IRAN AND THE GULF MILITARY BALANCE - I

The Conventional and Asymmetric Dimensions

FIFTH WORKING DRAFT

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Introduction

The most threatening form of US and Iranian competition takes place in the military and security arena. Currently, the areas in which this competition receives primary attention are developments in the nuclear and missile arena, and Iranian threats to "close the Gulf." US and Iranian tensions over Iran's nuclear program have grown steadily over the years. These tensions now threaten to reach the crisis point as Iran produces highly enriched uranium and develops all of the technology necessary to produce nuclear weapons, despite increased pressure resulting from US, European, and UN sanctions.

Military competition between the US and Iran permeates relations far beyond the Gulf. This competition plays out in the Arabian Peninsula, Iraq, Gulf of Oman and Arabian Sea, Indian Ocean, Levant, Arab-Israeli conflict, Turkey, Afghanistan, and beyond. As Iran improves its ballistic missile capabilities, the range of potential targets within its reach also expands.

It is a military competition that also involves a wide range of other states – and where the US role cannot be separated from that of its allies -- particularly the Arab Gulf states and Israel. It is a competition that occurs in ways where each nation--and its allies--seeks to deny the other side military options, and seeks to establish or reinforce containment, deterrence, and limits on escalation. It is also a competition for military prestige and status, and one which seeks to use military forces to influence the behavior of other states.

It also is a competition which could lead to a major clash or even war in the Gulf in the near-term – not because one is desired, but as the unintended consequence of rising tension and mistrust. . Hostilityover Iran's nuclear programs is leading each side to build up its forces, conduct war-fighting exercises of mutually-threatening scenarios, and make statements and claims that can provoke the other. Additionally, it is a risk driven by the threat of an Israeli or US preventive strike on Iran's nuclear facilities described in the next the second part of this analysis – which deals with Iran's missiles and weapons of mass destruction and the risk of preventive war.

At the same time, it is a confrontation that exists against the backdrop of an already accelerated, convoluted, and long-standing mix of arms races in the region – conventional, asymmetric, and proxy. Iran continues to build up its asymmetric and proxy capabilities while seeking advanced conventional weapons that can reverse the losses it suffered in this capacity resulting from the Iran-Iraq War and its inability to fund and obtain advanced conventional weapons - particularly more aircraft and surface-to-air and missile defenses. The US is building up its forces in the Gulf and has made the Middle East, along with Asia the twin "pivots" of the new strategy it announced early in 2012. The US is assisting the GCC states in a major military buildup to counter Iran, and is competing with Iran for security and military influence in Iraq.

There is no way to definitively assess the relative risks of a near-term conflict with the risks posed by an ongoing military build-up. Both risks are key aspects of US and Iranian competition. It is important to note, however, that the competition in conventional, asymmetric, and proxy warfare is linked to Iran's ability to acquire more lethal missiles and nuclear weapons. A nuclear-armed Iran could be far more effective in deterring US, Israeli, or Gulf Arab strikes of its territory, which may very well result if Tehran attempts to use its asymmetric and other forces to pressure or attack traffic through the Gulf or to try to influence other regional states. Iran's desire

for potential or actual nuclear capability is a key part of its strategy for improving its capabilities for conventional, asymmetric, and proxy warfare.

The Historical Background

The history of US and Iranian military competition is closely associated with with the history of the political tensions between the US and Iran. The US sees Iran as a state that has been vehemently anti-American since the fall of the Shah and the founding of the Islamic Republic, which held US embassy employees hostage, and threatens the region, exports terrorism, and exports aid and arms to insurgents and extremists in Iraq and Afghanistan. The US sees Iran as a nation seeking nuclear-armed missiles, that is steadily building up asymmetric forces that threaten friendly Gulf states and the stable flow of Gulf petroleum exports, and that is developing the capability to threaten Israel's existence. It feels Iran seeks to become the dominant power in the region while seeking to expel US power and influence.

Iran sees competition as driven by US efforts to dominate the Gulf and the region, by a period of US intervention in Iranian internal affairs that began in 1953, by US security assistance to the Pahlavi regime before the Shah's fall, US support of Iraq during the Iran-Iraq War, the "tanker war" from 1987-1988, and US efforts to deny Iran imports of arms and military technology. Iran feels the US seeks to dominate the region and Iran, while seeking to contain Iran's power and influence. It also seeks the US as threatening Iran's regime, as a possible invader, and as a state the might strike preemptively to destroy Iran's nuclear programs and weaken its military forces. It sees the US as the cause of growing economic problems and a sanctions regime that could cripple the Iranian economy.

The end result is a competition of building and deploying military forces that has now gone on for more than 30 years, and which has occasionally led to direct military action. Key events include the Iranian hostage crisis (1979-1981), US seizure of Iranian assets, the imposition of sanctions on Iran, and occasional military clashes (1988). The most prominent aspect of US-Iranian rivalry, though, has been the use of proxies.

The recent history of US and Iranian military competition is shown in **Figure III.1**. It reflects the fact that Iran has sought to bridge the gap in conventional capability by building a strong capacity asymmetric warfare to defend against attacks and invasion, and expand its influence throughout the region and pose a threat to tanker and shipping in the Gulf. After it conventional forces suffered tactical defeats at the hands of superior US forces in the Gulf during Operation Praying Mantis (1987-1988), Iran shifted its focus to developing a strong asymmetric capacity that focuses on the use of smart munitions, light attack craft, mines, swarm tactics, and missile barrages to counteract US naval power. While such assets cannot be used to achieve a decisive victory against US and other forces in a direct confrontation in the Gulf, they are difficult to counter and give Iran the ability to strike at larger conventional forces with little, if any warning.

Iran has also created robust nuclear and ballistic missile programs, which have become a focal point of US-Iranian military competition. Iran's missile program dates to the 1980s, and was fully underway during the Iran-Iraq War. While Iran's ballistic missile capabilities were initially limited, the range and sophistication of the country's missiles has increased greatly since its inception in the early days of the Iran-Iraq War. Iran has now created conventionally armed

ballistic missile forces that can strike at US allies and US bases in the region with little warning, and could be configured to carry nuclear warheads if Iran can develop them.

Although an Iranian nuclear program has existed in some form since the 1950s, Iran's push to enrich uranium and reach a nuclear breakout capability began in earnest during the Iran-Iraq War, and accelerated in the early 2000s. This program may have paused in 2003, but recent reporting by the International Atomic Energy Agency (IAEA) and other sources makes it clear that Iran has since made further advances in its capability to produce nuclear weapons, now has all of the technology necessary to produce a nuclear device, and is pursuing warhead designs for its missiles that could be used to deliver nuclear weapons.

In spite of sabotage, the assassination of some Iranian scientists, and international sanctions — Iran's nuclear program continues to progress. Iran still claims that its nuclear program is entirely peaceful, but its lack of cooperation with the IAEA – and the growing range of other indicators that it is developing the capability to produce nuclear weapons – make such claims doubtful. It is possible that Iran may acquire deliverable nuclear weapons at some point in the next two to five years.

The US has responded with sanctions, efforts to limit Iran's imports of weapons and technology, and by providing its Gulf allies with advanced military equipment to counter Iran. The UAE, for example, has received the transfer of advanced F-16s. Saudi Arabia has received transfers of billions of dollars of advanced equipment; including AH-64 Apache attack helicopters, M1 Abrams main battle tanks, and F-15S multirole fighters. Most Southern Gulf states have advanced version of the Patriot with some missile defense capability and the US has made it clear it will provide more advanced systems in the future. Such systems are far more advanced than Iranian military technology, and serve to both limit Iran's influence and provide a major deterrent to Iranian forces.

Even since the fall of the Shah and the rise of the Khomeini regime, the US and Europe have refused to provide Iran with new arms sales as well as military technology, parts, and updates for the systems they sold during the time of the Shah. They have also put continuing pressure on Russia, China and other arms suppliers to limit the transfer of arms. The US and its allies also favored Iraq during the Iran-Iraq War, and the US provided substantial support to Iraq in the form of arms sales, intelligence, and technological assistance. The combination of such limits on Iran's arms imports and its massive losses during the Iran-Iraq war have severely restricted the quality and modernization of Iran's conventional forces, and forced Iran to both create a domestic arms industry and find alternatives to conventional military power.

Figure III.1: Summary Chronology of US-Iranian Military Competition: 2000-2011[123]

2001

March 12 – Russian president Vladimir Putin and Iranian president Mohammed Khatami sign a cooperation and security agreement during a state visit to Moscow, the first since the 1979 Revolution.

April – Iran and Saudi Arabia sign a security agreement with the objective of combatting drug trafficking and terrorism.

