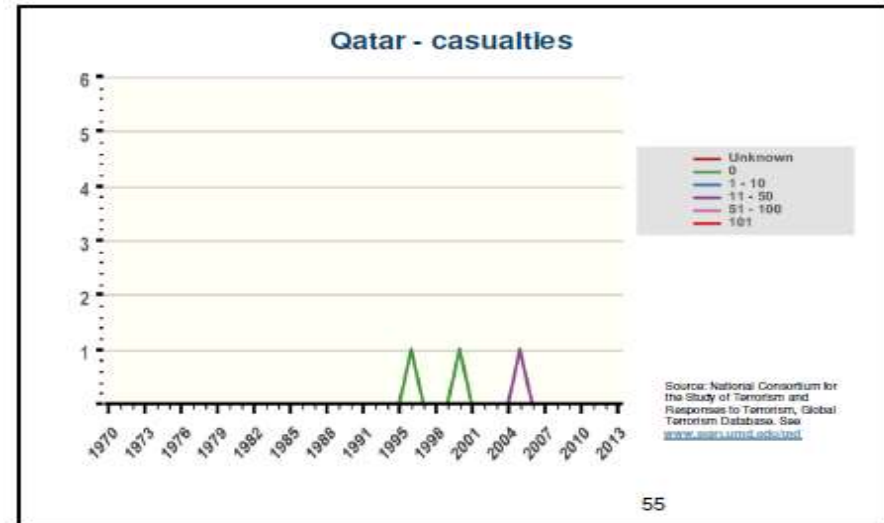
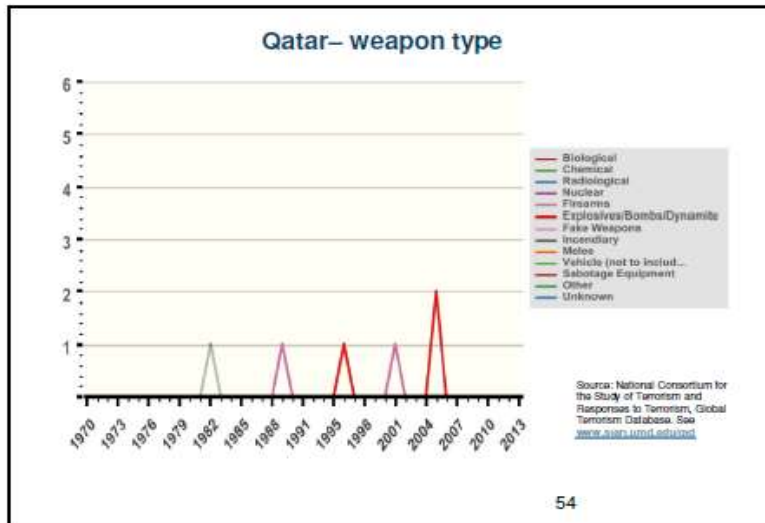


Figure XI.3: State Department Estimates of Trends in Terrorism: 1970-2013 Saudi Arabia—Part One

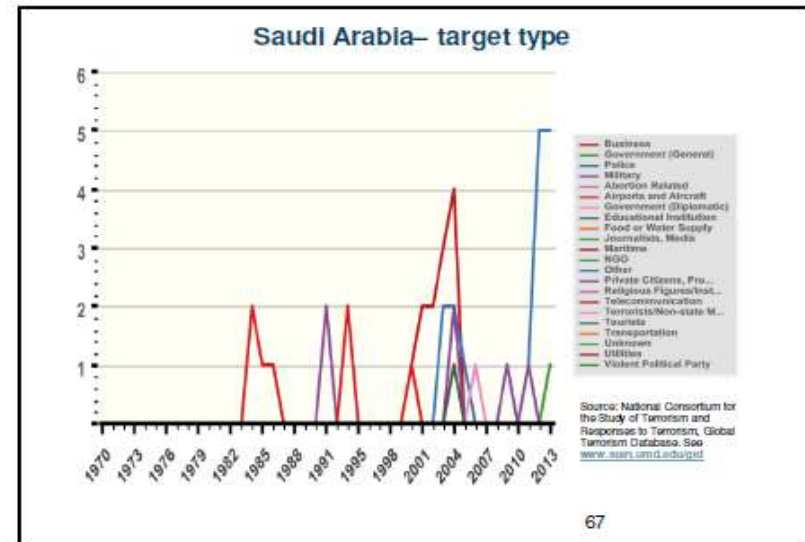
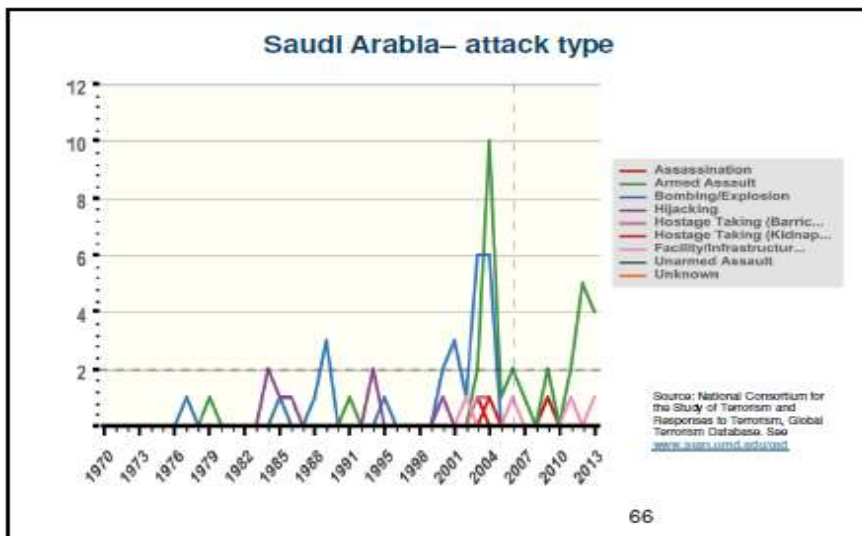
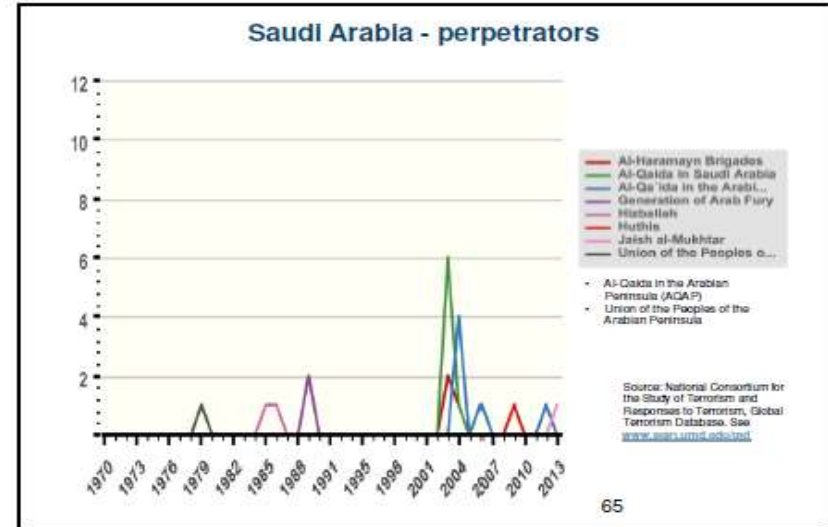
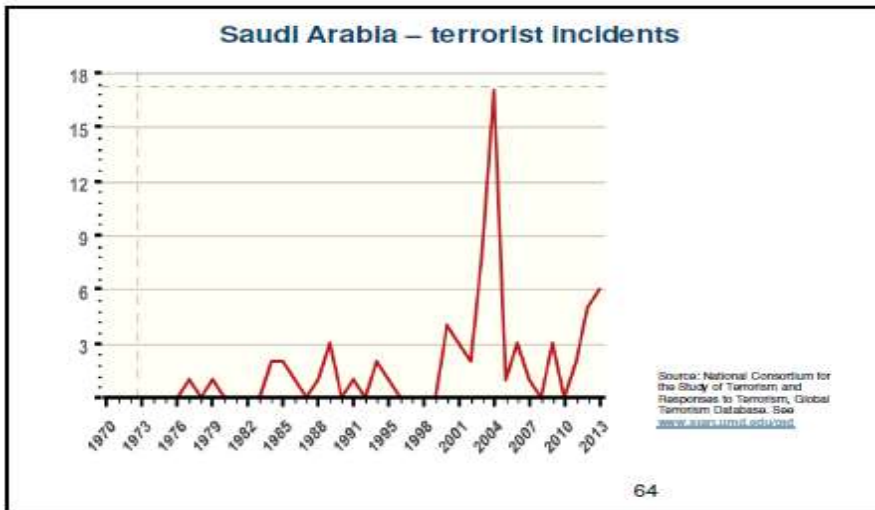


Figure X1.3: State Department Estimates of Trends in Terrorism: 1970-2013 Saudi Arabia—Part Two

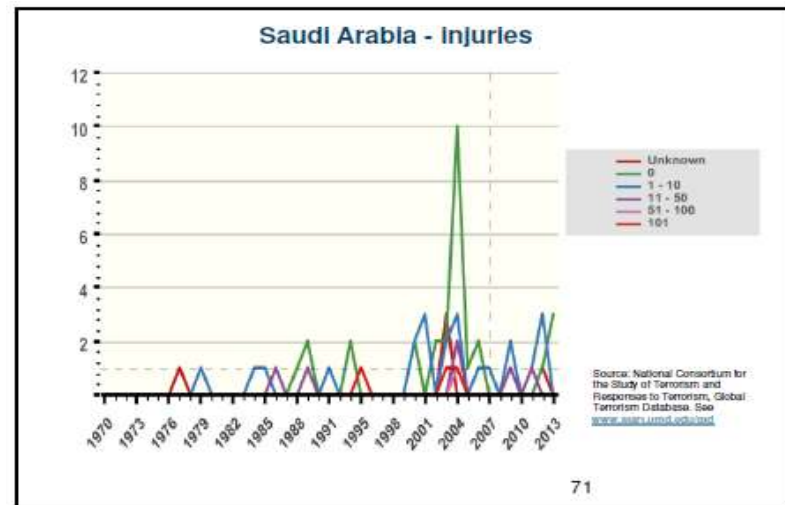
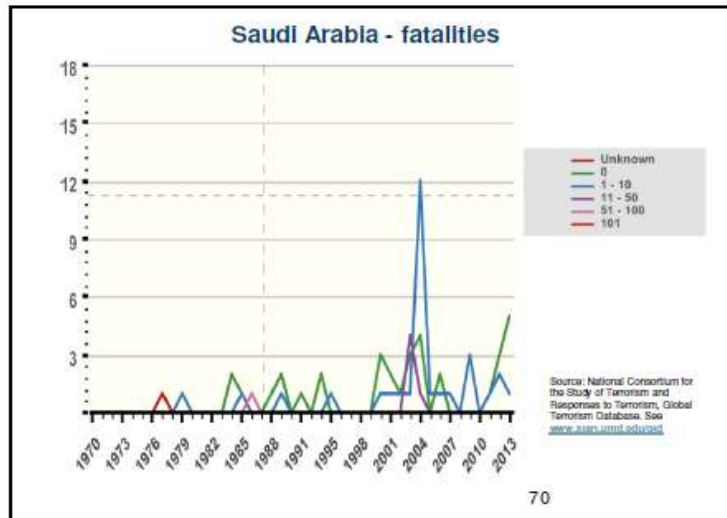
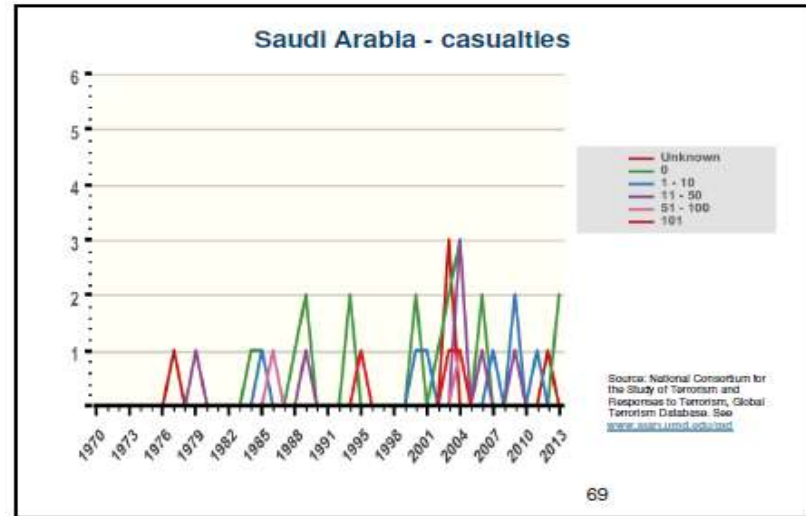
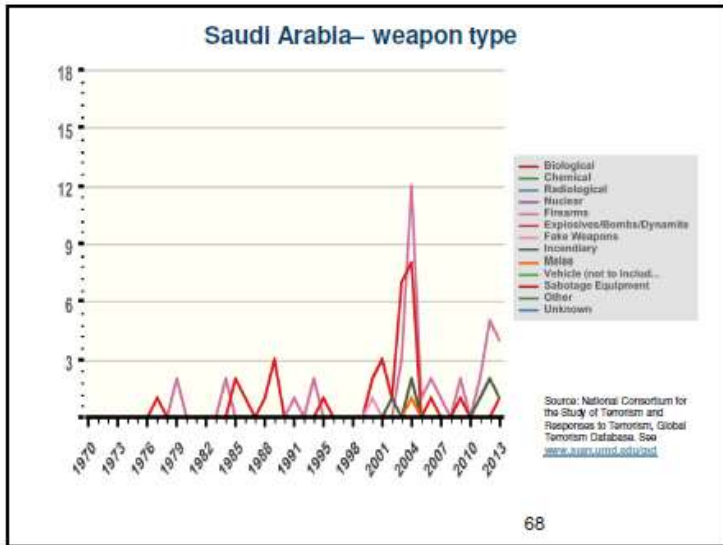


Figure X1.3: State Department Estimates of Trends in Terrorism, 1970-2013—UAE—Part Two

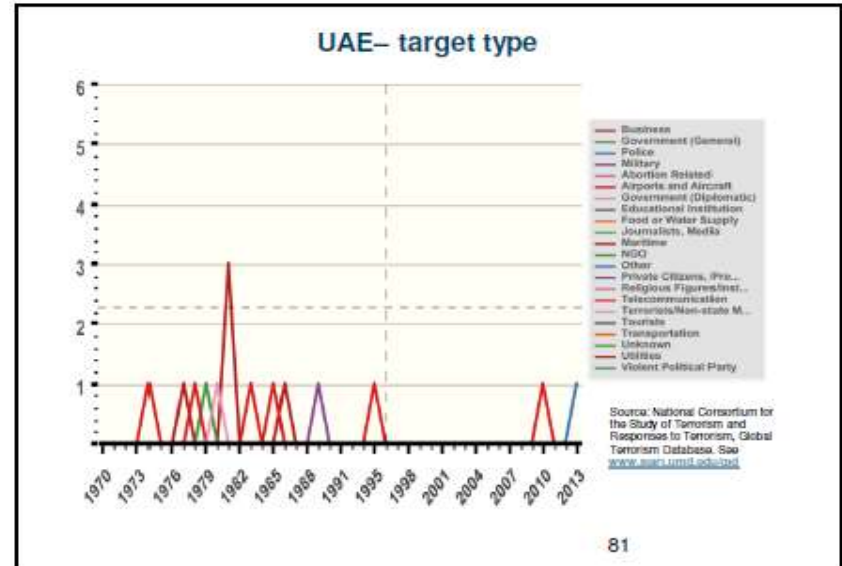
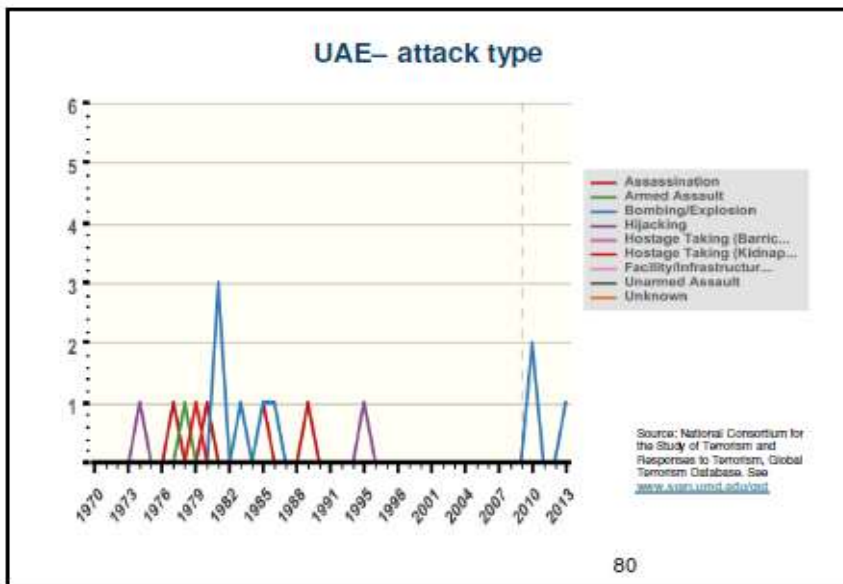
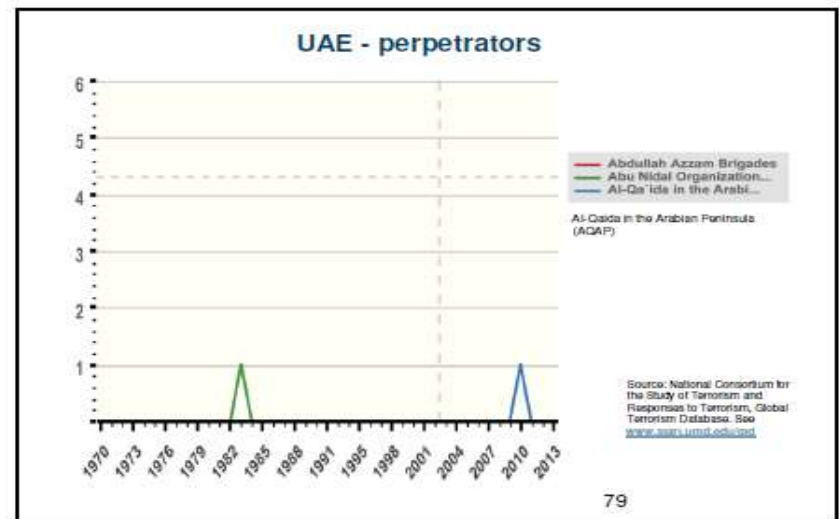
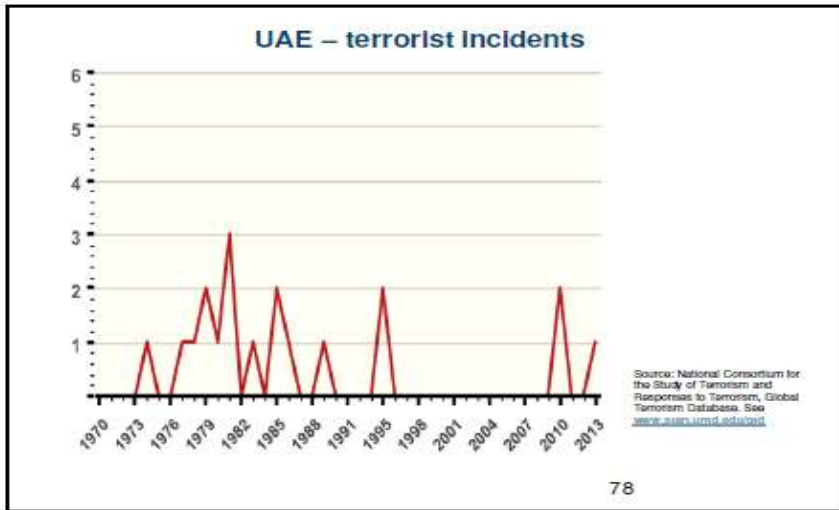


Figure X1.3: State Department Estimates of Trends in Terrorism, 1970-2013—Iran—Part One

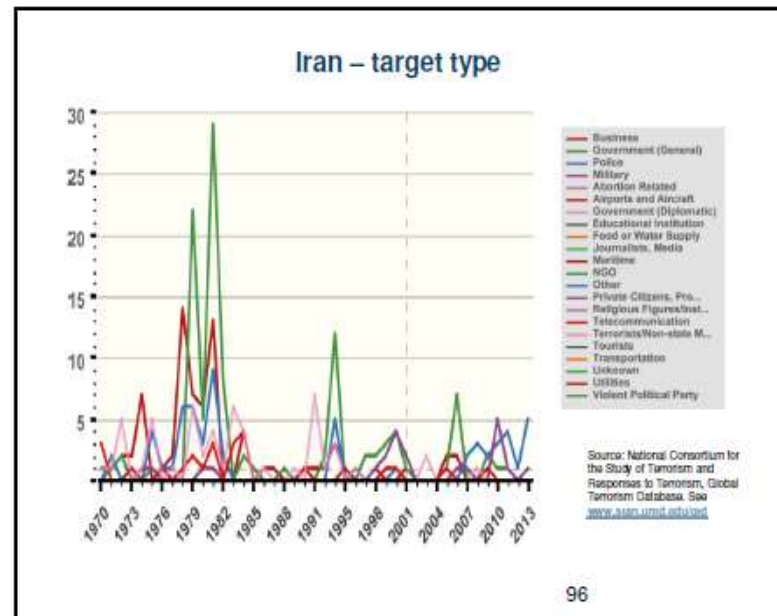
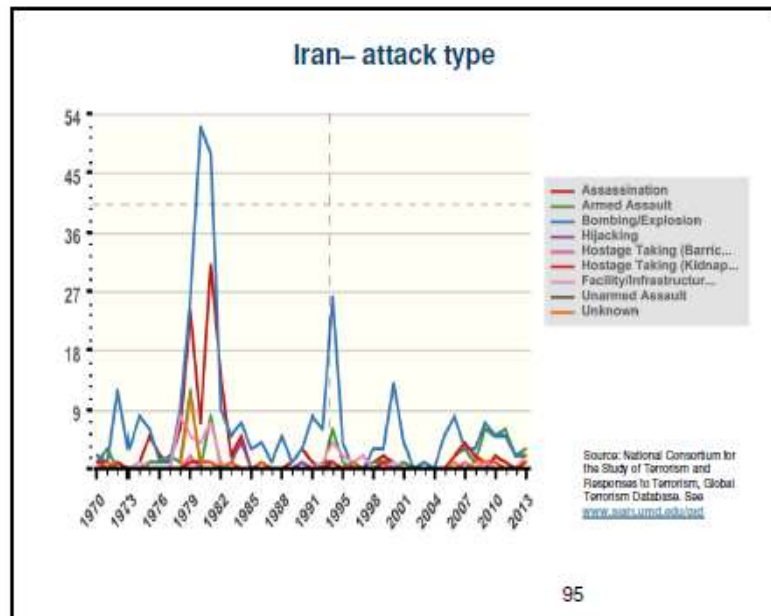
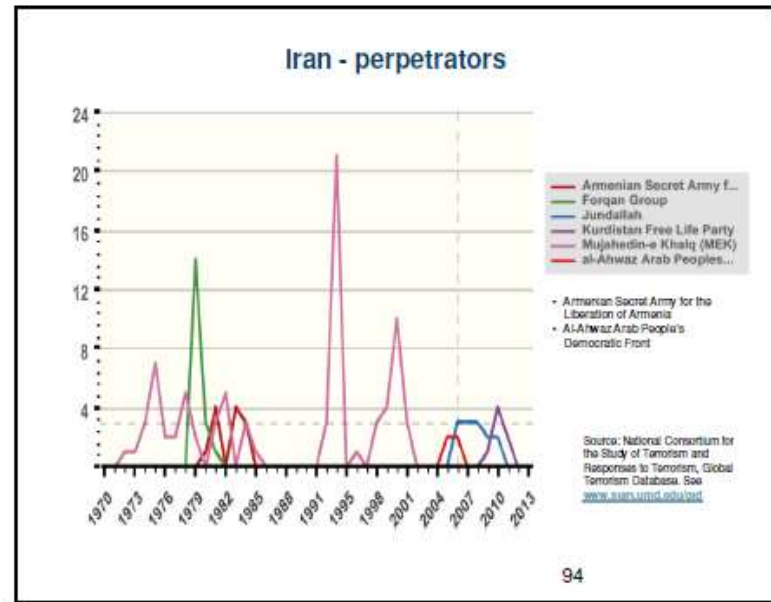
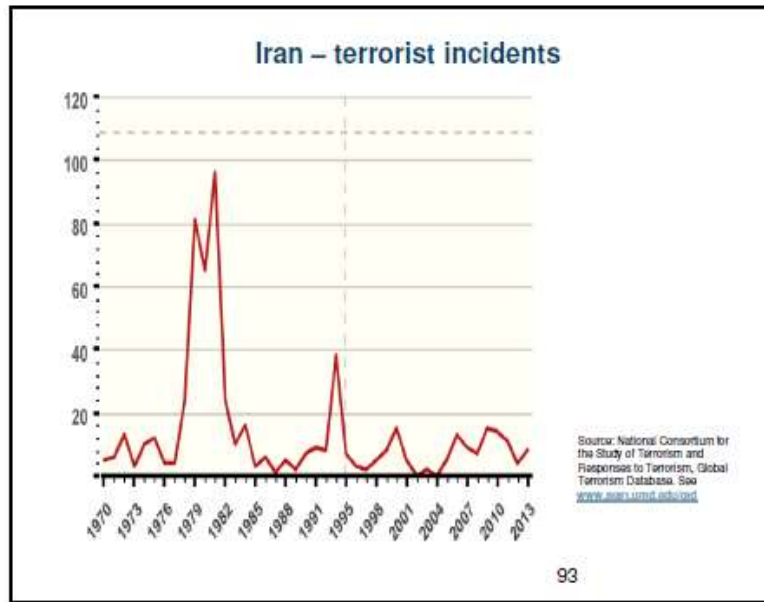


Figure XI.3: State Department Estimates of Trends in Terrorism, 1970-2013—Iran—Part Two

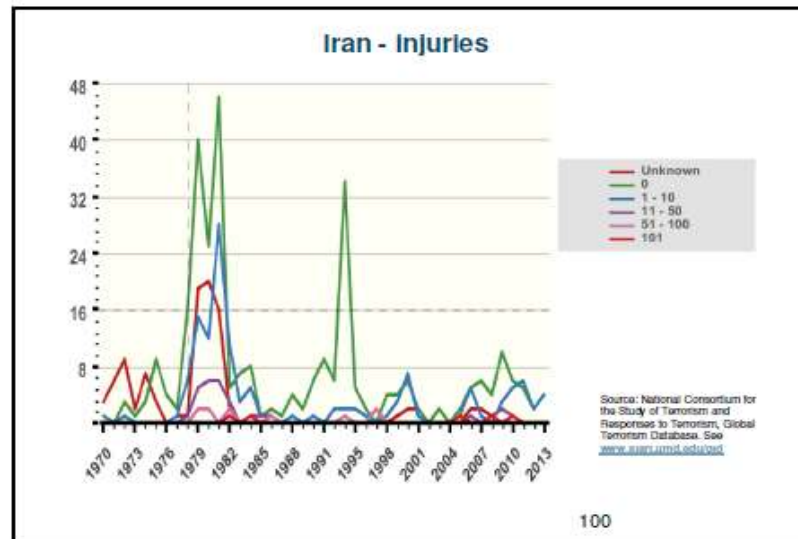
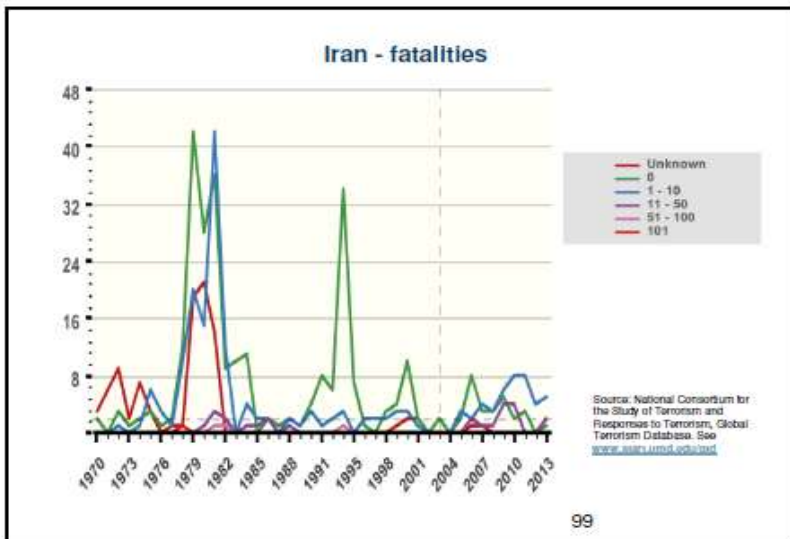
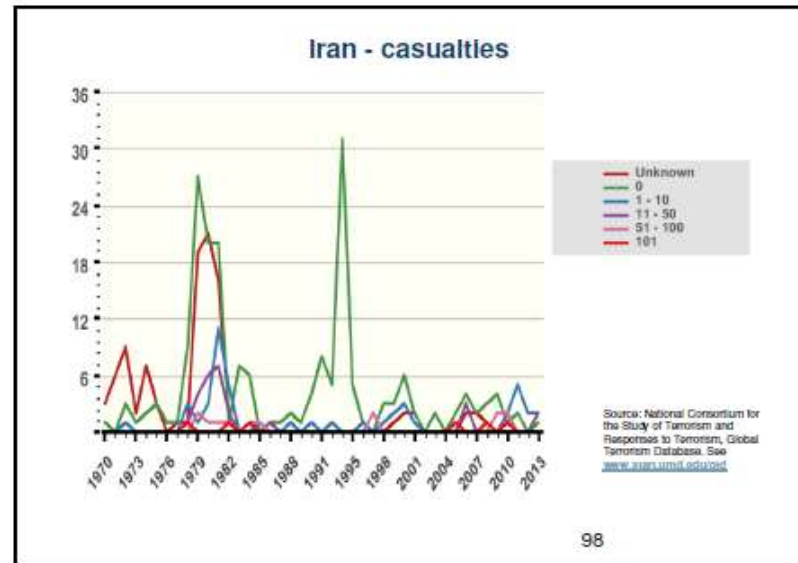
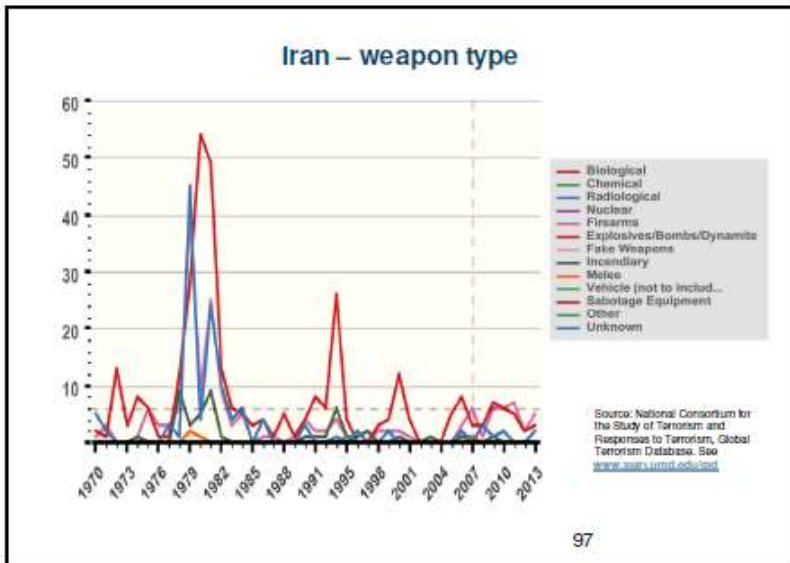


Figure XI.3: State Department Estimates of Trends in Terrorism: 1970-2013 Iraq—Part One

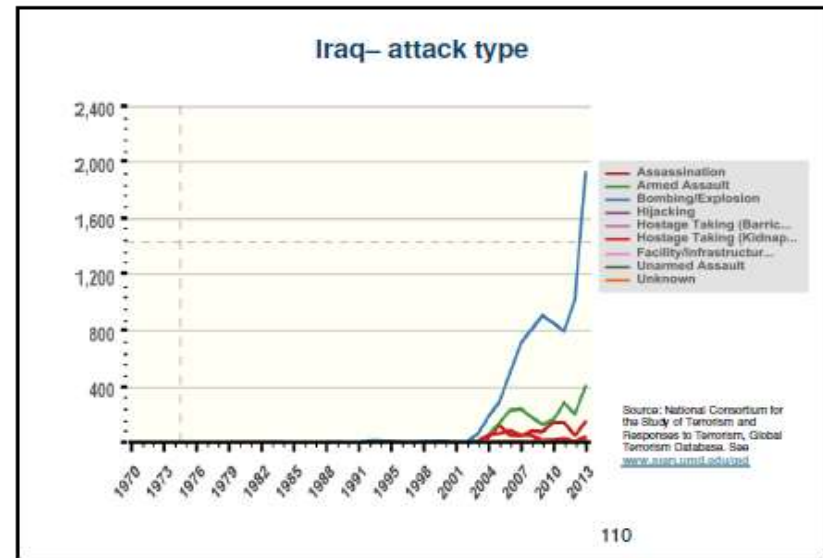
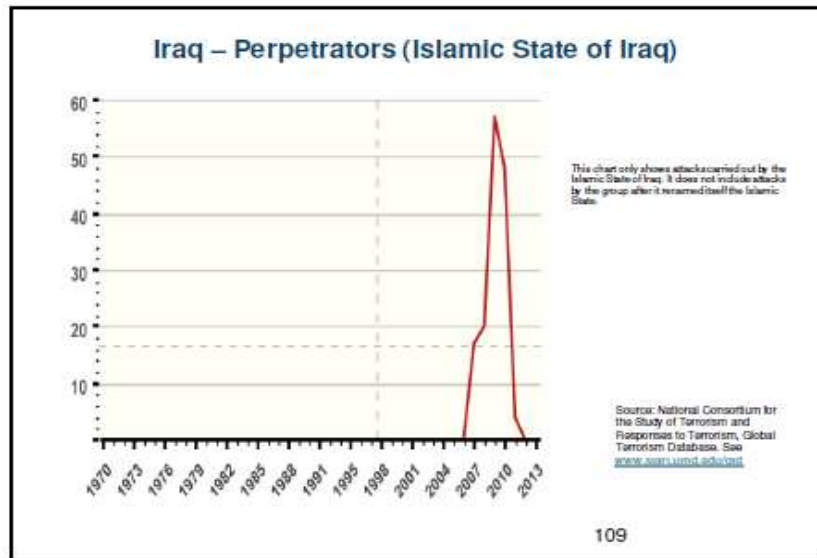
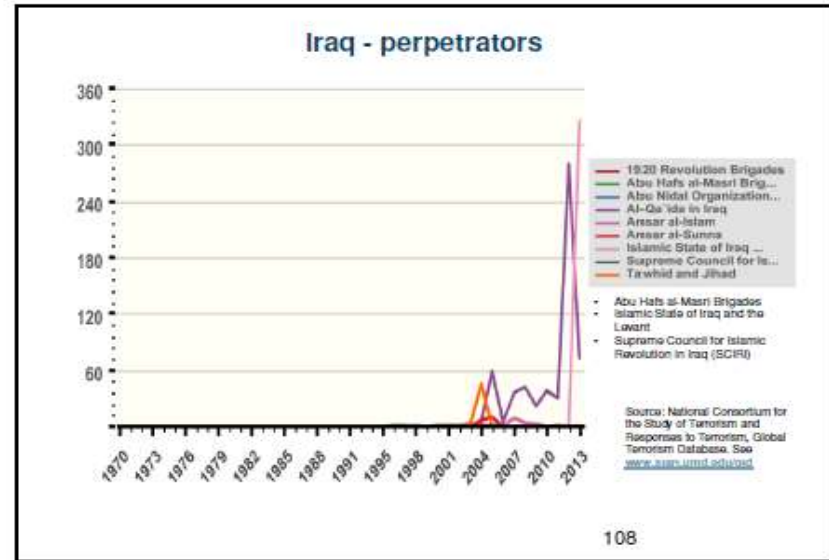
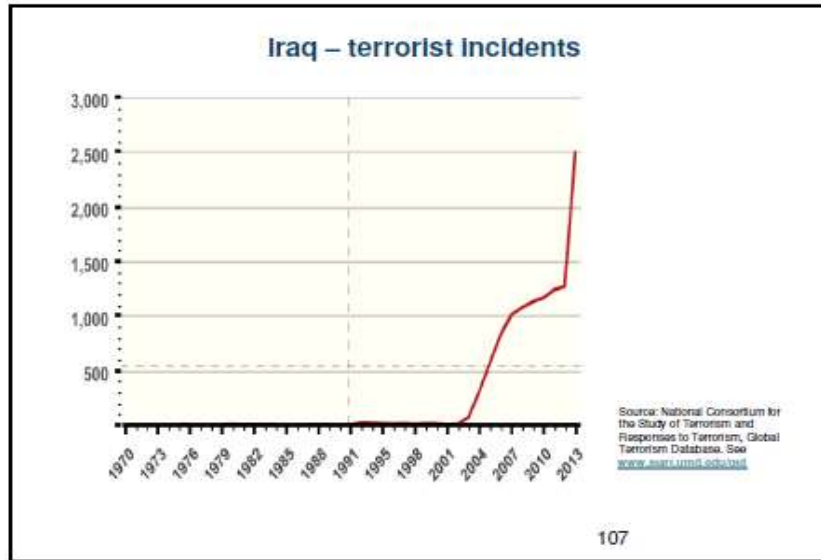


Figure XI.3: State Department Estimates of Trends in Terrorism, 1970-2013 Iraq—Part Two

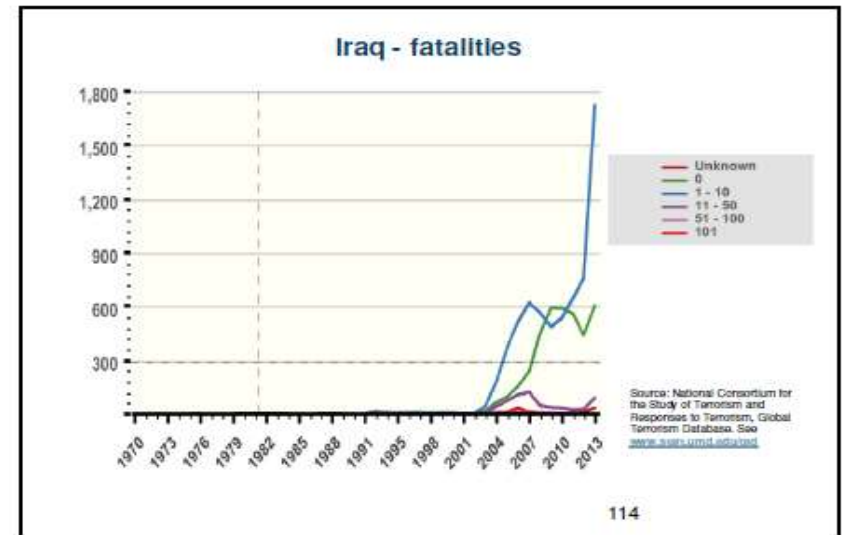
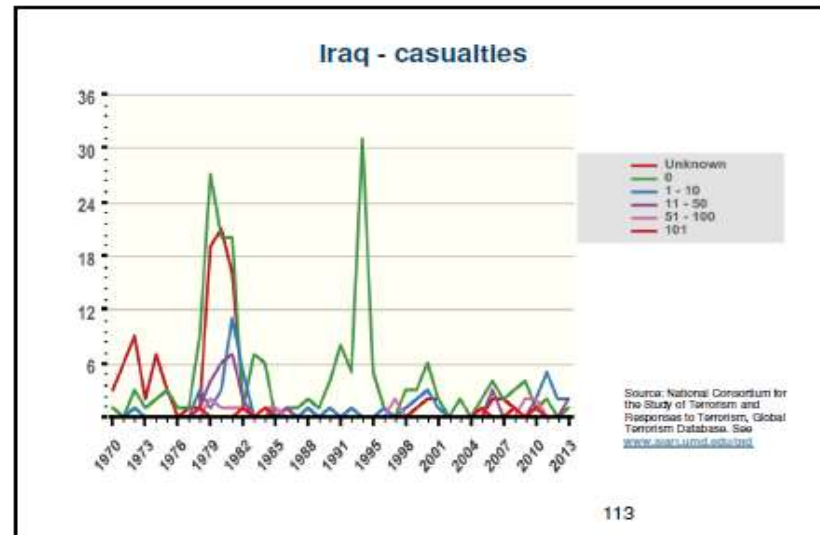
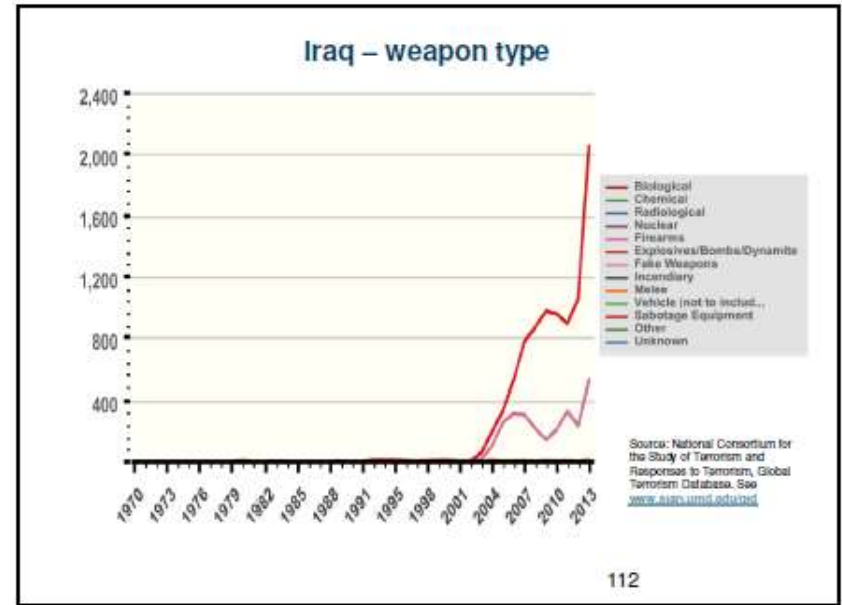
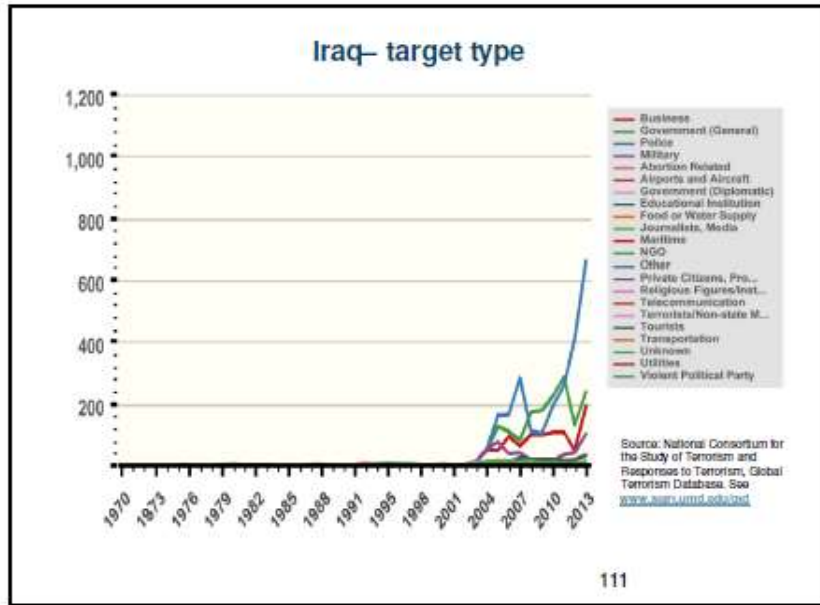


Figure XI.3: State Department Estimates of Trends in Terrorism: 1970-2013—Yemen—Part One

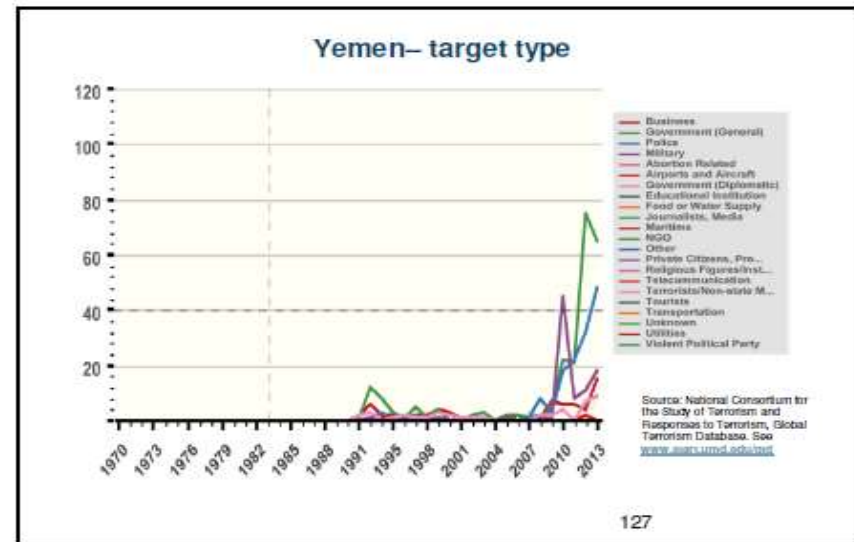
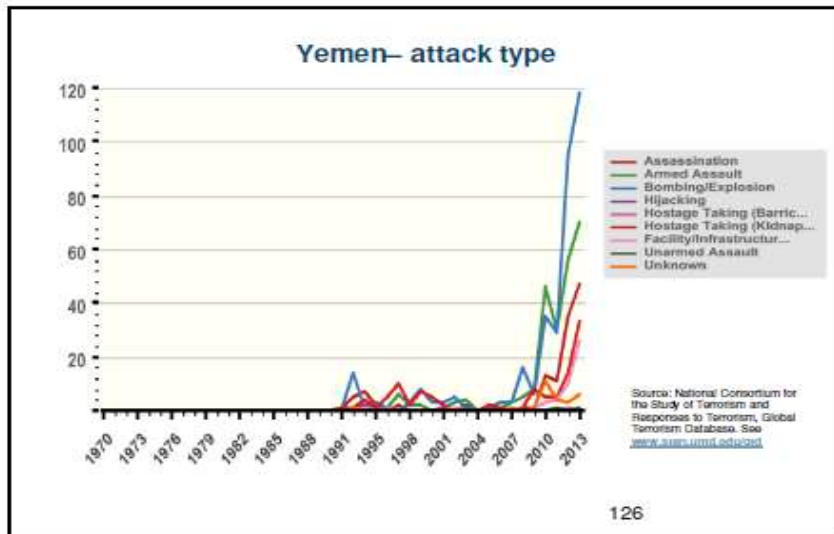
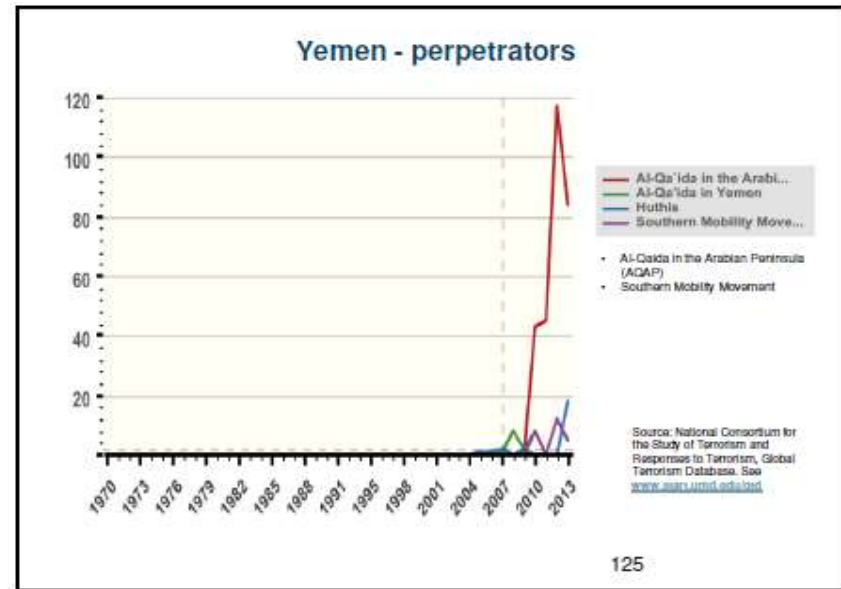
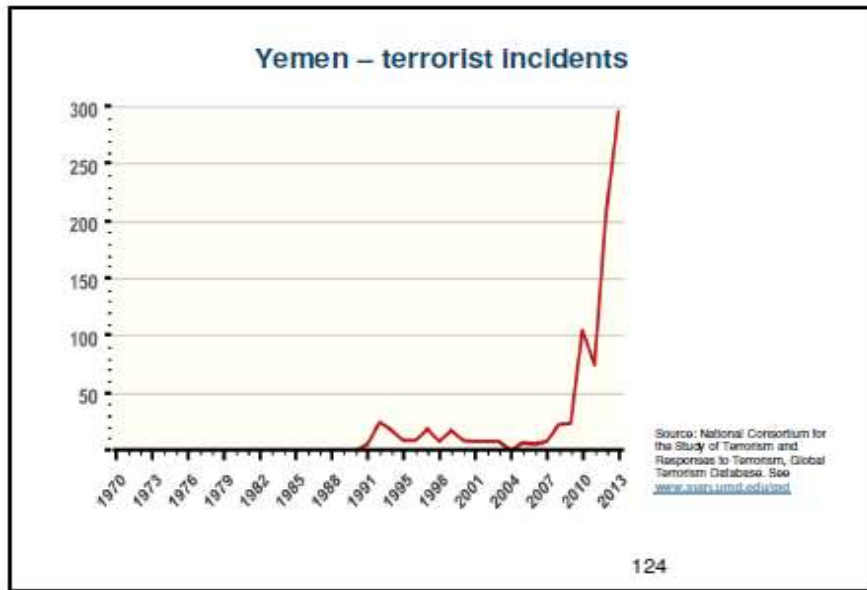


Figure XI.3: State Department Estimates of Trends in Terrorism, 1970-2013—Yemen—Part Two

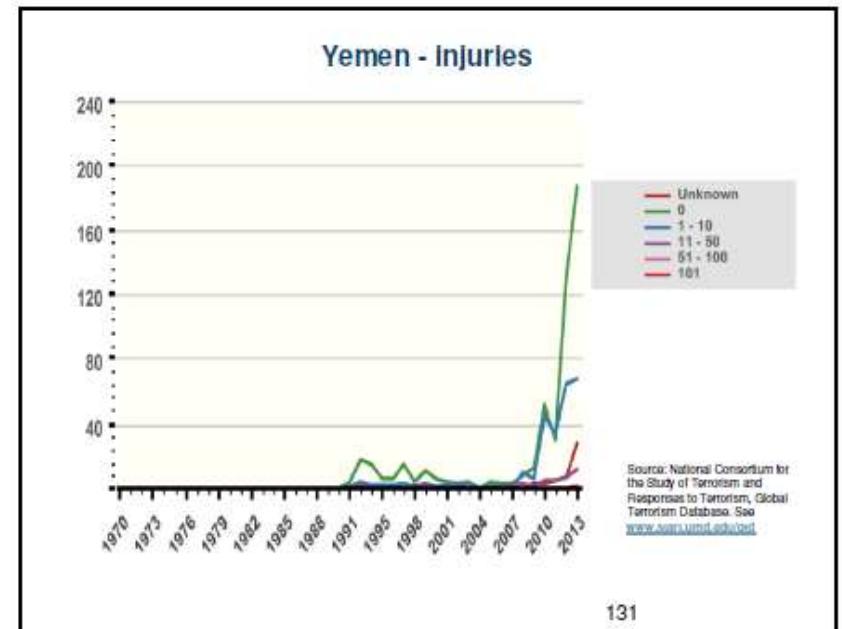
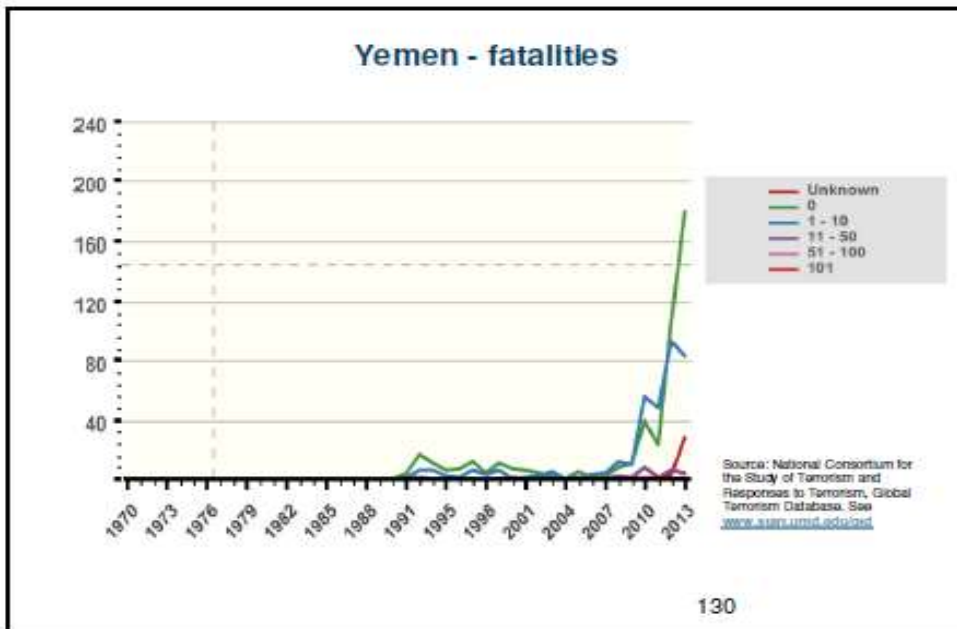
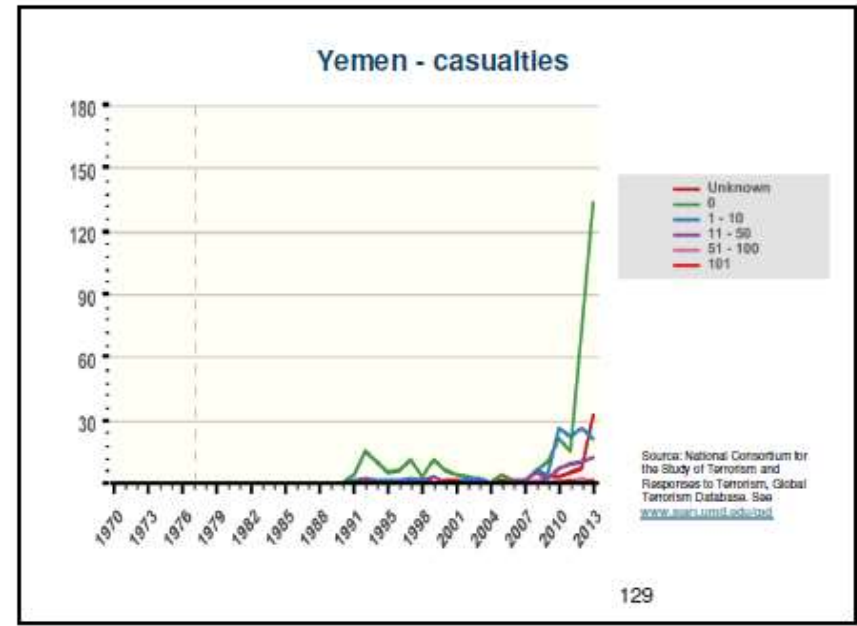
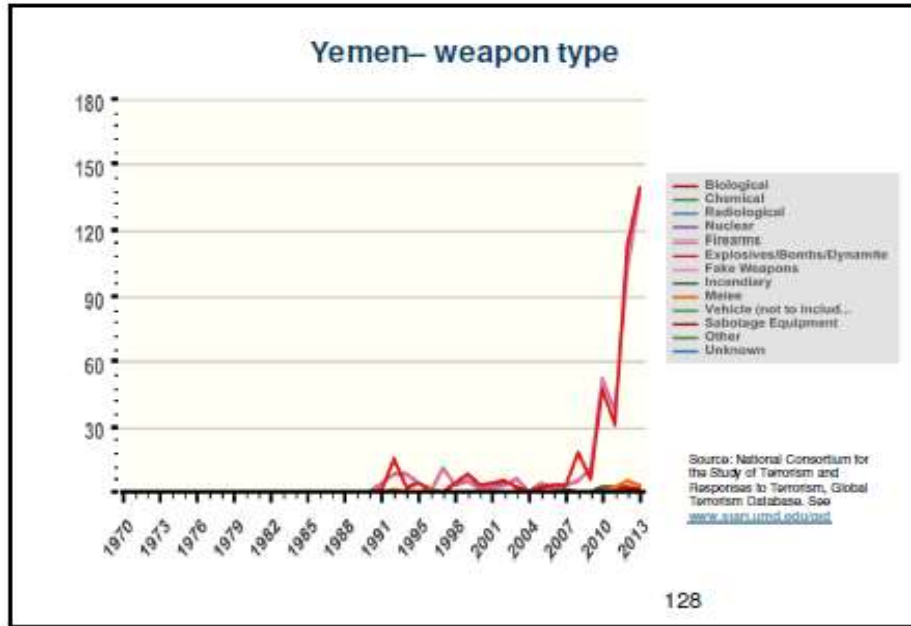
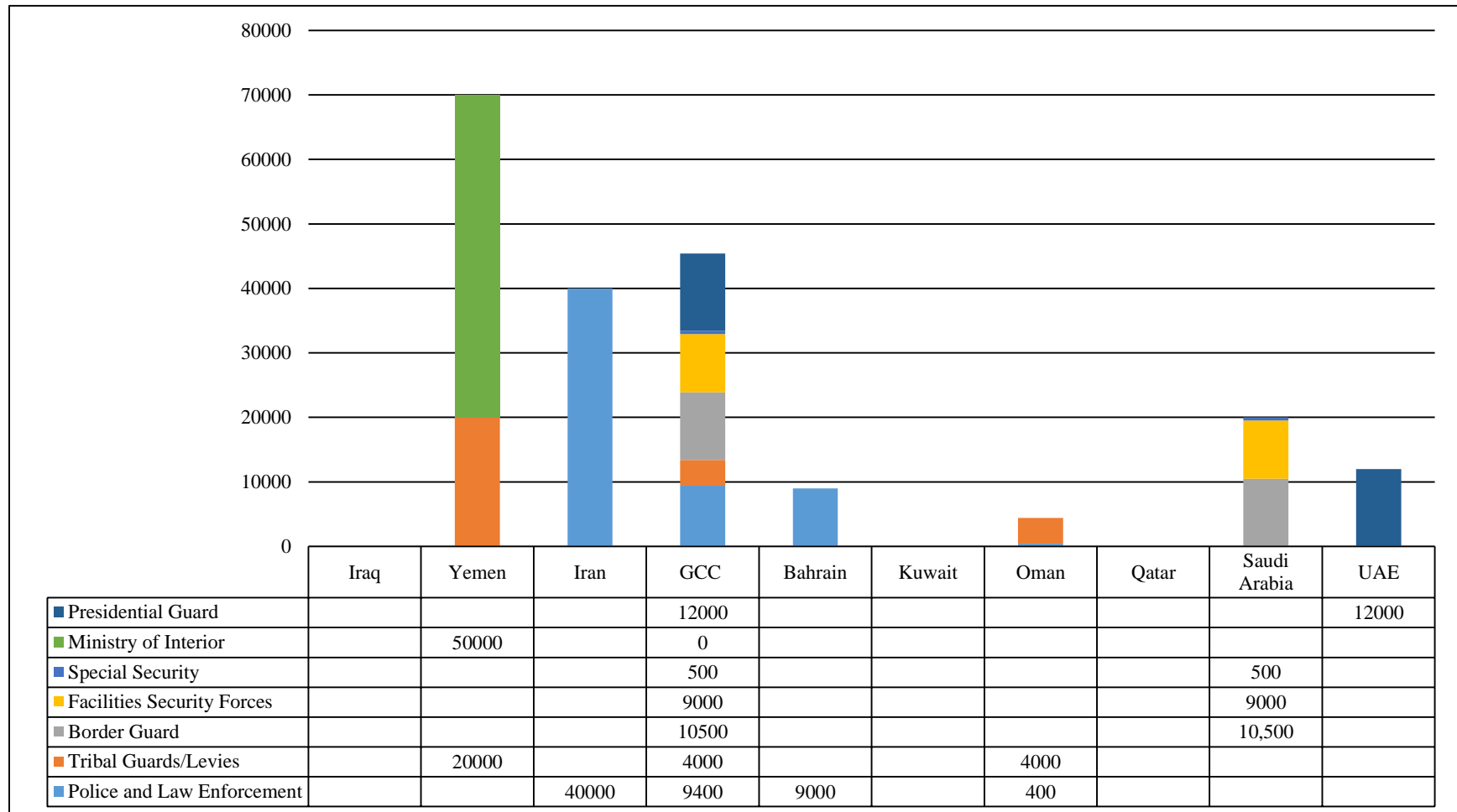


Figure XI.4: Estimate of Total Manning of Paramilitary and National Security Forces



Source: Based on Chapter Seven: Middle East and North Africa,” in The Military Balance, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane’s as adjusted by the authors.

Figure XI.5: Structure and Size of Gulf Paramilitary Forces

Yemen (Now in state of civil war and status unknown))

Paramilitary: 71,200+
 Ministry of the Interior Forces 50,000
 Tribal Levies 20,000+

Yemeni Coast Guard Authority: ε1,200
 Patrol and coastal combatants: 17
 PBF 4 *Archangel* (US)
 PB 13: 2 *Marine Patrol*; 11 various

Central Security Forces: Counter terrorism and counter-coup purposes
 Strength: 2002 estimate was 20,000; CSF-Counter Terrorism Unit (CSF CTU) is 200 strong, but is now a part of the Strategic Reserve Forces Command of the Armed Forces.

Division: The CSF was organized in recent years on the basis of battalions of two different types, Special Forces Battalions and Commando/Ranger Battalions, with each of these battalions deploying 450-750 personnel. Equipment for a battalion includes pick-up trucks equipped with a 12.7mm machine gun, while arms carried by CSF members include Kalashnikov assault rifles and 9mm Makarov pistols.

The CSF also deploys armoured personnel carriers. Major General Fadel al-Qawsi was appointed head of the CSF in 2012 by President Hadi, replacing Brigadier General Yahya Saleh, nephew of former president Saleh.

Iran

Paramilitary: 40,000–60,000

Law-Enforcement Forces: 40,000–60,000
 (border and security troops);
 450,000 on mobilisation (incl conscripts). Part of armed forces in wartime
 Patrol and Coastal Combatants: ε90
 Transport Aircraft: Light 2+: 2 An-140; some Cessna
 185/Cessna 310
 Utility Helicopters: ε24 AB-205 (Bell 205)/AB-206

(Bell 206) *Jet Ranger*

Basij Resistance Force up to ε1,500,000 on mobilization; 90,000 active strength personnel with a reserve strength of up to 210,000. 740 regional battalions with 300-350 personnel each. Paramilitary militia, with claimed membership of 12.6 million; perhaps 1 million combat capable; in the process, of closer integration with IRGC Ground Forces.

Other: 2,500 militia bn (claimed, limited permanent membership)

Iraq

Paramilitary n.k.
 Iraqi Police Service n.k.
 Iraqi Federal Police n.k.
 Facilities Protection Service n.k.
 Border Enforcement n.k.
 Oil Police n.k.

Bahrain

Paramilitary ε11,260

Police 9,000
 Ministry of Interior
 RECCE 8 S52 *Shorland*
 APC
 APC (W) Otokar ISV
 PPV *Cobra*
 Helicopters:

- MRH 2 Bell 412 *Twin Huey*
- ISR 2 Hughes 500
- TPT • Light 1 Bo-105

National Guard: ε2,000: used expressly for internal security purposes according to IHS Janes.
 3 paramilitary bn
 APC

APC (W) *Arma* 6x6
PPV *Cobra*

Coast Guard: €260
Ministry of Interior; Special Security Force (SSF)
Patrol and Coastal Combatants: 52
PBF 23: 2 *Ares* 18; 4 *Jaris*; 6 *Saham*; 6 *Fajr*; 5 *Jarach*
PB 29: 6 *Haris*; 1 *Al Muharraq*; 10 *Deraa* (of which 4
Halmatic 20, 2 *Souter* 20, 4 Rodman 20); 10 *Saif* (of which
4 *Fairey Sword*, 6 *Halmatic* 160); 2 *Hawar*
Amphibious, Landing Craft: LCU 1 *Loadmaster II*
Logistics and support: YAG 1 *Safra*

Kuwait

Paramilitary: €7,100 active

National Guard: €6,600 active
1 SF bn
1 armd car bn
3 security bn
1 MP bn
RECCE 20 VBL
APC (W) 97+: 5+ *Desert Chameleon*; 70 *Pandur*; 22 S600
(incl variants)
ARV *Pandur*

Coast Guard: 500
Patrol and Coastal Combatants: 32
PBF 12 *Manta*
PB 20: 3 *Al Shaheed*; 4 *Inttisar* (Austal 31.5m); 3 *Kassir*
(Austal 22m); 10 *Subahi*
Amphibious, Landing Craft: LCU 4: 2 *Al*
Tahaddy; 1 *Saffar*; 1 other
Logistics and support: AG 1 *Sawahil*

Oman

Paramilitary: 4,400 active

Tribal Home Guard 4,000. org in teams of €100

Police Coast Guard: 400
Patrol and Coastal Combatants: 33 (+20
Cougar Enforcer 33 PBF under 10 tonnes)
PCO 2 *Haras*
PBF 3 *Haras* (US Mk V *Pegasus*)
PB 27: 3 Rodman 101; 1 *Haras* (SWE CG27); 3 *Haras*
(SWE CG29); 14 Rodman 58; 1 D59116; 5 *Zahra*

Police Air Wing
Transport Aircraft; Light 4: 1 BN-2T *Turbine Islander*; 2
CN-235M; 1 Do-228
Transport helicopters: Light 5: 2 Bell 205A; 3 Bell 214ST (AB-214ST)

Qatar

Three Special Force-type units under army command:
Oil Well Guard Units;
Static Guards Regiment;
Border Guards Regiment.
Each has 300-400 personnel.
Border Guards protect the borders, were Static Guards are stationed
throughout the country. Oil Guards ensure the safety of oil pipelines.

Saudi Arabia

IISS estimate for Saudi Arabia:

Paramilitary: 24,500+ active

Border Guard: 10,500
Subordinate to Ministry of Interior: HQ in Riyadh.
9 subordinate regional commands
Some mobile def (long range patrol/spt) units
2 border def (patrol) units
12 infrastructure def units
18 harbour def units
Some coastal def units
Some MP units

Coast Guard 4,500
Patrol and Coastal Combatants: 14 (100+ small patrol boats are also in service)
PBF 6: 4 *Al Jouf*; 2 *Sea Guard*
PB 8: 6 *StanPatrol 2606*; 2 *Al Jubatel*
Amphibious, Landing Craft: 8: 3 UCAC; 5 LCAC *Griffin 8000*
Logistics and support: 4: 1 AXL; 3 AO

Facilities Security Force 9,000+
Subordinate to Ministry of Interior
General Civil Defence Administration Units
Transport Helicopters: Medium 10 Boeing Vertol 107

Special Security Force 500
APC (W): UR-416

Ministry of the Interior (Under same chain of command within MOI):

Special Security Forces: 10,000

Mujahideen: 5000

Drug Enforcement Agency: 20,000

Passport and Immigration Dept: 7,500

Border Guard: 15,000

Coast Guard: 7,500

*Civil Defense Administration: 25,000 --Rapid reaction force to deal with terrorist attacks or natural disasters and maintains its own helicopter fleet.

(*Under same chain of command within MOI)

UAE

Coast Guard: Ministry of Interior

Patrol and Coastal Combatants: 112

PSO 1 *Al Watid*

PBF 58: 6 *Baglietto GC23*; 3 *Baglietto 59*; 15 DV-15; 34

MRTP 16

PB 53: 2 *Protector*; 16 (US Camcraft 65); 5 (US Camcraft 77); 6 Watercraft 45; 12 *Halmatic Work*; 12 *Al Saber*

Source: Based on Chapter Seven: Middle East and North Africa," in *The Military Balance*, International Institute for Strategic Studies, 2015, p. 303-362, material from IHS Jane's as adjusted by the authors, and IHS Jane's, "IHS Global Limited 2015." *IHS Jane's Sentinel Gulf States*

Figure XI.5: US State Department Assessment of Problems in Gulf State Security Operations

Bahrain¹⁵²

The most serious human rights problems included citizens' inability to change their government peacefully; arrest and detention of protesters on vague charges, in some cases leading to their torture in detention; and lack of due process in trials of political and human rights activists, medical personnel, teachers, and students, with some resulting in harsh sentences. Some protesters engaged in lethal acts of violence against security forces, including the use of improvised explosive devices, Molotov cocktails, and other improvised weapons.

Other significant human rights problems included arbitrary deprivation of life; arrest of individuals on charges relating to freedom of expression; reported violations of privacy; and restrictions on civil liberties, including freedom of speech, press, assembly, association, and some religious practices. The government sometimes imposed and enforced travel bans on political activists. Discrimination on the basis of gender, religion, nationality, and sect persisted, especially against the Shia population. There were reports of domestic violence against women and children. Trafficking in persons and restrictions on the rights of foreign workers continued to be significant problems.

Beginning in February 2011, the country experienced a sustained period of unrest including mass protests calling for political reform. In 2011, 52 persons died in incidents linked to the unrest, and hundreds more were injured or arrested. The government prosecuted some police personnel implicated in abuses committed during the year and in 2011. Courts convicted six individuals of crimes related to police abuse, resulting in prison sentences ranging from three months to seven years. It was unclear whether any of those convicted were in prison at year's end. Many of the trials continued. In the pending cases, charges ranged from misdemeanor assault and battery to murder. The government took some steps to address the "culture of impunity," which the 2011 Bahrain Independent Commission of Inquiry (BICI) report identified.

...There were a number of reports that government security forces committed arbitrary or unlawful killings. Local human rights organizations linked between 23 and 29 deaths to security forces either directly or indirectly. Shia opposition political society Al-Wifaq's Freedom and Human Rights Department (FHRD) reported three deaths from injuries due to beating or torture, three from birdshot, two from "live ammunition," and one from delayed and inadequate medical care. Local human rights organizations attributed more than 20 deaths to exposure to tear gas.

...domestic and international human rights organizations reported numerous instances of torture and other cruel, inhuman, or degrading treatment or punishment. Detainees reported to local human rights activists that security officials continued to use abusive tactics. They alleged that security officials beat them, sometimes while they were blindfolded, and often with clubs, whips, or rubber hoses. Officials reportedly placed detainees in solitary confinement, sometimes in extreme temperatures, and burned body parts with lighters. Detainees claimed officials forced shoes into their mouths, spit on them, or spit into their mouths. Other reports noted a similar pattern of abuse following arrest, including beating without interrogation, beating with interrogation, harassment, and intimidation without further physical abuse. Most detainees were Shia.

Local human rights groups, including the unlicensed Bahrain Center for Human Rights (BCHR), Bahrain Human Rights Society (BHRS), and the FHRD reported that authorities beat and tortured detainees during interrogations and denied medical treatment to injured or ill detainees. Reports indicated that the MOI interrogated detainees about illegal protest activity. Detainees reported mistreatment at official interrogation facilities. The most frequently cited locations for mistreatment included the following MOI facilities: the Adliya Criminal Investigation Division (CID), Isa Town Detention Center for Women, Dry Dock Detention Center, and Jaw Prison. Other official detention facilities less commonly cited included police stations in Al Rifaa, Al Qudaibiya, Samaheej, Al Nuaim, Nabih Saleh, Al Budaiya, and Sitra.

Local human rights groups reported that detainees also complained of abuse and torture at various temporary facilities, including a youth hostel and a tent near the Exhibition Center in the Capital Governorate, an equestrian center in the Northern Governorate, and other locations in the Central and Muharraq

governorates. These unregistered detention centers did not comply with the BICI recommendations that require placing cameras and recording equipment in all official detention facilities. The most common techniques included blindfolding detainees; beating, punching, and hitting them with rubber hoses, cables, metal, wooden planks or other objects; electric shock; exposure to extreme temperatures; stress positions; verbal abuse; threats to rape the detainee or family members; sexual assault; preventing detainees from praying; sleep deprivation; and insulting the detainee's religious sect (Shia). Victims also reported security officials used physical and psychological mistreatment to extract confessions and statements under duress or as retribution and punishment. Detainees also reported security forces abused them in their homes.

On February 29, Public Prosecutor Ali Al-Buainain announced the Special Investigation Unit (SIU), a newly created entity under his office's jurisdiction, would investigate torture and mistreatment by government officials...The National Security Agency (NSA) reportedly initiated a general investigation into mistreatment claims in 2011, but only one prosecution resulted from that investigation.

...The MOI is responsible for internal public security and controls the public security force and specialized security units that are responsible for maintaining internal order. The Bahraini Coast Guard is under the jurisdiction of the MOI. The Bahrain Defense Force (BDF) is primarily responsible for defending against external threats, while the Bahrain National Guard is responsible for defending against external threats and is a security force against internal threats. The government also created two new independent ombudsman offices responsible for addressing cases of mistreatment and abuse; however, neither was operational by year's end. On February 29, the king issued a decree to establish an independent ombudsman's office at the MOI and a second decree to create an independent office for the inspector general at the National Security Agency. On August 26, the MOI announced the assignment of Nawaf Al-Ma'awada as its ombudsman. At year's end the government was in the process of establishing those offices and hiring personnel.

Security forces were not completely effective in maintaining order and were often accused of using excessive force. Many human rights groups continued to assert that investigations into police accountability for abuse were slow and ineffective.

The Bahrain News Agency reported on March 14 that the interior minister approved BICI's recommendation for a new code of conduct for police that requires officers to abide by 10 principles, including limited use of force and zero tolerance for torture and mistreatment. According to government officials, the new code is consistent with international human rights standards and forbids the use of force "except when absolutely necessary." At year's end the Royal Police Academy included the code in its curriculum and provided new recruits with copies in English and Arabic. However, it was unclear whether the MOI had mechanisms to enforce the code of conduct.

The MOI maintained a hotline for citizens to report police abuse, but many in the Shia community hesitated to report abuse for fear of retribution. The government reported that the hotline received 872 complaints during the year, not all of which were directly related to police abuse.

The mechanism for investigating allegations of abuse by NSA officials included the announcement of an independent inspector general.

The MOI began training courses with the International Institute of Higher Studies in Criminal Sciences based in Siracusa, Italy. Sixty judges, prosecutors, and investigators took part in three training courses held during the year.

According to the November 2012 BICI follow-up report, 100 female and 255 male recruits were hired in the first round of community policing recruitment to perform police work in all ministry departments.

...he MOI (in particular the CID and the Public Security Forces, which include the riot police) arbitrarily arrested numerous individuals. Many detained individuals reported being arrested and not shown warrants by arresting forces. There were many reports that security forces raided homes and damaged property without providing compensation while searching for suspected criminals.

The most egregious human rights problems were the government's manipulation of the electoral process, which severely limited citizens' right to change their government peacefully through free and fair elections; restrictions on civil liberties, including the freedoms of assembly, speech, and press; and disregard for the physical integrity of persons whom it arbitrarily and unlawfully detained, tortured, or killed.

Other reported human rights problems included: disappearances; cruel, inhuman, or degrading treatment or punishment, including judicially sanctioned amputation and flogging; politically motivated violence and repression, such as beatings and rape; harsh and life-threatening conditions in detention and prison facilities, with instances of deaths in custody; arbitrary arrest and lengthy pretrial detention, sometimes incommunicado; continued impunity of security forces; denial of fair public trials, sometimes resulting in executions without due process; the lack of an independent judiciary; political prisoners and detainees; ineffective implementation of civil judicial procedures and remedies; arbitrary interference with privacy, family, home, and correspondence; severe restrictions on freedoms of speech (including via the internet) and press; harassment of journalists; censorship and media content restrictions; severe restrictions on academic freedom; severe restrictions on the freedoms of assembly, association, and religion; some restrictions on freedom of movement; official corruption and lack of government transparency; constraints on investigations by international and nongovernmental organizations (NGOs) into alleged violations of human rights; legal and societal discrimination and violence against women, children, ethnic and religious minorities, and lesbian, gay, bisexual, and transgender (LGBT) persons based on perceived sexual orientation and gender identity; incitement to anti-Semitism; trafficking in persons; and severe restrictions on the exercise of labor rights.

The government took few steps to prosecute, punish, or otherwise hold accountable officials who committed abuses. Members of the security forces detained in connection with abuses were frequently released soon after their arrest, and judicial officials did not prosecute offenders. Impunity remained pervasive throughout all levels of the government and security forces.

... The government and its agents reportedly committed acts of arbitrary or unlawful killings, including, most commonly, by execution after arrests and trials lacking in due process. The government made limited attempts to investigate allegations of deaths that occurred after or during reported torture or other physical abuse, or after denying detainees medical treatment. Members of ethnic minority communities were disproportionately victims of such abuses.

... The government executed 624 persons during the year, according to the NGO Iran Human Rights Documentation Center (IHRDC), which reported that many trials did not adhere to basic principles of due process. The government officially announced 334 executions but did not release further information, such as the dates of executions, the names of those executed, or the crimes for which they were executed.

The law applies the death penalty to offenses such as "attempts against the security of the state," "outrage against high-ranking officials," "enmity towards God" (moharebeh), "corruption on earth" (fisad fil-arz), and "insults against the memory of Imam Khomeini and against the supreme leader of the Islamic Republic." Prosecutors frequently used moharebeh as a criminal charge against political dissidents and journalists, referring to struggling against the precepts of Islam and against the state that upholds those precepts. On December 8, the international NGO Amnesty International (AI) reported that authorities had executed four members of the country's Ahwazi Arab minority – Abdulreza Amir Khanafereh, Ghazi Abbasi, Abdulamir Mojdami, and Jasem Moghaddampanah – for charges including moharebeh and fisad fil-arz in relation to their alleged roles in a series of shootings that led to the deaths of a police officer and a soldier. The Supreme Court upheld the men's death sentences, despite reports that the Ahwaz Revolutionary Court convicted and sentenced them based on confessions obtained by torture in a trial at which the men were denied legal representation. According to the IHRDC, officials executed at least 27 persons during the year for charges that included moharebeh.

... There were reports of politically motivated abductions during the year. Plainclothes officials often seized journalists and activists without warning, and government officials refused to acknowledge custody or provide information on those taken. In other cases authorities detained persons incommunicado before permitting them to contact family members.

... The constitution prohibits all forms of torture “for the purpose of extracting confession or acquiring information,” but there were several credible reports that security forces and prison personnel tortured and abused detainees and prisoners. On October 23, the UN special rapporteur cited allegations that members of religious minority communities, including Baha’is and Sufis, faced torture while in detention.

... Several agencies shared responsibility for law enforcement and maintaining order, including the MOIS, law enforcement forces under the Interior Ministry, and the IRGC, which reported to the supreme leader. The Basij, a volunteer paramilitary group with local organizations in cities and towns across the country, sometimes acted as an auxiliary law enforcement unit subordinate to IRGC ground forces. Basij units often engaged in crackdowns on political opposition elements without formal guidance or supervision from superiors.

The security forces were not considered fully effective in combating crime, and corruption and impunity remained problems. Human rights groups frequently accused regular and paramilitary security forces, such as the Basij, of committing numerous human rights abuses, including acts of violence against protesters and public demonstrations. There was no transparent mechanism to investigate or punish security force abuses, and there were no reports of government actions to discipline abusers.

... The constitution and penal code require a warrant or subpoena for an arrest and state that an arrested person must be informed of charges within 24 hours. Authorities often violated these procedures by holding some detainees, at times incommunicado, for weeks or months without charge or trial, frequently denying contact with family or timely access to legal representation. By law the state is obligated to provide indigent defendants with attorneys only for certain types of crimes. The courts set prohibitively high bail, even for lesser crimes, and in many cases courts did not set bail. Authorities often compelled detainees and their families to submit property deeds to post bail. Persons released on bail did not always know how long their property would be retained or when their trials would be held, which effectively silenced them for fear of losing their families’ property.

The government placed persons under house arrest without due process to restrict their movement and communication. At year’s end former presidential candidates Mehdi Karroubi and Mir Hossein Mousavi and Mousavi’s wife, Zahra Rahnavard, remained under house arrest imposed in 2011. Security forces restricted their access to visitors and limited their access to outside information. Both Karroubi and Mousavi reportedly suffered from serious health problems during the year but were sometimes denied adequate medical care.

Arbitrary Arrest: Authorities commonly used arbitrary arrests to impede alleged antiregime activities. Plainclothes officers often arrived unannounced at homes or offices, arrested persons, conducted raids, and confiscated private documents, passports, computers, electronic media, and other personal items without warrants or other assurances of due process. Individuals often remained in detention facilities for long periods without charges or trials and were sometimes prevented from informing others of their whereabouts for several days. Authorities often denied detainees access to legal counsel during this period and imposed travel bans on individuals if they were released pending trial.

According to the CHRR, security agents arrested activist blogger Reza Akvanian on March 24 in the middle of the night. Authorities held Akvanian incommunicado for two weeks before allowing visitation with his family, who reported that Akvanian showed bruising and other signs of beatings. The CHRR reported that Judge Tahmasabi of Branch 1 of the Yasuj Revolutionary Court sentenced Akvanian to one year in prison and a five-year suspended sentence on the charges of “insulting the supreme leader and the president through blog content” and “associating with outsiders by sharing news reports.”

Iraq¹⁵⁴

Severe human rights problems persisted. The three most important were: politically motivated sectarian and ethnic killings, including by the resurgent terrorist network led by al-Qaida and its affiliate, the Islamic State of Iraq and the Levant (ISIL), formerly known as al-Qaida in Iraq (AQI); torture and abuses by government actors and illegal armed groups; and a lack of governmental transparency, exacerbated by widespread corruption at all levels of government and society.

...A culture of impunity largely protected members of the security services, as well as those elsewhere in the government, from investigation and successful prosecution for human rights violations. Corruption among officials across government agencies was widespread and contributed to significant human rights abuses.

Illegally armed sectarian and ethnic groups, including terrorist groups such as AQI/ISIL, committed deadly, politically motivated acts of violence, killing with suicide bombings, improvised explosive devices, drive-by shootings, as well as kidnappings and other forms of violence. Militants and terrorists targeted fellow citizens – Shia, Sunni, as well as members of other religious groups or ethnicities – security forces, places of worship, religious pilgrims, schools, public spaces, economic infrastructure, and government officials.

... According to multiple reports, government officials committed extrajudicial killings, although confirmation of the killers' identities was rare. Ministry of Interior officials tortured detainees to death, according to reports from multiple government officials and human rights organizations. The Human Rights Ministry concluded that 20 of the 117 deaths in custody in the first six months of the year resulted from torture; 85 resulted from medical causes; and 12 were due to unknown causes (see section 1.c.). Security forces reportedly fired on and killed protesters. The outcomes of infrequent official investigations were often unpublished, unknown, or incomplete and rarely approached credibility in high-profile cases.

For example, early in the morning on April 23, the country's Special Weapons and Tactics (SWAT) teams, elements of the 12th Division of the Iraqi Army, and the Federal Police stormed a sit-in camp of Sunni antigovernment protesters in the northern city of Hawija, reportedly in response to an attack on a nearby police checkpoint. Press reports and UN officials estimated that 44 civilians and three soldiers died in ensuing clashes between the security forces and demonstrators. The international human rights nongovernmental organizations (NGOs) Amnesty International (AI) and Human Rights Watch (HRW) concluded that security officials used excessive and lethal force. The government convened investigatory panels to assess the violence in Hawija, as it did in prior Iraqi Security Forces killings of protesters in Fallujah and Mosul in January and March. The government did not make public the results of any investigations, and the judiciary had brought no charges by year's end. The country's independent High Commission for Human Rights (HCHR) investigated the events and condemned the loss of life. Prime Minister Maliki said the dead were "martyrs" and ordered the establishment of a special commission to provide compensation to the families of the victims, but there was no information available to confirm that the families had received compensation by year's end.

... Persons believed to have falsely presented themselves as Iraqi Security Force personnel also committed abuses. In May armed militias conducted killings and kidnappings around the country at fake Iraqi Security Force checkpoints. On July 23, militants killed 14 Shia truck drivers after checking their identity papers at a makeshift roadblock near Suleyman Bek, 100 miles north of Baghdad. Unverified amateur videos posted online showed AQI/ISIL members taking responsibility for the attack.

Throughout the year and increasingly toward the end of the year, AQI/ISIL targeted Sunni tribal leaders and Sunnis who cooperated with the government, including the Sons of Iraq, also known as the Sahwa (Awakening) movement. On November 29, authorities discovered the corpses of 18 men with gunshot wounds near the Sunni town of Mishahda, 20 miles north of Baghdad. According to eyewitnesses, an armed group "dressed in military uniforms" kidnapped the men the night before. According to press, AQI/ISIL claimed responsibility for the attack, stating that it targeted a meeting at the home of a Sunni tribal chief focused on reinvigorating the Sahwa forces.