June – Five years after a truck bomb destroyed the Khobar Towers in Dhahran, Saudi Arabia; a federal grand jury in the US indicts 13 Saudis and one Lebanese for their role in the attack. The indictment states that all were part of Saudi Hezbollah, an Iranian proxy. The blast killed 19 US servicemen.

October 2 – Six years after it halted arms sales to Iran due to US diplomatic pressure, Russia signs a military agreement with Iran that includes the sale of missiles, fighter aircraft, and other armaments.

October 8 – Supreme Leader Ali Khamenei condemns the US airstrikes in Afghanistan. However, Iran agrees to perform search and rescue missions for US pilots that crash or are shot down over Iranian soil.

September – A CIA report accuses Iran of possessing one of the most active nuclear weapons programs in the world. Moreover, it indicates that Iran is seeking ballistic missile technology from Russia, China, and North Korea.

2002

January – Israeli seize the *Karina A.* They discover that the ship is carrying 50 tons of arms that Israeli officials believe are intended for Palestinian militant organizations.

January 29 – US president George W. Bush refers to Iran, Iraq, and North Korea as an "axis of evil" in his State of the Union address.

September – Iran begins construction of its first nuclear reactor at Bushehr with the assistance of Russian engineers and technicians. The move prompts strong objections from the US.

December – The US accuses Iran of possessing a secret nuclear weapons program centered on two nuclear facilities at Natanz and Arak, both of which are under construction at the time.

2003

March – In the wake of the US-led invasion of Iraq, Iran and Syria expand and intensify their cooperation to ensure that they themselves would not become targets as well. Both countries begin to support insurgent groups in Iraq, and expand bilateral defense cooperation.

May – Shortly after the US invasion of Iraq, a Swiss diplomat relays Iranian conditions for bilateral talks to the US government. The offer, however, is not considered seriously by the Bush administration.

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[1] "Timeline: Iran-US Relations." Al-Jazeera English. June 25, 2009.

[2] "Timeline: US-Iran Ties." BBC. May 10, 2011.

[3] "Timeline of Iran's Foreign Relations." United States Institute of Peace

2004

June 21 – Iran arrests six British sailors for allegedly trespassing into Iran's territorial waters. They are paraded through Tehran and later forced to apologize. All are released three days later after negotiations.

November – Iran agrees to suspend uranium enrichment in exchange for trade concessions from Europe.

2005

August – George W. Bush makes one of many statements to follow about not ruling out the use of force to halt Iran's nuclear program.

June – Former IRGC commander and presidential candidate Mohsen Rezaei states that Iran played a larger role in the overthrow of the Taliban than the US gave it credit for.

June 16 – Iran and Syria sign a military cooperation agreement to defend against what both sides deemed the "common threats" presented by the US and Israel. The defense ministers of both countries stated in a joint press conference that the agreement was aimed at consolidating defense efforts and strengthening mutual support.

June 6 – Iran is given observer status in the Shanghai Cooperation Organization, an intergovernmental mutual security organization that includes Russia, China, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. Iran later applies for full membership in March 2008, but its admission is blocked by sanctions imposed on it by the UN.

October 25 – Iran's new president, Mahmoud Ahmadinejad, calls for Israel to "vanish from the pages of time." This statement is widely seen as a threat leveled at Israel.

2006

April – Washington denies a claim reported in *The New York Times* that the US is considering a tactical nuclear strike on Iran's underground nuclear facilities.

Iran lodges a complaint at the UN, and states that it will retaliate against any attack. Iranian president Mahmoud Ahmadinejad reaffirms that Iran's nuclear program is peaceful. Iran later offers to hold direct talks with the US regarding Iraq, but withdraws the offer soon after.

May – Iran threatens withdrawal from the Nuclear Non-Proliferation Treaty if pressure on its nuclear program escalates following a UN Security Council draft resolution.

Later that month, the US offers to join the EU in direct negotiations with Iran if Tehran agrees to suspend uranium enrichment

December – The UN Security Council passes a resolution that imposes sanctions on Iran over its nuclear program.

2007

January – Members of the IRGC are arrested in Iraq by US forces for engaging in sectarian warfare. After lumping Iran together with al-Qaeda in the State of the Union address, US president George W. Bush states that he does not intend to attack Iran.

February – Iran denies accusations that it is promoting violence in Iraq.

February 8 – Iran's Supreme Leader Ali Khamenei states that Iran would retaliate against US interests

around the world if the US were to attack Iran's nuclear program.

March 24 – Iran detains 15 British marines and sailors for allegedly trespassing into Iran's territorial waters. They are released after approximately two weeks.

May 28 – The US and Iran hold the first high-level official talks since the 1979 Revolution in Baghdad. The meeting comes after the Iraqi government holds a security conference attended by regional states and permanent members of the UN Security Council. The talks focus on Iraqi security, and are later followed by more talks in July and November. In the course of these meetings, the US urges Iran to stop supporting Shi'ite militias in the country. The talks, however, do not lead to anything meaningful, and cease after three meetings.

August – Iranian officials denounce US plans to designate the IRGC as a terrorist organization as "worthless." Bush warns Iran over its support for Shi'ite militias in Iraq.

September 6 – NATO forces in Afghanistan intercept a large shipment of Iranian arms intended for the Taliban. Among other things, the shipment includes explosively formed penetrators (EFPs). US officials state that the large size of the shipment made is indicative that Iranian officials are at least aware of it. Iran denies the accusations.

October – The commander of US forces in Iraq, General David Petraeus, claims that Iran is promoting violence in Iraq. Petraeus also accuses Iran's ambassador to Iraq, Hassan Kazemi Qomi, of being a member of the Al Qods Force, the special operations wing of the IRGC that is responsible for training and equipping Iran's proxies.

November – Twenty Iranian citizens held by US forces in Iraq are released.

The IAEA releases a report that states that Iran supplied transparent records of its past nuclear activities, but emphasizes that it only has limited knowledge of Iran's then-current nuclear activities.

December – A US intelligence report states that Iran suspended its nuclear weapons program in 2003, but continued to enrich uranium.

Iranian president Mahmoud Ahmadinejad hails the report as an Iranian victory. US president George W. Bush states that Iran risks further isolation if it does not reveal the full extent of its nuclear activities.

US Secretary of Defense Robert Gates states that Iran may have restarted its nuclear weapons program at a conference in Bahrain, despite the US report. Moreover, he states that Iran still poses a serious threat to Middle East security and the US.

Iran protests US espionage against its nuclear activities in a formal letter to the US.

2008

January – Iran's Supreme Leader, Ali Khamenei, states that US-Iranian relations could be restored in the future. The US accuses Iran of harassing US Navy ships in the Strait of Hormuz.

Bush accuses Iran of being the world's leading sponsor of terrorism.

April – The US accuses Iran of continuing to support Afghan insurgents.

July – The IRGC carries out a series of war games and ballistic missile tests during the Great Prophet 3 military exercises. Iran test fired a new version of its Shahab-3 intermediate range ballistic missile, which Iran states are capable of hitting targets in Israel. The tests, however, draw attention over allegedly doctored

photographs, and some experts claim that the missile is the shorter range Shahab-3A or the SCUD C, which would indicate no improvement in Iran's ballistic missile technology or capabilities.

2009

January 29 – A White House spokesman indicates that US president Barack Obama will "preserve all his options," and has not ruled out the use of force to confront Iran's nuclear program.

February 3 – Iranian president Mahmoud Ahmadinejad announces the launch of the Omid ("Hope"), Iran's first indigenously produced satellite. The launch is seen in the West as veiled research into ballistic missile technology.

May 1 – The US Department of State designates Iran as the most active state sponsor of terrorism. Iran responds by stating that the US is in no position to accuse other states of terrorism in light of its actions at the Guantanamo Bay detention camp and the scandal at Iraq's Abu Ghraib prison.

May 20 – Iran successfully tests the Sajjil-2 ballistic missile, which the regime states has a 1,500-mile range (the longest range of any of Iran' missiles). The Obama administration responds by stating that the test was a "significant step" in Iran's ballistic missile program, and indicated that Iran was working on enhancing its missiles' payload capacity.

September – Iran admits to constructing the Fordow uranium enrichment facility near Qom, but states that it is for peaceful purposes.

September 22 – Iran shows its Shahab-3 and Sajjil ballistic missiles in a military parade. Additionally, it shows off its Russian-built Tor M1 air defense system for the first time.

September 27-28 – Iran tests a number of different ballistic missiles during the Great Prophet 4 war games, including the Tondar-69, the Shahab-1, the Shahab-2, and the Fateh-110.

December – General David Petraeus again accuses Iran of supporting Shi'ite militants in Iraq, and providing a "modest level" of support to Afghan insurgents.