From November 26 to November 29, authorities found at least 41 corpses with gunshot wounds to the head and body in Baghdad, Ninewa, and Diyala provinces, according to media reports. Seven of the victims were children. UNAMI noted that the rise in "execution-style" killings brought back fears of death squads during the worst days of the sectarian war in 2007-08.

... Local and international human rights organizations as well as government officials documented credible cases of torture and abuse in Ministry of Interior and to a lesser extent in Ministry of Justice, Ministry of Defense, and Kurdistan regional government detention facilities, including Interior and Justice Ministry facilities that held women. HRW contended that widespread torture and systematic abuses continued in detention facilities and reported several instances of

torture and rape of female detainees as well. In its May report on prisons and detention facilities, the Ministry of Human Rights recorded three allegations of rape and 13 allegations of sexual abuse of women, as well as 14 allegations of rape and 47 allegations of sexual abuse of men in Ministry of Justice facilities. The report noted that the Ministry of Human Rights lacked sufficient access to Ministry of Interior facilities to conduct a full investigation but confirmed the HRW allegation that torture and systematic abuses were pervasive among prison and detention center administrators.

As in previous years, credible accounts of abuse and torture during arrest and investigation, in pretrial detention, and after conviction, particularly by police and army, were common. According to former prisoners, detainees, and human rights groups, methods of torture and abuse included putting victims in stress positions, beatings, broken fingers, suffocation, burning, removing fingernails, suspending victims from the ceiling, overextending victims' spines, beatings on the soles of the feet with plastic and metal rods, forcing victims to drink large quantities of water while preventing urination, sexual assault, denial of medical treatment, and death threats. There were also reports during the year of detainees dying of "electric shock" torture while under interrogation, and local human rights organizations posted unconfirmed videos of electric shock torture in detention centers in Muthanna Province.

... The IKR antiterrorist law allows abusive interrogation under certain conditions, and such practices reportedly occurred in some detention facilities of the Asayish and the Kurdistan regional government's intelligence services, KDP's Parastin, and PUK's Zanyari. On September 16, Khalaf Ali Mikheber, an Iraqi police officer working in Rabeea near Mosul, was detained at a Kurdistan regional government -controlled checkpoint in Sinony, Sinjar District. Kurdistan regional government security forces accused Mikheber of distributing Baathist leaflets in the regional government-controlled Sinjar District and held him in a prison for 10 hours tied to a pole in the burning sun without food or water. Authorities released Mikheber after three days without an explanation for his arrest.

... The Iraqi Security Force consists of internal security forces administratively organized within the Interior Ministry, external security forces under the control of the Defense Ministry, and the CTS. Interior Ministry responsibilities include domestic law enforcement and maintenance of order relying on the Federal Police, Provincial Police, Facilities Protection Service, and Department of Border Enforcement. Conventional military forces under the Defense Ministry are responsible for external defense; however, they often work with elements of the Interior Ministry to carry out counterterrorism operations and internal security. The CTS reports directly to the prime minister and oversees the Counterterrorism Command, an organization that includes the three Special Operations Forces brigades.

The government rarely investigated reported human rights violations committed by Iraqi Security Force personnel and rarely punished perpetrators.

There were continued accounts of torture and abuse throughout the country in Interior Ministry police stations and Defense Ministry facilities, reportedly primarily during detainee interrogations. The Interior Ministry did not release the number of officers punished during the year, and there were no known court convictions for abuse. The government did not take widespread action to reform security forces to improve human rights protection.

Problems persisted among the country's provincial police forces, including sectarian divisions, corruption, ties to tribes, and unwillingness of some officers to serve outside the areas from which they originated. The army and federal police recruited nationwide and deployed soldiers and police to various areas, reducing the likelihood of corruption related to personal ties to tribes or militants.

Security forces made limited efforts to prevent or respond to societal violence. Local police stations in Basra and Kirkuk implemented "family protection units" in order to respond to and address claims of domestic violence by women and children. In 2011 the Council of Ministers established a lesbian, gay, bisexual, and transgender (LGBT) committee to identify victims of targeted discrimination and provide adequate protections. The committee had not made a discernible impact at year's end.

The two main Kurdish political parties, the KDP and PUK, maintained their own security apparatuses. Under the federal constitution, the Kurdistan regional government has the right to maintain regional guards brigades (RGBs), supported financially by the central government but under the regional government's control. Accordingly, the Kurdistan regional government established a Ministry of Peshmerga Affairs. There are 12 infantry RGBs under the authority of the Ministry of Peshmerga Affairs, but the PUK and the KDP control tens of thousands of additional military personnel and heavy weapons, including armor.

The KDP maintained its own internal security unit, the Asayish, and its own intelligence service, the Parastin. The PUK maintained its own internal security unit, also known as the Asayish, and its own intelligence service, the Zanyari. While the PUK and KDP took some nominal steps toward unifying their internal and external security organizations, they remained separate, as political party leaders effectively controlled these organizations through party channels.

Kurdistan regional government security forces detained suspects in areas the regional government controlled but also in the DIB provinces. The poorly defined administrative boundaries between the IKR and the rest of the country resulted in continuing confusion about the jurisdiction of security forces and the courts.

The 2011 repeal of Article 136(b) of the criminal procedure code did not lead to significant changes in the number and pattern of arrests. The article gave ministers the power to prevent the execution of arrest warrants stemming from criminal investigations of employees in their ministries.

Kuwait¹⁵⁵

Principal human rights problems included limitations on citizens' right to change their government; restrictions on freedom of speech and assembly, especially among foreign workers and stateless Arabs (called "Bidoon"); trafficking in persons within the foreign worker population, especially in the domestic and unskilled service sectors; and limitations on workers' rights.

Other human rights problems included reports of security force members abusing prisoners; restrictions on freedom of movement for certain groups, including foreign workers and Bidoon; and limitations on freedoms of press, association, and religion. Women and Bidoon faced social and legal discrimination.

The government took steps to prosecute and punish officials who committed abuses, whether in the security services or elsewhere in the government. Impunity was sometimes a problem in corruption cases.

...The police have sole responsibility for the enforcement of laws not related to national security, and State Security oversees intelligence and national security matters; both are under the purview of civilian interior ministry authorities.

The police were generally effective in carrying out core responsibilities. There were reports some police stations did not take seriously charges by complainants, especially foreign nationals and victims of rape and domestic violence. In cases of alleged police abuse, the district chief investigator examines abuse allegations and refers cases to the courts for trial. There was some evidence of police impunity.

Media sources reported that, during the first eight months of the year, individuals filed 300 complaints against police officers. Authorities took disciplinary measures against 50 officers following investigations and imprisoned nine for their crimes. Several media reports throughout the year detailed sexual assaults by police officers, usually against nonnational women.

Security forces sometimes failed to respond effectively to societal violence between family members or against domestic workers.

...The constitution provides for freedom of assembly; however, in practice the government restricted this right.

Political oppositionists organized dozens of protests and rallies throughout the year. Security officials allowed many peaceful protests to proceed without permits, but intervened to disperse some demonstrations that were unauthorized. Citing public safety and traffic concerns, officials sometimes also restricted the location of planned protests to designated public spaces.

Following elections on December 1, some opposition youth activists held unlicensed marches on consecutive nights to protest the elections. Security forces used nonlethal force to disperse some of the marches, and protesters responded by throwing projectiles, fireworks, and on one occasion Molotov cocktails at police.

On October 21 and November 4, security forces used nonlethal means, including tear gas, percussion grenades, and batons, to disperse marches organized to protest the emir's decision to amend the electoral law by decree. While the Interior Ministry stated it would permit demonstrators to participate in a protest at

a preauthorized location, it refused to allow the protesters to march from one place to another. Participants and human rights groups widely criticized the use of force to disperse what they stated were peaceful protests. Protest organizers requested licenses for two subsequent marches on November 30 and December 8, which the government granted; the marches occurred without incident.

In January, April, May, July, October, and December, security forces dispersed illegal gatherings of Bidoon protesters calling for citizenship rights and access to basic services, including personal documents, health care, and education. After demonstrators refused to leave, security forces used nonlethal means, including water cannons, smoke bombs, tear gas, batons, and rubber bullets to disperse the crowd. Security forces detained 61 demonstrators during the January 13 and 14 protests and 34 during the October 2 demonstrations. MPs and human rights groups criticized what they alleged was the use of force against demonstrators. Authorities released all participants on bail, and most cases were pending as of year's end. Abdulhakeem al-Fadhli, a prominent Bidoon organizer, was convicted in absentia on November 17 and sentenced to two years in prison for allegedly assaulting a police officer during an April demonstration. Al-Fadhli was arrested on December 11 and, on December 26, his attorney challenged the evidentiary basis for the conviction and sentence. Al-Fadhli remained incarcerated at year's end.

Oman¹⁵⁶

The principal human rights problems were the inability of citizens to change their government, limits on freedom of speech and assembly, and discrimination against women, including political and economic exclusion based on cultural norms. Thirty-two individuals were convicted on charges of libel against the sultan during the year, receiving prison sentences from six to 18 months and fines of 500 to 1,000 Omani rials (approximately \$1,300 to \$2,600). Another 12 individuals were convicted on charges of illegal assembly (assembly without a permit) while peacefully protesting some of the libel convictions. The protesters each received a prison sentence of one year and a 1,000 rial fine (approximately \$2,600).

Other ongoing concerns included lack of independent inspections of prisons and detention centers, restrictions on press freedom, instances of domestic violence, and instances of foreign citizen laborers placed in conditions of forced labor or abuse.

Security personnel and other government officials generally were held accountable for their actions. The Head of Finance of the Royal Oman Police (ROP) was prosecuted, sentenced, and jailed for four-and-a-half years for embezzlement of over 700,000 Omani rials (approximately \$1.8 million). In a separate case, after security forces shot and killed a protester in 2011, authorities conducted an investigation but held no one liable.

...Politically motivated disappearances were reported in the country. On May 31, security forces detained Ismael al-Meqbali, Habiba al-Hinai, and Yaqoub al-Kharusi, human rights activists who were visiting striking oil workers.

...The Royal Office, part of the cabinet, controls internal and external security and coordinates all intelligence and security policies. Under the Royal Office, the Internal Security Service investigates all matters related to domestic security, and the sultan's Special Forces have limited border security and antismuggling responsibilities. The ROP, also part of the cabinet, perform regular police duties, provide security at points of entry, serve as the country's immigration and customs agency, and includes the Coast Guard. The Ministry of Defense, and in particular the Royal Army of Oman (RAO), is responsible for securing the borders and has limited domestic security responsibilities. The security forces performed their duties effectively.

Civilian authorities generally maintained effective control over the Internal Security Service, the sultan's Special Forces, the RAO, and the ROP.

Qatar¹⁵⁷

The principal human rights problems were the inability of citizens to change their government peacefully, restriction of fundamental civil liberties, and pervasive denial of expatriate workers' rights. The monarch-appointed government prohibited organized political parties and restricted civil liberties, including freedoms of speech, press, and assembly and access to a fair trial for persons held under the Protection of Society Law and Combating Terrorism Law.

Other continuing human rights concerns included restrictions on the freedoms of religion and movement, as foreign laborers could not freely travel abroad. Trafficking in persons, primarily in the labor and domestic worker sectors, was a problem. Legal, institutional, and cultural discrimination against women limited their participation in society. The noncitizen “Bidoon” (stateless persons) who resided in the country with an unresolved legal status experienced social discrimination.

The government took steps to prosecute those who committed abuses, and there were no cases of impunity reported

... Prison and detention center conditions generally met international standards; however, there were reports that security forces abused prisoners held on politically sensitive charges...The state security service can arrest and detain suspects for up to 30 days without referring them to the public prosecutor.

...Civilian authorities maintained effective control over the police under the Ministry of Interior and state security forces, and the government employed effective mechanisms to investigate and punish abuse and corruption. There were no reports of impunity involving the security forces during the year.

...The Protection of Society Law and Combating Terrorism Law provide procedures that permit detention without charge for as long as 15 days, renewable for up to six months. The law permits an additional six months’ detention without charge with approval of the prime minister, who can extend the detention indefinitely in cases of threats to national security. This law empowers the minister of interior to detain persons suspected of crimes related to national security, honor, or impudence. Decisions under this law are subject to appeal by the prime minister only. A provision of this law permits the prime minister to adjudicate complaints involving such detentions. The law permits a second six-month period of detention with approval from the Criminal Court, which can extend a detention indefinitely with review every six months

Saudi Arabia¹⁵⁸

The most important human rights problems reported included citizens’ lack of the right and legal means to change their government; pervasive restrictions on universal rights such as freedom of expression, including on the Internet, and freedom of assembly, association, movement, and religion; and a lack of equal rights for women, children, and expatriate workers.

Other human rights problems reported included torture and other abuses; overcrowding in prisons and detention centers; holding political prisoners and detainees; denial of due process; arbitrary arrest and detention; and arbitrary interference with privacy, home, and correspondence...The government identified, prosecuted, and punished a limited number of officials who committed abuses, particularly those engaged in or complicit with corruption. Some members of the security forces and other senior officials, including those linked to the royal family, reportedly committed abuses with relative impunity.

...The law prohibits torture and holds criminal investigation officers accountable for any abuse of authority. Sharia, as interpreted in the country, prohibits judges from accepting confessions obtained under duress; statutory law provides that public investigators shall not subject accused persons to coercive measures to influence their testimony.

Government officials claimed that Ministry of Interior (MOI) rules prohibiting torture prevented such practices from occurring in the penal system. They also claimed representatives from the governmental Human Rights Commission (HRC) and the quasi-nongovernmental National Society for Human Rights (NSHR), which is supported by a trust funded by the estate of the late King Fahd, conducted prison visits to ascertain that torture did not occur in prisons or detention centers. Nevertheless, during the year there continued to be reports that authorities sometimes subjected prisoners and detainees to torture and other physical abuse, particularly during the investigation phase when interrogating suspects; however, due to lack of government transparency, it was not possible to ascertain the accuracy of these reports. There was no available information on the number of cases of abuse and corporal punishment.

...because of the government’s ambiguous implementation of the law and a lack of due process, the MOI, to which the majority of forces with arrest power report, maintained broad powers to arrest and detain persons indefinitely without judicial oversight or effective access to legal counsel or family. In practice

authorities held persons for weeks, months, and sometimes years and reportedly failed to advise them promptly of their rights, including their legal right to be represented by an attorney.

...The king, interior minister, defense minister, and national guard commander all have responsibility in law and in practice for law enforcement and maintenance of order. The MOI exercised primary control over internal security and police forces. The civil police and the internal security police are authorized to arrest and detain individuals.

...The semiautonomous CPVPV, which monitors public behavior to enforce strict adherence to the official interpretation of Islamic norms, reports to the king via the Royal Diwan (royal court) and to the MOI. The members of the religious police are required to carry official identification and have a police officer accompany them at the time of an arrest. The head of the CPVPV, Sheikh Abdullatif Al al-Sheikh (appointed in January), ordered strict compliance with this policy and prohibited any nonofficial volunteers. In an October 15 public address to youth, he emphasized citizens need not listen to any professed CPVPV member not displaying official identification. In addition Al al-Sheikh reiterated in a meeting with CPVPV branch directors that CPVPV officials are not allowed to pursue individuals but rather are to take note of relevant information and refer it to the police for further action, including arrest.

Security forces were generally effective at maintaining law and order. The Board of Grievances (Diwan al-Mazalim), a high-level administrative judicial body that specializes in cases against government entities and reports directly to the king, is the only formal mechanism available to seek redress for claims of abuse. Citizens may report abuses by security forces at any police station, to the HRC, or to the NSHR. The HRC and the NSHR maintained records of complaints and outcomes, but privacy laws protected information about individual cases, and information was not publicly available. During the year there were no reported prosecutions of security forces for human rights violations, but the Board of Grievances held hearings and adjudicated claims of wrongdoing. The HRC, in cooperation with the Ministry of Education, provided materials and training to police, security forces, and the religious police on protecting human rights.

The Bureau of Investigation and Prosecution (BIP) and the Control and Investigation Board (CIB) are the two units of the government with authority to investigate reports of criminal activity, corruption, and “disciplinary cases” involving government employees. These bodies are responsible for investigating potential cases and referring them to the administrative courts.

In November 2011 the Council of Ministers consolidated legal authorities for investigation and public prosecution of criminal offences within the BIP; however, the CIB continued to be responsible for investigation and prosecution of noncriminal cases. All financial audit and control functions were limited to the General Auditing Board.

...On April 2, (2012) the MOI’s Bureau of Investigation and Prosecution released statistics accounting for those detained for suspicion of terrorism since 2001. The data suggested that roughly half of the 11,527 persons arrested had been released. Of those not released, 2,215 had been referred to “the competent criminal courts,” with 1,612 convicted by April 2; the others were still being tried. There were 1,931 detainees nearing transfer to court as investigations were being completed, 934 detainees were still being held pending final charges, and another 616 were “still pending trial,” although it was not clear what that description meant. The MOI also reportedly paid compensation of 32 million riyals (\$8.5 million) to 486 detainees for being held longer in detention than their jail sentences and provided 529 million riyals (\$141 million) in monthly assistance to the families of suspects.

...The number of political prisoners or detainees who reportedly remained in prolonged detention without charge could not be reliably ascertained. In a report MOI spokesperson General Mansour al-Turki noted that of the 11,000 people officially arrested on security-related charges, 50 percent were in prison. However, on December 9, local media reported there were 2,709 detainees, including 597 foreign nationals, facing security-related charges in five prisons. In many cases it was impossible to determine the legal basis for incarceration and whether the detention complied with international norms and standards. Those who remained imprisoned after trial often were convicted of terrorism-related crimes, and there was not sufficient public information about such alleged crimes to judge whether they had a credible claim to be political prisoners.

...There are no laws that prevent male minorities from participating in political life on the same basis as other male citizens, but societal discrimination marginalized the Shia population. While the religious affiliation of Consultative Council members was not publicly known, the council included an estimated five or six Shia members. There were no known religious minorities in the cabinet. Multiple municipal Councils in the Eastern Province, where most Saudi Shia are concentrated, had large proportions of Shia as members to reflect the local population, including a majority in Qatif and 50 percent in al-Hasa. At year's end there were some Eastern Province Shia judges dealing with intra-Shia personal status and family laws.

UAE¹⁵⁹

The three most significant human rights problems were arbitrary arrests, incommunicado detentions, and lengthy pretrial detentions; limitations on citizens' civil liberties (including the freedoms of speech, press, assembly, and association); and citizens' inability to change their government.

...The constitution prohibits arbitrary arrest and detention; however, there were reports that the government held persons in official custody without charge or a preliminary judicial hearing. The Ministry of Interior detained foreign residents arbitrarily at times. The law permits indefinite, routine, and incommunicado detention without appeal. Authorities determined whether detainees were permitted to contact attorneys, family members, or others after an indefinite or unspecified period.

Beginning in March authorities arrested more than 80 individuals, including at least 12 Egyptians residing in the country who were arrested between November and December. Authorities stated that the individuals had ties to Dawat Al Islah, an organization purportedly associated with the Muslim Brotherhood, and were plotting a government overthrow and attacks against the nation. Individuals associated with those arrested, and other organizations, disputed authorities' claims and noted that many of the detainees called for political reforms and expanded rights. Many of the individuals were arbitrarily arrested and subjected to incommunicado detention (see section 1.e.).

Each of the seven emirates maintains a local police force, which is officially a branch of the federal Ministry of Interior and called a general directorate. All emirate-level police general directorates enforce their respective emirate's laws autonomously. The emirate-level police general directorates also enforce the country's federal laws within their emirate in coordination with each other and under the ministry's auspices, but the manner in which they do so varies depending on local operational considerations. The federal government maintains federal armed forces for external security. Civilian authorities maintained effective control over emirate-level police and federal security forces.

The Ministry of Interior has broad authority to investigate abuses. Civilian authorities maintained effective control over the local police forces, and the government had effective mechanisms to investigate and punish abuse and corruption. There were no reports of impunity involving security forces during the year. However, there were some unresolved cases involving allegations of mistreatment by security forces.

...Public prosecutors may order detainees held as long as 21 days without charge, or longer in some cases with a court order. Judges may not grant an extension of more than 30 days of detention without charge; however, they may renew 30-day extensions indefinitely. Public prosecutors may hold suspects in terrorism-related cases without charge for six months. Once a suspect is charged with terrorism, the Supreme Court may extend the detention indefinitely.

...A defendant is entitled to an attorney after police have completed their investigation. Police sometimes questioned the accused for weeks without permitting access to an attorney. The government may provide counsel at its discretion to indigent defendants charged with felonies that are punishable by imprisonment of three to 15 years. The law requires the government to provide counsel in cases in which indigent defendants face punishments of life imprisonment or the death penalty. Authorities generally granted family members prompt access to those arrested on charges unrelated to state security; however, authorities held some persons incommunicado.

...The government committed arbitrary arrests, notably in cases that allegedly violated state security regulations...The government held citizens both in incommunicado detention and under house arrest. Authorities initially placed two of the individuals detained for links to the Dawat Al Islah under house arrest.

The government did not inform the majority of the detainees with alleged links to Dawat Al Islah of the specific charges against them within the specified legal time limit and reportedly held the detainees incommunicado (see section 1.e., Political Prisoners and Detainees).

...In November and December authorities arbitrarily arrested additional individuals, potentially for comments posted online in support of those previously arrested. The government stated that those arrested had direct links to the Dawat Al Islah.

...The constitution provides for an independent judiciary; however, court decisions remained subject to review by the political leadership and suffered from nepotism. There were reports that the State Security Department intervened in judicial affairs. The judiciary was composed largely of contracted foreign nationals subject to potential deportation, further compromising its independence from the government. There was no functional separation between the executive and judicial branches.

...In the aftermath of the Arab Spring, the government restricted the activities of organizations and individuals allegedly associated with Dawat Al Islah and individuals critical of the government. Between March and December authorities arrested more than 80 individuals allegedly affiliated with Dawat Al Islah and the Muslim Brotherhood, including at least 12 Egyptians residing in the country. Although some officials publicly indicated that those arrested had plotted to overthrow the government, these accusations were not yet proven, and trials had not started by year's end.

Yemen¹⁶⁰

The most significant human rights problems were arbitrary killings and acts of violence committed by the government and various entities and groups; disappearances and kidnappings; and a weak and corrupt judicial system that did not ensure the rule of law.

Other human rights problems included: torture and other cruel, inhuman, or degrading treatment or punishment; poor prison conditions; arbitrary arrest and detention; lengthy pretrial detention; some infringements on citizens' privacy rights; some limits on freedom of speech, press, assembly, association, and movement; lack of transparency and significant corruption at all levels of government; violence and discrimination against women; violence against children; reported use of child soldiers by security forces, tribal groups, and other informal militias; discrimination against persons with disabilities; discrimination based on race and gender; restrictions on worker rights; forced labor, including forced child labor; and extremist threats and violence.

Impunity was persistent and pervasive. The transitional government planned to undertake investigations and prosecutions of government and security officials for human rights abuses, but political pressures and limited government capacity precluded significant action. Authorities removed some officials implicated in serious human rights violations from their positions, including Brigadier Abdulah Ghairan, who had been head of security in Aden and Ta'iz.

Nonstate actors engaged in internal armed conflict with government forces and committed abuses related to traditional tribal conflicts or simple criminality. Multiple armed groups, including progovernment and opposition tribal militias, regionally and religiously oriented insurgents, and terrorist groups including Al-Qaida in the Arabian Peninsula (AQAP) perpetrated numerous human rights abuses. Principal among these were arbitrary killings, unlawful detentions, and use of brutal force.

...There were reports of arbitrary or unlawful killings. Government forces and proxies responded at times with excessive force to demonstrations and protests in various parts of the country, particularly in Aden, where armed groups affiliated with the Southern Movement (Hirak) clashed with security forces and government proxies during the year. Excessive force also was used on both sides in internal armed conflicts in Sana'a, Marib, Ta'iz, Zinjibar, Abyan, and elsewhere, resulting in the killing of civilian bystanders.

Impunity for security officials remained a problem as the government was slow to act against officials implicated in committing abuses and using excessive force. Some remained at their posts, or were transferred to new ones. Judicial proceedings were initiated at the end of the year. Abdallah Qarain was removed from his post as head of security in Aden in March 2011 following reports of excessive use of force and was transferred to Ta'iz, where similar reports of excessive use of force followed. He was then removed as head of security at Ta'iz at the end of January 2012. In November Brigadier General Murad al-

Awbali led units of the Republican Guard who used tanks and mortars against protesters in Ta'iz, burned their tents, and reportedly removed medical supplies from the local hospital in May 2011. After continued outcry from revolutionary activists in 2012, al-Awbali was transferred by then Republican Guard commander Ahmed Ali Saleh to a brigade command outside Sana'a. The Ta'iz prosecutor's office brought charges against Abdullah Qairan and Murad al-Awbali and others accused of human rights abuses, including Abdullah Dhaban, a commander of the 33 Brigade, Hamoud al-Sofi, the former governor of Ta'iz, and Mohammad al-Haj, head of the municipal council.

The government took some steps to address impunity by removing other officers from their posts. Between April and December, Hadi fired at least four governors and more than a dozen generals, including Saleh's relatives. Most notably, Hadi announced that the military entities that Ahmed Ali Saleh and Ali Muhsin al-Ahmar lead would no longer exist after the reorganization process was complete in 2013. The changes reflected Hadi's desire to purge Saleh loyalists and prevent them from destabilizing the country. However, the moves also appeared to address the demands of hundreds of thousands of citizens for the removal of Saleh's relatives and allies from the military due to human rights abuses and corruption.

Politically motivated killings by nonstate actors such as terrorist and insurgent groups also occurred. Many other attempted killings were unsuccessful. On June 18, an explosive device detonated in Aden, killing the head of the military's Southern Regional Command, Commander Major General Salem Ali Qatan. He was the ranking officer in charge of the coordinated military and tribal attacks that drove AQAP and the affiliated Ansar al Sharia militias from several southern strongholds during the spring and early summer. Targeted killings of military, security, and government officials by those claiming affiliation with AQAP increased significantly during the year. By the end of the year, the government reported 40 security officers had been killed by assassins on motorcycles.

On May 21, a large explosion occurred during preparations for a military parade to be held on May 22. A suicide bomber dressed in a military uniform walked into a formation of military personnel and detonated his vest, killing or injuring nearly 100 soldiers. The intended target of the bombing was likely the minister of defense, who left the area only minutes before. AQAP claimed responsibility for the May 21 attack. The minister of defense was targeted many times during the year, including in late October.

Nonstate actors targeted foreigners and those working for foreign missions. On March 18, a foreign teacher who lived in the city of Ta'iz was killed by individuals who claimed they were affiliated with AQAP. In November a Saudi military official working at the Saudi embassy was killed.

Armed clashes broke out in northern governorates, including Sa'ada, al-Jawf, and Amran, between supporters of the Zaydi Shia Houthi movement and supporters of the largely Sunni members of the Islah Party. Attacks between the groups resulted in the deaths of many combatants and bystanders, according to media and local NGO reports. The fighting went largely unchecked as central government control in those areas was weak. On May 25, the press reported that a bomber drove a car packed with explosives into a school during Friday prayers in al-Jawf Province and killed at least 12 persons.

NGO representatives believed that the number of killings perpetrated by individual members of various security forces, tribes, or other groups increased during the year.

...The primary state security and intelligence-gathering entities, the PSO and the NSB, report directly to the Office of the President. There was no clear definition of many of the NSB's duties, which have evolved from protecting the country from external threats to overlapping with those of the PSO, which is domestically focused and charged with identifying and combating political crimes and acts of sabotage.

The Criminal Investigation Division reports to the Ministry of Interior and conducted most criminal investigations and arrests. The Central Security Office, also a part of the ministry, maintains a Counter Terrorism Unit and the paramilitary Central Security Forces (CSF), which often was accused of using excessive force in crowd control situations.

The Ministry of Defense also employed units under its formal supervision to quell domestic unrest and to participate in internal armed conflicts. Regular army units were engaged in fighting AQAP and associated groups located in Zinjibar in Abyan Governorate, but were not used in domestic law enforcement. However, special units under the Ministry of Defense, including the Republican Guard, were used to suppress demonstrations and often employed excessive

force. The Republican Guard commander and former president's son, Ahmed Ali Saleh, also commanded the Yemen Special Operations Forces, which, along with the Counter Terrorism Unit, were deployed during internal armed conflicts in Sana'a and Abyan.

The CSF, Yemen Special Operations Forces, Republican Guard, NSB, and other security organs ostensibly reported to civilian authorities in the Ministries of Interior and Defense and the Office of the President. However, members of former president Saleh's family controlled these units, often through unofficial channels rather than through the formal command structure. This fact, coupled with a lack of effective mechanisms to investigate and prosecute abuse and corruption, exacerbated the problem of impunity. The transition agreement implemented on November 23, 2011, committed the government to reorganizing the security and armed forces. In December President Hadi issued several decrees that began the process of restructuring the security forces.

...Citizens regularly accused security officials of ignoring due process when arresting and detaining suspects and demonstrators. Some members of the security forces continued to arrest or detain incommunicado persons for varying periods without charge, family notification, or hearings. Detainees were often unclear which investigating agency had arrested them, and the agencies frequently complicated determination by unofficially transferring custody of individuals among agencies. Security forces routinely detained relatives of fugitives as hostages until the suspect was located. Authorities stated that they detained relatives only when the relatives obstructed justice; human rights organizations rejected this claim. In 2010 the UN Committee against Torture expressed concern about this practice.

Local and international NGO reports and accounts by former detainees claimed that some branches of the security forces operated extrajudicial detention facilities, although the government denied that this was authorized. Private unauthorized prisons and detention facilities also existed. The government planned to address these through the national dialogue and ministry restructuring, which was intended to establish effective official control over both territory and functions.

...A court of limited jurisdiction considers security cases. A specialized criminal court, the State Security Court, operates under different procedures with nonpublic sessions. It was first established in 1999 to try persons charged with kidnapping, carjacking, attacking oil pipelines, and other acts considered to be a "public danger." This court does not provide defendants with the same rights provided in the regular courts. Defense lawyers reportedly did not have full access to their clients' charges or relevant government-held evidence and court files.

...There were numerous reports of political prisoners and detainees. The government was accused of detaining HIRAK activists, as well as demonstration leaders, journalists, and persons with alleged connections to Houthi rebels. Some were held for prolonged periods, while many were released within days. Elements within the security forces reportedly continued to detain persons for political reasons on bases or within headquarters.

Confirmation of the number and assessment of the status of political prisoners or detainees was difficult. Detainees were not charged publicly, their detentions were often short term, and the government and other entities severely restricted or barred information to and access by local or international humanitarian organizations. Absent charges, it was difficult to determine whether detainees' actions had been violent or primarily advocacy and dissent. The government also sometimes did not follow due process of law in cases in which detained suspects were accused of links to terrorism.

The heads of three human rights NGOs stated they were arbitrarily detained by security forces on multiple occasions during the year when they attempted to enter the country. In addition one member of a human rights NGO asserted that security forces forcibly removed him from his home and detained him for several days without a stated cause.

...Clashes occurred in the center of the country, near the capital, including in the districts of Arhab and Nihm, and near Ta'iz. Government units--including the CSF, Republican Guards, and Yemeni Special Operations Forces--and progovernment tribal proxies battled tribal fighters, including tribesmen aligned with the al-Ahmar family in Sana'a and with Sheikh Hamud al-Mikhlaifi in Ta'iz.

In the south the army and air force were deployed to combat AQAP and affiliated militant groups in Abyan Governorate, which had taken over the governorate's capital of Zinjibar. Armed clashes also took place between supporters of HIRAK and government forces and supporters in and around Aden.

In the north, tribes affiliated with the Zaydi Shia Houthi community in the governorates of Sa'ada, Amran, Hajja, and al-Jawf engaged in armed clashes with Salafi groups, as well as with tribesmen affiliated with the conservative Islah Party.

Killings: There were fewer incidents during the year that resulted in large numbers of persons being killed, compared with the widespread violence of 2011. Clashes in and around Sana'a were sporadic and smaller in scale, with few fatalities. Targeted killings, however, increased during the year, usually directed at members of security organizations or foreign officials. The largest single attack in Sana'a occurred on May 21 when a suicide bomber, disguised as a military member, infiltrated an area where military units were practicing for a May 22 parade and detonated his explosives, killing and injuring more than 100 soldiers. AQAP claimed responsibility for the attack. AQAP was apparently responsible for other killings, including a Saudi official shot in November.

In the northern governorates of Sa'ada, Amran, Hajja, and al-Jawf, there were many reported politically motivated clashes between Houthi supporters and supporters of Sunni Salafi sects and the Islah Party. Given the lack of foreign press and NGO presence in that region, data concerning deaths and other details of this conflict were unverifiable. However, Sa'ada residents reported that the clashes resulted in dozens, possibly hundreds, of deaths throughout the year.

...In the southern governorates of Abyan and Aden, terrorist activity by AQAP and its affiliate Ansar al Sharia caused a large number of deaths and injuries during the year. Government forces, supported by local tribal militias, carried out an offensive in the spring to drive AQAP militias from strongholds in Abyan. Hundreds of combatants on both sides died during the fighting, and reports indicated that innocent bystanders also were killed. Tens of thousands of internally displaced persons (IDPs) were forced from Abyan to Lahj and Aden for safety and shelter. AQAP-controlled areas in Abyan Governorate were booby-trapped with mines and other improvised explosive devices (IEDs), and dozens of IDPs who returned to their homes after government forces regained control of former AQAP areas were killed when they entered these booby-trapped homes or family areas.

...According to the UNHCR and the UN Office for the Coordination of Humanitarian Affairs, there were more than 390,000 IDPs as at the end of the year, with another 200,000 experiencing many of the same privations. Eleven out of the 21 governorates hosted IDPs displaced by the protracted conflict between Houthis and other armed groups in the north, AQAP expansion and conflict with government forces in the south, and general instability related to the Arab Spring protests centered on major population areas. According to the UNHCR, approximately 62 percent of IDPs were from the Sa'ada and Hajja Governorates in the north affected by long-running tribal, regional, and sectarian conflict between Houthi and Sunni/Islahi tribesmen. Thirty-eight percent of IDPs were from southern governorates, displaced by conflict between AQAP and government forces. Other citizens were displaced temporarily by armed clashes related to Arab Spring protests and general insecurity stemming from weakened government rule in Sana'a, Ta'iz, Aden, and other cities.

AQAP took control of Zinjbar and other areas in Abyan, Lahj, and Shabwah governorates in 2011 and held these locations for approximately one year until a government offensive drove them out in June. This fighting displaced over 100,000 persons. Mines, unexploded ordnance, and IEDs planted by AQAP, which deliberately targeted the civilian population, slowed, or prevented their return to their homes. At the end of the year, the UNHCR had registered more than 85,000 IDPs who returned to their homes.

Source: Adapted from Country Reports on Human Rights Practices for 2012, Bureau of Democracy, Human Rights, and Labor, US Department of State, undated. <http://www.state.gov/j/drl/rls/hrrpt/humanrightsreport/index.htm?year=2012&dldid=204370> (Accessed May 7, 2013).

XII. US Forces in the Gulf and Total Power Projection Capabilities

As has been noted from the start in this analysis, the military balance in the Gulf region is shaped by a number of outside powers. The key Western powers involved include Britain, France and the US, and increasingly by outside Arab powers like Egypt and Jordan. The US effort, however, is by far the largest outside power in terms of current commitments and power projection capabilities, and plays a

key role in deterring and defending against Iran by strengthening its military capabilities in the Gulf and those of its partner countries on the Arabian Peninsula – particularly in the realm of air power, missile defense, and air-sea operations.

US Strategy and the Role of Gulf Allies

The US long has been a major strategic partner of the Arab Gulf states, and has steadily strengthen these security partnerships in recent years. The Obama Administration made the Gulf a key part of the new strategic guidance it announced in February 2012. While some press reports have since discussed this strategy as based on a “pivot to Asia,” this description was based on speeches and not the actual US strategic guidance – which called for “rebalancing” a limited portion of US air and sea forces from Europe to Asia but gives equal priority to improving US deterrence and defense capabilities in the Middle East and Asia.

The Department of Defense strategic guidance, which was submitted along with the President’s FY2013 budget request, made this clear in the same document that first announced the rebalancing to Asia:¹⁶¹

The U.S. economic and security interests are inextricably linked to developments in the arc extending from the western Pacific and East Asia into the Indian Ocean region and South Asia, creating a mix of evolving challenges and opportunities. Accordingly, while the U.S. military will continue to contribute to security globally, we will of necessity rebalance toward the Asia-Pacific region. (p. 2-1)

In the Middle East the aim is to counter violent extremists, prevent destabilizing threats from developing, while upholding our commitment to allies and partner states. The U.S. continues to place emphasis on U.S. and allied military presence in the region, by working with partner nations in the region. (p. 2-1)

... DoD will tailor its global presence and posture with the right capabilities in the right places. We will rebalance toward the Asia-Pacific, emphasizing our existing alliances and expanding our networks of cooperation with emerging partners throughout the Asia-Pacific to ensure collective capability and capacity for securing common interests. We will maintain an emphasis on the greater Middle East to deter aggression and prevent the emergence of new threats... (p. 2-2)

...[The President’s strategic guidance calls for a [r]ebalance [in] force structure and investments toward the Asia-Pacific and Middle East regions while sustaining key alliances and partnerships in other regions. (p. 4-1)

... Our defense efforts in the Middle East will be aimed at countering violent extremists and destabilizing threats, as well as upholding our commitments to allies and partner states. U.S. policy will emphasize gulf security to prevent Iran’s development of a nuclear weapon capability and counter its destabilizing policies. The United States will do this while standing up to Israel’s security and a comprehensive Middle East peace. (p. 7-6)

The strategic guidance in the Quadrennial Defense Review (QDR) of long-term US defense plans and strategy that the US issued in 2014 reinforced this guidance, and stated that,¹⁶²

Friction points also endure in the Middle East. Religious differences, particularly a widening Sunni-Shi’a divide, are among the sources of trans-national division in the region. Competition for resources, including energy and water, will worsen tensions in the coming years and could escalate regional confrontations into broader conflicts – particularly in fragile states. In the region, Iran remains a destabilizing actor that threatens security by defying international law and pursuing capabilities that would allow it to develop nuclear weapons. Even as Iran pledges not to pursue nuclear weapons, Iran’s other destabilizing activities will continue to pose a threat to the Middle East, especially to the security of our allies and partners in the region and around

the world. Many countries in the Middle East and Africa are undergoing significant political and social change. People in countries including Tunisia, Libya, Yemen, and Egypt are seeking a greater voice in their governance, upending traditional power centers in the process. Terrorist groups seek to exploit transitional governments and expand their influence. Internal strife in Syria continues amid sectarian friction, at great cost to human life. Syria has become a magnet for global jihad – a situation that is likely to persist as long as the current leadership remains in power. Ongoing, severe spillover effects include an influx of foreign fighters and a flood of refugees into neighboring countries. These difficult political transitions are a reminder that events in the region will take years – perhaps decades – to develop fully.

... The United States will retain a deep, enduring interest in and a commitment to a stable Middle East. We will seek to deepen our strategic cooperation with Middle East partners based on common, enduring interests. We will strengthen joint planning with allies and partners to operate multilaterally, across domains, and to counter challenges to access and freedom of navigation. The Department will develop new or expanded forums to exchange views with allies and partners on the threats and opportunities facing the Gulf, particularly through the multilateral forum of the Gulf Cooperation Council (GCC). The Department plans to pursue a U.S.-GCC Defense Ministerial in 2014 and deepen U.S.-GCC ballistic missile defense cooperation. The United States will continue to seek more innovative and flexible approaches to meeting its enduring commitment to a secure Middle East.

... The Department will continue to maintain a strong military posture in the Gulf region – one that can respond swiftly to crisis, deter aggression, and assure our allies – while making sure that our military capabilities evolve to meet new threats. The U.S. Armed Forces today have a strong presence in the region with more than 35,000 military personnel in and immediately around the Gulf, including advanced fighter aircraft, ISR assets, missile defense capabilities, rotational ground forces building partnership capacity, and a robust naval presence. Our forces are working closely with regional partners to provide reassurance and sufficiently robust capabilities to deter and respond to an array of challenges, from terrorist, paramilitary, and conventional threats, among others. Going forward, the Department will place even more emphasis on building the capacity of our partners in order to complement our strong military presence in the region. Together, we will work closely to enhance key multilateral capabilities, including integrated air and missile defense, maritime security, and SOF. In addition to the forward posture in the region, the Department will plan to flow additional forces to the region in times of crisis.

The new US National security Strategy that the US issued on February 6, 2015 reacted to the growing instability in some parts of the region, and stated,¹⁶³

In the Middle East, we will dismantle terrorist networks that threaten our people, confront external aggression against our allies and partners, ensure the free flow of energy from the region to the world, and prevent the development, proliferation, or use of weapons of mass destruction. At the same time, we remain committed to a vision of the Middle East that is peaceful and prosperous, where democracy takes root and human rights are upheld. Sadly, this is not the case today, and nowhere is the violence more tragic and destabilizing than in the sectarian conflict from Beirut to Baghdad, which has given rise to new terrorist groups such as ISIL.

Resolving these connected conflicts, and enabling long-term stability in the region, requires more than the use and presence of American military forces. For one, it requires partners who can defend themselves. We are therefore investing in the ability of Israel, Jordan, and our Gulf partners to deter aggression while maintaining our unwavering commitment to Israel's security, including its Qualitative Military Edge. We are working with the Iraqi government to resolve Sunni grievances through more inclusive and responsive governance.

With our partners in the region and around the world, we are leading a comprehensive counterterrorism strategy to degrade and ultimately defeat ISIL. At the same time, we will continue to pursue a lasting political solution to the devastating conflict in Syria.

Stability and peace in the Middle East and North Africa also requires reducing the underlying causes of conflict. America will therefore continue to work with allies and partners toward a comprehensive agreement with Iran that resolves the world's concerns with the Iranian nuclear program. We remain

committed to ending the Israeli-Palestinian conflict through a two-state solution that ensures Israel's security and Palestine's viability. We will support efforts to deescalate sectarian tensions and violence between Shi'a and Sunni communities throughout the region. We will help countries in transition make political and economic reforms and build state capacity to maintain security, law and order, and respect for universal rights.

In this respect, we seek a stable Yemen that undertakes difficult structural reforms and confronts an active threat from al-Qa'ida and other rebels. We will work with Tunisia to further progress on building democratic institutions and strengthening its economy. We will work with the U.N. and our Arab and European partners in an effort to help stabilize Libya and reduce the threat posed by lawless militias and extremists. And we will maintain strategic cooperation with Egypt to enable it to respond to shared security threats, while broadening our partnership and encouraging progress toward restoration of democratic institutions.

The justification for the President's FY2016 defense budget requests also made it clear that the Middle East would continue to have the same priority as Asia. It said that the US strategic goal was to, (p-2-1) ¹⁶⁴

Build security globally to preserve regional stability, deter adversaries, support allies and partners, and cooperate with others to address common security challenges. In practice, this means continuing to rebalance the Department's posture and presence to the Asia-Pacific while maintaining a focus on the Middle East.

Perhaps the best state of US strategy in the Middle East and Gulf area came from General Lloyd Austin, the Commander of USCENTCOM, in the testimony to the House Armed Service Committee in March 2015, summarized in **Figure X-1**.

Key Areas of Cooperation

The US and its Arab Gulf partners must also deal with the fact that the past political barriers that somewhat insulated the Gulf from political and security issues to the west have largely broken down, as Gulf security has already been affected by Iraq as well as Iran. The competition between Iran and the Arab Gulf states for influence in Iraq is both serious and one where Iran now has the lead. The low level civil war between Sunni and Shi'ite that continues in Iraq cannot be separated from Iran's efforts to support the Assad and Alawite side in the Syrian civil war and Hezbollah in Lebanon. The broader tensions and sometimes conflicts between hardline Sunni Islamists and modern Sunnis and Sunni regimes, and between such Sunnis and Shi'ites and other Islamic minorities, now affect the entire Islamic world and all of the Gulf states as well. They feed extremism, violence, and serious terrorist threats like AQAP throughout the Gulf region.

Several factors are particularly important in shaping the attitudes of the leaders of the southern Gulf states towards the US and Iran, and the need for effective political, military, and economic unity and action by the Arab Gulf states:

- *Terrorism and Civil Unrest:* There is a history of Iranian-linked terrorism and civil unrest dating to the infancy of the Islamic Republic. Bahrain in particular has alleged that numerous uprisings, attempted coups, and recent bombings have been linked to Iranian support for Shia factions in that country. Kuwait also has a history of dealing with Iranian-linked terrorism as early as the 1980s, with another attempted attack recently uncovered. Plots in Bahrain and Kuwait have been linked to both Hezbollah and the IRGC Quds Force.
- *Threat to Maritime Trade:* The security of maritime commerce for much of the Arabian Peninsula is contingent upon safe passage through the Strait of Hormuz. The threat of Iranian mines, small boat attacks, and anti-ship missiles is a serious risk to regional commerce. At the same time, Yemen is scarcely

the only unstable state in the Red Sea, and Saudi Arabia now needs to strengthen its Red Sea fleet and air capabilities. Saudi Arabia exports petroleum and refined products through its port at Yanbu and has a major trading port at Jeddah. In 2011, some 3.4 mmb/d of petroleum products flowed through the Bab el-Mandab at the eastern entrance to the Red Sea, and 3.8 mmb/d flowed through the SUMED pipeline and the Suez Canal at its western entrance.¹⁶⁵

- *Missile Threat:* Iran's airpower capabilities are limited by sanctions and the aging nature of the country's fixed-wing air force. However, Iran has compensated for these shortcomings with short to intermediate range missile capabilities that put major population centers and critical infrastructure on the Arabian Peninsula in range of Iranian strikes.
- *Nuclear Threat:* The GCC Supreme Council meeting in December 2012 made it clear that the leaders of the Arab Gulf states supported Iran's right to make peaceful use of nuclear power. However, these leaders were deeply concerned about the growing evidence that Iran is developing a nuclear weapons breakout capability and has plans to arm its missile forces with nuclear weapons.
- *Competition for the Levant and Iranian Support to Other Violent Non-State Actors:* As has been the case with Hezbollah in Lebanon and Shia groups in Iraq, Iran has been accused of providing material support to violent non-state actors (VNSAs) in the Arabian Peninsula. The IRGC Quds Force is accused of meeting with and providing arms to Houthi militants in Yemen, which have been battling the US-backed regimes of Yemen and Saudi Arabia.
- *Iranian and Arab Gulf competition for influence in Iraq and Training and Support of Shia Militias in Iraq:* While Iran has largely supported the Maliki government; its Al Quds Force not only plays a role in Iraqi politics but trains, funds, and equips various Shia military factions.
- *Competition for Influence in Syria, and Role of Iranian Advisors and Arms Transfers in Syria:* Iran has become a major source of military advisors and trainers for the Shia militias backing Assad and a key source of arms, spare parts, and other military equipment to the pro-Assad elements of the regular military services and Syrian security forces. Along with its support of the Lebanese Hezbollah's efforts in Syria, it has become a key military factor in keeping the Assad regime in power.
- *Growing threat of instability in Jordan, Egypt, and the rest of the Arab world:* What some experts once called the Arab Spring now threaten to become the Arab quarter century. Political upheavals in Egypt and Syria, a civil war in Syria, growing violence in Lebanon, and instability in Jordan combine to form a new threat to Arab Gulf stability, and give Iran growing influence in Iraq, Syria, and Lebanon. This has fed Islamic extremism throughout the region, threatens to create an Iranian influenced "axis" that extends to the Mediterranean, and raises questions about the future security of Saudi Arabia's western border.
- *The risk of a broader conflict between Sunnis and Shi'ite and Islamic minorities and other minorities:* What some experts once called the "clash between civilizations" has become a "conflict within a civilization." Islam risks repeating all of the mistakes and horrors of the Christian reformation and counterreformation and atrocities like the Albigensian crusade. Hardline violent Sunni extremists now struggle against modern Sunnis and Sunni regimes, Shi'ite and Alawites, other Islamic minorities, and Christian and other minorities in Islamic states. The result is a mix of political struggles, local violence, terrorism and extremism, and insurgency and civil war. It directly affects Gulf states like Bahrain and Saudi Arabia with significant divisions between their Sunni and Shi'ite populations, but Sunni on Sunni tensions are a growing issue in Gulf states like the UAE and Qatar. The struggle for tolerance and modernization affects every Gulf and Islamic state.

The US has responded to these threats with a series of major security cooperation initiatives in the region geared towards containing and deterring Iran. These have included deploying US special forces and mine units to the Gulf, making the Gulf Cooperation Council (GCC) states partners in its Combined Air Operations Center (CAOC) in Qatar, sharply increasing the number of multilateral military

exercises – especially with the US 5th Fleet – and helping the GCC states make major improvements in their deterrence and defense capabilities.

It is clear that the US strategic partnership with GCC and its other Arab allies must deal with a range of threats that goes from low-level attacks or clashes in the Gulf to a possible effort to close the Strait of Hormuz to Iranian intervention in the Syrian civil war to Iran missile strikes. At the same time, the US and its Arab Gulf partners must deal with the political unrest and uprisings that have surged in the MENA region since the first set of upheavals in Tunisia in early 2011, the possible impact of Israeli preventative military action against Iran's nuclear infrastructure, and growing extremist and terrorist threats like AQAP and AQIM.

US Forces in the Gulf and US Power Projection Forces

The key US deployments in the Gulf region and US global forces are shown in **Figures XII.2 to Figure XII.7**. The US forces that defend the Gulf and cover the western IOR, focus on the entire for the Middle East and are assigned to USCENTCOM. They include the forces the US deploys in support of the Gulf states, Jordan, Egypt, and the Red Sea states.

It is critical to understand that the level of forces the US deploys to the Gulf and Middle East at any given time varies with the level of tension or conflict in the region, and is drawn from a massive pool of global power projection forces the US maintains in the US, in Europe and in the Pacific. The forces actually and deployed by USCENTCOM vary according to the contingency commitments the US makes in the CENTCOM region at any given time – a region which goes far beyond the IOR and extends from Egypt to Afghanistan and Pakistan.

The US does, however, maintain a major air-sea force as part of its 5th Fleet, which is headquartered in Bahrain. The US Navy has maintained a presence in the Gulf since 1949, has had facilities in Bahrain since 1971, and created the 5th Fleet in 1995. The new seapower strategy the US announced in April 2015 indicated that the US would increase its forward deployed forces, and that the strategy called for increasing the Navy's forward presence to 120 ships by 2020, up from about 97 ships today. The Navy is scheduled to increase presence in the Middle East from 30 ships today to 40 by 2020.¹⁶⁶

The overall US Army and US Air Force presence in the Gulf/Western IOR region is harder to quantify. The US had approximately 25,000 personnel in the area for all services in 2013, and major air facilities in Kuwait, Bahrain, Qatar, and the UAE. It also has a major air base and command facility at Al Udeid Air Force Base in Qatar called the Combined Air and Space Operations Center (COAC), and repositioning and contingency facilities in Oman.

It is not possible to separate out aircraft numbers or activity levels for the Gulf from the entire range of USAF air activity in the Central Region – which included Afghanistan. Total AFCENT activity in Iraq and Syria between August 2014 and the end of January 2015, however, provides a rough indication of US power projection and surge capabilities. The US flew over 8,900 close air support and interdiction sorties, 2,813 ISR sorties, 2,700 airlift sorties, and 5,000 tanker sorties – and these were levels far lower than at the

peak of the Iraq and Afghan Wars. These numbers clearly illustrate the fact that airpower in the Gulf area at any given time is not a measure of US capability for a rapid deployment force.¹⁶⁷

US Arms Transfers

As Chapter III has discussed, US Arms transfers play a critical role in shaping both the Gulf military balance and the US strategic partnership with the Arab Gulf states. While the major Western European states and China have cut their weapons exports to the region in recent years relative to the mid-2000s, the US increased its arms agreements with GCC states by over eight times between 2004-2007 and 2008-2011. Saudi Arabia made the most drastic increases, with a nine-fold increase in 2008-2011 in versus 2004-2007. Kuwait, Oman, the UAE, and Qatar have also experienced considerable growth in weapons imports from the US. Similar increases have also taken place in arms deliveries.¹⁶⁸

The US has clearly made arms transfer to the GCC a critical part of its strategy. Some of these transfers have already been summarized in Chapter III, but **Figure XII.8** provides a detailed summary of Congressional notifications of US transfers to each Gulf country and shows both the level of technology transfer involved and the impact on each country's deterrent and defense capabilities.

Figure XII.1: Excerpts from the statement of General Lloyd Austin III, Commander, U.S. Central Command, Before the House Armed Services Committee on the Posture of the US Central Command, March 6, 2014¹⁶⁹

USCENTCOM Priorities

Looking ahead, USCENTCOM will remain ready, engaged and vigilant—effectively integrated with other instruments of power; strengthening relationships with partners; and supporting bilateral and multilateral collective defense relationships to counter adversaries, improve security, support enduring stability, and secure our core interests in the Central Region. In support of this vision, the command remains focused on a wide range of issues, activities, and operations, including our priority efforts:

- Degrade and ultimately defeat ISIL in order to prevent the further spread of sectarian-fueled radical extremism, and to mitigate the continuing Iraq-Syria crisis.
- Continue support to Afghanistan, in partnership with NATO, as a regionally integrated, secure, stable and developing country.
- Defeat Al Qaeda, deny violent extremists safe havens and freedom of movement, and limit the reach of terrorists.
- Counter malign Iranian influence, while reducing and mitigating against the negative impacts of surrogates and proxies.
- Support a whole of government approach to developments in Yemen, preventing Yemen from becoming an ungoverned space for AQ/VEOs; retain CT capacity in the region.
- Maintain credible general and specific deterrent capability and capacity to counter Iran.
- Prevent, and if required, counter the proliferation of weapons of mass destruction; disrupt their development and prevent their use.
- Protect lines of communication, ensure free use of the shared spaces (including the cyber commons), and secure unimpeded global access for legal commerce.
- Shape, support, and maintain ready, flexible regional Coalitions and partners, as well as cross-CCMD and interagency U.S. whole-of-government teams, to support crisis response; optimize military resources.
- Develop and execute security cooperation programs, improving bilateral and multi-lateral partnerships, building partnered “capacities,” and improving information sharing, security, and stability.

Critical Focus Areas.

While we remain focused on the broad range of challenges present today in the Central Region, there are particular areas that merit a sizeable portion of our attention and resources. These areas are strategically important because of the potential impact on our core

national interests and those of our partners. Below are descriptions of the current critical focus areas, along with a listing of some of the key opportunities that we are actively pursuing in an effort to improve stability in USCENTCOM's AOR.

Protection of Nation States.

Historically, nation states have been the dominant players globally. However, in recent years we have witnessed the emergence of transnational extremist groups that desire and, in some cases, demonstrate the ability to operate as major players with unfavorable intentions. In many ways they are attempting to behave like nation states and, in so doing, they threaten the structures, rules, norms, and values that define the sovereignty of our nation-state based international system.

These transnational violent extremist organizations (VEO) are ideologically opposed to and target the nation states of the Central Region. They conduct attacks and terrorize local populaces in an effort to gain power and influence. This, in turn, weakens the nation states and generates increased instability. This is of obvious concern to us, given that nation states are typically anchors for stability across the globe, with some exceptions (e.g., Iran, Syria). Thus, the U.S. has a vested interest in buttressing our partner nations in the Central Region when necessary as part of a larger 'whole of government' effort to build regional stability through effective security assistance and support for inclusive governance.

As directed, we intervene to counter external threats, such as al Qaeda and ISIL. While our primary purpose for doing so is to protect U.S. interests, we also take action to allow time and space for the nation states in the region to build sufficient capacity to protect their own sovereignty. And, we support them through our planned regional engagements, our training and exercise programs, and foreign military sales (FMS) and foreign military financing (FMF) programs; all of which are designed to further enhance our partners nations' military capacity.

One of the key opportunities that exist amidst the challenges posed by transnational VEOs is to persuade our partners in the region of the urgent need to build their military capacity so that they are better able to defend their own sovereign territory against such threats. Our regional partners are very concerned about the threat posed by ISIL and other VEOs. More importantly, many in the region recognize that if they do not do something to address the root causes of the growing instability, they can all but guarantee continued political upheaval and anarchy. Again, transformational change can only be achieved by the governments and people of the region.

They must decide that the instability caused by the "underlying currents" merits greater action on their part, and they must do more to address the root causes of many of the problems that exist in their region. We can and will support them; but, they must lead the effort.

Iraq-Syria (Operation Inherent Resolve)

We remain highly focused on the crisis in Iraq and in Syria. Since launching its major offensive from eastern Syria into Iraq in early June, ISIL, which is commonly referred to by our partners in the region as "DA'ESH," has largely erased the internationally recognized boundary between Iraq and Syria and has sought to establish a proto state in the deserts of eastern Syria and western Iraq. ISIL's goal is to spur regional instability in order to establish an Islamic Caliphate. To achieve this end, ISIL has employed three primary lines of

effort: 1) instill fear and shape the operational environment using unconventional warfare and traditional terrorist tactics; 2) seize and hold territory; and 3) influence, shape, and define the conflict using sophisticated information operations. Importantly, although significantly degraded in recent months, ISIL still possesses the resources and organizational structure to pose a credible threat to the Government of Iraq (GoI). The erosion of Iraqi and regional stability caused by ISIL places extreme political and economic strain on Jordan, Lebanon, under-governed border areas, and, by extension, the broader Gulf and Levant sub- regions.

That said, ISIL is not a monolith; rather it is a symptom of the larger problems that continue to threaten the Central Region. In particular, the growing divide between ethno-sectarian groups and between religious moderates and radical Islamists, have created ideal conditions for a group like ISIL to take root. Over a period of years the previous government alienated important segments of its society, notably the Sunni and Kurdish populations, which resulted in growing disenfranchisement among these groups. ISIL capitalized on this opportunity and launched a successful blitz into Iraq absent much resistance and with support from local Sunnis who viewed ISIL as a means for bringing about a change in their government. The Sunnis simply refused to fight; and, in so doing, they facilitated ISIL's offensive. The remaining Iraqi security forces were largely incapable of mounting a credible defense against ISIL. After we departed Iraq in 2011, the leadership of the country made a series of poor decisions. Among them was the decision to stop training the security forces, to stop maintaining their equipment, and to assign leaders based on sectarian loyalty rather than competence, merit, and experience. As a result, the security forces' skills atrophied and the condition of their vehicles and weapon systems deteriorated. This precipitated a number of defeats early on in ISIL's push towards Baghdad.

This past September, President Obama announced to the American people that the United States, with the support of a broad Coalition, would take action to degrade and ultimately destroy ISIL through a comprehensive and sustained counter-terrorism strategy. We are currently in the early stages of our counter-ISIL campaign, Operation Inherent Resolve (OIR). Our military campaign plan is comprised of five key elements. They will be achieved in a logical progression; although many of the efforts will occur simultaneously or near-simultaneously. First, we must counter ISIL in Iraq and Syria. Our intent is to employ a Coalition effort in Iraq to halt the advance of ISIL and to enable the Iraqis to regain their territory and reestablish control over their border. Once we've halted ISIL's advance in Iraq, which we have done, we said that we would need to contain ISIL, and we are doing so with the assistance of our Coalition partners, including Jordan, Turkey, and Lebanon. We are working with them to ensure they have the capacity to secure their sovereign borders. We also said that we would need to enable the moderate Syrian opposition forces through our train and equip efforts. Our goal is to develop a reliable partner that can assist in countering ISIL on the ground inside of Syria. Eventually we want to eliminate ungoverned spaces out of which ISIL and other terrorist groups have been operating by enabling the indigenous security forces to defend their own sovereign territories. Once we do all of these things, we will have defeated ISIL through a combination of sustained pressure, a systematic dismantling of ISIL's capabilities, and by effectively expanding our regional partners' CT capacities.

Our military campaign is having the desired effects. Iraqi security forces, to include Iraqi Army and Counter-Terrorism Services (CTS) forces, Kurdish Peshmerga, and tribal elements, with the support of U.S. and Coalition air operations, have halted ISIL's advance in Iraq. The enemy is now in a "defensive crouch," and is unable to conduct major operations and seize additional territory. We can expect

that ISIL will continue to conduct ineffective counter-attacks and leverage their information operations to amplify the significance of these attacks. However, they are unable to achieve decisive effects. The effort in Iraq continues to represent our main focus. The actions that we are taking now in Syria against ISIL are shaping the conditions in Iraq. Specifically, our precision air strikes are disrupting ISIL's command and control, attriting its forces and leadership, slowing the flow of reinforcements from Syria into Iraq, and interrupting the resourcing of their operations. The more than 2,600 total air strikes conducted in Iraq and Syria over the past several months have been extremely effective.

Of course, the United States is not doing this alone. Our efforts are intended to enable the broader, 'whole of government' approach that is currently underway among various departments and agencies in the U.S. government. Equally important are the contributions being made by our Coalition partners. Indeed, the Coalition represents the strength and cohesion of our campaign. In particular, the active and public involvement of five Arab-led nations, specifically Saudi Arabia, Jordan, the United Arab Emirates, Bahrain, and Qatar, has greatly enhanced the fight and sends a clear message to ISIL and other VEOs that their actions will not be tolerated.

Ultimately, the intent of our regional campaign is not simply to destroy ISIL, although that is a primary objective. Even more importantly, we want to do what we can to help change the conditions inside of Iraq and Syria so that what we see happening there now, does not happen again in the future. The key to doing so is enabling indigenous forces to defend their own borders and provide for the security of their sovereign territory. This is the goal of our advise and assist and build partner capacity efforts currently underway in Iraq, and soon in Syria. We are also working with the Government of Iraq (GoI) to train Sunni tribal elements. Equally important, we are providing, in coordination with the GoI, support for the Kurds who continue to play a significant role in the fight against ISIL.

All that said, the effects of our military efforts will be short-lived if the Iraqis do not effectively address their political problems. The crisis in Iraq will not be solved through military means alone. The Iraqis have a new government and Prime Minister Haider al-Abadi has vowed to be more inclusive of the Sunnis and the Kurds and other minority groups. We are encouraged by the early steps he has taken to reach out to the Sunnis and Kurds and we are urging him to follow through on pledges made in the near-term. This is not a minor issue, as the government cannot succeed long-term without that support. National reconciliation is absolutely critical to the success of the counter-ISIL campaign.

A key opportunity that exists amidst the challenges posed by ISIL is to create conditions that reduce ungoverned spaces and allow for inclusion, security, and good governance in both Iraq and Syria. We pursue this opportunity, in part, by training, advising, and assisting the Iraqi Security Forces, helping them to re-build their capacity, and restructuring them to ensure greater inclusiveness. With your support, we have also have established a program to train, equip and sustain elements of the Syrian moderate opposition. We anticipate that these forces will make important contributions toward degrading and defeating ISIL, and they also will help to guard against ungoverned spaces, protect local populations, and help to create the conditions for a negotiated political settlement to the conflict in Syria that leads to more responsible and responsive governance.

Countering Terrorism and Violent Extremist Organizations (VEO)

As I travel around the region, I routinely hear from senior military leaders that they do not necessarily fear groups like ISIL's military prowess so much as they fear the groups' ideologies. These groups clearly demonstrate their ability to inspire extremist behavior and to recruit individuals in support of their causes.

In recent years, VEOs have increasingly exploited ungoverned or under-governed spaces in USCENTCOM's AOR. The extremists' use of these areas threatens regional security, as well as U.S. core national interests. They are able to plan and launch attacks, undermine local governments, and exercise malign influence from these spaces. At the same time, VEOs and other militant proxies continue to exploit security vacuums in countries experiencing political transitions and unrest, namely Iraq and Syria, Yemen, Egypt, and Lebanon. Chronic instability, disenfranchised populations, and weak regional governments provide new footholds for a resilient and expanding global jihadist movement and an ideal environment for Iran and its allies to aggressively undermine U.S. regional goals.

Of note, ISIL's rise as a competitor to al Qaeda (AQ) has significantly impacted the jihadist landscape. The two groups are now competing for recruits, resources, and publicity. This will likely result in increased terrorist attacks in the near-term as ISIL, AQ, and other elements attempt to out-do one another.

Meanwhile, the AQ movement is becoming more diffuse and decentralized as compared to pre- 9/11. The risk of affiliates and allies operating in more areas and increasingly collaborating and coordinating with one another as a transnational loosely-confederated 'syndicate' is cause for concern. The AQ ideology remains persuasive, attracting and radicalizing susceptible individuals in the region. Thus, it is critical that we maintain our vigilance in countering the group and its narrative.

We must also continue to look for ways to effectively counter ISIL. As noted earlier, ISIL seeks to broaden its reach beyond Iraq and Syria, and will try to leverage regional instability to revive a caliphate stretching from Europe to North Africa to South Asia. ISIL has already received pledges of allegiance from smaller jihadist groups in Yemen, Egypt, Libya and Algeria, and they have inspired lone-wolf attacks in Algeria and the West.

Other extremist groups have leveraged Syria's security vacuum, including the AQ-affiliated Al Nusrah Front (ANF). As the civil war in Syria continues, ANF will threaten neighboring states, particularly Israel and Lebanon, where the group has launched anti-Hezbollah attacks. The ongoing Syrian conflict has also created a safe haven for the Khorasan Group, a network of veteran AQ operatives, providing them with territory to plot and train for attacks against the West and the U.S. homeland.

The Iraq-Syria area of operations is the premier destination for jihadist foreign fighters, with over 15,000 coming from around the globe, and particularly Africa, Europe, Asia, and North America. The majority of these fighters are joining ISIL's ranks, although some have joined ANF and other Syrian opposition groups. As these conflicts carry on, returning battle-hardened foreign fighters will pose increasing risk to their home countries, including the United States. We must sustain our active measures to address this growing threat.

An important opportunity that exists in the Central Region is to limit the overall reach and effectiveness of VEOs, while also reducing the amount of ungoverned or under-governed space in which these groups typically operate. To do so, many of our partners acknowledge

the need to counter radical extremists' ideologies, in part by helping to amplify the voice of moderates in the region. They also recognize the need to limit access to ungoverned and under-governed spaces; thereby diminishing the reach and effectiveness of violent extremists operating in the region. By setting the right conditions and helping to promote the efforts of moderate and influential regional leaders, we may achieve significant and lasting improvements. And, these improvements are likely to have pervasive positive effects on the global security environment.

Iran

Iran represents the most significant threat to the Central Region. Our diplomats have been hard at work, trying to reach an agreement with Iran with respect to its nuclear program. The most recent extension allows for continued negotiations through 1 July 2015. While we remain hopeful that the two sides will eventually reach an acceptable deal, it is presently unclear how things will play out. We have to be prepared for what comes next. We will be prepared.

In the meantime, we remain very concerned about Iran's behavior in other areas. Iran continues to pursue policies that threaten U.S. strategic interests and goals throughout the Middle East. In addition to its nuclear program, Iran has a significant cyber capability, as well as the largest and most diverse ballistic missile arsenal in the Middle East. With ranges up to ~ 2,000 km, Iran is able to strike targets throughout the region with increasing precision using creatively adapted foreign technologies to improve its missile arsenal. It also has increased its anti-access area-denial air defense capabilities. Iran is improving its counter-maritime capabilities (e.g., mines, small boats, cruise missiles, submarines), which serve to threaten the flow of global commerce in the Strait of Hormuz. Perhaps most concerning, Iran routinely engages in malign activity through the Iranian Threat Network (ITN) consisting of the Islamic Revolutionary Guards Corps- Qods Force, the Ministry of Intelligence and Security, and its surrogates, businesses, and logistics support. Iran also engages in malign activity through support to proxy actors such as Lebanese Hezbollah and Hamas which threatens the sovereignty and security of Israel.

During the past year, the ITN primarily focused on Sunni groups in the Iraq and Syria-based conflict (including the moderate opposition in Syria) by bolstering the Syrian and Iraqi governments and overseeing engagements involving its own militant forces. Iran also maintains the ability to expand the scope of its activities. This is troubling as Iranian malign influence is enflaming sectarian tensions that are all too often exploited by violent extremist elements in the region. Needless to say, our relationship with Iran remains a challenging one. We will continue to pay close attention to their actions, and we will remain steadfast with our regional partners and do what we can to help improve their capacity to counter Iran and mitigate the effects of their malign activity.

One of the key opportunities that exist with respect to Iran is the prospect of an acceptable agreement regarding Iran's nuclear program. If the P5+1 are able to reach a long-term resolution, that would represent a step in the right direction and may present an unprecedented opportunity for positive change in the Central Region.

A Regional Perspective.

In many ways our military-to-military relationships continue to represent the cornerstone of America's partnerships with the nation states in the USCENTCOM AOR. Below are synopses of the status of those relationships, along with the current state of affairs in each of the 20 countries, minus Afghanistan, Iraq and Syria, and Iran which were addressed in the previous section, "Critical Focus Areas" (see pages 8-21):

The Gulf States

The Gulf States have proven to be valuable Coalition partners, engaging in and supporting offensive operations against ISIL and providing the indispensable access, basing and overflight privileges that are critical to the conduct of operations in the region. In recent months, we have seen some improvement in relations between and among the Kingdom of Saudi Arabia, the United Arab Emirates, Bahrain, and Qatar after a period of increased tensions. A convergence of interests, namely the need to counter the increasing threat posed by ISIL and other violent extremists groups, has afforded a unique opportunity to strengthen the Coalition and also contribute to improving stability and security in the broader Middle East region. In many ways, ISIL's expansion in Iraq has forced the Gulf States to take more seriously the threat posed by ISIL and other violent extremist groups. As a result, they have begun to take a more proactive approach to countering extremist financing and foreign fighter facilitation. They must maintain their focus and continue to make much-needed progress in these areas. At the same time, we are strengthening our partners' military capacity as part of a collective security architecture designed to deter and, where necessary, counter Iranian hegemonic ambitions. Going forward, we will play a key role in making sure that our partners remain united on common interests and security challenges.

...Our Strategic Approach.

USCENTCOM's goal is to effect incremental, holistic improvements to Central Region security and stability, in part, by shaping the behaviors and perceptions that fuel regional volatility. The intent is to generate a cumulative impact that de-escalates conflicts, mitigates confrontations and sets conditions for durable peace, cooperation, and prosperity throughout the region. Our strategic approach is defined by the "MANAGE-PREVENT-SHAPE" construct.

Our priority effort is to MANAGE operations, actions and activities in order to de-escalate violent conflict, contain its effects, maintain theater security and stability and protect U.S. interests and those of our partners. At the same time, we recognize that our charge is not simply to wage today's wars for a period. Rather, our goal is to achieve lasting and improved security and stability throughout the Middle East and Central and South Asia. We do so by managing the current conflicts, while also taking measures to PREVENT other confrontations and situations from escalating and becoming conflicts. At the same time, we are pursuing opportunities and doing what we can to effectively SHAPE behaviors, perceptions and outcomes in different areas. These efforts cross the entire theater strategic framework (near-, mid-, long-term actions).

Our ability to effectively employ our MANAGE-PREVENT-SHAPE strategic approach is largely dependent upon the capabilities and readiness of our forward deployed military forces, working in concert with other elements of U.S. power and influence. These elements include our diplomatic efforts, both multilateral and bilateral, and trade and energy. Equally important are our efforts aimed at building

regional partners' capability and capacity and also strengthening our bilateral and multilateral relationships, principally through key leader engagements and training and joint exercise programs. The long-term security architecture of the Central Region demands that our partners be capable of conducting deterrence and defending themselves and our common security interests. This can only be accomplished if we maintain strong military-to-military relationships and build on existing security frameworks; recognizing that we cannot surge trust.

Leverage Partnerships. In an effort to counter the “underlying currents” that are the root cause of violence and instability in the Central Region, we must leverage the ability and willingness of key regional leaders to influence behaviors. By encouraging certain states to adopt more moderate positions, for example, while promoting the efforts and voices of others that are already considered moderate, we may be able to limit the impact of radical Islamists. Likewise, by limiting the availability of ungoverned spaces, we may diminish the reach and effectiveness of violent extremists operating in the region. We cannot force a universal change in behaviors. But, we can set the right conditions and promote the efforts of influential states and regional leaders who may, through their words and actions, achieve significant and lasting improvements.

Building Partner Capacity (BPC). Building partner capacity is a preventative measure and force multiplier. Our goal is for our partners and allies to be stronger and more capable in dealing with common threats. Joint training exercises, key leader engagements and FMS and FMF financing programs all represent key pillars of our BPC strategy. When compared to periods of sustained conflict, it is a low-cost and high-return investment that contributes to improving stability throughout the Central Region while lessening the need for costly U.S. military intervention. Tangible by-products include increased access, influence, enhanced interoperability and improved security for forward-deployed forces, diplomatic sites and other U.S. interests. Working “by-with-and through” our regional partners, whenever possible, also serves to enhance the legitimacy and durability of our actions and presence and allows for increased burden sharing.

Training and Joint Exercise Programs. The USCENTCOM Exercise Program continues to provide meaningful opportunities to assist with BPC, enhance unity of effort and shape occasions for key leader engagements throughout the AOR. During FY13 and 1st Quarter FY14, four of the five USCENTCOM component commands developed or continued existing exercises covering the full spectrum of USCENTCOM Theater Security Cooperation Objectives. This past year, USCENTCOM executed 52 bilateral and multilateral exercises. Our successful training efforts included the Eagle Resolve exercise, which was hosted by Qatar and included naval, land, and air components from 12 nations, as well as 2,000 U.S. service members and 1,000 of their counterparts. Our Eager Lion 2013 exercise in Jordan involved 8,000 personnel from 19 nations, including 5,000 U.S. service members. The International Mine Countermeasures Exercise 2013, conducted across 8,000 square nautical miles stretching from the North Arabian Gulf through the Strait of Hormuz to the Gulf of Oman, united some 40 nations, 6,500 service members, and 35 ships in defense of the maritime commons.

In addition to military-to-military engagement, the exercise program achieved a number of objectives, including: demonstrating mutual commitment to regional security; combined command, control and communications interoperability; integrating staff planning and execution of joint combined operations; the development of coalition warfare; the refinement of complementary warfare capabilities; the enhancement of U.S. capability to support contingency operations; and the maintenance of U.S. presence and basing access and

overflight in the region. FY14-16 exercise focus areas will be: enhanced U.S./coalition interoperability; CT/critical infrastructure protection; integrated air and missile defense; counter WMD; and, maritime security, with an emphasis on mine countermeasures.

Critical Needs and Concerns.

The realities of the current fiscal environment will have a lasting impact on USCENTCOM headquarters (HQs), our five component commands and 18 country teams, and these realities must be confronted soberly, prudently and opportunistically. The cumulative effects of operating under successive continuing resolutions and budget uncertainty have created significant obstacles to both USCENTCOM HQs and the USCENTCOM AOR in terms of planning and execution. Persistent fiscal uncertainty hinders efficient and timely implementation of operational, logistical, tactical and strategic milestones and objectives.

Required capabilities.

For the foreseeable future, turbulence and uncertainty will define the Central Region, and vitally important U.S. national interests will be at stake. Therefore, it is necessary that USCENTCOM be adequately resourced and supported with the authorities, equipment, capabilities and forces required to address existing challenges and to pursue opportunities. Among the specific capabilities required are:

Forces and Equipment. Forward-deployed rotational and permanently-assigned joint forces, fighter and lift assets, surveillance platforms, ballistic missile defense assets, naval vessels, ground forces, and cyber teams that are trained, equipped, mission-capable and ready to respond quickly are indispensable to protecting our vital interests and reassuring our partners in the region. It is likewise essential that we maintain the strategic flexibility required to effectively respond to contingencies.

Information Operations (IO). Our adversaries continue their reliance on the information domain to recruit, fund, spread their ideology and control their operations. Our investments in IO thus far have made it USCENTCOM's most cost-effective method and the top non-lethal tool for disrupting terrorist activities across the Central Region. Our military information support operations programs provide critical non-kinetic capabilities designed to conduct a range of activities. Our Regional Web Interaction Program (RWIP), for example, provides non-lethal tools to disrupt ongoing terrorist recruitment and propaganda. The requirement to employ IO will persist beyond major combat and counter-insurgency operations. We will need to maintain the technological infrastructure, sustained baseline funding and continued investment to allow for further development of this valuable tool.

Ballistic Missile Defense (BMD). The theater ballistic missile threat is increasing both quantitatively and qualitatively. The threat from short-, medium- and intermediate-range ballistic missiles in regions where the U.S. deploys forces and maintains security relationships is growing at a rapid pace, with systems becoming more flexible, mobile, survivable, reliable, and accurate. This trajectory is likely to continue over the next decade. We must be ready and capable of defending against missile threats to United States forces, while also protecting our partners and allies and enabling them to defend themselves. Our capability and capacity would be further enhanced through the acquisition of additional interceptors and BMD systems. However, the global demand exceeds supply. Therefore, the U.S.

should continue to pursue investments in re-locatable ground- and sea-based BMD assets balanced against U.S. homeland defense needs.

Intelligence, Surveillance, Reconnaissance (ISR) Assets. We have enjoyed, for the most part, air supremacy for the last 12+ years while engaged in Operations Iraqi and Enduring Freedom. Now, we are out of Iraq and in the process of transitioning forces from Afghanistan. However, VEOs, principally Al Qaeda and other proxy actors continue to pose a significant and growing threat in the Central Region. Ascertaining the intentions and capabilities of these various elements is not an easy task. As airborne ISR and other collection assets diminish in the region, our knowledge will lessen even further. Now, more than ever, a persistent eye is needed to gain insight into threats and strategic risks to our national security interests. In many ways, collection in anti-access/area denial (A2AD) environments presents the toughest problem for the future. It simply cannot be overemphasized that human intelligence, satellite and airborne assets, and other special collection capabilities remain integral to our ability to effectively counter potential threats.

Combined military intelligence operations and sharing is a critical component of USCENTCOM operations. Over the past decade, intelligence community sharing policies have enabled near-seamless operations with traditional foreign partners. Over the last year, we have seen an increase in military intelligence collaboration with regional allies who bring new and unique accesses and insights into the actions and plans of our adversaries. These increasingly important regional partnerships are possible because of the close working relationship USCENTCOM's intelligence directorate maintains with the Office of the Director of National Intelligence. The progressive intelligence sharing authorities that we possess were provided by Director Clapper's team. I will continue to ask the intelligence community's senior leaders to emphasize the production of intelligence in a manner that affords USCENTCOM an opportunity to responsibly share it in a time-sensitive environment with our most trusted partners in order to enable increased bilateral and multilateral planning and operations.

Appropriately Postured. We sincerely appreciate Congress' continued support for capabilities required to sustain future operations in the Central Region and to respond to emerging situations; these include: prepositioned stock and munitions; a streamlined overseas military construction process that supports our necessary posture and security cooperation objectives; continued contingency construction and unspecific minor military construction authorities; increased sea-basing capabilities; and airfield, base, and port repair capabilities needed to rapidly recover forward infrastructure in a conflict. These capabilities enable our effective and timely response to the most likely and most dangerous scenarios in the Central Region. They also support our efforts to shape positive outcomes for the future.

Cyber Security. In the coming month and years, USCENTCOM will need to be able to aggressively improve our cyber security posture in response to advanced persistent threats to our networks and critical information. As the cyber community matures, we will plan, coordinate, integrate and conduct network operations and defensive activities in cooperation with other U.S. Government agencies and partner nations. Key requirements, resourcing and training and awareness for adequate cyber security remain at the forefront of USCENTCOM's cyber campaign. This campaign entails a multi-disciplined security approach to address a diverse and changing threat,

adequate resourcing at appropriate operational levels to enable the rapid implementation of orders and a command and control framework that aligns with the operational chain of command.

DoD requires redundant and resilient communications in this AOR. We ask for your continued support in sustaining the investments we have made to make our information technology and communications infrastructure resilient, as these programs are currently 97% Overseas Contingency Operations (OCO) funded. In addition, we are assisting our regional partners in building their capacity and expertise in the cyber domain as we are heavily reliant on host nation communications infrastructure across the Central Region. With Congress' backing, we will continue to focus on cyber security cooperation as a key part of our theater strategy.

Enduring Coalition Presence at USCENTCOM HQs. We enjoy a robust coalition presence at USCENTCOM HQs that currently includes 55 nations from five continents. These foreign officers serve as senior national representatives, providing USCENTCOM with a vital and expedient link to our operational and strategic partners. Their presence and active participation in the command's day-to-day activities assists the commander and key staff in retaining military-to-military relations with representatives of a country's chief of defense. Coalition presence also enables bilateral and multilateral information sharing, while maintaining a capability to rapidly develop plans to support military and humanitarian operations. It is a capability that we should retain, though I am currently looking to reshape and refocus the coalition as an enduring entity, post-2014. While their continued presence will require an extension of current authorities and funding, it represents a strong investment that aligns with and directly supports USCENTCOM's mission in what is a strategically critical and dynamic area of responsibility.

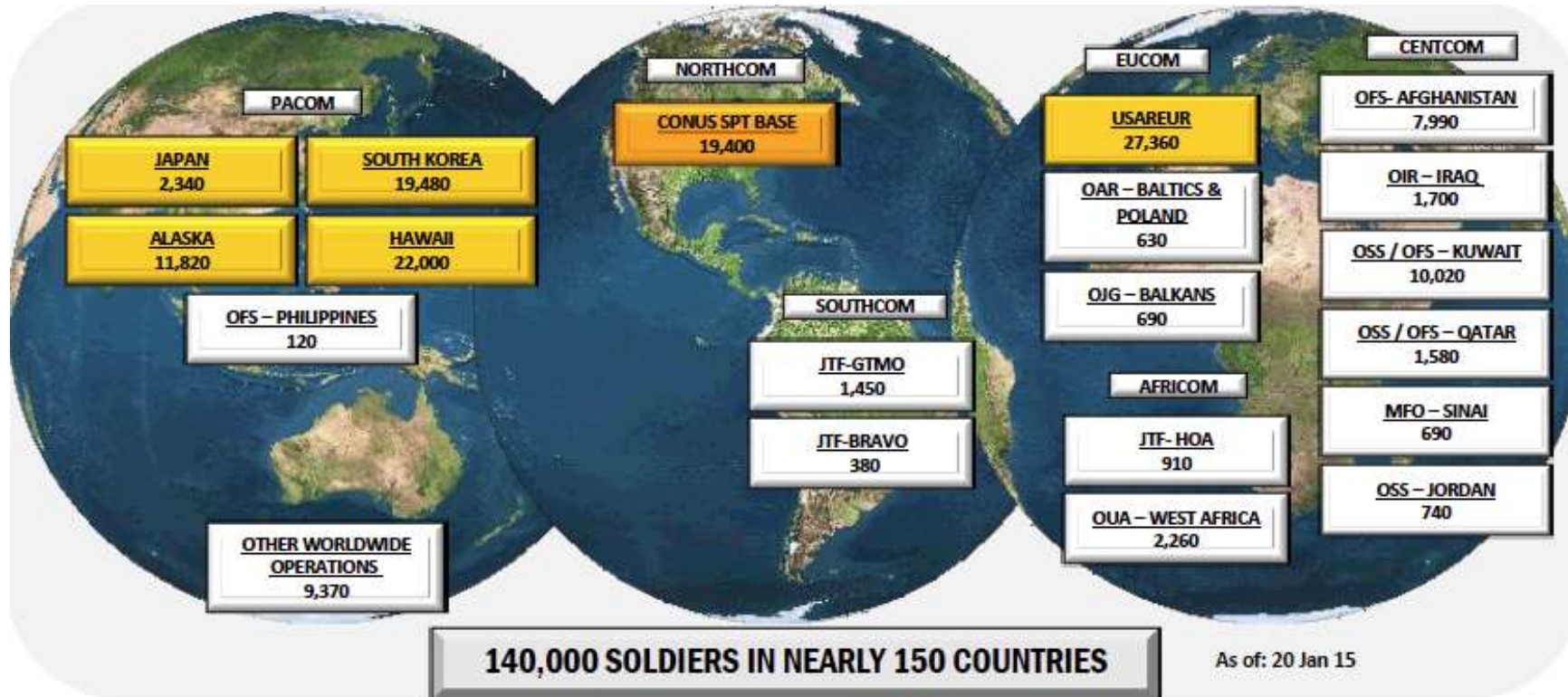
Required Authorities and Resources. We appreciate Congress' continued support for the following key authorities and appropriations. They remain critical to our partnerships, access, interoperability, responsiveness and flexibility in the dynamic USCENTCOM area of responsibility.

Building Partner Capacity. Continued support for flexible authorities is needed to effectively react to urgent and emergent threats. Global Train and Equip and Global Security Contingency Fund authorities demonstrate the ability of DoD and the Department of State to work together to effectively build partner capacity. The FY14 NDAA extends authority for DoD to loan specific equipment to partners through Acquisition and Cross-Servicing Agreements (ACSA) through December 2014. We strongly endorse and support making this authority permanent and global as an integral part of all ACSAs since it facilitates greater integration of coalition forces into regional contingencies and enhances security cooperation. Finally, continued support for our exercise and engagement efforts is necessary to maintain and enhance partnerships that are critical to ensuring and defending regional stability, which supports our national military and theater campaign strategies within the USCENTCOM AOR.

Foreign Military Financing and Sales (FMF and FMS). Our need for continued Congressional funding of FMF programs that support USCENTCOM security cooperation objectives cannot be overstated. We appreciate Congressional support for interagency initiatives to streamline the FMS and FMF process to ensure that we remain the partner of choice for our allies in the region and are able to capitalize on emerging opportunities.