2010

January – Masoud Ali Mohammadi, an Iranian physics professor, is killed in a bombing in Tehran. No group claims responsibility, but the Iranian government claims the US and Israel are behind the attack.

March – Iran and Qatar sign a security agreement to combat terrorism and promote security cooperation.

April - The IRGC conducts the Great Prophet 5 exercises in the Gulf and the Strait of Hormuz. The exercises include the conspicuous use of IRGC fast attack craft armed with anti-ship missiles against larger, static targets.

May - Iran holds the Velayat 89 naval war games in the Gulf and the Sea of Oman. Both the IRGC and the regular navy participate. The games include exercises in chemical and biological warfare, large-scale offensive naval infantry operations, and the use of small, fast-attack patrol craft.

August – Iran successfully tests a new version of the Fateh-110, a short-range ballistic missile with a 155-mile range.

In what Iran describes as a milestone in its quest for nuclear energy, technicians begin loading fuel into the Bushehr nuclear power plant.

September – The Stuxnet computer virus is detected in staff computers at the Bushehr nuclear power plant. The virus is believed to have been created by a nation state.

November - Iran carries out what it terms its "largest ever" air defense drill. The five-day exercise is aimed at defending the country's nuclear sites from airstrikes, and a number of missiles are test fired, including the S-200 system.

2011

January – Iran's nuclear chief, Ali Akbar Salehi, states that Iran now possesses the technology needed to make fuel plates and rods for its nuclear reactors.

February 7 – The commander of the IRGC, Brigadier General Mohammed Ali Jafari, unveils the *Khalij Fars*, a guided anti-ship ballistic missile. General Jafari claims the missile is capable of destroying a US aircraft carrier.

Iran sends two warships through Suez Canal for first time since the Islamic Revolution, in what Israel describes as an act of provocation.

July – The Iranian military holds the "Great Prophet 6" war games, during which Iran test-fires new long-range missile designs and reveals the presence of underground missile silos.

US Secretary of Defense Leon Panetta and Army General Lloyd Austin express concern that Iran is providing Shi'ite militants in Iraq with advanced rockets and other armaments.

September – The commander of Iran's navy, Admiral Habibollah Sayyari, announces Iran's intention to send warships to patrol the Atlantic, stating following: "Like the arrogant powers that are present near our marine borders, we will also have a powerful presence close to the American marine borders."

October – US officials reveal an alleged Iranian plot to assassinate Adel Al-Jubeir, Saudi Arabia's ambassador to the US. Iran denies all involvement.

November – The IAEA releases a report that provides detailed indicators that Iran has weaponized its nuclear program.

November – Explosions as a result of apparent acts of sabotage on Iranian nuclear and missile sites. Explosions at a missile site outside of Tehran on November 12 nearly leveled the facility, and killed IRGC General Hassan Moghaddam. On November 28, explosions rocked a uranium enrichment facility outside of Isfahan. Although Iranian officials claimed the event was an accident, the timing of these events makes such a conclusion unlikely.

December – Iran makes increasingly aggressive statements regarding the presence of the US 5th Fleet in the Gulf, including, but not limited to threatening a US aircraft carrier if it returned to the Gulf.

2012

January – Iran concludes the Velayat-90 naval exercises, during which the IRGC tested a number of missiles, mines, and torpedoes.

March – President Obama and Secretary of Defense Panetta make increasingly direct and aggressive statements that allude to the likelihood of a US strike on Iran's nuclear facilities should Tehran continue to refuse to cooperate with the international community over its program.

July – Iran carries out the Great Prophet 7 wargames in which the Shahab 3 MRBM is tested. During the three-day exercises missiles are launched at mock US bases in a simulated attack on US bases in Afghanistan and the Gulf.

July – Rumors that Iran is either preparing for a war against the US and its regional allies, or at least feigning to do so. The deputy commander of the IRGC, Morteza Mirban, states the following: "Today over 3,000 boats are in the Persian Gulf and involved in commerce, constantly passing by America's naval ships… The question is how can America engage us in war not knowing how it will get hit next? If they dare to take up arms, they will see how they will regret their act."

Current Patterns in the Structure of US and Iranian Military Competition

While the world tends to focus on Iran's nuclear programs, the current patterns of military competition between Iran and the US and Iran's Arab neighbors have four major aspects:

- *Iran's conventional forces: Iran seeks to improve its conventional forces in ways intended to expand its influence, limit US military options, provide the ability to intimidate its neighbors, and increase its power projection capabilities. The US seeks to counter Iran by denying it modern conventional arms, improving its own forces and power projection capabilities, and by building up those of friendly Arab Gulf states, particularly those of Saudi Arabia and the UAE. Both Iran and the US compete for influence over Iraq's future military development.*

  Iran does have large conventional forces with significant capabilities to threaten and influence its neighbors. It is improving its ability to deter US naval and air operations — as well as potential operations by Israel and other states — and it has significant military options it might use against Iraq, targets in the Gulf, Gulf of Oman, and the GCC states. As the Israeli-Hezbollah War and use of shaped-charge IEDs in Iraq have shown, Iran has also strengthened its proxies in other areas.

  Moreover, Iran has successfully imported Russian and North Korean submarines and a variety of Chinese anti-ship missiles. It has acquired modern Russian and Chinese air-to-air, air-to-ground, SHORAD, and anti-armor missiles. It has modern Russian homing torpedoes and is reported to possess advanced types of Russian and Chinese mines. It also is slowly creating the capability to design and manufacture its own major conventional weapons systems.

  The US, however, has had considerable success in persuading other states not to sell Iran modern major weapons system, and Iran has been forced to try to produce many of its own systems with only limited success. Iran is still heavily dependent on systems that date back to the time of the Shah and which were worn by the stress of the Iran-Iraq War. It has had some successes in modernization, but it has not been able to acquire large numbers of modern armor, combat aircraft, longer-range surface-to-air missiles, or major combat ships. Partly because of US efforts, much of its conventional military force is obsolescent or is equipped with less capable types of weapons.

  Much of the outcome of this aspect of US and Iranian military competition depends on how other nations treat arms sales to Iran. Iran has negotiated with Russia over sales of advanced types of modern combat aircraft, surface-to-air missiles, and ballistic missile defenses. It also actively seeks advanced systems from other countries.

  The end result is a constant and growing challenge to the US in the Gulf region, particularly in terms of air, missile, and naval warfare, as well as a challenge to the US in providing military support and transfer to the GCC states, Israel, and Iraq.

- *Asymmetric and irregular warfare*: *Iran has made major efforts to improve its capability for asymmetric warfare, and to use those forces to pressure, threaten, or attack other powers in ways that the US finds difficult to counter.*

  Iranian efforts to develop advanced capabilities for asymmetric warfare have focused on improving the capabilities of Iran's Islamic Revolutionary Guards Corps (IRGC), but they affect every aspect of Iran's military and security efforts. Any weapon and any type of force can be used in asymmetric, irregular, or hybrid ways—from a terrorist proxy to a nuclear weapon.

  Iran has already demonstrated its ability to use its forces in asymmetric and irregular warfare in a number of ways:

  - Iranian tanker war with Iraq
  - Oil spills and floating mines in the Gulf
  - Use of Al Qods Force in Iraq/RAM IEDs
  - Series of IRGC and naval/air exercises in Gulf and Gulf of Oman
  - Iranian use of UAVs over Iraq
  - Funding and training of Hezbollah; Provision of UAVs, long-range rockets, Kornet ATGMs to Hezbollah
  - Incidents and demonstrations during pilgrimage in Makkah
  - Transferring shaped charges and other advanced IEDs to Mahdi Army and others in Iraq; training of Iraqi insurgents
  - Arms flows into western Afghanistan
  - Shipments of arms to Hamas and Palestinians
  - Support of Shi'ite groups in Bahrain
  - Long-range ballistic missile and space tests; expanding range of missile programs. Iranian public description of possible missile attacks on Israel that indirectly demonstrating Iran's capability to attack its neighbors
  - Naval guards seizure of British boats, confrontation with US Navy
  - Long series of IRGC and Iranian military exercises in Gulf demonstrating ability to attack coastal targets, shipping, and offshore facilities

  Iran's military efforts to compete with the US and its Gulf neighbors by developing advanced capabilities for asymmetric warfare cannot be separated from Iran's emphasis on missiles and weapons of mass destruction (WMD). Both compensate for the limits of its conventional forces and act as a substitute. Moreover, if Iran does acquire – or is perceived to acquire – nuclear weapons, this will have at least some impact on deterring any response to Iran's use of asymmetric warfare. Iran's neighbors, as well as the US, Britain, France, and Israel must then at least consider the risk that Iran will escalate.