Coalition Support (CF). Authorities, such as Global Lift and Sustain, are critical to our ability to provide our partners with logistical, military, and other support, along with specialized training and equipment. Continuing to provide this support is vital to building and maintaining a coalition, which in turn reduces the burden on U.S. forces and increases interoperability.

Figure XII.2: US Army Gulf and Global Presence



- ❖ The world is experiencing an increased velocity of instability
- ❖ America’s Army remains indispensable to National Defense
- ❖ Nine of ten active Army division headquarters are actively engaged around the world
- ❖ The Army is the backbone of the Joint Force, providing command and control to Joint Forces, setting and sustaining theaters, and securing and controlling people and terrain

MG Thomas A. Horlander, US Army FY2016 President’s Budget Highlights, February 2015, p. 32, <http://www.asafm.army.mil/offices/BU/BudgetMat.aspx?OfficeCode=1200>

Figure XII.3: US Navy and Marine Corps Gulf and Global Presence



RADM William K. Lescher, Department of the Navy, FY2016 President’s Budget, February 2015, p. 5, <http://www.finance.hq.navy.mil/fmb/pb/books.htm>

Figure XII.4: US Navy Battle Force Ships

Category	Ship Type	FY 2014	FY 2015	FY 2016
Aircraft Carriers	CVN	10	10	11
Aircraft Carrier Total		10	10	11
Fleet Ballistic Missile Submarines	SSBN	14	14	14
Guided Missile (SSGN) Submarines	SSGN	4	4	4
Nuclear Attack Submarines	SSN	55	54	53
Submarine Total		73	72	71
Cruisers	CG	22	22	22
Destroyers	DDG	62	62	65
Large Surface Combatants Total		84	84	87
Frigates	FFG	10	-	-
Littoral Combat Ships	LCS	4	6	11
Mine Countermeasures Ships	MCM	12	11	11
Small Surface Combatants Total		26	17	22
Amphibious Warfare Assault Ships	LHA	2	1	1
Amphibious Assault Ships	LHD	8	8	8
Amphibious Transport Docks	LPD	9	9	10
Dock Landing Ships	LSD	12	12	12
Amphibious Warfare Ships Total		31	30	31
Dry-Cargo Ammunition Ships	T-AKE	12	12	12
Oilers	T-AO	15	15	15
Fast Combat Support Ships	T-AOE	3	2	2
Combat Logistics Ships Total		30	29	29
Afloat Forward Staging Base (Interim)	AFSB (I)	1	1	1
Submarine Tenders	AS	2	2	2
Joint High Speed Vessels	JHSV	4	5	7
Command Ships	LCC	2	2	2
Mobile Landing Platforms	MLP	2	3	3
Surveillance Ships	T-AGOS	5	5	5
T-AKEs for Maritime Prepositioning	T-AKE MPS	2	2	2
Salvage Ships	T-ARS	4	4	4
Fleet Ocean Tugs	T-ATF	4	4	4
High Speed Transport Ships	HST	1	1	1
Command and Support Ships Total		27	29	31
Battle Force Ships		281	271	282

Highlights of the Department of the Navy FY2016 Budget. February 2015, p. 3-3, <http://www.finance.hq.navy.mil/fmb/pb/books.ht>

Figure XII.5: US Navy Combat Air Inventory

Type Model Series Category	FY 2014	FY 2015	FY 2016
ANTI SUB	3	3	3
ATTACK	151	144	142
BAMS-D	4	4	4
Exec ROTARY WING	19	19	19
Experimental	2	2	2
FIGHTER	97	119	130
IN FLIGHT REFUEL	81	78	79
OTHER	1	1	1
PATROL	139	149	165
ROTARY WING	1,312	1,375	1,356
STRIKE FIGHTER	1,199	1,171	1,150
TRAINING JET	284	285	281
TRAINING PROP	310	290	311
TRAINING UTILITY	25	25	17
TRANSPORT	108	117	118
UAS Combat support	68	105	110
UAS Patrol	-	4	4
UAS ROTARY WING	22	41	41
UTILITY	25	24	24
WARNING	97	100	99
Total	3,947	4,056	4,056

Highlights of the Department of the Navy FY2016 Budget. February 2015, p. 3-7, <http://www.finance.hq.navy.mil/fmb/pb/books.htm>

Figure XII.6. US Air Force Manpower in Gulf and World Wide

- More than 25,000 Airmen support contingencies around the world – Active, Guard & Reserve
- Nearly 71,000 Airmen are forward stationed overseas
- 205,000 Airmen directly support Combatant Commander requirements from home stations
- We're smaller but busier & older than ever...in 2014 the Air Force:
 - Flew nearly 20,000 Close Air Support sorties in Afghanistan, Iraq and Syria
 - 35,000 ISR missions in CENTCOM
 - Employed almost 4,000 munitions for OIR alone
 - 109,000 mobility/tanker sorties – 172,000,000 gallons of fuel
 - Airlifted more than 6,000 wounded warriors & civilians

Smallest, oldest, busiest now more than ever...need PB level for recovery

Figure XII.7. US Air Force Combat Aircraft Inventory

Air Force Aircraft Inventory

Active Air Force					
Aircraft	FY15	FY16	Aircraft	FY15	FY16
A-10	143	0	E-4	4	4
B-1	61	61	E-9	2	2
B-2	20	20	F-15	322	317
B-52	58	58	F-16	570	570
C-5	36	36	F-22	165	165
KC-10	59	59	F-35	74	102
C-12	27	28	G-15	5	5
C-17	170	170	G-16	19	19
C-20	6	5	UH-1	96	96
C-21	17	17	HH-60	70	74
C-25	2	2	HHX	0	4
C-32	4	4	QF-16	25	27
C-37	12	12	MQ-1	110	110
C-40	4	4	RQ-4	33	33
C-46	0	11	MQ-9	227	228
C-130H	53	34	T-1	178	178
C-130J	124	144	T-6	445	445
C-130N	2	2	T-38	506	506
C-130P	4	0	T-41	4	4
C-130U	13	12	T-51	3	3
C-130W	12	12	T-53	25	25
C-135	186	186	U-2	32	32
CV-22	46	49	UV-18B	3	3
E-3	31	31			

Air National Guard		
Aircraft	FY15	FY16
A-10	85	64
C-17	34	34
C-21	2	2
C-26	11	11
C-32	2	2
C-40	3	3
C-130H	152	150
C-130J	23	23
C-130N	6	6
C-130P	7	7
C-135	172	172
E-8	16	16
F-15	142	137
F-16	336	336
F-22	20	20
HH-60	17	18
MQ-1	35	35
MQ-9	16	35

Air Force Reserve		
Aircraft	FY15	FY16
A-10	55	55
B-52	18	18
C-5	22	16
C-17	18	18
C-40	4	4
C-130H	56	56
C-130J	20	20
C-130N	1	1
C-130P	5	5
C-135	70	70
F-16	53	53
HH-60	15	16

MG Jim Martin, US Air Force FY2016 Budget Overview, February 2015, p. 5, <http://www.saffm.hq.af.mil/budget/>

Figure XII.8: US Arms Sales to the GCC States and Iraq: 2002-2013 (Information Adapted from Releases from the Defense Security Cooperation Agency)

Bahrain

- **Sept. 14, 2011** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of Bahrain for Armored High Mobility Multi-Purpose Wheeled Vehicles, TOW Missiles and associated equipment, parts, training and logistical support worth an estimated \$53 million.

The Government of Bahrain has requested a possible sale of 44 M1152A1B2 Armored High Mobility Multi- Purpose Wheeled Vehicles (HMMWVs), 200 BGM-71E-4B-RF Radio Frequency (RF) Tube-Launched Optically-Tracked Wire-Guided Missiles (TOW-2A), 7 Fly-to-Buy RF TOW-2A Missiles, 40 BGM-71F-3-RF TOW-2B Aero Missiles, 7 Fly-to-Buy RF TOW-2B Aero Missiles, 50 BGM-71H-1RF Bunker Buster Missiles (TOW-2A), 7 Fly-to-Buy RF Bunker Buster Missiles (TOW-2A), 48 TOW-2 Launchers, AN/UAS-12A Night Sight Sets, spare and repair parts, support and test equipment, publications and technical documentation, personnel training and training equipment, US Government and contractor engineering, technical and logistics support services, and other related elements of logistical and program support.

- **Nov. 4, 2010** – The Defense Security Cooperation Agency notified Congress November 3 of a possible Foreign Military Sale to Bahrain of 30 Army Tactical Missile Systems (ATACMS) T2K Unitary Missiles and associated parts, equipment, training and logistical support for a complete package worth approximately \$70 million.

The Government of Bahrain has requested a possible sale of 30 Army Tactical Missile Systems (ATACMS) T2K Unitary Missiles, Missile Common Test Device software, ATACMS Quality Assurance Team support, publications and technical documentation, training, US government and contractor technical and engineering support, and other related elements of program support.

- **July 28, 2009** – On July 27, the Defense Security Cooperation Agency notified Congress of a possible foreign military sale to the Government of Bahrain of 25 AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM) and associated equipment, parts and services at an estimated cost of \$74 million.
- **Aug. 3, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Bahrain of Bell 412 Air Search and Recovery Helicopters as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$160 million.
- **July 28, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Bahrain of UH-60M Black Hawk helicopters as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$252 million. The Government of Bahrain has requested a possible sale of nine (9) UH-60M Black Hawk helicopters, two (2) T700-GE-701D turbine engines, spare and repair parts, publications and technical data, support equipment, personnel training and training equipment, contractor engineering, logistics, and technical support services, a Quality Assurance Team, aircraft survivability equipment, tools and test equipment, and other related elements of logistics support.
- **July 21, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Bahrain of JAVELIN missiles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$42 million. The Government of Bahrain has requested a possible sale of 180 JAVELIN missile rounds and 60 JAVELIN command launch units, simulators, trainers, support equipment, spare and repair parts, publications and technical data, personnel training and equipment, US Government and contractor engineering and logistics personnel services, Quality Assurance Team services, and other related elements of logistics support.

- **July 21, 2005** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Government of Bahrain of continuing logistics support services/equipment for the F-16 aircraft and related components as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$150 million.

The Government of Bahrain has requested a possible sale of continuing logistics support services/equipment for the F-16 aircraft, ALR-69 radar warning receiver, ALQ-131 electric countermeasure pods, radar systems, and engines. The possible sale also includes support equipment, aircraft engine services/modification, repair/return services; depot level repair support; precision measurement equipment laboratory calibration, spare and repair parts, support equipment, supply support; personnel training and training equipment, publications and technical data, contractor technical services and other related elements of logistics support and to ensure aircraft operational availability.

- **Sept. 3, 2003** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Bahrain of an AN/AAQ-24(V) NEMESIS Directional Infrared Countermeasures System as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$61 million.

The Government of Bahrain has requested a possible sale of one AN/AAQ-24(V) NEMESIS Directional Infrared Countermeasures System which consists of three small laser turret assemblies, six missile warning sensors, one system processor, one control indicator unit, two signal repeaters, included associated support equipment, spare and repair parts, publications, personnel training and training equipment, technical assistance, contractor technical and logistics personnel services and other related elements of program support.

- **June 26, 2002** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Bahrain of a 3 dimensional radar and associated equipment and services. The total value, if all options are exercised, could be as high as \$40 Million.

The Government of Bahrain has requested a possible sale of one AN/TPS-59(V)3 3-dimensional land based radar, one Air Defense Communication Platform, spare and repair parts, publications, personnel training and training equipment, technical assistance, contractor technical and logistics personnel services and other related elements of program support.

Iraq

- **Dec. 19, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for M1151A1 Up-Armored High Mobility Multi-Purpose Wheeled Vehicles and associated equipment, parts and logistical support for an estimated cost of \$579 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of Iraq has requested a possible sale of 1000 M1151A1 Up-Armored High Mobility Multi-Purpose Wheeled Vehicles (HMMWVs), 1000 M2 .50 caliber machine guns, and 1000 MK-19 40mm grenade launchers with universal mounts, commercial radios, communication equipment, repair and spare parts, publications and technical documentation, tools and test equipment, personnel training and training equipment, U.S. Government and contractor logistics and technical support services, and other related elements of logistics support. The estimated cost is \$579 million.

- **Dec. 19, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for M1A1 Abrams tanks and associated equipment, parts and logistical support for an estimated cost of \$2.4 billion. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of Iraq has requested a possible sale of 175 Full Track M1A1 Abrams Tanks with 120mm Gun modified and upgraded to the M1A1 Abrams configuration, 15 M88A2 Improved Tank Recovery Vehicles, 175 .50 Caliber M2 Machine Guns with Chrysler Mount, 350 7.62mm M240 Machine Guns, 10 .50 Caliber BR M2 HB Machine Guns, 10,000 M831A1 120mm High Explosive Anti-tank TP-T Ammunition, 25,000 M865 120mm

TPCSDS-T Ammunition, 10,000 M830A1 120mm High Explosive Anti-tank Multipurpose Tracer Ammunition, 10,000 M1002 120mm Target Practice Multipurpose Tracer (TPMP-T) Ammunition, and 190 AN/VRC-92 Vehicular Dual Long-Range Radio Systems, 700 M1028 Commercial Utility Cargo Vehicles, Radios, Receiver Transmitters (RT-1702G), installation, ammunition, simulators, communication equipment, support equipment, fuel, transportation, spare and repair parts, site surveys, Quality Assurance Teams, special tools and test equipment, personnel training and training equipment, publications and technical documentation, U.S. Government and contractor technical, engineering, and logistical support services, and other related elements of program and logistics support. The estimated cost is \$2.4 billion.

- **Nov. 26, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for C-130E/J sustainment and associated equipment, parts, training and logistical support for an estimated cost of \$800 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of Iraq has requested a possible sale for a five-year sustainment package for the C-130E/J fleet that includes operational, intermediate, and depot level maintenance, spare and repair parts, support equipment, repair and return, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor logistics support services, and other related elements of logistics and program support. The estimated cost is \$800 million.

- **Nov. 12, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for a Foreign Military Sales Order II (FMSO II) to provide funds for blanket order requisitions, under a Cooperative Logistics Supply Agreement (CLSSA) and associated equipment, parts and logistical support for an estimated cost of \$600 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of Iraq has requested a Foreign Military Sales Order II (FMSO II) to provide funds for blanket order requisitions, under a Cooperative Logistics Supply Agreement (CLSSA) for spare parts to support M1A1 Battle Tanks, M1070 Heavy Equipment Tactical Trucks, M88A1/2 Tank Recovery Vehicles, M113 Vehicles, M198 Towed Howitzers, M109A5 Self Propelled Howitzers, High Mobility Multi-Purpose Wheeled Vehicles (HMMWV), Heavy Expanded Mobility Tactical Trucks (HEMTT), heavy and light machine guns, common repair sets, and additional authorized items with associated equipment and services. The estimated cost is \$600 million.

- **Nov. 12, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for Advanced Precision Kill Weapon Systems (APKWS) and associated equipment, parts and logistical support for an estimated cost of \$97 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of Iraq has requested a possible sale of up to 2,000 Advanced Precision Kill Weapon Systems (APKWS), weapon and test support equipment, spare and repair parts, publications and technical documentation, personnel training and training equipment, transportation, U.S. Government and contractor engineering, technical and logistics support services, and other related elements of logistical and program support. The estimated cost is \$97 million.

- **Oct. 20, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for M1A1 Abrams tank ammunition and associated equipment, parts and logistical support for an estimated cost of \$600 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of Iraq has requested a possible sale of 10,000 M831 120mm High-explosive anti-tank (HEAT) munitions, 10,000 M865 120mm Kinetic Energy Warheads (KEW), 10,000 M865 120mm KEW-A1, and 16,000 M830 120mm HEAT-MP-T tank ammunition. Also included are U.S. Government and contractor technical and logistics support services, and other related elements of logistical and program support. The estimated cost is \$600 million.

- **July 29, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for AGM-114K/N/R Hellfire missiles and associated equipment, parts, training and logistical support for an estimated cost of \$700 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on July 28, 2014.

The Government of Iraq has requested a possible sale of 5000 AGM-114K/N/R Hellfire missiles, Hellfire missile conversion, blast fragmentation sleeves and installation kits, containers, transportation, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, U.S. Government and contractor technical, engineering, and logistics support services, and other related elements of logistics and program support. The estimated cost is \$700 million.

- **July 29, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for aviation sustainment support, on-the-job maintenance training and maintenance advice and associated equipment, parts, training and logistical support for an estimated cost of \$500 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on July 28, 2014.

The Government of Iraq has requested a possible sale to establish five years of contractor logistics support for its Bell 407, OH-58, and Huey II aircraft in support of the Iraq Aviation Command. This support will include maintenance support, personnel training and training equipment, publications and technical documentation, site surveys, life support costs, Quality Assurance Teams, U.S. Government and contractor technical, logistics, and engineering support services, and other related elements of logistics support. The estimated cost is \$500 million.

- **May 13, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for AT-6C Texan II aircraft and associated equipment, parts, training and logistical support for an estimated cost of \$790 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on May 13, 2014.

The Government of Iraq has requested a possible sale of 24 AT-6C Texan II Aircraft, 2 spare PT-6A-68 Turboprop engines, 2 spare ALE-47 Counter-Measure Dispensing Systems and/or 2 spare AAR-47 Missile Launch Detection Systems, non-SAASM global positioning systems with CMA-4124, spare and repair parts, maintenance, support equipment, publications and technical documentation, tanker support, ferry services, personnel training and training equipment, U.S. Government and contractor engineering and logistics support services, and other related elements of logistics support. The estimated cost is \$790 million.

- **May 13, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for Aerostats and Rapid Aerostat Initial Deployment tower systems and associated equipment, parts, training and logistical support for an estimated cost of \$90 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on May 13, 2014.

The Government of Iraq has requested a possible sale of 7 Aerostats (17 meter) and 14 Rapid Aerostat Initial Deployment (RAID) Tower Systems, installation, spare and repair parts, support equipment, publications and technical data, site surveys, U.S. government and contractor technical assistance, personnel training and training equipment, and other related elements of program and logistics support. The estimated cost is \$90 million.

- **May 13, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Iraq for M1151A1 Up-Armored High Mobility Multi-Purpose Wheeled Vehicles (HMMWVs) and associated equipment, parts, training and logistical support for an estimated cost of \$101 million.

The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on May 13, 2014. The Government of Iraq has requested a possible sale of 200 M1151A1 Up-Armored High Mobility Multi-Purpose Wheeled Vehicles (HMMWVs) with M2 .50 cal. machine gun mounts, commercial radios, communication equipment, repair and spare parts, publications and technical documentation, tools and test equipment, personnel training and training equipment, U.S. Government and contractor logistics and technical support services, and other related elements

of logistics support. The estimated cost is \$101 million.

- **Feb. 4, 2014** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq for Air Traffic Control and Landing Systems and associated equipment, parts, training and logistical support for an estimated cost of \$700 million.

The Government of Iraq has requested a proposed sale of commercially available FAA Air Traffic Control (ATC) Equipment Suite and Airfield Navigational Aids Suites to be installed at four bases (Tikrit, Al Basra, Al Kut, and Taji). The ATC Equipment Suite includes 4 ASR-11 Airport Surveillance Radars, 10 ATC Automation system with 10 controller consoles, 4 AutoTrac II Airfield Support and Navigation Suites, 2 Primary Search Radars and 2 Mono-pulse secondary surveillance radars. The Airfield Navigation Aids Suite includes 2 Very High Frequency Omni-directional Range (VORTAC) and 3 Instrument Landing Systems with Distance Measuring Equipment, 2 Airfield Lighting Systems with Flush Mounted Lights for the runway and taxiways, Air Traffic Control Tower Equipment Suite. Also provided are site surveys, system integration, installation, testing, repair and return, facilities, warranties, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, U.S. Government and contractor engineering and logistics support services, and other related elements of logistics and program support. The estimated cost is \$700 million.

- **Jan. 27, 2014** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq for AH-64E APACHE LONGBOW Attack Helicopters and associated equipment, parts, training and logistical support for an estimated cost of \$4.8 billion.

Government of Iraq has requested a possible sale of 24 AH-64E APACHE LONGBOW Attack Helicopters, 56 T700-GE-701D Engines, 27 AN/ASQ-170 Modernized Target Acquisition and Designation Sight, 27 AN/AAR-11 Modernized Pilot Night Vision Sensors, 12 AN/APG-78 Fire Control Radars with Radar Electronics Unit (LONGBOW component), 28 AN/AAR-57(V)7 Common Missile Warning Systems, 28 AN/AVR-2B Laser Detecting Sets, 28 AN/APR-39A(V)4 or APR-39C(V)2 Radar Signal Detecting Sets, 28 AN/ALQ-136A(V)5 Radar Jammers, 52 AN/AVS-6, 90 Apache Aviator Integrated Helmets, 60 HELLFIRE Missile Launchers, and 480 AGM-114R HELLFIRE Missiles. Also included are AN/APR-48 Modernized Radar Frequency Interferometers, AN/APX-117 Identification Friend-or-Foe Transponders, Embedded Global Positioning Systems with Inertial Navigation with Multi Mode Receiver, MXF-4027 UHF/VHF Radios, 30mm Automatic Chain Guns, Aircraft Ground Power Units, 2.75 in Hydra Rockets, 30mm rounds, M211 and M212 Advanced Infrared Countermeasure Munitions flares, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, site surveys, U.S. government and contractor engineering, technical, and logistics support services, design and construction, and other related elements of logistics support. The estimated cost is \$4.8 billion.

- **Jan. 27, 2014** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq for support for APACHE lease and associated equipment, parts, training and logistical support for an estimated cost of \$1.37 billion.

The Government of Iraq has requested a possible sale of 8 AN/AAR-57 Common Missile Warning System, 3 T-700-GE-701D engines, 3 AN/ASQ-170 Modernized Target Acquisition and Designation Sight (MTADS), 3 AN/AAQ-11 Modernized Pilot Night Vision Sensors (PNVS), 152 AGM-114 K-A HELLFIRE Missiles, 14 HELLFIRE M299 Launchers, 6 AN/APR-39A(V)4 Radar Warning Systems with training Universal Data Modems (UDM), 2 Embedded Global Positioning System Inertial Navigation System (EGI), 6 AN/AVR-2A/B Laser Warning Detectors, 12 M261 2.75 inch Rocket Launchers, M206 Infrared Countermeasure flares, M211 and M212 Advanced Infrared Countermeasure Munitions (AIRCM) flares, Internal Auxiliary Fuel Systems (IAFS), Aviator's Night Vision Goggles, Aviation Mission Planning System, training ammunition, helmets, transportation, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, site surveys, U.S. Government and contractor technical assistance, and other related elements of program and logistics support. The estimated cost is \$1.37 billion.

- **Jan 23, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq for AGM-114K/R Hellfire Missiles and associated equipment, parts, training and logistical support for an estimated cost of \$82 million.

The Government of Iraq has requested a possible sale of 500 AGM-114K/R Hellfire missiles, Hellfire missile conversion, blast fragmentation sleeves, and installation kits, containers, transportation, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, U.S. Government and contractor technical, engineering, and logistics support services, and other related elements of logistics and program support. The estimated cost is \$82 million.

- **Aug. 5, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq of an Integrated Air Defense System and associated equipment, parts, training and logistical support for an estimated cost of \$2.403 billion.

The Government of Iraq has requested a possible sale of 40 AVENGER Fire Units, 681 STINGER Reprogrammable Micro-Processor (RMP) Block I 92H Missiles, 13 AN/MPQ-64F1 SENTINEL Radars, 7 AN/YSQ-184D Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) Systems, 75 AN/VRC-92E SINCGARS Radios, 3 HAWK XXI Batteries (6 Fire Units) which include 6 Battery Fire Direction Centers, 6 High Powered Illuminator Radars, 216 MIM-23P HAWK Tactical Missiles, 2 Mobile Battalion Operation Centers (BOC), 3 HAWK XXI BOC Air Defense Consoles (ADCs), 1DS/GS Shop 20, 1 DS/GS Shop 21, 1 Mini-Certified Round Assembly Facility (MCRAF), Air Command and Control (C2) systems and surveillance radars for the Integrated Air Defense Systems that includes TPS-77 Long-Range Radars (LRR) and Omnyx-I0 Air Command and Control System, and 10 Medium Range Radars. Also included: Ground Air Transmit Receive Ultra High Frequency/Very High Frequency radio capability, facilities and construction for one (1) underground Air Defense Operations Center and two (2) Air Defense Sector Operations Centers, spare and repair parts, repair and return, software support, systems integration, long haul communication technical integration, communications equipment, support equipment and sustainment, tools and test equipment, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor representative engineering, technical, and logistics support services, and other related elements of logistics support. The estimated cost is \$2.403 billion.

- **Aug. 5, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq of Mobile Troposcatter Radio Systems and associated equipment, parts, training and logistical support for an estimated cost of \$339 million.

The Government of Iraq has requested a possible sale of 19 Mobile Troposcatter Radio Systems, 10 Mobile Microwave Radio Systems, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, site surveys, U.S. Government and contractor technical assistance, and other related elements of program and logistics support. The estimated cost is \$339 million.

- **July 25, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq of Multi-Platform Maintenance and associated equipment, parts, training and logistical support for an estimated cost of \$750 million.

The Government of Iraq has requested a possible sale to provide for a five year follow-on maintenance support for the M88A1 Recovery Vehicle, M88A2 Hercules, M113 Family of Vehicles, M109A5 Howitzers, M198 Howitzers, M1070 Heavy Equipment Trailer and Truck (HETT), M977 Heavy Expanded Mobility Tactical Truck (HEMTT), High Mobility Multipurpose Wheeled Vehicle (HMMWV), and the Tactical Floating River Bridge System (TFRBS) Including, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, site surveys, Quality Assurance Teams, U.S. Government and contractor technical assistance, and other related elements of program and logistics support. The estimated cost is \$750 million.

- **July 25, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq of 12 Bell 412 EP helicopters and associated equipment, parts, training and logistical support for an estimated cost of \$300 million.

The Government of Iraq has requested a possible sale of 12 Bell 412 EP helicopters equipped with Star SAFIRE III EO/IR systems, PT6T-3DF engines, KDM-706 Distance Measuring Equipment, KNR 634 VOR/LOC with MB/HSI, MST67A Transponder, Artex C406-1HM Emergency Locator Transmitter, Wulfsberg FlexComm II C5000 System with Synthesized Guard, KTR-908 Very High Frequency Radios, NAT AA-95 Audio System, 660

Weather Radar, AAI Radome, Night Vision Imaging System (NVIS) Compatible Cockpit Lighting, SX-16 Nightsun, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, site surveys, U.S. Government and contractor technical assistance, and other related elements of program and logistics support. The estimated cost is \$300 million.

- **July 25, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq of 50 M1135 Stryker Nuclear, Biological, and Chemical Reconnaissance Vehicles and associated equipment, parts, training and logistical support for an estimated cost of \$900 million.

The Government of Iraq has requested a possible sale of 50 M1135 Stryker Nuclear, Biological, and Chemical Reconnaissance Vehicles, DECON 3000 Decontamination Systems, M26 Commercial Joint Service Transportable Decontamination Systems (JSTDS), AN/VRC-89 Single Channel Ground and Airborne Radio Systems (SINCGARS) with Global Positioning System (GPS), AN/VRC-90 SINCGARS with GPS, M40A1 Protective Masks, Lightweight Personal Chemical Detectors LCD-3, Portable Chemical Warfare Agent Detectors GID-3, MultiRAE PLUS Gas Detectors, AN/VDR-2 Radiac Sets, M256 Chemical Agent Detector Kits, Decontamination Kits, Chemical Biological Mask Canisters, M8 Chemical Paper Agent Detector Kits, water canteens, individual clothing and equipment, spare and repair parts, support equipment, communication equipment, publications and technical data, personnel training and training equipment, site surveys, a Quality Assurance Team, U.S. Government and contractor technical assistance, and other related elements of program and logistics support. The estimated cost is \$900 million.

- **Feb. 28, 2013** – The Defense Security Cooperation Agency notified Congress Feb. 27 of a possible Foreign Military Sale to the Government of Iraq for 200 RAPISCAN cargo inspection systems and associated equipment, parts, training and logistical support for an estimated cost of \$600 million.

The Government of Iraq has requested the possible sale of 90 M45 RAPISCAN Mobile Eagle High Energy Mobile System Vehicles, 40 M60 RAPISCAN Mobile Eagle High Energy Mobile System Vehicles, 70 American Science and Engineering brand Z Backscatter Vans.

The Z Backscatter vans will be used to scan vehicle interiors and will provide the Government of Iraq a tool to restrict the ability of insurgent and terrorist groups to operate by detecting contraband movement through borders and checkpoints.

- **Dec. 24, 2012** – The Defense Security Cooperation Agency notified Congress Dec. 21 of a possible Foreign Military Sale to the Government of Iraq for Very Small Aperture Terminal (VSAT) operations and maintenance services and associated equipment, parts, training and logistical support for an estimated cost of \$125 million.

The Government of Iraq has requested a possible sale of Very Small Aperture Terminal (VSAT) operations and maintenance services, equipment installation services, upgrade VSAT managed and leased bandwidth, video teleconferencing equipment, 75 VSAT Equipment Suites (consisting of 1.8m VSAT terminals, block upconverters (BUCs), low-noise down converters (LNBs), required cables and components, iDirect e8350 modem, network operation and dynamic bandwidth equipment, and iMonitor software), spares and repair parts, tools, personnel training and training equipment, publications and technical documentation, U.S. Government and contractor representative technical support services, and other related elements of logistics and program support.

- **Aug. 15, 2012** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of Iraq for commercially available Federal Aviation Administration Air Traffic Control and Landing System/Navigational Aids and associated equipment, parts, training and logistical support at an estimated cost of \$60 million.

The Government of Iraq has requested a proposed sale of commercially available Federal Aviation Administration Air Traffic Control and Landing System/Navigational Aids. The system will include an ASR-11 Radar, Autotrac II simulator, Instrument Landing System, and Airfield Lighting System, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, site survey, installation, US Government and contractor engineering and logistics support services, and other related elements of logistics and program support.

- **July 20, 2012** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of Iraq for 12 FIREFINDER Radars and associated equipment, parts, training and logistical support for an estimated cost of \$428 million.

The Government of Iraq has requested a possible sale of 6 AN/TPQ-36(V)11 FIREFINDER Radar Systems, 6 AN/TPQ-37(V)9 FIREFINDER Radars, 3 Meteorological Measuring Sets, 86 AN/VRC-92 export variant Single Channel Ground and Airborne Radio Systems, 12 Advanced Field Artillery Tactical Data Systems, 3 Improved Position and Azimuth Determining Systems, 63 M1152A1 and 3 M1151A1 High Mobility Multipurpose Wheeled Vehicles, 12 M1083A1 Family of Medium Tactical Utility Vehicles, government furnished equipment, common hardware and software, communication support equipment, tools and test equipment, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, US Government and contractor engineering, logistics, and technical support services, and other related elements of logistics support.

- **Dec. 12, 2011** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of Iraq for 18 F-16IQ aircraft and associated equipment, parts, weapons, training and logistical support for an estimated cost of \$2.3 billion.

The Government of Iraq has requested a possible sale of 18 F-16IQ aircraft, 24 F100PW-229 or F110-GE-129 Increased Performance Engines, 120 LAU-129/A Common Rail Launchers, 24 APG-68(V)9 radar sets, 19 M61 20mm Vulcan Cannons, 100 AIM-9L/M-8/9 SIDEWINDER Missiles, 150 AIM-7M-F1/H SPARROW Missiles, 50 AGM-65D/G/H/K MAVERICK Air to Ground Missiles, 200 GBU-12 PAVEWAY II Laser Guided Bomb Units (500 pound), 50 GBU-10 PAVEWAY II Laser Guided Bomb Units (2000 pound), 50 GBU-24 PAVEWAY III Laser Guided Bomb Units (2000 pound), 22 ALQ-211 Advanced Integrated Defensive Electronic Warfare Suites (AIDEWS), or Advanced Countermeasures Electronic System (ACES) (ACES includes the ALQ-187 Electronic Warfare System and AN/ALR-93 Radar Warning Receiver), 20 AN/APX-113 Advanced Identification Friend or Foe (AIFF) Systems (without Mode IV), 20 Global Positioning Systems (GPS) and Embedded GPS/ Inertial Navigation Systems (INS), (Standard Positioning Service (SPS) commercial code only), 20 AN/AAQ-33 SNIPER or AN/AAQ-28 LITENING Targeting Pods, 4 F-9120 Advanced Airborne Reconnaissance Systems (AARS) or DB-110 Reconnaissance Pods (RECCE), 22 AN/ALE- 47 Countermeasures Dispensing Systems (CMDS), 20 Conformal Fuel Tanks (pairs), 120 Joint Helmet Mounted Cueing Systems (JHMCS), 20 AN/ARC-238 Single Channel Ground and Airborne Radio Systems, 10,000 PGU-27A/B Ammunition, 30,000 PGU-28 Ammunition, 230 MK-84 2000 lb. General Purpose Bombs, and 800 MK-82 500lb General Purpose Bombs. Also included: LAU-117 Maverick Launchers, site survey support equipment, Joint Mission Planning System, Ground Based Flight Simulator, tanker support, ferry services, Cartridge Actuated Devices/Propellant Actuated Devices (CAD/PAD), repair and return, modification kits, spares and repair parts, construction, publications and technical documentation, personnel training and training equipment, US Government and contractor technical, engineering, and logistics support services, ground based flight simulator, and other related elements of logistics support.

- **June 29, 2011** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of Iraq for follow-on support and maintenance of multiple aircraft systems and associated equipment, parts, training and logistical support for an estimated cost of \$675 million.

The Government of Iraq has requested a possible sale of follow-on support and maintenance of multiple aircraft systems that include TC-208s, Cessna 172s, AC-208s, T-6As, and King Air 350s. Included are ground stations, repair and return, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, US Government and contractor engineering, logistics, and technical support services, and other related elements of logistics support.

- **Oct. 14, 2011** – The Defense Security Cooperation Agency notified Congress Oct 5 of a possible Foreign Military Sale to the Government of Iraq for various explosive projectiles and charges, as well as associated equipment, parts, training and logistical support for an estimated cost of \$82 million.

The Government of Iraq has requested a possible sale of 44,608 M107 155mm High Explosive Projectiles and 9,328 M485A2 155mm Illumination projectiles; also included are, M231 Propelling charges, M232A1 155mm Modular Artillery Charge System Propelling charges, M739 Fuzes, M762A1 Electronic Time Fuzes, M82 Percussion primers, M767A1 Electronic Time Fuzes, 20-foot Intermodal Containers for transporting ammunition,

publications and technical data, personnel training and training equipment, US Government and contractor engineering, logistics, and technical support services, and other related elements of logistics support.

- **May 3, 2011** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of Iraq of various radios and communication equipment, as well as associated equipment, parts, training and logistical support for an estimated cost of \$67 million.

The Government of Iraq has requested a possible sale of (750) 50-Watt Vehicular Multiband Handheld Radio Systems, (900) 5-watt Multiband Handheld Radio Systems, (50) 50-watt Multiband Handheld Base Station Radio Systems, (50) 20-watt High Frequency (HF) Base Station Radio Systems, (100) 5-watt Secure Personal Role Handheld Radio Systems, accessories, installation, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, US Government and contractor engineering and technical support services, and other related elements of logistics support.

- **March 30, 2011** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of Iraq of six AN/TPQ-36(V)10 FIREFINDER Radar Systems, 18 AN/TPQ-48 Light Weight Counter-Mortar Radars and associated equipment, parts, training and logistical support for an estimated cost of \$299 million.

The Government of Iraq has requested a possible sale of 6 AN/TPQ-36(V)10 FIREFINDER Radar Systems, 18 AN/TPQ-48 Light Weight Counter-Mortar Radars, 3 Meteorological Measuring Sets, 36 export variant Single Channel Ground and Airborne Radio Systems, 6 Advanced Field Artillery Tactical Data Systems, 3 Position and Azimuth Determining Systems, government furnished equipment, common hardware and software, communication support equipment, tools and test equipment, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, US Government and contractor engineering, logistics, and technical support services, and other related elements of logistics support.

- **Nov. 30, 2010** – The Defense Security Cooperation Agency notified Congress November 29 of a possible Foreign Military Sale to Iraq of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C⁴ISR) Systems and associated parts and equipment for a complete package worth approximately \$68 million.

The Government of Iraq has requested a possible sale for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C⁴ISR) Systems which includes, High Frequency, Ultra High Frequency, and Very High Frequency radios, Automatic Identification System, Surface Scan Radar System, Forward Looking Infrared System, Situational Display System, Mobile and Fixed Towers, Electro-Optical Cameras, Voice Over Internet Protocol, K Under Band Very Small Aperture Terminal upgrades, generators, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, US Government and contractor engineering and technical support services, and other related logistical support.

- **Nov. 30, 2010** – The Defense Security Cooperation Agency notified Congress November 29 of a possible Foreign Military Sale to Iraq of M1A1 Abrams Tank Ammunition for an estimated cost of \$36 million.

The Government of Iraq has requested a possible sale of 14,010 TP-T M831A1 120mm Cartridges, 16,110 TPCSDS-T M865 120mm Cartridges, and 3,510 HEAT-MP-T M830A1 120mm Cartridges.

- **Sept. 24, 2010** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq of contractor technical support of the Iraqi Defense Network and associated parts and equipment for a complete package worth approximately \$98 million.
- **Sept. 24, 2010** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq of contractor logistics support for Mobile Communications Centers and associated parts and equipment for a complete package worth approximately \$57 million.

- **Sept. 15, 2010** – The Defense Security Cooperation Agency notified Congress on September 14, of a possible Foreign Military Sale to Iraq for the refurbishment of 440 M113A2 Armored Personnel Carriers as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$131 million.
- **Sept. 15, 2010** – The Defense Security Cooperation Agency notified Congress on September 13 of a possible Foreign Military Sale to Iraq of 18 F-16IQ Aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$4.2 billion. The Government of Iraq has requested a possible sale of (18) F-16IQ aircraft, (24) F100-PW-229 or F110-GE-129 Increased Performance Engines, (36) LAU-129/A Common Rail Launchers, (24) APG- 68(V)9 radar sets, (19) M61 20mm Vulcan Cannons, (200) AIM-9L/M-8/9 SIDEWINDER Missiles, (150) AIM-7M-F1/H SPARROW Missiles, (50) AGM-65D/G/H/K MAVERICK Air to Ground Missiles, (200) GBU-12 PAVEWAY II Laser Guided Bomb Units (500 pound), (50) GBU-10 PAVEWAY II Laser Guided Bomb Units (2000 pound), (50) GBU-24 PAVEWAY III Laser Guided Bomb Units (2000 pound), (22) Advanced Countermeasures Electronic Systems (ACES) (ACES includes the ALQ-187 Electronic Warfare System and AN/ALR-93 Radar Warning Receiver), (20) AN/APX-113 Advanced Identification Friend or Foe (AIFF) Systems (without Mode IV), (20) Global Positioning Systems (GPS) and Embedded GPS/Inertial Navigation Systems (INS), (Standard Positioning Service (SPS) commercial code only), (20) AN/AAQ-33 SNIPER or AN/AAQ-28 LITENING Targeting Pods, (4) F-9120 Advanced Airborne Reconnaissance Systems (AARS) or DB- 110 Reconnaissance Pods (RECCE), (22) AN/ALE-47 Countermeasures Dispensing Systems (CMD5); (20) Conformal Fuel Tanks (pairs). Also included: site survey, support equipment, tanker support, ferry services, Cartridge Actuated Devices/Propellant Actuated Devices (CAD/PAD), repair and return, modification kits, spares and repair parts, construction, publications and technical documentation, personnel training and training equipment, US Government and contractor technical, engineering, and logistics support services, ground based flight simulator, and other related elements of logistics support.
- **Aug. 5, 2010** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Iraq of contractor logistics support for various helicopters for an estimated cost of \$152 million. The Government of Iraq has requested a possible sale of two years of contractor logistics support for Mi-17 Helicopters and two years of logistics support for US-origin rotary wing aircraft not in DoD's inventory.
- **March 5, 2010** – The Defense Security Cooperation Agency notified Congress March 4 of a possible Foreign Military Sale to Iraq of various communication equipment, associated parts and logistical support for a complete package worth approximately \$142 million. The Government of Iraq has requested a possible sale of (300) 50-watt Very High Frequency (VHF) Base Station radios, (230) 50-Watt VHF Vehicular Stations, (150) 20-watt High Frequency/Very High Frequency (HF/VHF) Base Station Systems, (50) 20-watt HF/VHF Vehicular Radios, (50) 50-watt Ultra High Frequency/Very High Frequency (UHF/VHF) Base Stations, (10) 150-watt HF/VHF Vehicular Radio Systems, (10) 150-watt HF Base Station Radio Systems, (30) 20-watt HF Vehicular Mobile Radio Stations, (250) 20-watt HF/VHF Handheld Radio Systems, (300) 50-watt UHF/VHF Vehicular Stations, (10) 150-watt HF/VHF Fixed Base Station Radio Systems, (590) Mobile Communications, Command and Control Center Switches, (4) Mobile Work Shops, High Capacity Line of Sight Communication Systems with Relay Link, generators, accessories, installation, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, contractor engineering and technical support services, and other related elements of logistics support.
- **Nov. 19, 2009** – The Defense Security Cooperation Agency notified Congress Nov. 18 of a possible Foreign Military Sale to Iraq of 15 helicopters with associated parts, equipment, training and logistical support for a complete package worth approximately \$1.2 billion. The Government of Iraq has requested a possible sale of up to 15 Agusta Westland AW109 Light Utility Observation helicopters, or alternatively, 15 Bell Model 429 Medical Evacuation and Aerial Observation helicopters, or 15 EADS North America UH-72A Lakota Light Utility helicopters; and, up to 12 Agusta Westland AW139 Medium Utility helicopters, or alternatively, 12 Bell Model 412 Medium Utility helicopters, or 12 Sikorsky UH-60M BLACK HAWK helicopters equipped with 24 T700-GE-701D engines. Also included: spare and repair parts, publications and technical data, support equipment, personnel training and training equipment, ground support, communications equipment, US Government and contractor provided technical and logistics

support services, tools and test equipment, and other related elements of logistics support.

- **Dec. 10, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of (64) Deployable Rapid Assembly Shelters (DRASH), (1,500) 50 watt Very High Frequency (VHF) Base Station Radios, (6,000) VHF Tactical Handheld Radios, (100) VHF Fixed Retransmitters, (200) VHF Vehicular Radios, (30) VHF Maritime 50 watt Base Stations, (150) 150 watt High Frequency (HF) Base Station Radio Systems, (150) 20 watt HF Vehicular Radios, (30) 20 watt HF Manpack Radios, (50) 50 watt Very High Frequency/Ultra High Frequency (VHF/UHF) Ground to Air Radio Systems, (50) 150 watt VHF/UHF Ground to Air Radio Systems, (50) 5 watt Multiband Handheld Radio Systems as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$485 Million.
- **Dec. 10, 2008** – On Dec. 9, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of (80,000) M16A4 5.56MM Rifles, (25,000) M4 5.56MM Carbines, (2,550) M203 40MM Grenade Launchers as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$148 million.
- **Dec. 10, 2008** – On Dec. 9, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of 26 Bell Armed 407 Helicopters, 26 Rolls Royce 250-C-30 Engines, 26 M280 2.75-inch Launchers, 26 XM296 .50 Cal. Machine Guns with 500 Round Ammunition Box, 26 M299 HELLFIRE Guided Missile Launchers as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$366 million.
- **Dec. 10, 2008** – On Dec. 9, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of 140 M1A1 Abrams tanks modified and upgraded to the M1A1M Abrams configuration, 8 M88A2 Tank Recovery Vehicles, 64 M1151A1B1 Armored High Mobility Multi-Purpose Wheeled Vehicles (HMMWV), 92 M1152 Shelter Carriers, 12 M577A2 Command Post Carriers, 16 M548A1 Tracked Logistics Vehicles, 8 M113A2 Armored Ambulances, and 420 AN/VRC-92 Vehicular Receiver Transmitters as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$2.160 billion.
- **Dec. 10, 2008** – On Dec. 9, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of (20) 30-35meter Coastal Patrol Boats and (3) 55- 60 meter Offshore Support Vessels as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$1.010 billion.
The Government of Iraq has requested a possible sale of (20) 30-35meter Coastal Patrol Boats and (3) 55- 60 meter Offshore Support Vessels, each outfitted with the Seahawk MS1-DS30MA2 mount using a 30 x 173mm CHAIN gun and short range Browning M2-HB .50 cal machine gun, spare and repair parts, weapon system software, support equipment, publications and technical data, personnel training and training equipment, US Government and contractor engineering and logistics support services, and other related elements of logistics support.
- **Dec. 10, 2008** – On Dec. 9, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of 20 T-6A Texan aircraft, 20 Global Positioning Systems (GPS) as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$210 million.
The Government of Iraq has requested a possible sale of 20 T-6A Texan aircraft, 20 Global Positioning Systems (GPS) with CMA-4124 GNSSA card and Embedded GPS/Inertial Navigation System (INS) spares, ferry maintenance, tanker support, aircraft ferry services, site survey, unit level trainer, spare and repair parts, support and test equipment, publications and technical documentation, personnel training and training equipment, contractor technical and logistics personnel services, and other related elements of logistics support.
- **Dec. 10, 2008** – On Dec. 9, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of 400 M1126 STRYKER Infantry Carrier Vehicles as well as associated equipment. The total value, if all options are exercised, could be as high as \$1.11 billion.
The Government of Iraq has requested a possible sale of 400 M1126 STRYKER Infantry Carrier Vehicles (ICVs), 400 M2 HB 50 cal Browning Machine

Guns, 400 M1117 Armored Security Vehicles (ASVs), 8 Heavy Duty Recovery Trucks, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, contractor engineering and technical support services, and other related elements of logistics support.

- **Dec. 10, 2008** – On Dec. 9, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of 36 AT-6B Texan II Aircraft as well as associated support. The total value, if all options are exercised, could be as high as \$520 million. The Government of Iraq has requested a possible sale of 36 AT-6B Texan II Aircraft, 6 spare PT- 6 engines, 10 spare ALE-47 Counter-Measure Dispensing Systems and/or 10 spare AAR-60 Missile Launch Detection Systems, global positioning systems with CMA-4124, spare and repair parts, maintenance, support equipment, publications and technical documentation, tanker support, ferry services, personnel training and training equipment, US Government and contractor engineering and logistics support services, and other related elements of logistics support.
- **July 31, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of M1A1 and Upgrade to M1A1M Abrams Tanks as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$2.16 billion. The Government of Iraq has requested a possible sale of 140 M1A1 Abrams tanks modified and upgraded to the M1A1M Abrams configuration, 8 M88A2 Tank Recovery Vehicles, 64 M1151A1B1 Armored High Mobility Multi-Purpose Wheeled Vehicles (HMMWV), 92 M1152 Shelter Carriers, 12 M577A2 Command Post Carriers, 16 M548A1 Tracked Logistics Vehicles, 8 M113A2 Armored Ambulances, and 420 AN/VRC- 92 Vehicular Receiver Transmitters. Also included are: 35 M1070 Heavy Equipment Transporter (HET) Truck Tractors, 40 M978A2 Heavy Expanded Mobility Tactical Truck (HEMTT) Tankers, 36 M985A2 HEMTT Cargo Trucks, 4 M984A2 HEMTT Wrecker Trucks, 140 M1085A1 5-ton Cargo Trucks, 8 HMMWV Ambulances w/ Shelter, 8 Contact Maintenance Trucks, 32 500 gal Water Tank Trailers, 16 2500 gal Water Tank Trucks, 16 Motorcycles, 80 8 ton Heavy/Medium Trailers, 16 Sedans, 92 M1102 Light Tactical trailers, 92 635NL Semi-Trailers, 4 5,500 lb. Rough Terrain Forklifts, 20 M1A1 engines, 20 M1A1 Full Up Power Packs, 3 spare M88A2 engines, 10 M1070 engines, 20 HEMTT engines, 4 M577A2 spare engines, 2 5-ton truck engines, 20 spare HMMWV engines, ammunition, spare and repair parts, maintenance, support equipment, publications and documentation, personnel training and equipment, US Government and contractor engineering and logistics support services, and other related elements of logistics support.
- **July 30, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of Helicopters and related munitions as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$2.4 billion. The Government of Iraq has requested a possible sale of 24 Bell Armed 407 Helicopters or 24 Boeing AH-6 Helicopters, 24 Rolls Royce 250-C-30 Engines, 565 M120 120mm Mortars, 665 M252 81mm Mortars, 200 AGM-114M HELLFIRE missiles, 24 M299 HELLFIRE Guided Missile Launchers, 16 M36 HELLFIRE Training Missiles, 15,000 2.75-inch Rockets, 24 M280 2.75-inch Launchers, 24 XM296 .50 Cal. Machine Guns with 500 Round Ammunition Box, 24 M134 7.62mm Mini-Guns, 81mm ammunition, 120mm ammunition, test measurement and diagnostics equipment, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, US Government and contractor engineering and logistics personnel services, and other related elements of logistics support.
- **July 30, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of technical assistance for construction of facilities and infrastructure as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$1.6 billion. The Government of Iraq has requested a possible sale of technical assistance to ensure provision of adequate facilities and infrastructure in support of the recruitment, garrison, training, and operational facilities and infrastructure for the Iraqi Security Forces (ISF). The US Army Corps of Engineers (USACE) will provide engineering, planning, design, acquisition, contract administration, construction management, and other technical services for construction of facilities and infrastructure (repair, rehabilitation, and new construction) in support of the training, garrison, and operational requirements of the ISF. The scope of the program includes provision of technical assistance for Light Armored Vehicles, Range Facilities, Training Facilities, Tank Range Complex Facilities, and Armed Reconnaissance Helicopter Facilities in support of Government of Iraq (GoI) construction projects throughout the country

of Iraq. The facilities and infrastructure planned include mission essential facilities, maintenance and supply buildings, company and regimental headquarters, and utilities systems (including heating, water, sewer, electricity, and communication lines). Services include support, personnel training and training equipment, acquisition of engineer construction equipment, technical assistance to Iraqi military engineers, other technical assistance, contractor engineering services, and other related elements of logistic support.

- **July 30, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of Light Armored Vehicles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$3 billion.
The Government of Iraq has requested a possible sale of 392 Light Armored Vehicles (LAVs) which include 352 LAV-25, 24 LAV-CC, and 16 LAV-A (Ambulances); 368 AN/VRC-90E Single Channel Ground and Airborne Radio Systems (SINCGARS); 24 AN/VRC-92E SINCGARS; and 26 M72 Light Anti-Tank Weapons. The following are considered replacements to vehicles/weapons requested in the Military Table of Equipment (MTOE): 5 LAV-R (Recovery), 4 LAV-L (Logistics), 2 Mine Resistant Ambush Protected (MRAP) Vehicles, 41 Medium Tactical Vehicle Replacement (MTVR), 2 MK19 40mm Grenade Machine Guns, 773 9mm Pistols, 93 M240G Machine Guns, and 10 AR-12 rifles. Non-MDE includes ammunition, construction, site survey, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, contractor engineering and technical support services and other related elements of logistics support.
- **July 28, 2008** – On July 24th, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of Armored Security Vehicles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$206 million.
The Government of Iraq has requested a possible sale of 160 M2 .50 caliber Machine Guns, 160 M1117 Armored Security Vehicles (ASVs), 4 Heavy Duty Recovery Trucks, 160 Harris Vehicular Radio Systems, 144 MK19 MOD3 40mm Grenade Machine Guns with Bracket, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, contractor engineering and technical support services, and other related elements of logistics support.
- **July 25, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of C-130J-30 Aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$1.5 billion.
The Government of Iraq has requested a possible sale of 6 C-130J-30 United States Air Force baseline aircraft and equipment, 24 Rolls Royce AE 2100D3 engines, 4 Rolls Royce AE 2100D3 spare engines, 6 AAR-47 Missile Warning Systems, 2 spare AAR-47 Missile Warning Systems, 6 AN/ALE-47 Countermeasures Dispensing Systems, 2 spare AN/ALE-47 Countermeasures Dispensing Systems. Also included are spare and repair parts, configuration updates, integration studies, support equipment, publications and technical documentation, technical services, personnel training and training equipment, foreign liaison office support, US Government and contractor engineering and logistics personnel services, construction, and other related elements of logistics support.
- **May 7, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of technical assistance for construction of facilities and infrastructure as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$450 million.
- **March 21, 2008** – On March 12, 2008, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of various vehicles, small arms and ammunition, communication equipment, medical equipment, and clothing and individual equipment as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$1,389 million.
The Government of Iraq has requested a possible sale of (700) M1151 High Mobility Multi-Purpose Wheeled Vehicles (HMMWV) Armored Gun Trucks, (4,000) AN/PVS-7D Night Vision Devices, and (100,000) M16A4 Assault Rifles. Also included are: (200) Commercial Ambulances, (16) Bulldozers, (300) Light Gun Trucks, (150) Motorcycles, (90) Recovery Trucks, (30) 20 ton Heavy Trailer, (1,400) 8 ton Medium Trailers, (3,000) 4X4 Utility Trucks, (120) 12K Fuel Tank Trucks, (80) Heavy Tractor Trucks, (120) 10K Water Tank Trucks, (208) 8 ton Heavy Trucks, (800) Light Utility Trailers, (8)

Cranes, (60) Heavy Recovery Vehicles, (16) Loaders, (300) Sedans, (200) 500 gal Water Tank Trailers, (1,500) 1 ton Light Utility Trailers, (50) 40 ton Low Bed Trailers, (40) Heavy Fuel Tanker Trucks, (20) 2000 gal Water Tanker Trucks, (2,000) 5 ton Medium Trucks, (120) Armored IEDD Response Vehicles, (1,200) 8 ton Medium Cargo Trucks, (1,100) 40mm Grenade Launchers, (3,300) 9mm Pistols with Holsters, (400) Aiming Posts, (140,000) M16A4 Magazines, (100,000) M4 Weapons, (65) 5K Generators, (5,400) hand-held VHF radio sets, (3,500) vehicular VHF radio sets, (32) Air Conditioner Charger kits, (32) Air Conditioner Testers, (4,000) binoculars, (20) electrician tool kits, (600) large general purpose tents, (700) small command general purpose tents, medical equipment, organizational clothing and individual equipment, standard and non-standard vehicle spare and repair parts, maintenance, support equipment, publications and documentation, US Government and contractor engineering and logistics support services, and other related elements of logistics support.

- **Sept. 25, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of various vehicles, small arms ammunition, explosives, and communications equipment as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$2.257 billion.
The Government of Iraq has requested a possible sale of the following: MDE includes: (980) M1151 High Mobility Multi-Purpose Wheeled Vehicles (HMMWV) and (123,544) M16A4 Rifles.
Also included are: Upgrade and refurbishment of 32 additional UH-I configuration; Armored Land Cruisers (189); Armored Mercedes (10); Light utility trucks (1,815); Fire trucks (70); Fuel trucks (40); Septic truck (20); Water truck (45); Motorcycles (112); Sedans (1,425); 5 Ton Trucks (600); Medium Trucks (600); BTR 3E1 (336); 8 Ton Trucks (400); 12 Ton Trucks (400); 16- 35 Ton Trucks (100); 35 Ton Trucks (20); Ambulances (122); Bulldozers (33); Excavators (10); Wheeled Loader (20); Variable Reach Forklifts (10); 5Kw generators (447); ILAV Route Clearing Vehicle (55); Wrecker w/Boom (19); Fuel Pumps (34); 11 Passenger Bus (127); 24 Passenger Bus (207); 44 Passenger Bus (80); Contact Maintenance Trucks (105); communication towers, troposcatter and Microwave radios, IDN, DPN, VSAT Operations and Maintenance, (1,518) VHF Wheeled Tactical and Base Station Radios, (4,800) VHF hand-held radios, (6,490) VHF man pack radios, clothing and individual equipment, standard and non-standard vehicle spare and repair parts, maintenance, support equipment, publications and documentation; personnel training and training equipment; Quality Assurance Team support services, US Government and contractor engineering and logistics support services, preparation of aircraft for shipment, and other related elements of logistics support.
- **Sept. 21, 2007** – On September 21, 2007, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of logistics support for three C-130E aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$172 million.
The Government of Iraq has requested a possible sale of logistics support for three C-130E aircraft to include supply and maintenance support, flares, electronic warfare support, software upgrades, pyrotechnics, spare and repair parts, support equipment, publications and documentation, personnel training and training equipment, fuel and fueling services, US Government and contractor engineering and logistics support services, and other related elements of logistics support.
- **Aug. 17, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of UH-I HUEY repair parts as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$150 million.
- **May 24, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of medical supplies, equipment, and training as well as associated support equipment and services. The total value, if all options are exercised, will be less than \$1.05 billion.
- **May 18, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of Technical Assistance for Construction of Facilities and Infrastructure as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$350 million.

- **May 4, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of various small arms ammunition, explosives, and other consumables as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$508 million.
- **Dec. 07, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq to provide funds for Trucks, Vehicles, Trailers, as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$463 million. Major Defense Equipment (MDE): 522 High Mobility Multipurpose Wheeled Vehicles (HMMWVs) or 276 Infantry Light Armored Vehicles (I-LA Vs), eight Heavy Tracked Recovery Vehicles – either Brem Tracked Recovery and Repair or M578 Recovery Vehicles, six 40-Ton Trailer Lowboy – either M871 or Commercial, 66 8-Ton Cargo Heavy Trucks – either M900 series or M35 series or MK23 Medium Tactical Vehicles or Commercial Medium Trucks.

Also included: logistics support services/equipment for vehicles (Armored Gun Trucks; Light, Medium, and Heavy Vehicles; trailers; recovery vehicles; and ambulances) supply and maintenance support, measuring and hand tools for ground systems, technical support, software upgrades, spare and repair parts, support equipment, publications and documentation, personnel training and training equipment, US Government and contractor engineering and logistics support services, and other related elements of logistics support.

- **Sept. 27, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of King Air 350ER and potentially other aircraft, as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$900 million. The Government of Iraq has requested a possible sale of:
 - 24 King Air 350ER for Intelligence/Surveillance/Reconnaissance role with L-3 Wescam
 - MX-15 Electro Optics/Infrared (EO/IR) system, plus 1 of the following Synthetic Aperture Radar (SAR/ISAR)/Inverse Synthetic: APS-134 Sea View or APS-143 Ocean Eye or RDR-1700 or Lynx II (APY-8) or APS144 or APY-12 Phoenix
 - 24 Data Link Systems (T-Series Model-U or T-Series Model-N or ADL850 or TCDL or BMT-85)
 - 24 King Air 350ER or PZL M-18 Skytruck Aircraft for light transport role
 - 48 AAR-47 Missile Warning Systems
 - 48 ALE-47 Countermeasures Dispensing Systems
 - 6,000 M-206 Flare Cartridges
 - 50 Global Positioning System (GPS) and Embedded GPS/Inertial Navigation Systems (INS)Also included: support equipment, management support, spare and repair parts, supply support, training, personnel training and training equipment, publications and technical data, US Government and contractor technical assistance and other related elements of logistics support.
- **Sept. 27, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of one AN/FPS-117 or TPS-77 Long Range Air Traffic Control Radar, as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$142 million. The Government of Iraq has requested a possible sale of one AN/FPS-117 or TPS-77 Long Range Air Traffic Control Radar, support equipment, management support, spare and repair parts, supply support, training, publications and technical data, US Government and contractor technical assistance and other related elements of logistics support.

- **Sept. 19, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of helicopters, vehicles, weapons and support as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$500 million. Also included: logistics support services/equipment for helicopters (Jet Ranger, Huey II and Mi-17) and vehicles (Standard/Non-Standard Wheeled Vehicles, Tracked Vehicles, Infantry Light Armored Vehicles Armored Personnel Carriers) and small/medium weapons and weapon systems, on-job-training, laser pointers, supply and maintenance support, measuring and hand tools for ground systems, technical support, software upgrades, spare and repair parts, support equipment, publications and documentation, personnel training and training equipment, US Government and contractor engineering and logistics support services, and other related elements of logistics support.
- **Sept. 19, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of logistics support for Helicopters, Vehicles, Weapons as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$250 million. The Government of Iraq has requested a possible sale of logistics support services/equipment for helicopters (Jet Ranger, Huey II and Mi-17) and vehicles (Standard/Non-Standard Wheeled Vehicles, Tracked Vehicles, Infantry Light Armored Vehicles Armored Personnel Carriers) and small/medium weapons and weapon systems including on-job-training, supply and maintenance support, measuring and hand tools for ground systems, software upgrades, spare and repair parts, support equipment, publications and documentation, personnel training and training equipment, US Government and contractor engineering and logistics support services, and other related elements of logistics support.
- **March 10, 2005** – On 10 March 2005, the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Iraq of six T-56A-7 engines and logistics support for C-130 aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$132 million. The Government of Iraq has requested a possible sale of six T-56A-7 engines and logistics support for C-130 aircraft to include supply and maintenance support, flares, software upgrades, pyrotechnics, spare and repair parts, support equipment, publications and documentation, personnel training and training equipment, fuel and fueling services, US Government and contractor engineering and logistics support services, and other related elements of logistics support.

Kuwait

- **June 30, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Kuwait for facilities and infrastructure construction support services and associated equipment, parts, training and logistical support for an estimated cost of \$1.7 billion. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on Jun 30, 2014.

The Government of Kuwait has requested a possible sale for the design, construction, procurement of medical, non-medical, and information technology equipment, and operation and maintenance for the Kuwait Armed Forces Hospital. The U.S. Army Corps of Engineers (USACE) will provide project management, engineering, planning, design, acquisition, contract administration, construction management, and other technical services for construction of facilities and infrastructure for the hospital. The overall project will also include a new central utilities plant, site utilities, site improvements, covered parking, parking access and roads, and an enclosed pedestrian circulation connector for the new complex to the existing Armed Forces Hospital. The estimated cost is \$1.7 billion.
- **Dec. 5, 2013** - The Defense Security Cooperation Agency notified Congress on Dec 4 of a possible Foreign Military Sale to the Government of Kuwait for F/A-18 C/D follow-on contractor engineering technical services and associated equipment, parts, and logistical support for an estimated cost of \$150 million.

The Government of Kuwait requests the continuation of contractor engineering technical services, contractor maintenance services, Hush House support services, and Liaison Office Support for the Kuwait's Air Force's F/A-18 C/D program, which will include spare and repair parts, publications and

technical documentation, U.S. Government and contractor technical support services and other related elements of logistics support. The estimated cost is \$150 million.

- **June 10, 2013** - The Defense Security Cooperation Agency notified Congress June 7 of a possible Foreign Military Sale to Kuwait of technical and logistics support for F/A-18 C/D aircraft for an estimated cost of \$200 million.

The Government of Kuwait has requested a possible sale of continuation of logistics support, contractor maintenance, and technical services in support of the F/A-18 C/D aircraft to include avionics software upgrade, engine component improvement, ground support equipment, spare and repair parts, publications and technical documentation, engineering change proposals, U.S. Government and contractor technical and logistics support services and other related elements of logistical support. The estimated cost is \$200 million.

- **Apr. 17, 2013** – The Defense Security Cooperation Agency notified Congress April 16 of a possible Foreign Military Sale to Kuwait for 1 C-17 GLOBEMASTER III aircraft and associated equipment, parts, training and logistical support for an estimated cost of \$371 million.

The Government of Kuwait has requested a possible sale of 1 C-17 GLOBEMASTER III aircraft, 4 Turbofan F117-PW-100 Engines, 1 AN/AAR-47 Missile Approach Warning System, 1 AN/ALE-47 Countermeasure Dispenser Set (CMDS), secure radios, precision navigation equipment, spare and repair parts, support and test equipment, publications and technical documentation, tactics manuals, personnel training and training equipment, U.S. Government and contractor engineering, aircraft ferry support, aircraft fuel, and technical and logistics support services; and related elements of initial and follow-on logistical and program support.

- **Jul. 20, 2012** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of Kuwait for 60 PATRIOT Advanced Capability (PAC-3) Missiles and associated equipment, parts, training and logistical support for an estimated cost of \$4.2 billion. The Government of Kuwait has requested a possible sale of 60 PATRIOT Advanced Capability (PAC-3) Missiles, 4 PATRIOT radars, 4 PATRIOT Engagement Control Stations, 20 PATRIOT Launching Stations, 2 Information Coordination Centrals, 10 Electric Power Plants, communication and power equipment, personnel training and training equipment, spare and repair parts, facility design and construction, publications and technical documentation, US Government and contractor technical and logistics personnel services and other related elements of program and logistics support.

- **Jul. 12, 2012** – The Defense Security Cooperation Agency notified Congress July 10 of a possible Foreign Military Sale to the Government of Kuwait for continuing logistics support, training, depot-level repair services and associated equipment, parts and logistical support for an estimated cost of \$200 million.

The Government of Kuwait has requested a possible sale for continuing logistics support, training, depot-level repair services, and technical services in support of AH-64D APACHE helicopters, publications and technical documentation, US Government and contractor technical and logistics personnel services and other related elements of program and logistics support.

- **Jun. 28, 2012** – The Defense Security Cooperation Agency notified Congress June 26 of a possible Foreign Military Sale to the Government Kuwait of 43 Joint Helmet Mounted Cueing System Cockpit Units and associated equipment and support. The estimated cost is \$51 million.

The Government of Kuwait has requested a possible sale of 43 Joint Helmet Mounted Cueing System Cockpit Units, Single Seat Electronic Units, Helmet Display Units, spare and repair parts, support equipment, tool and test equipment, personnel training and training equipment, publications and technical data, US Government and contractor technical and logistics personnel services and other related elements of program and logistics support.

- **Jun. 28, 2012** – The Defense Security Cooperation Agency notified Congress June 26 of a possible Foreign Military Sale to the Government Kuwait of 300 AGM-114R3 HELLFIRE II missiles and associated equipment and support. The estimated cost is \$49 million.

The Government of Kuwait has requested a possible sale 300 AGM-114R3 HELLFIRE II missiles, containers, spare and repair parts, support and test equipment, repair and return support, training equipment and personnel training, US Government and contractor logistics, Quality Assurance Team support services, engineering and technical support, and other related elements of program support.

- **Feb. 24, 2012** – The Defense Security Cooperation Agency notified Congress Feb. 24 of a possible Foreign Military Sale to Kuwait of 80 AIM-9X-2 SIDEWINDER Block II All-Up-Round Missiles and associated equipment, parts, training and logistical support for an estimated cost of \$105 million.
- **Nov. 8, 2011** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of Kuwait for continuing logistics support, contractor maintenance, and technical services in support of the F/A-18 aircraft and associated equipment, parts, training and logistical support for an estimated cost of \$100 million.
- **Sept. 24, 2010** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Kuwait of one Boeing C-17 GLOBEMASTER III aircraft and associated parts, equipment and logistics support for a complete package worth approximately \$693 million. The Government of Kuwait has requested a possible sale of one Boeing C-17 GLOBEMASTER III aircraft, four Turbofan F117-PW-100 engines installed on the aircraft, one spare Turbofan F117-PW- 100 engine, one AN/ALE-47 Counter-Measures Dispensing System (CMD5), one AN/AAR-47 Missile Warning System, aircraft ferry services, refueling support, precision navigation equipment, spare and repairs parts, support, personnel training and training equipment, publications and technical data, US Government and contractor engineering, technical, and logistics support services, and other related elements of logistics support. The estimated cost is \$693 million.
- **Aug. 11, 2010** – The Defense Security Cooperation Agency notified Congress Aug. 10 of a possible Foreign Military Sale to Kuwait of 209 MIM-104E PATRIOT Guidance Enhanced Missile-T (GEM-T) Missiles for an estimated cost of \$900 million.
- **Nov. 23, 2009** – The Defense Security Cooperation Agency notified Congress Nov. 20 of a possible Foreign Military Sale to Kuwait for the design and construction of facilities and infrastructure for Al Mubarak Air Base and the Kuwait Air Force Headquarters Complex for an estimated cost of \$700 million.
- **Dec. 18, 2009** – The Defense Security Cooperation Agency notified Congress Dec. 17 of a possible Foreign Military Sale to Kuwait of construction support services to provide administrative, operational, storage, support facilities and utility infrastructure for the 26th Al Soor Brigade facilities for a complete package worth approximately \$360 million.
- **Nov. 16, 2009** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the government of Kuwait of four-year PATRIOT Air Defense System sustainment and repair/return programs and associated spare parts, equipment and logistical support worth approximately \$410 million.
- **July 20, 2009** – On July 15, the Defense Security Cooperation Agency notified Congress of a possible foreign military sale to the Government of Kuwait of eight KC-130J Multi-mission Cargo Refueling Aircraft and associated equipment, parts and support for an estimated cost of \$1.8 billion. The Government of Kuwait has requested a possible sale of 8 KC-130J Multi-mission Cargo Refueling Aircraft with 32 AE-2100D3 Turbo propeller engines, 8 spare AE-2100D3 Turbo propeller engines, 4 AN/ALR-56M Radar Warning Receivers, 4 AN/AAR-47 Missile Approach Warning Systems, 4 AN/ALE-47 Countermeasures Dispenser Sets, 20 AN/ARC-210 (RT-1851A(U)) Very High Frequency/Ultra High Frequency HAVEQUICK/Single Channel Ground and Airborne Radio Systems, spare and repair parts, support equipment, publications and technical documentation, warranties, aircraft ferry support, personnel training and training equipment, US Government and contractor technical and logistics personnel services and other related elements of program support.
- **July 14, 2009** – On July 13, the Defense Security Cooperation Agency (DSCA) notified Congress of a possible Foreign Military Sale to the Government

Kuwait of logistics support, contractor maintenance and technical services in support of the F/A-18 aircraft. The estimated cost is \$70 million.

- **July 14, 2009** – On July 13, the Defense Security Cooperation Agency (DSCA) notified Congress of a possible Foreign Military Sale to the Government of Kuwait of four M2 .50 cal HB Browning machine guns, two Swiftship Model 176DSV0702, 54X9.2X1.8 meter Nautilus Class Diver Support Vessels outfitted with a MLG 27mm gun system, and other related services and equipment. The estimated cost is \$81 million.
- **July 10, 2009** – On July 8, the Defense Security Cooperation Agency notified Congress of a possible foreign military sale to the Government of Kuwait to upgrade the Desert Warrior Fire Control System with Gunner's Integrated TOW System (GITS II) worth an estimated \$314 million. The Government of Kuwait has requested a possible sale to upgrade the Desert Warrior Fire Control System with Gunner's Integrated TOW System (GITS II) hardware. The proposed sale includes installation of the Improved Thermal Sight System 2nd Generation Forward-Looking Infrared Radar, spare and repair parts, support equipment, publications and technical documentation, test equipment, personnel training and training equipment, US Government and contractor technical and logistics personnel services and other related elements of program support.
- **July 7, 2009** – On July 6, the Defense Security Cooperation Agency notified Congress of a possible foreign military sale to the Government of Kuwait of continuing logistics support, contractor maintenance, and technical services in support of F/A-18 aircraft worth an estimated \$95 million.
- **Sept. 9, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of AIM-120C-7 AMRAAM Missiles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$178 million. The Government of Kuwait has requested a possible sale of 120 AIM-120C-7 Advanced Medium Range Air-to- Air Missiles (AMRAAM), 78 LAU-127-B/A Launchers, 78 LAU-127-C/A Launchers, Captive Air Training Missiles, missile containers, spare and repair parts, support and test equipment, publications and technical documentation, personnel training and training equipment, US Government (USG) and contractor engineering, technical and logistics support services, and other related elements of logistical and program support.
- **Jan. 3, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of TOW-2A/B Radio Frequency Missiles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$328 million. The Government of Kuwait has requested a possible sale of 2,106 TOW-2A Radio Frequency missiles, 21 Buy- to-Fly missiles, 1,404 TOW-2B Radio Frequency missiles, 14 Buy-to-Fly missiles, containers, spare and repair parts, supply support, publications and technical data, US Government and contractor technical and logistics personnel services, and other related elements of program support.
- **Dec. 4, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of PAC-3 missiles, PAC-2 missile upgrades to GEM-T, and PATRIOT ground support equipment upgrades as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$1.363 billion. The Government of Kuwait has requested a possible sale of 80 PAC-3 Missiles, PATRIOT GEM-T Modification Kits to upgrade 60 PAC-2 missiles, 6 PATRIOT System Configuration 3 Modification kits to upgrade PATRIOT Radars to REP III, communication support equipment, tools and test equipment, system integration and checkout, installation, personnel training, containers, spare and repair parts, publications and technical data, US Government and contractor technical and logistics personnel services, and other related elements of program support.
- **Nov. 9, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of technical/logistics support for F/A-18 aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$90 million.
- **Oct. 4, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait to upgrade three L-100-30 aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$250 million.

The Government of Kuwait has requested a possible sale to upgrade three L-100-30 aircraft (a commercial version of the C-130 aircraft), to include modifications, spare and repair parts, support equipment, publications and technical data, flight engineer training, communications equipment, maintenance, personnel training and training equipment, US Government and contractor engineering and logistics support services, preparation of aircraft for shipment, and other related elements of logistics support.

- **Nov. 17, 2005** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of 12 MKV-C Fast Interceptor Boats as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$175 million.

The Government of Kuwait has requested a possible sale of 12 MKV-C Fast Interceptor Boats including installed Hull, Mechanical and Electrical systems, 12 RWM GMBH MLG-27mm Mauser Lightweight Gun Systems, communications, technical ground support equipment, spare and repair parts, supply support, publications and technical data, US Government and contractor technical and logistics support services and other related elements of program support.

- **Aug. 22, 2005** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of continuing logistics support, contractor maintenance, and technical services in support of the F/A-18 aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$295 million.

The Government of Kuwait has requested a possible sale of continuing logistics support, contractor maintenance, and technical services in support of the F/A-18 aircraft to include contractor engineering technical services, contractor maintenance support, avionics software, engine component improvement and spare parts, technical ground support equipment, spare and repair parts, supply support, publications and technical data, engineering change proposals, US Government and contractor technical and logistics personnel services, and other related elements of program support.

- **Aug. 4, 2005** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of 436 TOW-2A/B Anti-armor Guided Missiles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$19 million.

The Government of Kuwait has requested a possible sale of 288 TOW-2A missiles, 4 TOW-2A Fly-to-Buy missiles, 140 TOW-2B missiles, and 4 TOW-2B Fly-to-Buy missiles. Also included are spare and repair parts, supply support, publications and technical data, engineering change proposals, US Government and contractor technical and logistics personnel services and other related elements of program support.

- **Oct. 11, 2002** – the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of an Aerostat Radar System as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$131 million.

The Government of Kuwait has requested a possible sale to replace its Aerostat radar system with the Aerostat balloon/radar system comprised of the 71M Low Altitude Surveillance System (LASS) Balloon with a non-MDE version of the AN/TPS-63 radar. Also included in the proposed sale are: Interim AN/TPS-63 radar components, spare LASS balloon, AN/TPS-63 radar component (Tether Up), miscellaneous commercial vehicles, spare and repair parts, supply support, publications and technical documentation, personnel training and training equipment, US Government and contractor technical assistance and other related elements of logistics support.

- **June 4, 2002** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of AIM 120C AMRAAM air-to-air missiles and associated equipment and services. The total value, if all options are exercised, could be as high as \$58 Million.

The Government of Kuwait has requested a possible sale of 80 AIM-120C Advanced Medium Range Air-to-Air Missiles (AMRAAM), 60 AIM-120C Launch Rails, two Captive Air Training Missiles, flight test instrumentation, software updates to support AMRAAM operational and training devices, missile containers, aircraft modification and integration, spare and repair parts, support and test equipment, publications and technical documentation, maintenance and pilot training, contractor support, other related elements of logistical and program support.

- **April 17, 2002** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Kuwait of AH-64D Apache Helicopters and associated equipment and services. The total value, if all options are exercised, could be as high as \$2.1 Billion.

The Government of Kuwait has requested a possible sale of 16 AH-64D Apache attack helicopters, four (4) spare T-700-GE -701C engines with gas generator first state 401C turbine blades, four (4) spare M299 HELLFIRE launchers, 96 Longbow HELLFIRE AGM-114L3 and 288 HELLFIRE AGM-114K3 missiles, 16 dummy missiles, 16 Modernized Targeting Acquisition and Designation Systems, eight (8) AN/APG-78 Longbow Fire Control Radar, 30mm cartridges, 2.75-inch rockets, ammunition, spare and repair parts, communications equipment, support equipment, simulators, quality assurance teams, chemical masks, tools and test sets, chaff dispensers, Integrated Helmet and Display Sight Systems, electronic equipment, test facility spares, publications, Quality Assurance Teams, personnel training and training equipment, US Government and contractor technical support and other related elements of logistics support.

Oman

- **May 15, 2013** – The Defense Security Cooperation Agency notified Congress May 14 of a possible Foreign Military Sale to Oman for two AN/AAQ-24(V) Large Aircraft Infrared Countermeasures (LAIRCM) Systems and associated equipment, parts, training and logistical support for an estimated cost of \$100 million.

The Government of Oman has requested a possible sale of 2 AN/AAQ-24(V) Large Aircraft Infrared Countermeasures (LAIRCM) Systems (1 B747-400 and 1 B747-800), 11 Small Laser Transmitter Assemblies, 3 System Processors/Repeaters, 14 AN/AAR-54 Missile Warning Sensors, User Data Module Cards and Control Interface Units, Multi-role Electro-Optic End-to-End test set, Card Memory, Smart Cards, and Support Equipment, Consumables, and Flight Test/Certification. Also included are tools and test equipment, support equipment, spare and repair parts, publications and technical documents, personnel training and training equipment, U.S. Government and contractor technical assistance, and other related elements of logistics and program support. The estimated cost is \$100 million.

- **Dec. 12, 2012** – The Defense Security Cooperation Agency notified Congress Dec. 11 of a possible Foreign Military Sale to Oman for a number of F-16 A/C weapon systems, as well as associated equipment, parts, training and logistical support for an estimated cost of \$117 million.

The Sultanate of Oman has requested a possible sale of 27 AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM), 162 GBU-12 PAVEWAY II 500-lb Laser Guided Bombs, 162 FMU-152 bomb fuzes, 150 BLU-111B/B 500-lb Conical Fin General Purpose Bombs (Freefall Tail), 60 BLU-111B/B 500-lb Retarded Fin General Purpose Bombs (Ballute Tail), and 32 CBU-105 Wind Corrected Munitions Dispensers (WCMD). Also included are 20mm projectiles, Aerial Gunnery Target System (AGTS-36), training munitions, flares, chaff, containers, impulse cartridges, weapon support equipment and components, repair and return, spare and repair parts, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor representative logistics and technical support services, site survey, and other related elements of logistics support.

- **Nov. 19, 2012** – The Defense Security Cooperation Agency notified Congress November 15 of a possible Foreign Military Sale to the Government of Oman for 400 Javelin Guided Missiles and associated equipment, parts, training and logistical support for an estimated cost of \$96 million.

The Sultanate of Oman has requested a possible sale of 400 Javelin Guided Missiles, Javelin Weapon Effects Simulator (JAVWES), containers, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, U.S. Government and contractor representative logistics and technical support services, and other related elements of logistics and program support.

- **Jun. 13, 2012** – The Defense Security Cooperation Agency notified Congress on June 12 of a possible Foreign Military Sale to the Government of Oman for 55 AIM-9X Block II SIDEWINDER All-Up Round Missiles, 36 AIM-9X Block II SIDEWINDER Captive Air Training Missiles, 6 AIM-9X Block

II Tactical Guidance Units, 4 AIM-9X Block II Captive Air Training Missile Guidance Units, 1 Dummy Air Training Missile, and other related equipment. The estimated cost is \$86 million.

The Government of Oman has requested a possible sale of 55 AIM-9X Block II SIDEWINDER All-Up-Round Missiles, 36 AIM-9X Block II SIDEWINDER Captive Air Training Missiles, 6 AIM-9X Block II Tactical Guidance Units, 4 AIM-9X Block II Captive Air Training Missile Guidance Units, 1 Dummy Air Training Missile, containers, weapon support equipment, spare and repair parts, publications and technical documentation, personnel training and training equipment, US Government and contractor technical support services, and other related elements of logistics support.

- **Oct. 18, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Oman for AVENGER Fire Units, STINGER Missiles and Advanced Medium Range Air to Air Missiles, as well associated equipment, parts, training and logistical support for an estimated cost of \$1.248 billion.

The Government of the Oman has requested a possible sale of 18 AVENGER Fire Units, 266 STINGER- Reprogrammable Micro-Processor (RMP) Block 1 Anti-Aircraft missiles, 6 STINGER Block 1 Production Verification Flight Test missiles, 24 Captive Flight Trainers, 18 AN/VRC-92E exportable Single Channel Ground and Airborne Radio Systems (SINCGARS), 20 S250 Shelters, 20 High Mobility Multi-Purpose Wheeled Vehicles (HMMWVs), 1 lot AN/MPQ-64F1 SENTINEL Radar software, 290 AIM-120C-7 Surface- Launched Advanced Medium Range Air-to-Air Missiles, 6 Guidance Sections, Surface-Launched Advanced Medium Range Air-to-Air Missile (SL-AMRAAM) software to support Oman's Ground Based Air defense System, training missiles, missile components, warranties, containers, weapon support equipment, repair and return, spare and repair parts, publications and technical documentation, personnel training and training equipment, US Government and contractor technical support services, and other related elements of logistics support.

- **Nov. 18, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Oman of logistics support and training for one C-130J-30 aircraft being procured through a Direct Commercial Sale and associated equipment, parts and logistical support for a complete package worth approximately \$76 million.

The Government of Oman has requested a possible sale of logistics support and training for one C- 130J-30 aircraft being procured through a Direct Commercial Sale, 1 AN/AAQ-24(V) Large Aircraft Infrared Countermeasures System, 7 AN/AAR-54 Missile Approach Warning Systems, 2 AN/ALR-56M Radar Warning Receivers, 2 AN/ALE-47 Countermeasure Dispenser Sets, communication and navigation equipment, software support, repair and return, installation, aircraft ferry and refueling support, spare and repair parts, support and test equipment, publications and technical documentation, personnel training and training equipment, US Government and contractor engineering, technical, and logistics support services, and related elements of logistical and program support.

- **Aug. 3, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Oman of 18 F-16 Block 50/52 aircraft and associated equipment, parts, training and logistical support for an estimated cost of \$3.5 Billion.

The Government of Oman has requested a possible sale of 18 F-16 Block 50/52 aircraft, 20 F100-PW- 229 or F110-GE-129 Increased Performance Engines, 36 LAU- 129/A Common Rail Launchers, 24 APG-68(V)9 radar sets, 20 M61 20mm Vulcan Cannons, 22 AN/ARC-238 Single Channel Ground and Airborne Radio Systems with HAVE QUICK I/II, 40 Joint Helmet Mounted Cueing Systems, 36 LAU-117 MAVERICK Launchers, 22 ALQ-211 Advanced Integrated Defensive Electronic Warfare Suites (AIDEWS) or Advanced Countermeasures Electronic Systems (ACES) (ACES includes the ALQ-187 Electronic Warfare System and AN/ALR-93 Radar Warning Receiver), Advanced Identification Friend or Foe (AIFF) Systems with Mode IV, 34 Global Positioning Systems (GPS) and Embedded-GPS/Inertial Navigation Systems (INS), 18 AN/AAQ-33 SNIPER Targeting Pods or similarly capable system, 4 DB-110 Reconnaissance Pods (RECCE), 22 AN/ALE-47 Countermeasures Dispensing Systems (CMDS), and 35 ALE-50 Towed Decoys. Also included is the upgrade of the existing 12 F-16 Block 50/52 aircraft, site survey, support equipment, tanker support, ferry services, Cartridge

Actuated Devices/Propellant Actuated Devices (CAD/PAD), conformal fuel tanks, construction, modification kits, repair and return, modification kits, spares and repair parts, construction, publications and technical documentation, personnel training and training equipment, US Government and contractor technical, engineering, and logistics support services, ground based flight simulator, and other related elements of logistics support.

- **July 2, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Oman of logistics support and training for two C-130J-30 aircraft, including associated equipment and parts for an estimated cost of \$54 million.

The Government of Oman has requested a possible sale of logistics support and training for two (2) C-130J-30 aircraft being procured through a Direct Commercial Sale, 2 AN/AAR-47 Missile Approach Warning Systems, 2 AN/ALE-47 Countermeasure Dispenser Sets, 2 AN/ALR-56M Radar Warning Receivers, communication equipment, software support, repair and return, installation, aircraft ferry and refueling support, spare and repair parts, support and test equipment, publications and technical documentation, personnel training and training equipment, US Government and contractor engineering, technical, and logistics support services, and related elements of logistical and program support.

- **July 28, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Oman of JAVELIN anti-tank missile systems as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$48 million.

The Government of Oman has requested a possible sale of 250 JAVELIN missile rounds and 30 JAVELIN command launch units, simulators, trainers, support equipment, spare and repair parts, publications and technical data, personnel training and equipment, US Government and contractor engineering and logistics personnel services, a Quality Assurance Team, and other related elements of logistics support.

- **July 18, 2002** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Oman of podded reconnaissance systems as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$49 million.

The Government of Oman has requested a possible sale of two Goodrich DB-110 or two BAE Systems F-9120 Podded reconnaissance systems, one Goodrich or one BAE Systems Exploitation Ground Station, support equipment, spares and repair parts, publications and technical documentation, personnel training and training equipment, US Government and contractor technical and logistics personnel services, and other related elements of logistics support.