  Iran has also gone to considerable lengths to use proxies to undermine the US presence and influence in regional countries. Examples include Iranian support for Shi'ite militant groups in Lebanon such as Hezbollah and Islamic Jihad, which led to the 1983 bombing of the US Marine barracks in Beirut, an event that pushed the US military presence out of the country. More recently, Iran has provided extensive material support and training to

Shi'ite militias in post-2003 Iraq, which have constituted a thorn in the side of Coalition forces as well as a major obstacle to the establishment of a stable Iraqi state.

- *Expanded areas of operation and influence. The strategic focus of US-Iranian military competition is centered on Iranian efforts to build up Iran's military capabilities in the Gulf, Straits of Hormuz, and Gulf of Oman. However,* ***Figure III.2*** *shows that it now extends throughout much of the Middle East and North Africa, into Central and South Asia, and beyond;* Iran is seeking the capability to challenge the US and other Gulf states with a mix of capabilities ranging from free-floating mines and small craft with anti-ship missiles, to the ability to conduct air attacks on key targets like desalination plants, as well as missile attacks on military bases and cities.

  USCENTCOM and senior US officers have states has stated that Iran already has a limited capability to halt most commercial shipping through the Gulf for a short period. Speaking on Iran's ability to close the Strait of Hormuz, the strategic shipping lane linking the Gulf of Oman and the Persian Gulf, Joint Chiefs of Staff chairman, General Martin Dempsey stated in January 2012 that:

  > *They've invested in capabilities that could, in fact, for a period of time block the Strait of Hormuz."* - Joint Chiefs of Staff chairman General Martin Dempsey, January 9, 2012.[4]

  Several days later, Admiral Jonathon Greenert also responded to Iran's threats and claims close the Strait:

  > *"If you ask me what keeps me awake at night, it's the Strait of Hormuz and the business going on in the Persian Gulf."* – Admiral Jonathan Greenert January 11, 2012.[5]

  Few doubt that Iran now has a mix of forces that can carry out low-level attacks and harassment over extended periods of time in ways that would make it difficult for the US and its allies to respond by escalating in a manner that would seem justified.

  The US does, however, retain the advantage in scenarios that involve an Iranian attempt to "close the Gulf." Despite Iran's steadily advancing capabilities in asymmetric and proxy warfare, Iran's forces, territory, military and military production facilities, and critical infrastructure are still vulnerable to US conventional forces and devastating precision attacks on Iran's military and economic assets. It is only if Iran can acquire nuclear weapons that it can create a potential deterrent to US conventional attacks if Iran uses its asymmetric or conventional forces.

- *Missiles and weapons of mass destruction: Iran is a declared chemical weapons power, has long-range missiles, may be developing biological weapons, and is seems to be seeking nuclear weapons to counter US capability to threaten and deter Iran, as well as*

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[4] Kathleen Hunter and Viola Gienger, *"Iran Able to Block Strait of Hormuz, General Dempsey Says on CBS".* Bloomberg*, January 9, 2012. Available at* ,http://www.bloomberg.com/news/2012-01-08/iran-able-to-block-strait-of-hormuz-general-dempsey-tells-cbs.html

[5] "US Navy Commander: Iran's Words about Hormuz Strait "Keeps Me Awake at Night", FARS News Agency, January 11, 2012. Available at http://english.farsnews.com/newstext.php?nn=9010170705

to win influence over its neighbors. The US is seeking to prevent Iran from acquiring nuclear weapons and long-range missiles while simultaneously developing options to deter and defend against Iran if they should succeed.

A November 2011 report by the IAEA lists strong indicators that Iran has been moving towards a nuclear weapons capability since the mid-1980s. This seems to be a process that has been going on since the Iran-Iraq War, and that grew out of Khomeini's decision to resume nuclear research once Iran came under chemical weapons attack from Iraq.

IAEA and other reports show that Iran developed underground nuclear facilities that it initially attempted to keep covert, and expressed an active interest in nuclear warheads for its missiles. Reports also show that Iran is making advances in its centrifuge designs that can greatly increase their capacity as well as making it far easier for them to create small, dispersed sites that will be far harder to detect. Even if Iran agrees to IAEA inspections and is vulnerable to some form of preventive attack, its growing technology base will continue to create new options for concealing a nuclear weapons program and/or developing a break out capability.

Iran also is a declared chemical weapons power, although it has never complied with the Chemical Weapons Convention (CWC), nor stated its holdings. It probably has the capability to manufacture persistent nerve gas. It could certainly put such gas in a unitary warhead and probably has some cluster weapon capability.

Iran is a signatory to the Biological Weapons Convention (BWC), but there are no firm data to indicate whether it does or does not have an ongoing biological weapons program. It is clear, however, that Iran does have the capability to develop and produce advanced biological weapons – and could do so as either a supplement or substitute for nuclear weapons. Iran could acquire the ability to develop even more advanced genetically engineered biological weapons in within the next five years, roughly the same timeframe required to deploy a nuclear force.

There is no inspection regime for the BWC, and US studies raise serious questions as to whether such a regime is even possible. Accordingly, even if Iran did fully comply with all IAEA requirements, it could still develop and produce weapons of mass destruction. Similarly, there is no enforceable way that a true WMD free zone can be established and enforced in the Middle East – or any other area with advanced biotechnology.

Iran's missile programs represent a critical part of its military efforts and expenditures. Iran is making major advances in its long-range missiles, including the development of solid fuel systems. Its longer-range missiles have not, however, been tested in ways that demonstrate the reliability and accuracy required to be effective against anything other than area targets, unless they are armed with a nuclear warhead. A chemical missile warhead would have such limited lethality that it would be more a weapon of terror rather than a true weapon of mass destruction.

So far, the US has attempted to prevent Iran from building and deploying nuclear weapons through the use of sanction, and by developing military options for preventive strikes if negotiations fail. It also has taken step to deter and defend against Iran's missile and nuclear programs by seeking to develop US and regional capabilities like missile

defense, and by offering its allies "extended regional deterrence." There is little evidence, however, that the US has yet been able to halt Iran's nuclear program.

The ways in which the Gulf states will respond to Iran's efforts remain uncertain, but this is an area of US and Iranian competition where neither the US or Iran can ignore either the possibility that a state like Saudi Arabia will seek its own nuclear weapons or that Israel is not already involved in a nuclear and missile arms race with Iran.

Like the US, Israel has examined military options for strikes on Iran that could delay or prevent it from acquiring nuclear weapons. Israel is also making major improvements to its missile defense programs. As is discussed later in this study, Israel currently has the capability to target Iran with nuclear-armed missiles, and is reported to be developing nuclear-armed cruise missiles for its Dolphin submarines.

Israel has had French fission and fusion design and test data on nuclear weapons for decades. While Iran is still developing fission designs, Israel is probably targeting Iran with boosted and thermonuclear weapons. As a result, there is already an existential nuclear arms race in the region, although at present it is Iran and not Israel that is the target.

Differing National Perspectives

As is the case with every other aspect of US and Iranian competition, military competition is shaped by differing US, Iranian, and third country perceptions and politics.

US Perceptions

American policymakers and planners focus on the full spectrum of Iran's military capabilities as they affect the entire region and statements and non-state actors outside it. They focus on the full range of Iran's military actions and capabilities, and on the fact Iran plays a growing role outside the Gulf and Levant that the US and many of its other allies perceive as an additional threat.

The US Secretary of Defense summarized Iran's strategy as follows in the unclassified version of his annual report on Iranian forces that he sent to Congress on June 29, 2012,[6]

> *There has been no change to Iran's strategies over the past year. Iran's grand strategy remains challenging U.S. influence while developing its domestic capabilities to become the dominant power in the Middle East. Iran's security strategy remains focused on deterring an attack, and it continues to support governments and groups that oppose U.S. interests. Diplomacy, economic leverage, and active sponsorship of terrorist and insurgent groups, such as Lebanese Hizbullah, Iraqi Shia groups, and the Taliban, are tools Iran uses to increase its regional power. Iran's principles of military strategy remain deterrence, asymmetrical retaliation, and attrition warfare.*
>
> *Iran seeks to increase its stature by countering U.S. influence and expanding ties with regional actors while advocating Islamic solidarity. Iran also desires to expand economic and security agreements with other nations, particularly members of the Nonaligned Movement in Latin America and Africa.*

[6] Taken from unclassified edition of the *Annual Report on Military Power of Iran, April 2012*, as transmitted in Letter from the Secretary of Defense to the Honorable Carl Levin, chairman of the Senate Armed Services Committee, June 29, 2012, pp. 1-4.

With the advent of the Arab Spring in 2011, Iran saw opportunities to increase its influence by supporting groups opposed to regimes in power, particularly those perceived to support U.S. interest. Iran publicized its belief that these popular, democratic uprisings were inspired by its own 1979 revolution.