- **April 10, 2002** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Oman of various munitions for F-16 Fighter Aircraft and associated equipment and services. The total value, if all options are exercised, could be as high as \$42 Million.

The Government of Oman has requested a possible sale of 50,000 20mm high explosive projectiles, 50,000 20mm training projectiles, 300 MK-82 500 lb. general purpose bombs, 200 MK-83 1,000 lb. general purpose bombs, 100 enhanced GBU-12 Paveway II 500 lb. laser guided bomb kits, 50 GBU-31(v)3/B Joint Direct Attack Munitions, 50 CBU-97/105 sensor fuzed weapon, 20,000 RR-170 self-protection chaff, 20,000 MJU-7B self-protection flares, support equipment, software development/integration, modification kits, spares and repair parts, flight test instrumentation, publications and technical documentation, personnel training and training equipment, US Government and contractor technical and logistics personnel services, and other related elements of logistical and program support.

Qatar

- **July 29, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Qatar of one (1) A/N FPS-132 Block 5 Early Warning Radar (EWR) and associated equipment, parts, training and logistical support for an estimated cost of \$1.1 billion.

The Government of Qatar has requested a possible sale of one (1) A/N FPS-132 Block 5 Early Warning Radar (EWR) to include Prime Mission Equipment package, technical and support facilities, communication equipment, encryption devices, spare and repair parts, support and test equipment, publications

and technical documentation, publications and technical documentation, personnel training and training equipment, U.S Government and contractor engineering, technical and logistics support services; and related elements of logistics and program support. The estimated cost is \$1.1B.

- **June 27, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Qatar of 2 F117-PW-100 C-17 Globemaster III spare engines, and associated equipment, parts, training and logistical support for an estimated cost of \$35 million.

The Government of Qatar has requested a possible sale of 2 F117-PW-100 C-17 Globemaster III spare engines, support equipment, publications and technical data, personnel training and training equipment, site surveys, U.S. Government and contractor engineering, technical, and logistics support services, design and construction, and other related elements of logistics support. The estimated cost is \$35 million.

- **May 15, 2013** - The Defense Security Cooperation Agency notified Congress May 14 of a possible Foreign Military Sale to Qatar for two AN/AAQ-24(V) Large Aircraft Infrared Countermeasures (LAIRCM) Systems and associated equipment, parts, training and logistical support for an estimated cost of \$110 million.

The Government of Qatar has requested a possible sale of 2 AN/AAQ-24(V) Large Aircraft Infrared Countermeasures (LAIRCM) Systems for B747-800 Aircraft, 11 Small Laser Transmitter Assemblies, 3 System Processors/Repeaters, 14 AN/AAR-54 Missile Warning Sensors, User Data Module Cards and Control Interface Units, Multi-role Electro-Optic End-to-End test set, Card Memory, Smart Cards, and Support Equipment, Consumables, and Flight Test/Certification. Also included are tools and test equipment, support equipment, spare and repair parts, publications and technical documents, personnel training and training equipment, U.S. Government and contractor technical assistance, and other related elements of logistics and program support. The estimated cost is \$110 million.

- **Mar. 28, 2013** – The Defense Security Cooperation Agency notified Congress March 26 of a possible Foreign Military Sale to Qatar for 500 Javelin Guided Missiles and associated equipment, parts, training and logistical support for an estimated cost of \$122 million. The Government of Qatar has requested a possible sale of 500 Javelin Guided Missiles, 50 Command Launch Units (CLU), Battery Coolant Units, Enhanced Performance Basic Skills Trainer (EPBST), Missile Simulation Rounds (MSR), tripods, Javelin Weapon Effects Simulator (JAVWES), spare and repair parts, rechargeable and non-rechargeable batteries, battery chargers and dischargers, support equipment, publications and technical data, personnel training and training equipment, U.S. Government and contractor representative engineering, technical and logistics support services, and other related logistics support.

- **Dec. 24, 2012** – The Defense Security Cooperation Agency notified Congress Dec. 21 of a possible Foreign Military Sale to the Government of Qatar for rocket and missile systems and associated equipment, parts, training and logistical support for an estimated cost of \$406 million.

The Government of Qatar has requested a possible sale of 7 M142 High Mobility Artillery Rocket System (HIMARS) Launchers with the Universal Fire Control System (UFCS); 60 M57 Army Tactical Missile System (ATACMS) Block 1A T2K Unitary Rockets (60 pods, 1 rocket per pod); 360 M31A1 Guided Multiple Launch Rocket System (GMLRS) Unitary Rockets (60 pods, 6 rockets per pod); 180 M28A2 Reduced Range Practice Rockets (30 pods, 6 rockets per pod); 7 M68A2 Trainers, 1 Advanced Field Artillery Tactical Data System (AFATDS); 2 M1151A1 High Mobility Multipurpose Wheeled Vehicles (HMMWV); and 2 M1152A2 HMMWVs. Also included are simulators, generators, transportation, wheeled vehicles, communications equipment, spare and repair parts, support equipment, tools and test equipment, technical data and publications, personnel training and training equipment, U.S. government and contractor engineering, technical and logistics support services, and other related elements of logistics support.

- **Nov. 7, 2012** – The Defense Security Cooperation Agency notified Congress Nov. 6 of a possible Foreign Military Sale to the Government of Qatar for the sale of 11 PATRIOT Configuration-3 Modernized Fire Units and associated equipment, parts, training and logistical support for an estimated cost of \$9.9 billion.

The Government of Qatar has requested a possible sale of 11 PATRIOT Configuration-3 Modernized Fire Units, 11 AN/MPQ-65 Radar Sets, 11 AN/MSQ-132 Engagement Control Systems, 30 Antenna Mast Groups, 44 M902 Launching Stations, 246 PATRIOT MIM-104E Guidance Enhanced Missile-TBM

(GEM-T) with canisters, 2 PATRIOT MIM-104E GEM-T Test Missiles, 768 PATRIOT Advanced Capability 3 (PAC-3) Missiles with canisters, 10 PAC-3 Test Missiles with canisters, 11 Electrical Power Plants (EPPII), 8 Multifunctional Information Distribution Systems/Low Volume Terminals (MIDS/LVTs), communications equipment, tools and test equipment, support equipment, publications and technical documentation, personnel training and training equipment, spare and repair parts, facility design, U.S. Government and contractor technical, engineering, and logistics support services, and other related elements of logistics and program support.

- **Nov. 5, 2012** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of the United Arab Emirates (UAE) for 48 Terminal High Altitude Area Defense (THAAD) missiles and associated equipment, parts, training and logistical support for an estimated cost of \$1.135 billion. The Government of the United Arab Emirates (UAE) has requested a possible sale of 48 Terminal High Altitude Area Defense (THAAD) missiles, 9 THAAD launchers; test components, repair and return, support equipment, spare and repair parts, personnel training and training equipment, publications and technical data, U.S. Government and contractor technical assistance, and other related logistics support.

- **Nov. 5, 2012** – The Defense Security Cooperation Agency notified Congress November 2 of a possible Foreign Military Sale to the Government of Qatar for two Terminal High Altitude Area Defense (THAAD) Fire Units and associated equipment, parts, training and logistical support for an estimated cost of \$6.5 billion.

The Government of Qatar has requested a possible sale of 2 Terminal High Altitude Area Defense (THAAD) Fire Units, 12 THAAD Launchers, 150 THAAD Interceptors, 2 THAAD Fire Control and Communications, 2 AN/TPY-2 THAAD Radars, and 1 Early Warning Radar (EWR). Also included are fire unit maintenance equipment, prime movers (trucks), generators, electrical power units, trailers, communications equipment, tools, test and maintenance equipment, repair and return, system integration and checkout, spare/repair parts, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor technical and logistics personnel support services, and other related support elements. The estimated cost is \$6.5 billion.

- **July 12, 2012** – The Defense Security Cooperation Agency notified Congress July 10 of a possible Foreign Military Sale to the Government of Qatar for 700 AGM-114K3A or AGM-114R3 HELLFIRE tactical missiles and associated equipment, parts, training and logistical support for an estimated cost of \$137 million.

The Government of Qatar has requested a possible sale of 700 AGM-114K3A or AGM-114R3 HELLFIRE tactical missiles, 25 training missiles, containers, spare and repair parts, support and test equipment, publications and technical data, personnel and training equipment, US Government and contractor logistics, engineering and technical support, and other related elements of program support.

- **July 12, 2012** – The Defense Security Cooperation Agency notified Congress July 10 of a possible Foreign Military Sale to the Government of Qatar for 24 AH-64D APACHE Block III LONGBOW Attack Helicopters and associated equipment, parts, training and logistical support for an estimated cost of \$3.0 billion.

The Government of Qatar has requested a possible sale of 24 AH-64D APACHE Block III LONGBOW Attack Helicopters, 56 T700-GE-701D Engines, 27 AN/ASQ-170 Modernized Target Acquisition and Designation Sight, 27 AN/AAR-11 Modernized Pilot Night Vision Sensors, 12 AN/APG-78 Fire Control Radars (FCR) with Radar Electronics Unit (LONGBOW component), 12 AN/APR-48A Radar Frequency Interferometers, 28 AN/AAR-57(V)7 Common Missile Warning Systems, 30 AN/AVR-2B Laser Detecting Sets, 28 AN/APR-39A(V)4 Radar Signal Detecting Sets, 28 AN/ALQ-136(V)5 Radar Jammers or Equivalent, 160 Integrated Helmet and Display Sight Systems-21, 58 Embedded Global Positioning Systems with Inertial Navigation, 30 30mm Automatic Chain Guns, 8 Aircraft Ground Power Units, 52 AN/AVS-6 Night Vision Goggles, 60 M299A1 HELLFIRE Missile Launchers, 576 AGM-114R HELLFIRE II Missiles, 295 FIM-92H STINGER Reprogrammable Micro Processor (RMP) Block I Missiles, 50 STINGER Air-to-Air Launchers, 4092 2.75 in Hydra Rockets, and 90 APACHE Aviator Integrated Helmets. Also included are M206 infrared countermeasure flares, M211 and M212 Advanced Infrared Countermeasure Munitions (AIRCMM) flares, training devices, helmets, simulators, generators, transportation, wheeled

vehicles and organization equipment, spare and repair parts, support equipment, tools and test equipment, technical data and publications, personnel training and training equipment, US government and contractor engineering, technical, and logistics support services, and other related elements of logistics support.

- **June 28, 2012** – The Defense Security Cooperation Agency notified Congress June 26 of a possible Foreign Military Sale to the Government of Qatar of 10 MH-60R SEAHAWK Multi-Mission Helicopters, 12 MH-60S SEAHAWK Multi-Mission Helicopters with the Armed Helicopter Modification Kit, 48 T-700 GE 401C Engines (44 installed and 4 spare) with an option to purchase an additional 6 MH-60S SEAHAWK Multi-Mission Helicopters with the Armed Helicopter Modification Kit and 13 T-700 GE 401C Engines. The estimated cost is \$2.5 billion.

The Government of Qatar has requested a possible sale of 10 MH-60R SEAHAWK Multi-Mission Helicopters, 12 MH-60S SEAHAWK Multi-Mission Helicopters with the Armed Helicopter Modification Kit, 48 T-700 GE 401C Engines (44 installed and 4 spare) with an option to purchase an additional 6 MH-60S SEAHAWK Multi-Mission Helicopters with the Armed Helicopter Modification Kit and 13 T-700 GE 401C Engines (12 installed and 1 spare) at a later date, communication equipment, spare engine containers, support equipment, spare and repair parts, tools and test equipment, technical data and publications, personnel training and training equipment, US government and contractor engineering, technical, and logistics support services, and other related elements of logistics support.

- **June 13, 2012** – The Defense Security Cooperation Agency notified Congress on June 12 of a possible Foreign Military Sale to the Government of Qatar of 12 UH-60M BLACK HAWK Utility Helicopters, 26 T700-GE-701D Engines (24 installed and 2 spares), 15 AN/AAR-57 V(7) Common Missile Warning Systems, 15 AN/AVR-2B Laser Detecting Sets, 15 AN/APR-39A(V)4 Radar Signal Detecting Sets, 26 M240H Machine Guns, and 26 AN/AVS-6 Night Vision Goggles. The estimated cost is \$1.112 billion.

The Government of Qatar has requested a possible sale of 12 UH-60M BLACK HAWK Utility Helicopters, 26 T700-GE-701D Engines (24 installed and 2 spares), 15 AN/AAR-57 V(7) Common Missile Warning Systems, 15 AN/AVR-2B Laser Detecting Sets, 15 AN/APR-39A(V)4 Radar Signal Detecting Sets, 26 M240H Machine Guns, and 26 AN/AVS-6 Night Vision Goggles. Also included are M206 infrared countermeasure flares, M211 and M212 Advanced Infrared Countermeasure Munitions (AIRCM) flares, M134D-H Machine Guns, system integration and air worthiness certification, simulators, generators, transportation, wheeled vehicles and organization equipment, spare and repair parts, support equipment, tools and test equipment, technical data and publications, personnel training and training equipment, US government and contractor engineering, technical, and logistics support services, and other related elements of logistics support

- **Sept. 22, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Qatar of 6 MH-60R SEAHAWK Multi- Mission Helicopters and associated equipment, parts, training and logistical support for an estimated cost of \$750 million.

The Government of Qatar has requested a possible sale of 6 MH-60R SEAHAWK Multi-Mission Helicopters, 13 T-700 GE 401C Engines (12 installed and 1 spare), communication equipment, support equipment, spare and repair parts, tools and test equipment, technical data and publications, personnel training and training equipment, US government and contractor engineering, technical, and logistics support services, and other related elements of logistics support.

- **July 11, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Qatar of logistics support and training for two C- 17 Globemaster III aircraft and associated equipment and services. The total value, if all options are exercised, could be as high as \$400 million.
- **Sept. 3, 2003** – the Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Qatar of an AN/AAQ-24(V) NEMESIS Directional Infrared Countermeasures System as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$61 million.

The Government of Qatar has requested a possible sale of one AN/AAQ-24(V) NEMESIS Directional Infrared Countermeasures System which consists

of three small laser turret assemblies, six missile warning sensors, one system processor, one control indicator unit, two signal repeaters, included associated support equipment, spare and repair parts, publications, personnel training and training equipment, technical assistance, contractor technical and logistics personnel services and other related elements of program support.

Saudi Arabia

- **Oct. 1, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to the Kingdom of Saudi Arabia for a Patriot Air Defense System with PAC-3 enhancement and associated equipment, parts, training and logistical support for an estimated cost of \$1.750 billion. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on September 30, 2014.

The Kingdom of Saudi Arabia has requested a possible sale of 202 Patriot Advanced Capability (PAC) -3 Missiles with containers, and 1 Guidance Enhanced Missile (GEM) Flight Test Target/Patriot as a Target. Also included are 2 PAC-3 Telemetry Kits, 6 Fire Solution Computers, 36 Launcher Station Modification Kits, 2 Missile Round Trainers, 2 PAC-3 Slings, 6 Patriot Automated Logistics Systems Kits, 6 Shorting Plugs, spare and repair parts, lot validation and range support, ground support equipment, repair and return, publications and technical documentation, personnel training and training equipment, Quality Assurance Team, U.S. Government and contractor technical and logistics support services, and other related elements of logistics and program support. The estimated cost is \$1.750 billion.

- **Aug. 12, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Saudi Arabia for an AWACS modernization program and associated equipment, parts, training and logistical support for an estimated cost of \$2.0 billion. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on August 12, 2014.

The Kingdom of Saudi Arabia (KSA) has requested a sale of 5 Airborne Warning and Control System (AWACS) Block 40/45 Mission Computing Upgrade systems, 20 Next Generation Identification Friend or Foe (NG IFF) AN/UPX-40, communication equipment, provisioning, spare and repair parts, support equipment, Mission Planning System, repair and return, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor logistics and technical support services, and other related elements of logistics and program support. The Block 40/45 major defense equipment includes new mission computing hardware and software with open architecture – including computers, servers, and mission interactive displays. The NG IFF major defense equipment includes receivers, interrogators and processor hardware for earlier detection of friendly contacts. The total estimated cost is \$2.0 billion.

- **April 21, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to Saudi Arabia for support services and associated equipment, parts, training and logistical support for an estimated cost of \$80 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on April 17, 2014.

The Government of Saudi Arabia has requested a possible sale to provide three years of support services for the Facilities Security Forces- Training and Advisory Group (FSF-TAG) in Riyadh, Saudi Arabia in support of the Kingdom of Saudi Arabia Ministry of Interior (MOI). The support will include technical assistance and advisory support salaries, housing, office equipment, training, maintenance, vehicles, travel, furniture, and other related support. The estimated cost is \$80 million.

- **Dec. 5, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Kingdom of Saudi Arabia for tube-launched, optically-tracked wire-guided 2A/2B radio-frequency (RF) Missiles and associated equipment, parts, training and logistical support for an estimated cost of \$900 million.

The Kingdom of Saudi Arabia has requested a possible sale of 9,650 BGM-71 2A Tube-Launched, Optically-Tracked Wire-Guided (TOW) Radio-Frequency (RF) missiles, 4,145 BGM-71 2B Tube-Launched, Optically-Tracked Wire-Guided Aero RF missiles, 91 TOW-2A Fly-to-Buy missiles, 49

TOW-2B Fly-to-Buy missiles, containers, spare and repair parts, support equipment, tools and test equipment, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor engineering, logistics, and technical support services, and other related elements of logistics and program support. The estimated cost is \$900 million.

- **Dec. 5, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Kingdom of Saudi Arabia for tube-launched, optically-tracked wire-guided missiles and associated equipment, parts, training and logistical support for an estimated cost of \$170 million.

The Kingdom of Saudi Arabia has requested the possible sale of 750 BGM-71 2B Tube-launched, Optically-tracked Wire-guided (TOW) missiles, 7 Fly-to-Buy TOW2B missiles, 1,000 BGM-71 2A TOW missiles, 7 Fly-to-Buy TOW2A missiles, containers, spare and repair parts, support equipment, tools and test equipment, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor engineering, logistics, and technical support services, and other related elements of logistics and program support. The estimated cost is \$170 million.

- **Nov. 18, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Saudi Arabia of C4I system upgrades and maintenance and associated equipment, parts, training and logistical support for an estimated cost of \$1.1 billion.

The Government of Saudi Arabia has requested a possible sale of C4I system upgrades and maintenance including: 109 Link-16 Multifunction Information Distribution System Low Volume Terminals (MIDS-LVT), Global Command and Control Systems – Joint (GCCS-J), Identification Friend or Foe (IFF), Commercial Satellite Communications (SATCOM), Combined Enterprise Regional Information Exchange System (CENTRIXS) and follow-on systems, Commercial High Frequency (HF) Radios, Commercial Ultra High Frequency/ Very High Frequency (UHF/VHF) Radios, HF Voice and Data, HF Sub-Net Relay (SNR), Commercial HF Internet Protocol (IP)/SNR, Global Positioning System (GPS), Air Defense System Interrogator (ADSI), communications support equipment, information technology upgrades, spare and repair parts, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor engineering and technical support, and other elements of program support. The estimated cost is \$1.1 billion.

- **Oct. 15, 2013** - The Defense Security Cooperation Agency notified Congress on Oct. 11 of a possible Foreign Military Sale to Saudi Arabia of various munitions and associated equipment, parts, training and logistical support for an estimated cost of \$6.8 billion.

The Government of Saudi Arabia has requested a possible sale of 650 AGM-84H Standoff Land Attack Missiles-Expanded Response (SLAM-ER), 973 AGM-154C Joint Stand Off Weapons (JSOW), 400 AGM-84L Harpoon Block II missiles, 1000 GBU-39/B Small Diameter Bombs (SDB), 40 CATM-84H Captive Air Training Missiles (CATM), 20 ATM-84H SLAM-ER Telemetry Missiles, 4 Dummy Air Training Missiles, 60 AWW-13 Data Link pods, 10 JSOW CATMs, 40 Harpoon CATMs, 20 ATM-84L Harpoon Exercise Missiles, 36 SDB Captive Flight and Load Build trainers, containers, mission planning, integration support and testing, munitions storage security and training, weapon operational flight program software development, transportation, tools and test equipment, support equipment, spare and repair parts, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor engineering and logistics support services, and other related elements of logistics support. The estimated total cost is \$ 6.8 billion.

- **Oct. 15, 2013** - The Defense Security Cooperation Agency notified Congress on Oct. 11 of a possible Foreign Military Sale to Saudi Arabia of support services for an estimated cost of \$90 million.

The Government of Saudi Arabia has requested a possible sale of support services to its Ministry of Defense for three years. The U.S. Military Training Mission (USMTM) in Riyadh, Saudi Arabia is the Security Cooperation Organization (SCO) responsible for identifying, planning, and executing U.S. security cooperation training and advisory support for the Kingdom of Saudi Arabia's Ministry of Defense. The estimated cost is \$90 million.

- **Aug. 23, 2013** - The Defense Security Cooperation Agency notified Congress Aug 22 of a possible Foreign Military Sale to Saudi Arabia of follow-on support and services for Royal Saudi Air Force (RSAF) aircraft and associated equipment, parts, training and logistical support for an estimated cost of \$1.2 billion.

The Government of Saudi Arabia has requested a possible sale of follow-on support and services for Royal Saudi Air Force (RSAF) aircraft, engines and weapons, to include contractor technical services, logistics support, maintenance support, spares, equipment repair, expendables, support and test equipment, communication support, precision measuring equipment, personnel training and training equipment, technical support, exercises, deployments and other related elements of program support services, U.S. Government and contractor technical and logistics support services, and other related elements of logistical and program support. The estimated cost is \$1.2 billion.

- **July 10, 2013** - The Defense Security Cooperation Agency notified Congress July 9 of a possible Foreign Military Sale to Saudi Arabia of 30 Mark V patrol boats and associated equipment, parts, training and logistical support for an estimated cost of \$1.2 billion.

The Kingdom of Saudi Arabia has requested a possible sale of 30 Mark V patrol boats, 32 27mm guns, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, U.S. Government and contractor engineering, technical, and logistics support services, and other related elements of logistics support. The estimated cost is \$1.2 billion.

- **June 20, 2013** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to Saudi Arabia for the continuation of the United States-supported effort to modernize the Saudi Arabian National Guard (SANG), and associated equipment, parts, training and logistical support for an estimated cost of \$4.0 billion.

The Government of Saudi Arabia has requested a possible sale for the continuation of the United States-supported effort to modernize the Saudi Arabian National Guard (SANG), consisting of the following defense services: OPM-SANG operation, support and equipment, and Modernization Program support, personnel training and training equipment, transportation, repair and return, spare and repair parts, automation initiatives, SANG Health Affairs Program support, construction, communication and support equipment, publications and technical documentation, U.S. Government and contractor technical, engineering, and logistics support services, and other related elements of program support. The estimated cost is \$4.0 billion.

- **Nov. 28, 2012** – The Defense Security Cooperation Agency notified Congress November 26 of a possible Foreign Military Sale to the Kingdom of Saudi Arabia for technical services to recertify the functional shelf life of up to 300 PATRIOT Advanced Capability-2 (PAC-2) (MIM-104D) Guidance Enhanced Missiles and associated equipment, parts, training and logistical support for an estimated cost of \$130 million.

The Government of Saudi Arabia has requested a possible sale of technical services to recertify the functional shelf life of up to 300 PATRIOT Advanced Capability-2 (PAC-2) (MIM-104D) Guidance Enhanced Missiles (GEM), modernization of existing equipment, spare and repair parts, support equipment, U.S. Government and contractor representatives logistics, engineering, and technical support services, and other related elements of logistics and program support.

- **Nov. 26, 2012** – The Defense Security Cooperation Agency notified Congress Nov 26 of a possible Foreign Military Sale to the Kingdom of Saudi Arabia for a Foreign Military Sales Order II to provide funds for blanket order requisitions under the Cooperative Logistics Supply Support Arrangement for an estimated cost of \$300 million.

The Government of the Kingdom of Saudi Arabia has requested a possible sale of a Foreign Military Sales Order II to provide funds for blanket order requisitions under the Cooperative Logistics Supply Support Arrangement, for spare parts in support of M1A2 Abrams Tanks, M2 Bradley Fighting Vehicles, High Mobility Multipurpose Wheeled Vehicles, equipment, support vehicles and other related logistics support. The estimated cost is \$300 million.

- **Nov. 9, 2012** – The Defense Security Cooperation Agency notified Congress Nov. 8 of a possible Foreign Military Sale to the Kingdom of Saudi Arabia for 20 C-130J-30 Aircraft and 5 KC-130J Air Refueling Aircraft, as well as associated equipment, parts, training and logistical support. The Kingdom of Saudi Arabia (KSA) also requested 120 Rolls Royce AE2100D3 Engines (100 installed and 20 spares), 25 Link-16 Multifunctional Information Distribution Systems, support equipment, spare and repair parts, personnel training and training equipment, publications and technical data, U.S. Government and contractor technical assistance, and other related logistics support. The total estimated cost is \$6.7 billion.
- **Aug. 15, 2012** – The Defense Security Cooperation Agency notified Congress August 9 of a possible Foreign Military Sale to the Government of the Kingdom of Saudi Arabia for ten Link-16 capable data link systems and Intelligence, Surveillance, and Reconnaissance (ISR) suites and associated equipment, parts, training and logistical support at an estimated cost of \$257 million

The Government of the Kingdom of Saudi Arabia (KSA) has requested a possible sale of ten Link-16 capable data link systems and Intelligence, Surveillance, and Reconnaissance (ISR) suites for four KSA-provided King Air 350ER aircraft and associated ground support, with an option to procure, via a Foreign Military Sales, an additional four King Air 350ER aircraft with enhanced PT6A-67A engines and spare parts equipped with the same ISR suites. The ISR suites include a Com-Nav Surveillance/Air Traffic Management cockpit, RF-7800MMP High Frequency Radios with encryption, AN/ARC-210 Very High Frequency/Ultra High Frequency/Satellite Communication Transceiver Radios with Have Quick II and encryption, a High Speed Data Link, an AN/APX-114/119 Identification Friend or Foe Transponder, Embedded Global Positioning System/Inertial Navigations Systems (GPS/INS) with a Selective Availability Anti-spoofing Module (SAASM), AN/AAR-60 Infrared Missile Warning and AN/ALE-47 Countermeasures System, Electro-Optical Sensor, SIGINT System, Synthetic Aperture Radar. Also included are Ground Stations, Training Aids, C⁴I Integration, aircraft modifications, spare and repair parts, support equipment, publications and technical data, personnel training and training equipment, aircraft ferry, US Government and contractor technical, engineering, and logistics support services, and other related elements of logistics support.

- **Aug. 6, 2012** – The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the Government of the Kingdom of Saudi Arabia for follow-on support and services for the Royal Saudi Air Force at an estimated cost of \$850 million.

The Kingdom of Saudi Arabia has requested a possible sale of follow-on support and services for the Royal Saudi Air Force aircraft, engines and weapons; publications and technical documentation; airlift and aerial refueling; support equipment; spare and repair parts; repair and return; personnel training and training equipment; US Government and contractor technical and logistics support services; and other related elements of logistical and program support.

- **Dec. 22, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Kingdom of Saudi Arabia of the continuation of services for the PATRIOT Systems Engineering Services Program (ESP) and associated equipment, parts, training and logistical support for an estimated cost of \$120 million.
- **Oct. 26, 2011** – The Defense Security Cooperation Agency notified Congress Oct. 26 of a possible Foreign Military Sale to the Kingdom of Saudi Arabia for 124 M1151A1-B1 Up-Armored High Mobility Multi-Purpose Wheeled Vehicles (HMMWVs), 99 M1152A1-B2 Up-Armored HMMWVs and associated equipment, parts, training and logistical support for an estimated cost of \$33 million.
- **Sept. 19, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Kingdom of Saudi Arabia of Howitzers, radars, ammunition and associated equipment, parts, training and logistical support for an estimated cost of \$886 million. The Government of the Kingdom of Saudi Arabia has requested a possible sale for 36 M777A2 Howitzers, 54 M119A2 Howitzers, 6 AN/TPQ-36(V) Fire Finder Radar Systems, 24 Advanced Field Artillery Tactical Data Systems (AFATDS), 17,136 rounds M107 155mm High Explosive (HE) ammunition, 2,304 rounds M549 155mm Rocket Assisted Projectiles (RAPs), 60 M1165A1 High Mobility Multipurpose Vehicles (HMMWVs), 120 M1151A1 HMMWVs, 252 M1152A1 HMMWVs, Export Single Channel Ground And Airborne Radio Systems (SINCGARS), electronic support systems, 105mm ammunition, various wheeled/tracked support vehicles, spare and repair parts, technical manuals and publications, translation services, training, USG and

contractor technical assistance, and other related elements of logistical and program support.

- **June 13, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Saudi Arabia of a variety of light armored vehicles and associated equipment, parts, training and logistical support for an estimated cost of \$350 million. The Government of Saudi Arabia has requested a possible sale of 25 LAV-25 series Light Armored Vehicles, 8 LAV Assault Guns, 8 LAV Anti-Tank Vehicles, 6 LAV Mortars, 2 LAV Recovery Vehicles, 24 LAV Command and Control Vehicles, 3 LAV Personnel Carriers, 3 LAV Ammo Carriers, 1 LAV Engineer Vehicle, 2 LAV Ambulances, AN/VRC 90E and AN/VRC-92E Export Single Channel Ground and Airborne Radio Systems (SINCGARS), battery chargers, spare and repair parts, publications and technical documentation, personnel training and training equipment, US Government and contractor engineering and technical support services, and other related elements of logistical and program support.
- **June 13, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Saudi Arabia of 404 CBU-105D/B Sensor Fuzed Weapons and associated equipment, parts, training and logistical support for an estimated cost of \$355 million. The Government of Saudi Arabia has requested a possible sale of 404 CBU-105D/B Sensor Fuzed Weapons, 28 CBU-105 Integration test assets, containers, spare and repair parts, support and test equipment, personnel training and training equipment, publications and technical documentation, US Government and contractor engineering, technical, and logistics support services, and other related elements of logistics support.
- **June 13, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Saudi Arabia of a variety of light armored vehicles and associated equipment, parts, training and logistical support for an estimated cost of \$263 million. The Government of Saudi Arabia has requested a possible sale of 23 LAV-25mm Light Armored Vehicles (LAV), 14 LAV Personnel Carriers, 4 LAV Ambulances, 3 LAV Recovery Vehicles, 9 LAV Command and Control Vehicles, 20 LAV Anti-Tank (TOW) Vehicles, 155 AN/PVS-7B Night Vision Goggles, M257 Smoke Grenade Launchers, Improved Thermal Sight Systems (ITSS) and Modified Improved TOW Acquisition Systems (MITAS), Defense Advanced Global Positioning System Receivers, AN/USQ-159 Camouflage Net Sets, M2A2 Aiming Circles, compasses, plotting boards, reeling machines, sight bore optical sets, telescopes, switchboards, driver vision enhancers, spare and repair parts, support and test equipment, personnel training and training equipment, publications and technical documentation, US Government and contractor engineering, technical and logistics support services, and other related elements of logistics support.
- **May 12, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale Order to the Kingdom of Saudi Arabia for various night and thermal vision equipment, including parts and logistical support with an estimated cost of \$330 million. The Government of the Kingdom of Saudi Arabia has requested a possible sale of 200 High-performance In-Line Sniper Sight (HISS) Thermal Weapon Sights - 1500 meter, 200 MilCAM Recon III LocatIR Long Range, Light Weight Thermal Binoculars with Geo Location, 7,000 Dual Beam Aiming Lasers (DBAL A2), 6000 AN/PVS-21 Low Profile Night Vision Goggles (LPNVG), spare and repair parts, support equipment, technical documentation and publications, translation services, training, U. S. government and contractor technical and logistics support services, and other related elements of logistical and program support.
- **Nov. 18, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Saudi Arabia of 150 JAVELIN Guided Missiles and associated equipment, parts and logistical support for a complete package worth \$71 million. The Kingdom of Saudi Arabia has requested a possible sale of 150 JAVELIN Guided Missiles, 12 Fly-to-Buy Missiles, 20 JAVELIN Command Launch Units (CLUs) with Integrated Day/Thermal Sight, containers, missile simulation rounds, Enhanced Producibility Basic Skills Trainer (EPBST), rechargeable and non-rechargeable batteries, battery dischargers, chargers, and coolant units, support equipment, spare and repair parts, publications and technical data, US Government and contractor engineering and logistics personnel services, and other related elements of logistics support.
- **Oct. 20, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Saudi Arabia of:

- 84 F-15SA Aircraft
- 170 APG-63(v)3 Active Electronically Scanned Array Radar (AESA) radar sets
- 193 F-110-GE-129 Improved Performance Engines
- 100 M61 Vulcan Cannons
- 100 Link-16 Multifunctional Information Distribution System/Low Volume Terminal (MIDS/LVT) and spares
- 193 LANTIRN Navigation Pods (3rd Generation-Tiger Eye)
- 338 Joint Helmet Mounted Cueing Systems (JHMCS)
- 462 AN/AVS-9 Night Vision Goggles (NVGS)
- 300 AIM-9X SIDEWINDER Missiles
- 25 Captive Air Training Missiles (CATM-9X)
- 25 Special Air Training Missiles (NATM-9X)
- 500 AIM-120C/7 Advanced Medium Range Air-to-Air Missiles (AMRAAM)
- 25 AIM-120 CATMs
- 1,000 Dual Mode Laser/Global Positioning System (GPS) Guided Munitions (500 lb.)
- 1,000 Dual Mode Laser/GPS Guided Munitions (2000 lb.)
- 1,100 GBU-24 PAVEWAY III Laser Guided Bombs (2000lb)
- 1,000 GBU-31B V3 Joint Direct Attack Munitions (JDAM) (2000 lb.)
- 1,300 CBU-105D/B Sensor Fuzed Weapons (SFW)/Wind Corrected Munitions Dispenser (WCMD)
- 50 CBU-105 Inert
- 1,000 MK-82 500lb General Purpose Bombs
- 6,000 MK-82 500lb Inert Training Bombs
- 2,000 MK-84 2000lb General Purpose Bombs
- 2,000 MK-84 2000lb Inert Training Bombs
- 200,000 20mm Cartridges
- 400,000 20mm Target Practice Cartridges
- 400 AGM-84 Block II HARPOON Missiles

- 600 AGM-88B HARM Missiles
- 169 Digital Electronic Warfare Systems (DEWS)
- 158 AN/AAQ-33 Sniper Targeting Systems
- 169 AN/AAS-42 Infrared Search and Track (IRST) Systems
- 10 DB-110 Reconnaissance Pods
- 462 Joint Helmet Mounted Cueing System Helmets
- 40 Remotely Operated Video Enhanced Receiver (ROVER)
- 80 Air Combat Maneuvering Instrumentation Pods

Also included are the upgrade of the existing Royal Saudi Air Force (RSAF) fleet of seventy (70) F-15S multi-role fighters to the F-15SA configuration, the provision for CONUS-based fighter training operations for a twelve (12) F-15SA contingent, construction, refurbishments, and infrastructure improvements of several support facilities for the F-15SA in-Kingdom and/or CONUS operations, RR-188 Chaff, MJU-7/10 Flares, training munitions, Cartridge Actuated Devices/Propellant Actuated Devices, communication security, site surveys, trainers, simulators, publications and technical documentation, personnel training and training equipment, US government and contractor engineering, technical, and logistical support services, and other related elements of logistical and program support. The estimated cost is \$29.432 billion.

- **Oct. 20, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Saudi Arabia of:
 - 10 AH-64D Block III APACHE Longbow Helicopters
 - 28 T700-GE-701D Engines
 - 13 Modernized Targeting Acquisition and Designation Systems/Pilot
 - Night Vision Sensors
 - 7 AN/APG-78 Fire Control Radars with Radar Electronics Unit
 - (Longbow Component)
 - 7 AN/APR-48A Radar Frequency Interferometer
 - 13 AN/APR-39 Radar Signal Detecting Sets
 - 13 AN/AVR-2B Laser Warning Sets
 - 13 AAR-57(V)3/5 Common Missile Warning Systems
 - 26 Improved Countermeasures Dispensers
 - 26 Improved Helmet Display Sight Systems
 - 14 30mm Automatic Weapons

- 6 Aircraft Ground Power Units
- 14 AN/AVS-9 Night Vision Goggles
- 640 AGM-114R HELLFIRE II Missiles
- 2,000 2.75 in 70mm Laser Guided Rockets
- 307 AN/PRQ-7 Combat Survivor Evader Locators
- BS-1 Enhanced Terminal Voice Switch
- Fixed-Base Precision Approach Radar
- Digital Airport Surveillance Radar
- DoD Advanced Automation Service
- Digital Voice Recording System

Also included are trainers, simulators, generators, training munitions, design and construction, transportation, tools and test equipment, ground and air based SATCOM and line of sight communication equipment, Identification Friend or Foe (IFF) systems, GPS/INS, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, US Government and contractor engineering, technical, and logistics support services, and other related elements of program support. The estimated cost is \$2.223 billion.

- **Oct. 20, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Saudi Arabia of:
 - 24 AH-64D Block III APACHE Longbow Helicopters
 - 58 T700-GE-701D Engines
 - 7 Modernized Targeting Acquisition and Designation Systems/Pilot
 - Night Vision Sensors
 - 10 AN/APG-78 Fire Control Radars with Radar Electronics Unit
 - (Longbow Component)
 - 10 AN/APR-48A Radar Frequency Interferometer
 - 27 AN/APR-39 Radar Signal Detecting Sets
 - 27 AN/AVR-2B Laser Warning Sets
 - 27 AAR-57(V)3/5 Common Missile Warning Systems
 - 54 Improved Countermeasures Dispensers
 - 28 30mm Automatic Weapons
 - 6 Aircraft Ground Power Units

- 48 AN/AVS-9 Night Vision Goggles
- 106 M299A1 HELLFIRE Longbow Missile Launchers
- 24 HELLFIRE Training Missiles
- 1,536 AGM-114R HELLFIRE II Missiles
- 4,000 2.75 in 70mm Laser Guided Rockets
- 307 AN/PRQ-7 Combat Survivor Evader Locators
- BS-1 Enhanced Terminal Voice Switch
- Fixed-Base Precision Approach Radar
- Digital Airport Surveillance Radar
- DoD Advanced Automation Service
- Digital Voice Recording System

Also included are trainers, simulators, generators, training munitions, design and construction, transportation, tools and test equipment, ground and air based SATCOM and line of sight communication equipment, Identification Friend or Foe (IFF) systems, GPS/INS, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, US Government and contractor engineering, technical, and logistics support services, and other related elements of program support. The estimated cost is \$3.3 billion.

- **Oct. 20, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of Saudi Arabia of:
 - 36 AH-64D Block III APACHE Helicopters
 - 72 UH-60M BLACKHAWK Helicopters
 - 36 AH-6i Light Attack Helicopters
 - 12 MD-530F Light Turbine Helicopters
 - 243 T700-GE-701D Engines
 - 40 Modernized Targeting Acquisition and Designation Systems/Pilot
 - Night Vision Sensors
 - 20 AN/APG-78 Fire Control Radars with Radar Electronics Unit
 - 20 AN/APR-48A Radar Frequency Interferometer
 - 171 AN/APR-39 Radar Signal Detecting Sets
 - 171 AN/AVR-2B Laser Warning Sets
 - 171 AAR-57(V)3/5 Common Missile Warning Systems

- 318 Improved Countermeasures Dispensers
- 40 Wescam MX-15Di (AN/AAQ-35) Sight/Targeting Sensors
- 40 GAU-19/A 12.7mm (.50 caliber) Gatling Guns
- 108 Improved Helmet Display Sight Systems
- 52 30mm Automatic Weapons
- 18 Aircraft Ground Power Units
- 168 M240H Machine Guns
- 300 AN/AVS-9 Night Vision Goggles
- 421 M310 A1 Modernized Launchers
- 158 M299 HELLFIRE Longbow Missile Launchers
- 2,592 AGM-114R HELLFIRE II Missiles
- 1,229 AN/PRQ-7 Combat Survivor Evader Locators
- 4 BS-1 Enhanced Terminal Voice Switches
- 4 Digital Airport Surveillance Radars
- 4 Fixed-Base Precision Approach Radar
- 4 DoD Advanced Automation Service
- 4 Digital Voice Recording System

Also included are trainers, simulators, generators, munitions, design and construction, transportation, wheeled vehicles and organization equipment, tools and test equipment, communication equipment, Identification Friend or Foe (IFF) systems, GPS/INS, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, US Government and contractor engineering, technical, and logistics support services, and other related elements of program support. The estimated cost is \$25.6 billion.

- **Sept. 15, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Kingdom of Saudi Arabia for continuation of a blanket order training program as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$350 million.
- **Dec. 17, 2009** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of 2,742 BGM-71E-4B-RF Tube-Launched, Optically-Tracked, Wire-Guided (TOW-2A) Radio Frequency missiles and associated parts, equipment, training and logistical support for a complete package worth approximately \$177 million. The Government of Saudi Arabia has requested a possible sale for 2,742 BGM-71E-4B-RF Tube- Launched, Optically-Tracked, Wire-Guided (TOW-2A) Radio Frequency missiles (42 missiles are for lot acceptance testing), publications and technical documentation, and other related elements of logistics support. The proposed sale will support efforts to modernize the Saudi Arabian National Guard (SANG).