Outside the Middle East, Iran's efforts to expand political, economic, and security ties with a range of countries demonstrates Tehran's desire to offset sanctions and diplomatic isolation.

Iran continues to use a multipronged strategy in Iraq, including engagement with leaders across the political spectrum, outreach to the Iraqi populace, and continued support to Iraqi Shia militants and terrorists, such as Kataib Hizbullah, Asaib Ahl al-Haq, and the Promised Day Brigade, in the wake of the U.S. military withdrawal. Iran provides money, weapons, training, and strategic and operational guidance to Shia militants and terrorist groups to protect and preserve Iran's security interests, including threatening the residual U.S. presence. In addition to providing arms and support, the Islamic Revolutionary Guard Corps-Qods Force (IRGC-QF) is responsible for training Iraqi militants and terrorists in Iran, sometimes using Lebanese Hizbullah instructors.

Iran continues to influence events in Afghanistan through a multifaceted approach, including support for the Karzai government while also supporting various insurgent groups. Tehran maintains ties with leaders across the political spectrum and continues to be involved in a number of humanitarian, economic, and cultural outreach activities among the Afghan populace. Although Tehran's support to the Taliban is inconsistent with their historical enmity, it complements Iran's strategy of backing many groups to maximize its influence while also undermining U.S. and North Atlantic Treaty Organization (NATO) objectives by fomenting violence.

Iran has been involved in Lebanon since the early days of the Islamic Republic, especially seeking to expand ties with the country's large Shia population. The IRGC-QF continues to provided money, weapons, training, and logistical support to Lebanese Hizbullah and views the organization as a key to tool in its efforts to pressure Israel.

Since the beginning of the Syrian unrest, Iran has supported President Bashar al-Asad while downplaying the depth of this support in public. Iran's support to the Asad regime has included military equipment and communications assistance. Iran probably has provided military trainers to advise Syrian security forces.

There has been no chance to Iran's strategies over the past year. Iran continues to seek to increase in stature by countering U.S. influence and expanding ties with regional actors while advocating Islamic solidarity. Iran also desires to expand economic and security agreements with other nations, particularly members of the Nonaligned Movement in Latin America and Africa.

Iran's military doctrine remains designed to slow an invasion; target its adversaries' economic, political, and military interests; and force a diplomatic solution to hostilities while avoiding any concessions that challenge its core interests. Iran over the past year publicly threatened to use its naval forces to close the Strait of Hormuz in response to increasing sanctions and in the event Iran is attacked. Iran also has threatened to launch missiles against U.S. interests and our allies in the region in response to an attach and has issued threats to support terrorist attacks against U.S. interests.

American planners focus on the fact that Iran has begun to compete with the US on a global basis. Iran's actions range from interfering in the internal affairs of Morocco, to an anti-American political and propaganda alliance with the Chavez regime in Venezuela. At the same time, American policymakers and planners have repeatedly made it clear that Iran poses an asymmetric threat in the Gulf and to all of its neighbors, and that Iran poses a threat that could lead to a major crisis in Gulf petroleum exports and world oil markets. The US is now deeply involved in a de facto alliance with the Southern Gulf states to deal with these threats, as well as with Jordan and Egypt in finding ways to contain Iran and limit its ability to pose a security threat to Iraq.

American policymakers and planners feel that Iran's missile and potential nuclear weapons capabilities threaten the entire Gulf, many other MENA states, and Turkey. American policymakers see Iran's missiles as a potential threat to Europe in any confrontation where it seeks to deter US military action. They have also made it clear that they feel Iran not only threatens Israel, but the Arab-Israeli peace process as well. The US must deal with the fact that Iran opposes the current Arab-Israeli peace negotiations and is probably unwilling to accept any broad Arab-Israeli peace settlement in the near future.

Both President Bush and President Obama, and a number of senior US officials and officers, have made it clear that the US has developed military options for striking at Iran's nuclear and missile programs. American leaders have also made it clear that they do not view military competition as inevitably leading to some form of warfighting, nor do they see the use of such military options as desirable.

American policymakers – and most Europeans as well – currently act on the perception that the Iranian threat can best be dealt with using options like sanctions and negotiations, and by focusing more on diplomatic options, although American leaders make it clear that military options remain on the table. Key US military leaders like Admiral Mullen, General Petraeus, and General Dempsey have made it clear that they oppose any near-term Israeli strike on Iran, and see such actions as deeply destabilizing at a time when the US is still engaged in Iraq and Afghanistan, and is dealing with a broader struggle against violent Islamic extremists.

Iranian Perceptions

Iran's policymakers and planners see the US as the major threat to Iran and claim to see it as the most significant threat – followed by Israel – to the entire region. While their private views may be different and more nuanced, and Iran uses the "threat" posed by the US and Israel to justify a military buildup that is also directed at increasing its influence over its Arab neighbors and Turkey, key Iranian officers and leaders have described their military competition with the US as follows:

- *"The sworn enemies of Islam and the Islamic Revolution have been united to take the opportunity of elections and try to counter the ideals of the Islamic establishment. We should remain vigilant to thwart the enemies' plots."* –Heidar Moslehi, Iranian Intelligence Minister, February 8, 2012 ==

- *"We do not want war, but if a problem arises one day and His Holiness gives a signal, many people are ready to execute his orders... Israel has no easy sleep because of fearing Hezbollah."* -Mohammad Mohammadi Golpayegani, the head of Supreme Leader Ali Khamenei's Office, February 8, 2012. http://www.farsnews.com/newstext.php?nn=13901118000917

- *"Should the enemies desire to use the method and spirit of threats, we will naturally also threaten them. The (military) exercise by the armed forces of the Islamic Republic of Iran's Islamic Revolution, in fact, expresses the will to act against various types of threats that are targeting our national security."* - Hossein Salami, Revolutionary Guards Deputy, February 7, 2012. http://www.farsnews.com/newstext.php?nn=13901118000917

- *"The Hamian-e Velayat [Supporters of Guardianship] war game is a response to the strong statements of the Supreme Leader at the Friday prayer and his strategy to counter regional and extra regional threats. The war game displayed the latest offensive and defensive doctrine of the Revolutionary Guards Ground Forces deploying 33rd Al-Mahdi airborne brigade."* - Hossein Salami, Revolutionary Guards Deputy, February 7, 2012. http://www.farsnews.com/newstext.php?nn=13901116001165

- *"Syria's President Bashar al-Assad should be allowed some time to carry out his pledged reforms as the Syrian leader has taken considerable steps so far in this regard."* - Iranian Foreign Minister Ali Akbar Salehi, February 2, 2012.
  http://english.farsnews.com/newstext.php?nn=9010173383

- *"Tens of radar and missile systems with various ranges have been manufactured and deployed in Iran's defense sector so far and new systems are on their way to join the defense network during the 10-Day Dawn celebrations, which began on February 1 to mark the 33th anniversary of the victory of the Islamic Revolution in Iran. Iran's scientific and technological progresses, which have irked the arrogant powers, come in the face of US-led sanctions."* - Farzad Esmayeeli, Commander of Khatam ol-Anbia Air Defense Base Brigadier General, February 2, 2012.
  http://english.farsnews.com/newstext.php?nn=9010173363

- *"[T]he recent statements made by the US and the West about the Strait of Hormuz show that they are frightened by the awe of the (Islamic) Revolution, otherwise the Iranian nation considers the Strait of Hormuz as the strait of peace. However, the Iranian nation is determined to cut the hand of those who seek adventurism in the Persian Gulf, the Sea of Oman and the Strait of Hormuz."* – Ali Larijani, Speaker of Iranian Parliament, February 1, 2012.
  http://english.farsnews.com/newstext.php?nn=9010173255

- *"Tehran will not remain indifferent to US mischief in the region if Washington tries to cause problems for regional countries. The Strait of Hormuz is a region of peace and Iran has protected its peace for centuries and will continue to do so in order to maintain calm in it,"*-Ali Larijani, Speaker of Iranian Parliament, January 31, 2012.
  http://www.presstv.ir/detail/223919.html

- *"There are some geographic, historical, and social differences between the Muslim nations and there is no unitary role model for all Islamic countries. What is important is that they oppose the satanic Zionist and American dominance and don't tolerate the existence of the cancerous tumor of Israel..."* -Ayatollah Ali Khamenei, Supreme Leader of Iran, January 31, 2012.
  http://www.farsnews.com/newstext.php?nn=13901110001058

- *"Wherever there is an activity and plan beneficial to Israel and the United States, we must be vigilant and should consider that an alien [movement] contrary to the interests of the nations. Wherever there is an Islamic, anti-Zionist, anti-imperialist, anti-corruption movement, all Muslims will share the same opinion to approve and strengthen it..."* -Ayatollah Ali Khamenei, Supreme Leader of Iran, January 31, 2012.
  http://www.farsnews.com/newstext.php?nn=13901110001058