- **Aug. 6, 2009** – The Defense Security Cooperation Agency notified Congress of a possible foreign military sale to the Government of Saudi Arabia of Communication Navigation and Surveillance/Air Traffic Management upgrades for an estimated cost of \$1.5 billion.
- The Government of Saudi Arabia has requested a possible sale of a two-phased approach for the Communication Navigation and Surveillance/Air Traffic Management upgrades of the communication and navigation systems for the Royal Saudi Air Force's fleet of 13 RE-3, KE-3, and E-3 aircraft. Phase One will include Global Positioning System/Inertial Navigation Systems, 8.33 kHz Very High Frequency radios, Traffic Collision Avoidance Systems, Mode S Transponders, Mode 4/5 Identification Friend or Foe Encryption, High Frequency radio replacements, Multifunctional Information Display Systems for Link 16 operations, Have Quick II radios, Satellite Communications and Common Secure Voice encryptions. Phase 2 will include digital flight deck instrumentation and displays, flight director system/autopilot, flight management system, cockpit data line message and combat situational awareness information. Also included are spare and repair parts, support and test equipment, publication and technical documentation, personnel training and training equipment, personnel support and test equipment to include flight simulators, US government and contractor engineering support, technical and logistics support services, and other related elements of logistical and program support.
- **Aug. 5, 2009** – The Defense Security Cooperation Agency notified Congress of a possible foreign military sale to the Government of Saudi Arabia of Tactical Airborne Surveillance System (TASS) aircraft upgrades for an estimated cost of \$530 million.
The Government of Saudi Arabia has requested services to upgrade the TASS aircraft, installation of 10 AN/ARC-230 High Frequency Secure Voice/Data Systems, 25 AN/ARC-231 or 25 AN/ARC-210 Very High Frequency/Ultra High Frequency (VHF/UHF) Secure Voice/Data Systems, four Multifunctional Information Distribution System-Low Volume Terminals (MIDS-LVT), four LN-100GT Inertial Reference Units, 25 SY-100 or functional equivalent Crypto Systems, seven SG-250 or functional equivalent Crypto Systems, six SG-50 or functional equivalent, 10 CYZ-10 Fill Devices, modification of existing ground stations, TASS equipment trainer, mission scenario generator (simulator), and maintenance test equipment; spare and repair parts, support and test equipment, personnel training and training equipment, publications and technical documentation including flight/operator/maintenance manuals, modification/construction of facilities, US Government and contractor engineering and support services and other related elements of logistics support.
- **Sept. 26, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of AIM-9X SIDEWINDER missiles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$164 million.
The Government of Saudi Arabia has requested a possible sale of 250 All-Up-Round AIM-9X SIDEWINDER Missiles, 84 AIM-9X SIDEWINDER Captive Air Training Missiles (CATMs), 12 AIM-9X SIDEWINDER Dummy Air Training Missiles (DATMs), missile containers, missile modifications, test sets and support equipment, spare and repair parts, publications and technical data, maintenance, personnel training and training equipment, contractor engineering and technical support services, and other related elements of logistics support.
- **Sept. 26, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of AN/FPS-117 Long Range Radar Upgrade as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$145 million.
- **Sept. 26, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of Multifunctional Information Distribution System/Low Volume Terminals as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$31 million.
The Government of Saudi Arabia has requested a possible sale of 80 Link 16 Multifunctional Information Distribution System/Low Volume Terminals (MIDS/LVT-1) to be installed on United Kingdom Eurofighter Typhoon aircraft, data transfer devices, installation, testing, spare and repair parts, support equipment, personnel training, training equipment, contractor engineering and technical support, and other related elements of program support.
- **July 18, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of continued assistance in the modernization of the Saudi Arabian National Guard (SANG) as well as associated equipment and services. The total value, if all options are

exercised, could be as high as \$1.8 billion.

- **Jan. 14, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of Joint Direct Attack Munitions as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$123 million. The Government of Saudi Arabia has requested a possible sale of 900 Joint Direct Attack Munitions (JDAM) tail kits (which include 550 GBU-38 for MK-82, 250 GBU-31 for MK-84, and 100 GBU-31 for BLU-109). Also included are bomb components, mission planning, aircraft integration, publications and technical manuals, spare and repair parts, support equipment, contractor engineering and technical support, and other related elements of program support.
- **Dec. 7, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of AN/AAQ-33 SNIPER Targeting Pods as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$220 million. The Government of Saudi Arabia has requested a possible sale of 40 AN/AAQ-33 SNIPER Advanced Targeting Pods, aircraft installation and checkout, digital data recorders/cartridges, pylons, spare and repair parts, support equipment, publications and technical documentation, contractor engineering and technical support, and other related elements of program support.
- **Dec. 7, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of mission equipment for AWACS aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$400 million. The Government of Saudi Arabia has requested a possible sale of five sets of Airborne Early Warning (AEW) and Command, Control and Communications (C3) mission equipment/Radar System Improvement Program (RSIP) Group B kits for subsequent installation and checkout in five E-3 Airborne Warning and Control Systems (AWACS). In addition, this proposed sale will include spare and repair parts, support equipment, publications and technical documentation, contractor engineering and technical support, and other related elements of program support.
- **Oct. 4, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of Light Armored Vehicles and High Mobility Multi-Purpose Wheeled Vehicles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$631 million. The Government of Saudi Arabia has requested a possible sale for:
 - 37 Light Armored Vehicles - Assault Gun (LAV-AG)
 - 26 LA V-25 mm
 - 48 LA V Personnel Carriers
 - 5 Reconnaissance LAVs
 - 5 LAV Ambulances
 - LAV Recovery Vehicles
 - 25 M1165A1 High Mobility Multi-purpose Wheeled Vehicles (HMMWV)
 - 25 M1165A1 HMMWV with winch
 - 124 M240 7.62mm Machine Guns
 - 525 AN/PVS-7D Night Vision Goggles (NVGs):

Various M978A2 and M984A2 Heavy Expanded Mobility Tactical Trucks, family of Medium Tactical Vehicles, 120mm Mortar Towed, M242 25mm guns, spare and repair parts; sets, kits, and outfits; support equipment; publications and technical data; personnel training and training equipment; contractor engineering and technical support services and other related elements of logistics support.

- **Nov. 13, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the government of Saudi Arabia of 155 General Electric (GE) F110- GE129 engines or 20 Pratt & Whitney F100-PW229 engines in support of F-15S aircraft.

The Government of Saudi Arabia has requested a possible sale of either option or a combination of: a) 155 General Electric (GE) F110-GE129 engines in support of F-15S aircraft; b) 20 Pratt & Whitney (P&W) F100-PW229 engines to restore/refurbish the Royal Saudi Air Force (RSAF) current inventory of P&W engines; support equipment; engine improvement program services; flight tests; Technical Coordination Group/International Engine Management; Hush House refurbishment; aircraft integration; program management; publications; trainers; mission planning; training; spare and repair parts; repair and return services; contractor technical assistance and other related elements of logistics support. The estimated cost is \$1.5 billion.

- **Sept. 27, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia for the continued effort to modernize the Saudi Arabian National Guard (SANG). The total value, if all options are exercised, could be as high as \$84 million.

The Government of Saudi Arabia has requested a possible sale for the continuation of the United States supported effort to modernize the SANG by providing Major Defense Equipment (MDE) and non-MDE items:

552 AN/VRC-90E Single Channel Ground and Airborne Radio Systems (SINCGARS) Vehicular Single Long-Range Radio Systems; 225 AN/VRC-92E SINCGARS Vehicular Single Long-Range Radio Systems Dual Long Range; 1,214 AN/PRC-119 E SINCGARS Man-pack Single Long-Range Radio Systems Man-pack and vehicular installation kits, communications management system computers, antennas, programmable fill devices, support equipment; publications and technical data; personnel training and training equipment; contractor engineering and technical support services and other related elements of logistics support.

- **July 28, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of the remanufacture and upgrade of AH-64A to AH-64D Apache helicopters as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$400 million.

The Government of Saudi Arabia has requested a possible sale of the remanufacture and upgrade of 12 AH-64A APACHE attack helicopters to AH-64D configuration, 10 spare T-700-GE-701A engines converted to T-700-GE-701D models, Modernized Targeting Acquisition and Designation Systems, spare and repair parts, communications equipment, support equipment, simulators, quality assurance teams, chemical masks, tools and test sets, chaff dispensers, Integrated Helmet and Display Sight Systems, electronic equipment, test facility spares, publications, Quality Assurance Teams service, personnel training and training equipment, US Government and contractor technical support and other related elements of logistics support.

- **July 28, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of M1A1 and upgrade of M1A2 to M1A2S Abrams tanks as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$2.9 billion.

The Government of Saudi Arabia has requested a possible sale and reconfiguration for 58 M1A1 Abrams tanks, which, together with 315 M1A2 Abrams tanks already in Saudi Arabia's inventory, will be modified and upgraded to the M1A2S (Saudi) Abrams configuration, kits, spare and repair parts, communications and support equipment, publications and technical data, personnel training and training equipment, contractor engineering and technical support services and other related elements of logistics support.

- **July 21, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia to provide funds for

blanket order requisitions, under a Cooperative Logistics Supply Support Agreement (CLSSA). The total value, if all options are exercised, could be as high as \$276 million.

Government of Saudi Arabia has requested a possible sale for a Foreign Military Sales Order (FMSO) to provide funds for blanket order requisitions FMSO II, under the CLSSA for spare parts in support of M1A2 Abrams Tanks, M2 Bradley Fighting Vehicles, High Mobility Multipurpose Wheeled Vehicles (HMMWVs), construction equipment, and support vehicles and equipment in the inventory of the Royal Saudi Land Forces Ordnance Corps.

- **July 20, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia to continue modernization of the Saudi Arabian National Guard (SANG). The total value, if all options are exercised, could be as high as \$5.8 billion.

The Government of Saudi Arabia has requested a possible sale for the continuation of the United States supported effort to modernize the SANG by providing Major Defense Equipment (MDE) and non-MDE items:

- 724 LAV-25, LAV-AG, LAV-M, LAV-AT, LAV-CC, LAV-PC, LAV-A, LAV-AC LAV-E and LAV-R Light Armored Vehicles (LAV)
- 1,160 AN/VRC-90E Single Channel Ground and Airborne Radio Systems (SINCGARS) Vehicular Single Long-Range Radio Systems
- 627 AN/VRC-92E SINCGARS Vehicular Single Long-Range Radio Systems
- 518 AN/VRC-119 E SINCGARS Vehicular Single Long-Range Radio Systems
- 2,198 SINCGARS Spearhead Handheld
- 1,700 AN/AVS-7D Night Vision Goggles (NVG)
- 432 AN/PVS-14 NVG
- 630 AN/PAS-13 Thermal Weapon Sight
- 162 84mm Recoilless Rifle

Also included are Harris Corporation Commercial High Frequency Radios; various commercial vehicles; fixed facilities and ranges; simulations; generators; battery chargers; protective clothing; shop equipment; training devices; spare and repair parts; sets, kits, and outfits; support equipment; publications and technical data; personnel training and training equipment; contractor engineering and technical support services and other related elements of logistics support.

- **July 20, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of UH-60L Utility/Assault Black Hawk helicopters as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$350 million.

The Government of Saudi Arabia has requested a possible sale of 24 UH-60L Utility/Assault Black Hawk helicopters, spare and repair parts, communications and support equipment, publications and technical data, personnel training and training equipment, contractor engineering and technical support services and other related elements of logistics support.

- **Oct. 3, 2005** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of the continuation of contractor, technical services and logistics support for aircraft, aircraft engines, and missiles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$760 million.

The Government of Saudi Arabia has requested a possible sale for the continuation of support for F-5, F-15, RF-5, E-3, RE-3, KE-3, and C-130, aircraft; F-100-PW-220/229, J-85, T-56, and CFM-56 aircraft engines; and A/TGM-65 AIM-7 and AIM-9 missiles which have already been delivered to and are being operated by Saudi Arabia; contractor services; maintenance; spare and repair parts; support and test equipment; goggles; communication support; precision measuring equipment; personnel training; training equipment; technical support; and contractor engineering; and other related elements of program support.

- **Oct. 3, 2005** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia for the continuation of the United States supported effort to modernize the Saudi Arabian National Guard (SANG) by providing Major Defense Equipment (MDE) and non-MDE items as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$918 million.

Major Defense Equipment (MDE) proposed:

- 144 Armored Personnel Carrier Vehicles
 - 12 Water Cannon Vehicles
 - 52 Command and Control Vehicles
 - 17 Ambulance and Evacuation Vehicles
 - 36 Platoon Command Vehicles
 - 55,500 40mm Ammunition
 - 3,600 F-2000 5.56mm Assault Rifles with 40mm Grenade Launchers
 - 51,400 F-2000 5.56mm Assault Rifles without 40mm Grenade Launchers
 - 198 AN/VRC-90E SINCGARS Vehicular Single Long-Range Radio Systems
- **Oct. 3, 2005** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of 165 Link 16 Multifunctional Information Distribution System (MIDS)/Low Volume Terminals (Fighter Data Link terminals), 25 Joint Tactical Information Distribution System (JTIDS) terminals as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$401 million.
 - **Sept. 27, 2005** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of upgrade kits and services for 54 C-130E/H aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$800 million.
 - **Nov. 20, 2003** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of modernization support services for the Saudi Arabian National Guard as well as associated equipment. The total value, if all options are exercised, could be as high as \$990 million.

The Government of Saudi Arabia has requested a possible sale of services for the continuation of the US supported effort to modernize the Saudi Arabian National Guard (SANG) by providing minor defense articles including spare and repair parts for V150 armored vehicles, light armored vehicles, artillery pieces, communications equipment, other military equipment, medical equipment and medicines, automation equipment and software for logistics, training, and management, translated (into Arabic) tactical and technical manuals. Defense services transferred would include training, professional military advice and assistance, management assistance, contract administration, construction oversight, transportation of equipment, upper echelon

maintenance, management of repair and return of components. These support services would be for the period 1 January 2004 through 31 December 2008. This proposed sale does not entail the procurement of Major Defense Equipment.

- **Sept. 3, 2003** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to Saudi Arabia of AN/AAQ-24(V) NEMISIS Directional Infrared Countermeasures Systems as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$240 million.

The Government of Saudi Arabia has requested a possible sale of four AN/AAQ-24(V) NEMISIS Directional Infrared Countermeasures Systems which consist of three small laser turret assemblies, six missile warning sensors, one system processor, one control indicator unit, two signal repeaters, included associated support equipment, spare and repair parts, publications, personnel training and training equipment, technical assistance, contractor technical and logistics personnel services and other related elements of program support.

UAE

- **Sep. 29, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to the United Arab Emirates for High Mobility Artillery Rocket Systems (HIMARS) Launchers and associated equipment, parts, training and logistical support for an estimated cost of \$900 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of the United Arab Emirates (UAE) has requested a possible sale of:

12 High Mobility Artillery Rocket Systems (HIMARS) Launchers
100 M57 Army Tactical Missile System (ATACMS) T2K (Block IA Unitary) Rockets
65 M31A1 Guided Multiple Launch Rocket (GMLRS) Unitary Pods

Also included are 12 High Mobility Artillery Rocket System Resupply Vehicles M1084A1P2; 2 Wreckers, 5 Ton, M1089A1P2, with Long Term Armor Strategy (LTAS) Cab and B-Kit Armor; 90 Low Cost Reduced-Range Practice Rocket (RRPR) pods; support equipment; communications equipment; spare and repair parts; test sets; batteries; laptop computers; publications and technical data; personnel training and equipment; systems integration support; a Quality Assurance Team and a Technical Assistance Fielding Team support; United States Government and contractor engineering and logistics personnel services; and other related elements of logistics support. The estimated cost is \$900 million.

- **Sep. 26, 2014** - The State Department has made a determination approving a possible Foreign Military Sale to the United Arab Emirates for Mine Resistant Ambush Protected (MRAP) Vehicles and associated equipment, parts, training and logistical support for an estimated cost of \$2.5 billion. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of the United Arab Emirates (UAE) has requested a possible sale for the refurbishment and modification of 4,569 Mine Resistant Ambush Protected (MRAP) Vehicles (that include 29 MaxxPro Long Wheel Base (LWB), 1,085 MaxxPro LWB chassis, 264 MaxxPro Base/MRAP Expedient Armor Program (MEAP) capsules without armor, 729 MaxxPro Bases, 283 MaxxPro MEAP without armor, 970 MaxxPro Plus, 15 MRAP Recovery Vehicles, 1,150 Caiman Multi-Terrain Vehicles without armor, and 44 MRAP All-Terrain Vehicles) being sold separately from U.S. Army stock pursuant to section 21 of the Arms Export Control Act, as amended, as Excess Defense Articles (EDA). Also included are Underbody Improvement Kits, spare and repair parts, support equipment, personnel training and training equipment, publications and technical documentation, Field Service Representatives' support, U.S. Government and contractor logistics and technical support services, and other related elements of logistics and program support. Notification for the sale from stock of the MRAP vehicles referenced above has been provided separately, pursuant to the requirements of section 7016 of the Consolidated Appropriations Act, 2014 and section 516 of the Foreign Assistance Act of 1961, as amended. The estimated cost is \$2.5 billion.

- **Jan. 24, 2014** -The Defense Security Cooperation Agency notified Congress on Jan 23 of a possible Foreign Military Sale to the United Arab Emirates (UAE) for equipment in support of a Direct Commercial Sale of F-16 Block 61 Aircraft and associated equipment, parts, training and logistical support for an estimated cost of \$270 million.

The United Arab Emirates (UAE) has requested a possible sale of equipment in support of its commercial purchase of 30 F-16 Block 61 aircraft and to support the upgrade of its existing F-16 Block 60 aircraft. Major Defense Equipment includes: 40 20mm M61A Guns; and 40 Embedded GPS Inertial Navigation Systems. Also included: Identification Friend or Foe Equipment; Joint Mission Planning System; night vision devices; Cartridge Activated Device/Propellant Activated Devices; Weapons Integration; spare and repair parts; tools and test equipment; personnel training and training equipment; publications and technical documentation; International Engine Management Program-Component Improvement Program; repair and return; aerial refueling support; ferry maintenance and services; site surveys; U.S. Government and contractor engineering, technical and logistics support services; and other related elements of logistics and program support. The estimated cost is \$270 million.

- **Jan. 8, 2014** - The Defense Security Cooperation Agency notified Congress today of a possible Foreign Military Sale to the United Arab Emirates (UAE) for blanket order training and associated training and logistical support for an estimated cost of \$150 million.

The Government of the United Arab Emirates has requested a possible sale for follow on United States Marine Corps blanket order training, training support, and other related elements of program support for the United Arab Emirates Presidential Guard Command. The estimated cost is \$150 million.

The proposed sale will provide the continuation of U.S. Marine Corps training of the UAE's Presidential Guard for counterterrorism, counter-piracy, critical infrastructure protection, and national defense. The training also provides engagement opportunities through military exercises, training, and common equipment. The Presidential Guard currently uses these skills alongside U.S. forces, particularly in Afghanistan.

- **Oct. 15, 2013** - The Defense Security Cooperation Agency notified Congress Oct. 11 of a possible Foreign Military Sale to the United Arab Emirates of various munitions and associated equipment, parts, training and logistical support for an estimated cost of \$4.0 billion.

The Government of the United Arab Emirates has requested a possible sale of 5000 GBU-39/B Small Diameter Bombs (SDB) with BRU-61 carriage systems, 8 SDB Guided Test Vehicles for aircraft integration, 16 SDB Captive Flight and Load Build trainers, 1200 AGM-154C Joint Stand Off Weapon (JSOW), 10 JSOW CATMs, 300 AGM-84H Standoff Land Attack Missiles-Expanded Response (SLAM-ER), 40 CATM-84H Captive Air Training Missiles, 20 ATM-84H SLAM-ER Telemetry Missiles, 4 Dummy Air Training Missiles, 30 AWW-13 Data Link pods, containers, munitions storage security and training, mission planning, transportation, tools and test equipment, integration support and testing, weapon operational flight program software development, support equipment, spare and repair parts, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor engineering and logistics support services, and other related elements of logistics support. The estimated cost is \$4.0 billion.

- **Nov. 5, 2012** – The Defense Security Cooperation Agency notified Congress November 2 of a possible Foreign Military Sale to the Government of the United Arab Emirates (UAE) for 48 Terminal High Altitude Area Defense (THAAD) missiles, 9 THAAD launchers; test components, repair and return, support equipment, spare and repair parts, personnel training and training equipment, publications and technical data, U.S. Government and contractor technical assistance, and other related logistics support. The estimated cost is \$1.135 billion.

- **Aug. 1, 2012** – The Defense Security Cooperation Agency notified Congress July 31 of a possible Foreign Military Sale to the Government of the United Arab Emirates for two F117-PW-100 engines for an estimated cost of \$35 million.

The Government of the United Arab Emirates (UAE) has requested a proposed sale of 2 spare F117-PW-100 engines in support of the UAE C-17 GLOBEMASTER III aircraft.

- **Dec. 14, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of the United Arab Emirates of 260 JAVELIN Anti-Tank Guided Missiles and associated equipment, parts, weapons, training and logistical support for an estimated cost of \$60 million.
- **Nov. 30, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of the United Arab Emirates (UAE) for 4,900 JDAM kits and associated equipment, parts, training and logistical support for an estimated cost of \$304 million. The Government of the UAE has requested a possible sale of 4,900 JDAM kits which includes 304 GBU-54 Laser JDAM kits with 304 DSU-40 Laser Sensors, 3,000 GBU-38(V)1 JDAM kits, 1,000 GBU-31(V)1 JDAM kits, 600 GBU-31(V)3 JDAM kits, 3,300 BLU-111 500lb General Purpose Bombs, 1,000 BLU-117 2,000lb General Purpose Bombs, 600 BLU-109 2,000lb Hard Target Penetrator Bombs, and four BDU-50C inert bombs, fuzes, weapons integration, munitions trainers, personnel training and training equipment, spare and repair parts, support equipment, US government and contractor engineering, logistics, and technical support, and other related elements of program support.
- **Sept. 22, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of 500 AGM-114R3 HELLFIRE missiles and associated equipment, parts, training and logistical support for an estimated cost of \$65 million.
- **Sept. 22, 2011** – The Defense Security Cooperation Agency notified Congress Wednesday of a possible Foreign Military Sale to the United Arab Emirates of 107 MIDS/LVT LINK 16 Terminals and associated equipment, parts, training and logistical support for an estimated cost of \$401 million. The Government of the United Arab Emirates (UAE) has requested a possible sale of 107 Link 16 Multifunctional Information Distribution System/Low Volume Terminals (MIDS/LVT) to be installed on the United Arab Emirates F-16 aircraft and ground command and control sites, engineering/integration services, aircraft modification and installation, testing, spare and repair parts, support equipment, repair and return support, personnel training, contractor engineering and technical support, interface with ground command and control centers and ground repeater sites, and other related elements of program support.
- **June 24, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of the United Arab Emirates of five UH-60M BLACKHAWK VIP helicopters and associated equipment, parts, training and logistical support for an estimated cost of \$217 million. The Government of the United Arab Emirates (UAE) has requested a possible sale of 5 UH-60M BLACKHAWK VIP helicopters, 12 T700-GE-701D engines (10 installed and 2 spares), 6 AN/APR-39A(V)4 Radar Signal Detecting Sets, 80 AN/AVS-9 Night Vision Devices, 6 Star Safire III Forward Looking Infrared Radar Systems, 6 AAR-57(V)3 Common Missile Warning Systems, 6 AN/AVR-2B Laser Warning Sets, C406 Electronic Locator Transmitters, Traffic Collision Avoidance Systems and Weather Radars, Aviation Mission Planning Station, government furnished equipment, ferry support, spare and repair parts, publications and technical documentation, support equipment, personnel training and training equipment, ground support, communications equipment, US Government and contractor technical and logistics support services, tools and test equipment, and other related elements of logistics support.
- **May 25, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of the United Arab Emirates for support and maintenance of F-16 aircraft and associated equipment, parts, training and logistical support for an estimated cost of \$100 million.
- **April 19, 2011** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of the United Arab Emirates of 218 AIM-9X-2 SIDEWINDER Block II Tactical Missiles and associated equipment, parts, training and logistical support for an estimated cost of \$251 million. The Government of the United Arab Emirates has requested a possible sale of 218 AIM-9X-2 SIDEWINDER Block II Tactical Missiles, 40 CATM-9X-2 Captive Air Training Missiles (CATMs), 18 AIM-9X-2 WGU-51/B Tactical Guidance Units, 8 CATM-9X-2 WGU-51/B Guidance Units, 8 Dummy Air Training Missiles, containers, support and test equipment, spare and repair parts, publications and technical documentation, personnel training and

training equipment, US Government and contractor engineering and logistics support services, and other related elements of logistics support.

- **Nov. 4, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the Government of the United Arab Emirates of 100 Army Tactical Missile Systems (ATACMS) and 60 Low Cost Reduced-Range Practice Rockets (LCRRPR), as well as associated equipment, training and logistical support for a total package worth approximately \$140 million.
- **Nov. 4, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of 30 AH-64D Block II lot 10 APACHE helicopters, remanufactured to AH-64D Block III configuration and 30 AH-64D Block III APACHE helicopters, as well as associated parts, equipment, training and logistical support for a complete package worth approximately \$5.0 billion.
The Government of the United Arab Emirates (UAE) has requested a possible sale of 30 AH-64D Block II lot 10 APACHE helicopters, remanufactured to AH-64D Block III configuration, 30 AH-64D Block III APACHE helicopters, 120 T700-GE-701D engines, 76 Modernized Target Acquisition and Designation Sight/Modernized Pilot Night Vision Sensors, 70 AN/APG-78 Fire Control Radars with Radar Electronics Units, 70 AN/ALQ-144A(V)3 Infrared Jammers, 70 AN/APR-39A(V)4 Radar Signal Detecting Sets, 70 AN/ALQ-136(V)5 Radar Jammers, 70 AAR-57(V)3/5 Common Missile Warning Systems, 30mm automatic weapons, improved counter measure dispensers, communication and support equipment, improved helmet display sight systems, trainer upgrades, spare and repair parts, publications and technical documentation, personnel training and training equipment, US Government and contractor engineering and logistics support services, and other related elements of logistics support.
- **May 26, 2010** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates (UAE) of logistics support and training for two C-17 Globemaster III aircraft and associated equipment, parts, and logistical support for an estimated cost of \$250 million.
The Government of the UAE has requested a possible sale of logistics support and training for two additional C-17 Globemaster III aircraft being procured through a Direct Commercial Sale, 2 AN/AAR-47 Missile Warning Systems, 4 AN/ARC-210 (RT-1794C) HAVE QUICK II Single Channel Ground and Airborne Radio Systems, 2 AN/ALE-47 Countermeasure Dispensing Sets, ferry support, communication and navigation equipment, spare and repair parts, support and test equipment, publications and technical documentation, maintenance, personnel training and training equipment, US Government and contractor engineering and logistics support services, preparation of aircraft for shipment, and other related elements of logistics support.
- **Dec. 28, 2009** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of logistics support, training and related systems for 12 C-130J-30 aircraft being procured through a Direct Commercial Sale. The complete package, including associated parts and equipment is worth approximately \$119 million.
The Government of the United Arab Emirates has requested a possible sale of logistics support and training for 12 C-130J-30 aircraft being procured through a Direct Commercial Sale, 12 AN/AAR-47 Missile Approach Warning Systems, 12 AN/ALE-47 Countermeasure Dispenser Sets, 12 AN/ALR-56M Radar Warning Receivers, communication equipment, navigation equipment, aircraft ferry and refueling support, spare and repair parts, support and test equipment, publications and technical documentation, mission planning systems, personnel training and training equipment, US Government and contractor engineering, technical, and logistics support services, and related elements of logistical and program support.
- **Dec. 28, 2009** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of enhanced guided bomb units and associated parts, equipment, training and logistical support for a complete package worth approximately \$290 million.
The Government of the United Arab Emirates (UAE) has requested a possible sale of 400 GBU-24(V) 11/B Enhanced PAVEWAY III, 400 GBU-24(V) 12/B Enhanced PAVEWAY III, 400 GBU-49(V) 3/B Enhanced PAVEWAY II, 400 GBU-50(V) 1/B Enhanced PAVEWAY II, 800 MK-84 2000 lbs. Bombs, 400 MK-82 500 lbs. Bombs, 400 BLU-109/B 2000 lbs. Bombs. Also included are containers, bomb components, mission planning software, spare and repair parts, publications and technical documentation, personnel training and training equipment, US Government and contractor technical and logistics personnel support services, and other related elements of program support.

- **Dec. 18, 2009** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to United Arab Emirates of logistics support, training and related systems for four C-17 Globemaster III aircraft being procured through a Direct Commercial Sale. The complete package, including associated parts and equipment is worth approximately \$501 million.
The Government of the United Arab Emirates has requested a possible sale of logistics support and training for four C-17 Globemaster III aircraft being procured through a Direct Commercial Sale, 5 AN/AAR-47 Missile Warning Systems, 10 AN/ARC-210 (RT-1794C) HAVE QUICK II Single Channel Ground and Airborne Radio Systems, 5 AN/ALE-47 Countermeasure Dispensing Sets, ferry support, communication and navigation equipment, spare and repair parts, support and test equipment, publications and technical documentation, maintenance, personnel training and training equipment, US Government and contractor engineering and logistics support services, preparation of aircraft for shipment, and other related elements of logistics support.
- **Dec. 3, 2009** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of 16 Chinook helicopters, and communication equipment, as well as associated parts, equipment, training and logistical support for a complete package worth approximately \$2.0 billion.
The Government of the United Arab Emirates (UAE) has requested a possible sale of 16 CH-47F CHINOOK Helicopters, 38 T55-GA-714A Turbine engines, 20 AN/APX-118 Transponders, 20 AN/ARC-220 (RT-1749) Single Channel Ground and Airborne Radio Systems (SINCGARS) with Electronic counter-countermeasures, 40 AN/ARC-231 (RT-1808A) Receiver/Transmitters, 18 AN/APR-39A(V)1 Radar Signal Detecting Sets with Mission Data Sets, flight and radar signal simulators, support equipment, spare and repair parts, publications and technical documentation, site survey, construction and facilities, US Government and contractor technical and logistics support services, and other related elements of logistics support.
- **Aug. 4, 2009** – The Defense Security Cooperation Agency (DSCA) notified Congress of a possible Foreign Military Sale to the Government of the United Arab Emirates of 362 HELLFIRE Missiles, 15 Common Missile Warning Systems (CMWS) four radar-warning receivers, and related equipment and services. The estimated cost is \$526 million.
The Government of the United Arab Emirates has requested a possible sale of 362 AGM-114N3 HELLFIRE Missiles, 15 AAR-57 CMWS, 21 AN/APR-39A (V) four Radar Warning Receivers, eight AN/APX-118 Transponders, 19 AN/PRC-117 Radios, 15 AN/ASN-128D Doppler Radars, six AN/ARC-231 Radios, and 15 Data Transfer Modules/Cartridges.
- **Sept. 9, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of UH-60M BLACK HAWK Helicopters as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$774 million.
The Government of the United Arab Emirates (UAE) has requested a possible sale of 14 UH-60M BLACK HAWK helicopters with engines; 6 T700-GE-701D spare engines; 14 each AN/ALQ-144A(V)3 Infrared (IR) Countermeasure Sets, AN/APR-39A(V)4 Radar Signal Detecting Sets, AAR-57(V)3 Common Missile Warning Systems, and AN/AVR-2B Laser Warning Sets; Weaponization of 23 UH-60M BLACK HAWK helicopters; 390 AGM-114N HELLFIRE missiles; 8 HELLFIRE training missiles; 30 M299 HELLFIRE launchers; 23,916 MK-66 Mod 4 2.75” Rocket Systems in the following configuration: 1,000 M229 High Explosive Point Detonate, 540 M255A1 Flechette, 1,152 M264 RP Smoke, 528 M274 Smoke Signature, 495 M278 Flare, 720 M274 Infrared Flare, 20,016 HA23 Practice; 22 GAU-19 Gatling Gun Systems; and 93 M-134 Mini-Gun. Also included: spare and repair parts, publications and technical data, support equipment, personnel training and training equipment, ground support, communications equipment, US Government and contractor technical and logistics personnel services, aircraft survivability equipment, tools and test equipment, and other related elements of logistics support.
- **Sept. 9, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of Surfaced Launched Advanced Medium Range Air-to-Air Missile (SL-AMRAAM) as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$445 million.

The Government of United Arab Emirates has requested a possible sale of 288 AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM) Air Intercept Missiles, 2 Air Vehicle-Instrumented (AAVI), 144 LAU- 128 Launchers, Surface Launched Advanced Medium Range Air-to-Air Missile (SL-AMRAAM) software, missile warranty, KGV-68B COMSEC chips, training missiles, containers, support and test equipment, missiles components, spare/repair parts, publications, documentation, personnel training, training equipment, contractor technical and logistics personnel services, and other related support elements.

- **Sept. 9, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of Terminal High Altitude Air Defense (THAAD) Fire Units as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$6.95 billion.

The Government of the United Arab Emirates has requested a possible sale of 3 Terminal High Altitude Air Defense (THAAD) Fire Units with 147 THAAD missiles, 4 THAAD Radar Sets (3 tactical and one maintenance float), 6 THAAD Fire and Control Communication stations, and 9 THAAD Launchers. Also included are fire unit maintenance equipment, prime movers (trucks), generators, electrical power units, trailers, communications equipment, tools, test and maintenance equipment, repair and return, system integration and checkout, spare/repair parts, publications, documentation, personnel training, training equipment, contractor technical and logistics personnel services, and other related support elements.

- **Sept. 9, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of PATRIOT Advanced Capability-3 Missile Systems as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$121 million.

The Government of the United Arab Emirates has requested a possible sale of 4 PATRIOT Advanced Capability (PAC-3) Intercept Aerial Missiles with containers, 19 MIM-104D Guided Enhanced Missiles-T with containers (GEM-T), 5 Anti-Tactical Missiles, and 5 PATRIOT Digital Missiles. These missiles are for lot validation and testing of the PAC-3 missiles notified for sale in Transmittal Number 08-17. Also included: AN/GRC-245 Radios, Single Channel Ground and Airborne Radio Systems (SINCGARS Export), power generation equipment, electric power plant, trailers, communication and support equipment, publications, spare and repair parts, repair and return, United States Government and contractor technical assistance and other related elements of logistics support.

- **Sept. 9, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of AVENGER and VMSLP fire units as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$737 million.

The Government of the United Arab Emirates has requested a possible sale of 78 complete AVENGER fire units including Vehicle Mounted Stinger Launch Platform (VMSLP) fire units (72 Tactical and 6 floats); 780 STINGER-Reprogrammable Micro-Processor (RMP) Block 1 Anti-Aircraft missiles; 24 STINGER Block 1 Buy-to-Fly missiles; 78 Captive Flight Trainers, 16 AN/MPQ64-F1 SENTINEL Radars; 78 AN/VRC-92E Single Channel Ground and Airborne Radio System (SINCGARS) radios; 78 Enhanced Position Location Reporting System (EPLRS) Radios; 20 Integrated Fire Control Stations, S250 Shelters on HMMWVs, communication and support equipment, system integration and checkout, tools and test equipment, spare and repair parts, publications, installation, personnel training and training equipment, US Government and contractor technical support services, and other related elements of logistics support. The estimated cost is \$737 million.

- **Jan. 3, 2008** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of various munitions and weapon systems as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$326 million. The Government of the United Arab Emirates has requested a possible sale of 224 AIM-120C-7 Advanced Medium Range Air-to-Air Missile (AMRAAM) Air Intercept Missiles, 200 GBU-31 Guided Bomb Unit (GBU) Joint Direct Attack Munition tail kits, 224 MK-84 2,000 pound General-Purpose Bombs (GPB), 450 GBU-24 PAVEWAY III with MK-84 2,000 pound GPB, 488 GBU-12 PAVEWAY II with MK-82 500 pound GPB, 1 M61A 20mm Vulcan Cannon with Ammunition Handling System, containers, bomb components, spare/repair parts, publications, documentation, personnel training, training

equipment, contractor technical and logistics personnel services, and other related support elements.

- **Dec. 4, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of the PATRIOT Advanced Capability-3 Missile System as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$9 billion.
The Government of United Arab Emirates has requested a possible sale of the PATRIOT Air Defense System consisting of 288 PATRIOT Advanced Capability-3 (PAC-3) missiles, 216 Guidance Enhanced Missiles-T (GEM-T), 9 PATRIOT Fire Units that includes 10 phased array radar sets, 10 Engagement Control Stations on trailers, 37 Launching Stations (4 per fire unit), 8 Antenna Mast Groups (AMG) on trailers, 8 Antenna Mast Group (AMG) Antennas for Tower Mounts, AN/GRC-245 Radios, Single Channel Ground and Airborne Radio Systems (SINCGARS, Export), Multifunctional Information Distribution System/Low Volume Terminals, generators, electrical power units, trailers, communication and support equipment, publications, spare and repair parts, repair and return, United States Government and contractor technical assistance and other related elements of logistics support.
- **Dec. 4, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of upgrades and refurbishments of E-2C aircraft as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$437 million.
The Government of the United Arab Emirates has requested a possible sale of upgrades and refurbishment for three (3) used, excess defense articles (EDA) E-2C Airborne Early Warning (AEW) aircraft with radar and antennae. These upgrades/refurbishments include E-2C Group II Navigation Upgrade configuration, 8 T56-A- 427 Turbo Shaft engines, Phased Maintenance Inspection, spare and repairs parts, support equipment, personnel training and training equipment, technical data and publications, tactical software and software laboratory, system software development and installation, testing of new system modifications, US Government and contractor technical and logistics personnel services, and other related support elements.
- **Oct. 4, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of Blast Fragmentation Warheads and HELLFIRE II Longbow Missiles as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$428 million.
The Government of the United Arab Emirates has requested a possible sale of 300 AGM-114M3 Blast Fragmentation Warheads and 900 AGM-114L3 HELLFIRE II Longbow missiles, 200 Blast Fragmentation Sleeve Assemblies, containers, spare and repair parts, test and tool sets, personnel training and equipment, publications, US Government and contractor engineering and logistics personnel services, Quality Assurance Team support services, and other related elements of logistics support.
- **June 18, 2007** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates (UAE) of a Pilot Training Program as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$201 million.
The Government of United Arab Emirates (UAE) has requested a possible sale of United States pilot proficiency training programs and munitions, services and support for F-16 aircraft which includes: 105,000 20mm cartridges, aircraft modifications kits, maintenance, participation in joint training Continental United States (CONUS) pilot proficiency training program, Introduction to Fighter Fundamentals training, F-5B transition and continuation training, fighter follow-on preparation training, participation in joint training exercises, fuel and fueling services, supply support, flight training, spare/repair parts, support equipment, program support, publications, documentation, personnel training, training equipment, contractor technical and logistics personnel services and other related program requirements necessary to sustain a long-term CONUS training program.
- **Sept. 21, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of High Mobility Artillery Rocket Systems as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$752 million.
The Government of United Arab Emirates (UAE) has requested a possible sale of the following Major Defense Equipment (MDE):

- 20 High Mobility Artillery Rocket Systems (HIMARS) Launchers
- 101 M39A1 Army Tactical Missile System (ATACMS) Block 1A Anti-Personnel-Anti- Material Rocket Pods
- 101 M39A1 ATACMS Block 1A Unitary Rocket Pods
- 130 M30 Guided Multiple Launch Rocket Systems (GMLRS) Dual Purpose Improved Conventional Munitions Rocket Pods
- 130 M31 Unitary High Explosive GMLRS Pods
- 60 Multiple Launcher Rocket Systems (MLRS) Practice Rocket Pods
- 104 M26 MLRS Rocket Pods
- 20 M1084A1 Family of Medium Truck Vehicles
- 3 M108A1 Wreckers

Also included are support equipment, communications equipment, spare and repair parts, test sets, batteries, laptop computers, publications and technical data, personnel training and equipment, systems integration support, a Quality Assurance Team and a Technical Assistance Fielding Team service support, United States Government and contractor engineering and logistics personnel services, and other related elements of logistics support.

- **July 28, 2006** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of UH-60M Black Hawk helicopters as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$808 million. The Government of United Arab Emirates (UAE) has requested a possible sale of 26 UH-60M Black Hawk helicopters with engines, 4 spare T-700-GE-701D turbine engines, spare and repair parts, publications and technical data, support equipment, personnel training and training equipment, ground support, communications equipment, contractor engineering, logistics, a Quality Assurance Team, aircraft survivability equipment, tools and test equipment, and other related elements of logistics support.
- **Nov. 17, 2004** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of JAVELIN anti-tank missile systems, missile rounds and associated equipment and services. The total value, if all options are exercised, could be as high as \$135 million.

The Government of United Arab Emirates (UAE) has requested a possible sale of 1,000 JAVELIN anti-tank missile systems consisting of 100 JAVELIN command launch units and 1,000 JAVELIN missile rounds, simulators, trainers, support equipment, spare and repair parts, publications and technical data, personnel training and equipment; US Government and contractor engineering and logistics personnel services, a Quality Assurance Team, and other related elements of logistics support.

- **Sept. 4, 2002** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of refurbished/upgraded E-2C aircraft to the E-2C HAWKEYE 2000 as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$400 million.

The Government of the United Arab Emirates has requested a possible sale of 5 refurbished/upgraded E-2C aircraft to the E-2C HAWKEYE 2000, 5 AN/APS-145 radars, 5 OE-335/A antenna groups, 10 T56-A-425 engines, spare and repairs parts, support equipment, personnel training and training equipment, technical data and publications, tactical software and software laboratory, system software development and installation, testing of new system modifications, US Government and contractor engineering and logistics services and other related elements of program support.

- **July 17, 2002** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to UAE of an upgrade of Apache Helicopters from the A variant to the D variant as well as associated equipment and services. The total value, if all options are exercised, could be as high as \$1.5 Billion.

The Government of United Arab Emirates (UAE) has requested the remanufacture of 30 AH-64A APACHE helicopters to the AH-64D model aircraft. This proposed sale also includes: 32 AN/APG-78 AH-64D Longbow Fire Control Radar; 32 APR-48A Radar Frequency Interferometer; 32 T-700-GE-701C engines; 32 Modernized Target Acquisition Designation Sight/Pilot Night Vision Sensors; 240 AGM-114L3 HELLFIRE II laser guided missiles; 49 AGM-114M3 HELLFIRE II blast fragmentation missiles; 90 M299 HELLFIRE missile launchers; 33 AN/ALQ-211 Suite of Integrated Radio Frequency Countermeasures/Suite of Integrated Infrared Countermeasures; HAVE GLASS II capabilities; spare and repair parts; support equipment; publications and technical documentation; personnel training and training equipment; US Government and contractor technical support and other related elements of logistics support.

- **May 23, 2002** – The Defense Security Cooperation Agency notified Congress of a possible Foreign Military Sale to the United Arab Emirates of Evolved Seasparrow Missiles and associated equipment and services. The total value, if all options are exercised, could be as high as \$245 Million.

The Government of United Arab Emirates (UAE) has requested a possible sale of 237 Evolved Seasparrow Missiles (ESSM), containers, spare and repair parts, shipboard equipment, support and test equipment, publications and technical documentation, personnel training and training equipment, US Government and contractor technical assistance and other related elements of logistics support.

Source: Adapted from: Defense Security Cooperation Agency (DSCA), <http://www.dsca.mil/>

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Segment upgrade consists of the PAC-3 Missile, a highly agile hit-to-kill interceptor, the PAC-3 Missile canisters (in four packs), a fire solution computer and an Enhanced Launcher Electronics System (ELES). These elements are integrated into the Patriot system, a high to medium altitude, long-range air defense missile system providing air defense of ground combat forces and high-value assets. The PAC-3 Missile uses a solid propellant rocket motor, aerodynamic controls, attitude control motors (ACMs) and inertial guidance to navigate. The missile flies to an intercept point specified prior to launch by its ground-based fire solution computer, which is embedded in the engagement control station. Target trajectory data can be updated during missile flyout by means of a radio frequency uplink/downlink. Shortly before arrival at the intercept point, the PAC-3 Missile's on board Ka band seeker acquires the target, selects the optimal aim point and terminal guidance is initiated. The ACMs, which are small, short duration solid propellant rocket motors located in the missile forebody, fire explosively to refine the missile's course to assure body-to-body impact." <http://www.lockheedmartin.com/us/products/PAC-3.html>

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