- *"The US has given a role to Saudi Arabia, Qatar and Turkey to direct the regional developments in a way that they move towards these countries' interests in line with the US policies and opposite to Iran's policies. Owing to the fact that Iran's Islamic Revolution serves as a role model for the regional and world nations in their fight against the tyranny of their rulers and arrogant powers, the US and its allies are attempting to prevent Tehran's further political influence in the region."* - Major General Yahya Rahim Safavi, Senior Military Aide to the Supreme Leader, January 31, 2012.
  http://english.farsnews.com/newstext.php?nn=9010173133

- *"New home-made satellite carrier rockets, smart ammunition, aeronautic products, as well as new electronic and telecommunication devices will be unveiled. The laser system used in the munitions is able to track and identify targets and locate and assess their distance. The new munitions are suitable to target static and mobile targets with high precision strike."* - Brigadier General Ahmad Vahidi, Iranian Defense Minister, January 30, 2012.
  http://english.farsnews.com/newstext.php?nn=9010173037

- *"[The] enemies are trying to make up for the damages they have sustained due to popular uprisings in Egypt, Tunisia, Libya and other Islamic countries… The enemies are busy with designing plots and conspiracies, and Islamic nations--especially the youths of the Muslim Ummah (community) who are the engine of the Islamic Awakening--should not allow the global network of tyranny to hijack their revolutions…."* -Ayatollah Ali Khamenei, Supreme Leader of Iran, January 30, 2012. http://english.farsnews.com/newstext.php?nn=9010173033

- *"The U.N.'s chief nuclear inspector arrived in Iran on Sunday on a mission to clear up "outstanding substantive issues" on Tehran's atomic program, and called for dialogue with the Islamic state. We have always had a broad and close cooperation with the agency and we have always maintained transparency as one of our principles working with the agency."* –Iranian Foreign Minister Ali Akbar, January 29, 2012. http://www.alarabiya.net/articles/2012/01/29/191187.html

- *"An oil war with Iran will force Europe into its knees since Iran will not allow export of a single drop of oil. The Islamic Republic of Iran has the third largest oil reserves in the world and certainly cannot be excluded from the energy equation. Iranian Parliament seeks approval for a plan to stop oil exports to the European Union, a move that would paralyze Italy, Spain, and Greece."* -Seyed Emad Hosseini, Spokesman for Majlis Energy Commission, January 26, 2012. http://www.farsnews.com/newstext.php?nn=13901106000567

- *"Losing the European oil market will have an impact on Iran's economy which needs rational planning by the authorities. Selling oil at sub-market level prices is not a good way to counter the oil embargo."* - Mehdi Hosseini, former Oil Ministry international deputy, January 26, 2012. http://www.criticalthreats.org/iran-news-roundup/iran-news-round-january-26-2012

- *"The United States did not dare to direct its aircraft carrier through the Strait of Hormuz alone; this is why the carrier was "escorted" by military vessels of other nations. If the Strait is closed, the aircraft carriers will become the war booty of Iran."* - Javad Karimi Qodousi, parliamentary National Security Committee member, January 24, 2012. http://www.isna.ir/ISNA/NewsView.aspx?ID=News-1935908&Lang=P

- *"We are fundamentally against interfering in the affairs of other countries. We think it does not solve the problems but will only make them more complicated. The good reforms which have been announced by Syrian officials are pushing the ambience towards dialogue and solving the problems, though some countries do not like this."* - Iranian Foreign Ministry Spokesman Ramin Mehman-Parast, January 23, 2012. http://english.farsnews.com/newstext.php?nn=9010171825

- *"This assassination [of Ahmadi-Roshan] shows the misery, desperation, and despicability of the enemies of Islam and the revolution. They claim to fight against terrorism, but are themselves the leader of terrorists and produce terrorists. This scandal and indecency of theirs knows no limit since they also talk about human rights... We saw that following this assassination there were 300 applicants to change their academic majors into studies related to nuclear energy. Following the martyrdom of one Ahmadi-Roshan, 300 other Ahmadi-Roshans grew... This assassination leads to increased resistance…"* - Ayatollah Ahmad Jannati, temporary Tehran Friday prayer leader, January 23, 2012. http://www.farsnews.com/newstext.php?nn=13901030000414

- *"There is no decision to block and close the Strait of Hormuz unless Iran is threatened seriously and somebody wants to tighten the noose. All the options are on the table."* - Mohammad Khazaee, Iranian Ambassador to the United Nations, January 19, 2012. http://www.bloomberg.com/news/2012-01-19/iran-s-un-envoy-says-closing-strait-of-hormuz-is-an-option-if-threatened.html

- *"The US is not in a position to affect Iran's decisions. Iran does not ask permission to implement its own defensive strategies."* -Brigadier General Hossein Salami, Iranian Lieutenant Commander of the Islamic Revolution Guards Corps (IRGC), January 17, 2012.
  http://www.farsnews.com/newstext.php?nn=13901030000414

- "Our capability to provide security in the region, specially the Strait of Hormuz during sensitive times, will not experience any change due to the western warships' trafficking in the region." - Gholam Reza Karami, Iranian lawmaker and Chairman of the Parliamentary Defense Committee, January 16, 2012.
  http://english.farsnews.com/newstext.php?nn=9010171403

- *"Today the Islamic Republic of Iran has full domination over the region and controls all movements within it."* - Navy Rear Admiral Ali Fadavi, Commander of Iran's Islamic Revolution Guards Corps (IRGC), January 6, 2012.
  http://english.farsnews.com/newstext.php?nn=9007270592

- *"Iran has total control over the strategic waterway. Closing the Strait of Hormuz is very easy for Iranian naval forces."* -Rear Admiral Habibollah Sayyari, Iran's naval commander, December 28, 2011.
  http://www.nytimes.com/2011/12/29/world/middleeast/noise-level-rises-over-iran-threat-to-close-strait-of-hormuz.html?_r=2

- *"If they impose sanctions on Iran's oil exports, then even one drop of oil cannot flow from the Strait of Hormuz."* - Mohammad-Reza Rahimi, Iran's first vice president, December 27, 2011.
  http://www.nytimes.com/2011/12/28/world/middleeast/iran-threatens-to-block-oil-route-if-embargo-is-imposed.html?pagewanted=all

- *"Closure of the Strait of Hormuz is not on the Islamic Republic of Iran's agenda (at present), but if threats against Iran come to trample upon the rights of our nation while others use the strait for exporting their oil, then Iran will be entitled to the right to close the Strait of Hormuz. The international conventions reserve such rights for the Islamic Republic of Iran as well. For the time being, the Islamic Republic of Iran has not decided to close the strait, but this (closing the strait) depends on the conditions of the region."* - Mohammad Taqi Rahbar, Iranian lawmaker, December 19, 2011.
  http://english.farsnews.com/newstext.php?nn=9007277986

- *"According to the international laws, including Paragraph 4 of Article 14 of the Geneva Convention, in case Iranian oil is sanctioned, we will not allow even a single barrel of oil to pass through to reach the hostile countries"*. -Isa Jafari, Senior Iranian lawmaker, December 18, 2011.
  http://english.farsnews.com/newstext.php?nn=9007277872

- *"Iran's military strategy is defensive in nature, while our tactics are offensive."* – Brigadier General Hossein Salami, Lieutenant Commander of the IRGC, June 28, 2011.

- *"The hegemonic system and its regional supporters should know that as they could not isolate or weaken the Iranian nation and could not trample upon the Iranian nation's rights through their supports for (former Iraqi dictator) Saddam Hussein and the Baath party, they will not succeed in ignoring the inalienable rights of the Iranians through continuing their threat, sanctions and Iranophobia strategy and through their resort to lies and deceitful measures, use of an arrogant language, hegemony and bullying behavior."* – Major General Gholam Ali Rashid, Deputy Head of the General Staff of Iran's Armed Forces

- **"***When we study history we reach the absolute conclusion that the only nation that is fit for passing through the last curve leading to the promised point is the pious and revolutionary, dear Iranian nation; a nation that with its Islamic Revolution started this great historic mission."* – Iranian President Mahmoud Ahmadinejad, May 5, 2011.

- *"The new and young generation of the IRGC should be growingly higher and stronger (than the older generation) in knowledge, informedness, insight, dedication, correct and prompt accomplishment of tasks and duties, because although there is no military war happening today, a more delicate and of course more dangerous war is underway."* – Iranian Supreme Leader Khamenei, July 4, 2011.
- *"It is the warmongering and interventionist American leaders who try to harm good relations between the countries of the region by designing false matters and creating divisions."* – Ahmad Vahidi, Iranian Minister of Defense, December 13, 2010.
- *"The US' Iran 'scenario' is intended to create an excuse for its illegitimate presence and the sale of weapons in the region."* – Ahmad Vahidi, Iranian Minister of Defense, December 13, 2010.
- *"With the arrival of the British and later the Americans in the region, plots were hatched to try and change the name with fake identities... to distort the history and identity of the Persian Gulf."* – Major General Hassan Firouzabadi, Chief of Staff of Iran's armed forces, April 30, 2011.
- *"Whenever there is a problem, they [US] take out their guns."* – Iranian President Mahmoud Ahmadinejad, April 11, 2010.
- *"As the Commander-in-Chief (Ayatollah Seyed Ali Khamenei) has emphasized, our fingers should be kept on the trigger for deterrence."* – Lieutenant Commander of the IRGC Ground Forces, General Abolqassem Foroutan, July 13, 2011.
- *"We must exploit the chaotic situation and accelerate the arming of the resistance groups in Palestine.*

  Groups like HAMAS and Islamic Jihad should be armed with high-quality, modern weapons from Iranian production.

  In order to purposefully exert influence on the next Egyptian Government, we must support Shiite forces in the region and establish an anti-American axis." – A report provided to Supreme Leader Khamenei by the Iranian National Council, April 20, 2011.
- *"The [P]GCC should not put the blame for the ongoing developments in Bahrain on Iran. The Islamic Republic seeks peace in the region.*

  Iran's policy on Arab countries in the Persian Gulf has not changed and we still believe in good relations with these states.

  The Islamic Republic of Iran is the most influential country in the region which tightens regional security and has played a valuable role in defusing crisis and establishing security." – Alaeddin Boroujerdi, head of the National Security and Foreign Policy Commission of the Iranian Parliament, April 17, 2011.
- *"The Persian Gulf has always, is and shall always belong to Iran."* – Major General Hassan Firouzabadi, Chief of Staff of Iran's armed forces, April 30, 2011.
- *"Iranian forces are in complete control of the Strait of Hormuz and the Sea of Oman."* – Rear Admiral Ali Fadavi, commander of the IRGC navy, December 10, 2010.[7]

These Iranian statements, and others like them, do much to reveal the range of perceptions of Iranian leaders and military officers. They reflect Iran's perception of itself as the major Gulf power, as a natural regional leader, and as a state with a special historical and religious mission and justification for its actions. Moreover, they show that Iran sees the US and the US' regional allies as the principal threat to what Iran's leaders and officers perceive is Iran's right to emerge as the Gulf's dominant state.

[7] Quotes taken from a number of Iranian news sources such as Fars News, PressTV, the Tehran Times, and others. Also included are quotes from Western news outlets such as CNN, the New York Times, and the Washington Post.

These statements also track with Iranian military exercises and force developments that reflect the country's perception that the US' military presence in the Gulf is hostile and unacceptable. Iran's focus on asymmetric doctrine in its military strategy illuminates what the country perceives as the primary threat to its regional influence and national security: the US 5th fleet and US military bases in the Gulf. Iran's response to the overwhelming American hard power in the region has been to develop a range of asymmetric assets that focus on confronting superior US forces while avoiding frontal combat, and establishing the ability to close the Gulf in ways that would disrupt international petroleum shipments.

Iran's ballistic missile arsenal is another reflection of its threat perceptions, as it constitutes another dimension of Iran's asymmetric response to the US' presence in the region. Iranian military officials often boast openly of the country's ability to strike at Israel and US bases in the Gulf with a range of missiles.

For example, the IRGC announced in February 2011 that it had developed an anti-ship ballistic missile, the *Khalij Fars* ("Persian Gulf"), which it claimed was capable of destroying US warships and commercial vessels.[8] This announcement, and others like it, provides another reflection of Iran's threat perceptions and strategic priorities. Iran's focus on systems designed to counter superior US conventional forces is indicative that it perceives American – and other – foreign military power in the Gulf as an unacceptable threat to its national security and regional ambitions. As Iran has shaped its asymmetric assets, ballistic missile arsenal, and nuclear program as a deterrent to the US conventional advantage in the Gulf, it is clear that the American presence in the region is Iran's principle concern.

While Iran's perception of the US is often openly negative and confrontational, Iran's security approach to its Gulf neighbors was more nuanced following the end of the Iran-Iraq War in 1988 through roughly 2010, and Iran often used friendly rhetoric that invoked notions of Islamic brotherhood and regional solidarity. Yet, even when Iranian officials made conciliatory statements regarding their Gulf neighbors, they often did not refer to them as equals. For example, the Iranian Defense Minister was quoted as stating in September 2010 that:

> "There is no reason for regional countries to fear our weapons and military equipment… We have announced that whatever we have belongs to all regional nations, and we are even ready to supply… [Iranian-made weapons] to these countries."[9]

Such statements reveal Iran's regional aspirations and its perceptions of its Gulf neighbors. Iranian offers to share arms and military technology with neighboring countries have been a combination of political gestures, attempts to play a leadership role in the region, and attempts to provide a counterweight or regional alternative to US patronage. Regardless of its rhetoric at any given time, Iran has perceived its neighbors as competitors, not partners. These perceptions have been reinforced by the fact that Iran is a revolutionary Shi'ite state, while most of its neighbors are Sunni-dominated monarchies that have close ties to the US.

[8] "Iran mass producing smart ballistic missiles: IRGC chief." Tehran Times, February 8, 2011.

[9] Defense Minister Says US Arms Sales to Regional States a Plot Aimed at Iran." Islamic Republic News Agency. 22 Sept. '10

Iran's stance towards its neighbors has steadily hardened in recent years. For example, the Chief of Staff of Iran's armed forces – Major General Hassan Firouzabadi – articulated this perception clearly when referencing the GCC's intervention in Bahrain's 2011 unrest in a speech in April of 2011, Iran's "National Day of the Persian Gulf:"

> "The Arab dictatorial regimes in the Persian Gulf are unable to contain the popular uprisings. Instead of trying and failing to open an unworkable front against Iran, these dictators should relinquish power, end their savage crimes and let the people determine their own future."[10]

By the end of 2011, Iran was talking about closing the Gulf and making much more direct threats – threats it continued to make through the summer of 2012. Iran was also found to be carrying out an assassination plot against the Saudi ambassador to the US in October of 2011.

Arab and Turkish Perceptions

As **Figure III.2** shows, every aspect of this US and Iranian military competition involves a wide range of other players. In general, this competition favors Washington because of US ties to the Southern Gulf states, Turkey, other Arab states, and Israel. Iran has, however, created an informal military alliance with Syria and the Hezbollah in Lebanon, and is now actively competing for military influence in Iraq.

The Southern Gulf states, most of the rest of the Arab world, Israel, and a number of other regional powers, perceive Iran as a current or potential threat. These perceptions differ by country in terms of risk, priority, and probability, evolving with changes in Iran's behavior, military forces, and nuclear capabilities.

There are further differences within given countries between the perceptions of leaders and national security elites and the perceptions of the public and media. Many Arab countries and Turkey have their own versions of hawks and doves in the way they view Iran as a potential threat. Such internal debates do, however, have to be kept in perspective. While the current political upheavals in the Arab world may change past alignments, it is the perceptions of national intelligence services, military planners, and top-level decision makers that usually shape national policy. These constituencies generally see Iran as a threat and the US as an ally.

In the past, Arab leaders have been cautious about publicly referring to Iran as a threat, even though they acknowledge it in private. Many Gulf leaders, military officials, and intelligence experts – as WikiLeaks' release of various diplomatic cables make clear – have come to view Iran as a steadily growing threat. Gulf leaders not only view Iran's nuclear and missile capabilities as a threat, but they are also much more sensitive to the asymmetric threats that Iran poses to their territory and petroleum exports than most US policymakers and national security analysts.

These concerns have become far more public in the course of 2011. US and Gulf leaders, military officials, and intelligence experts share a common concern over Iran's growing ability to use specialized asymmetric forces like the Al Qods Force as well as key elements of the IRGC. Arab concerns have been has been reinforced by events in Bahrain, and many in the Gulf feel that Iran has supported the Houthi rebels in Yemen and is seeking dominant influence in Iraq.

[10] "Gulf 'Belongs to Iran': Top Military Officer." Associated Free Press. 30 April '11

The US revelation of a plot to assassinate the Saudi ambassador to the US that is linked to Iran's Al Qods Force in October of 2011 has made such concerns even more serious. This raises problems for every Arab Gulf state with a Shi'ite majority, as well as increases the risk of broader tension and clashes between Shi'ites and Sunnis throughout the Muslim world.

Turkey – which plays a critical role in dealing with Iran, Syria, and Iraq – is still careful to avoid direct confrontation with Iran. It does, however, have major military forces in eastern Turkey, plays a growing role in seeking to stabilize Iraq, and is considering missile defenses. It is also playing a growing role in seeking political reform and change in Syria – actions which would limit Iran's military links to Syria and Lebanon – and possibly affect Iranian influence in Iraq.

Israeli perceptions

As later chapters discuss in detail, Israel sees its military competition with Iran from a different perspective. Many Israelis see Iran as an emerging "existential" threat because of Iran's long-range missiles and nuclear program. Israelis have a more narrow view of Iran as an asymmetric threat, and focus on Iranian actions like supporting Hezbollah in Lebanon and arming Hamas in Gaza.

While Israel does have its own version of hawks and doves, nearly all Israelis broadly that Iran should be prevented from acquiring nuclear weapons, and many feel that such prevention is so important that it could justify Israeli or US military strikes on Iran. Israeli officials and officers see missile defense as a key option and there is almost no public opposition (or discussion of any kind) of the role that Israel's undeclared nuclear forces play in deterring or potentially striking Iran.

In contrast, US, European, Gulf, and Turkish threat perceptions focus more on the broader range of Iranian threats outlined in **Figure III.2**. These perceptions include the threats posed by Iran's ties to Syria, closer relations with Turkey, its role in Afghanistan, and its broader role in Central Asia. Arab states like Egypt and Jordan have expressed their concern over the potential threat posed by Iran's relations with Syria and the creation of a "Shi'ite crescent" that includes Lebanon and could come to include Iraq.

Perceptions of the "War of Sanctions"

Finally, American, European, Gulf, Turkish, Israeli, Russian, Chinese, and other national threat perceptions cannot be decoupled from the "war of sanctions" between Iran and the US and Iran's diplomatic offensive in the UN – throughout the world – to block sanctions and win acceptance for its declared nuclear programs. This struggle is described in detail in a later Chapter, and includes Iran's efforts to use energy and other investment opportunities to win influence over China and Russia, as well as obtain imports of advanced arms from both countries. While Israel, the US, and the Gulf may perceive destabilizing arms sales and technology transfers to Iran in somewhat different ways, they all perceive such sales and transfers as a threat.

Figure III.2: Assessing the Full Range of Iranian Competition and Threats

Non-Military Competition

- *Ideology, religion, and political systems*
- *"Terrorism" and violent extremism vs. "counterterrorism"*
- *Energy, sanctions, and global economic impacts*
- *Arms control, arms exports, and arms imports*
- *International diplomacy*

Military Competition

- *Weapons of mass destruction*
- *Conventional forces*
- *Asymmetric and irregular warfare*
- *Proxy use of state and non-state actors*
- *Threat and intimidation*

Nations and Sub-Regions of Competition

- *Gulf Cooperation Council countries*
- *Yemen*
- *Iraq*
- *Jordan*
- *Syria*
- *Lebanon*
- *Israel*
- *Gaza and West Bank*
- *Morocco*
- *Pakistan*
- *Turkey*
- *Afghanistan*
- *Central Asia*
- *Europe*
- *Russia*
- *China*
- *Japan and Asia*
- *Venezuela, Cuba, Brazil, Argentina*

Key Uncertainties in Assessing the Details of US and Iranian Military Competition

There are a wide range of useful data that provide insights into the details of US and Iranian military competition, and the role of Arab states and Israel, but it is important to keep unclassified sources in perspective. Estimates and perceptions of the data on Iran's conventional forces and asymmetric warfare capabilities are generally broadly accurate, but this level of confidence only affects estimates of force size and key manpower and equipment numbers. Iran's intentions in building up such forces are far from clear, as are its intentions on using them. Iran often uses hardline rhetoric in threatening the use of such forces or describing their exercises, but this may be little more than a deterrent or threatening propaganda.

Other Iranian activity, like the use of its Al Qods Force, Revolutionary Guards, and intelligence branches in aiding non-state actors or conducting operations in countries like Iraq is more covert and harder to assess. The US and Saudi Arabia, for example did not agree on the level of Iranian support of the Houthi rebels. There are disagreements on the level of Iranian covert activity in supporting dissidents in Bahrain, and experts disagree on some of the details of the role of the Al Qods Force, Sevak, and other elements of Iranian action in supporting Sadrist militias and hardline Shi'ite splinter groups, as well as covert support of AQIM for spoiler purposes. Gulf and Israel policymakers are also somewhat more concerned of the risk of a "Shi'ite crescent" including Iran, Iraq, Syria, and Lebanon that their US and European counterparts.

Uncertainties Affecting Nuclear and Missile Programs

The differences between experts and in national perspectives are particularly important in the case of perceptions of Iran's nuclear weapons program. In spite of steadily more detailed reporting – such as the IAEA report issued in November of 2011 – data are lacking on many aspects of Iran's current nuclear and missile efforts, and experts are forced to speculate.

The military annexes to the November 2011 IAEA report indicate that Iran has made major progress in assembling all the technologies and manufacturing skills necessary to design a fission warhead small enough to mount on a missile and test it through simulated explosive testing than has previously been publically reported There are still experts, however, who question whether Iran is seeking nuclear weapons. There is no consensus over how soon it will be able to get the weapons-grade fissile material it needs or then advance to the point where it can able deploy nuclear bombs and missile warheads.

There are broad uncertainties over how many nuclear facilities Iran really has and how far it has gotten in producing more advanced centrifuges like the IR-2 and IR-4. Some experts estimate that even the IR-2 could be far more reliable and have some six times the output of the IR-1, making it far easier to disperse and conceal. The IR-4 would presumably be even more efficient, allowing Iran to conceal enrichment activity in smaller spaces and disperse such activity at much lower cost. Other uncertainties exist over its reactor project in Arak and whether it will seek more power reactors in ways that might affect its future weapons production capabilities. "Guesstimates" are notoriously unreliable – particularly in their worst-case form.

As yet, there are only limited unclassified data on the size and nature of any Iranian plans to deploy a nuclear-armed force; what role aircraft and various types of missile will play; how such a force will be based; and what kinds of command, control, computer, communications, and

intelligence (C4I) systems Iran intends to deploy. It is clear that Iran has modified the warhead of its Shahab 3 in ways that would make it easier to mount a nuclear weapon, and that Iran is constantly testing variants of its existing missiles and claiming it is producing new types, as well as using alleged satellite launches as a vehicle for research and development into ballistic missile technology. It may be shifting from liquid-fueled missiles to solid-fuel types, and it keeps changing warhead configurations.

Uncertainties Affecting Regime Stability and Regime Change

There is no consensus among US, European, Gulf, or Israeli experts as to the level of political instability in Iran, how close it might be to some form of regime change, and how this affects the Iranian threat. There are advocates of the position that Iran faces massive popular discontent and advocates that the regime has reestablished secure control.

Officials and intelligence experts in the US, Europe, Gulf states, Turkey, and Israel rarely seem to adopt either extreme. They do differ on how vulnerable Iran is to outside efforts at regime change. Few, however, seem to believe any major regime change is now likely or that sanctions are now likely to create public pressures that will halt Iran's nuclear efforts or fundamentally alter its relations with Israel, the US, or its neighbors.

The broad consensus that talking about Iran as if it had one unified and detailed set of policies, goals, and plans is misleading. There also seems to be some degree of agreement that Iran's constant denials that it is seeking nuclear or other weapons of mass destruction and refusals to cooperate with the UN and the International Atomic Energy Agency (IAEA) are efforts to disguise Iran's nuclear programs.

Some of these differences have become public in debates over how to confront Israel and the US, the past details on Iran's negotiating positions, and how Iran should deal with internal and external threats. There also seems to be an expert consensus that rivalries between Iran's leaders, its Revolutionary Guards and other Iranian political forces, and between the various elements of its military and security forces involve at least some differences over how Iran should shape almost every aspect of its military development and use of force.

Accordingly, it is scarcely surprising that experts and decision makers in the US and Israel – as well as each of the Gulf states, and key actors like Britain, France, Germany, China, and Russia – all have experts that perceive the threat from Iran in very different ways. No one can attend a range of international conferences on Iran without discovering that every country has officials, officers, and intelligence officers that take contrasting pessimistic and optimistic views of Iran. All have experts that disagree in detail over Iran's current threat and the threats that might emerge in the future.

Uncertainties Affecting the View of Different National Officials, Military Officers, and Intelligence Experts

There is little point in trying to catalog just how different the views of US, European, Gulf, and Israeli officials and intelligence experts really are because so many of the details are sensitive and classified. The views of given actors keep changing and evolving, and it is clear that there is no singular view of the threat. Sources like WikiLeaks also show that few Gulf and Arab governments are as transparent in discussing national security issues as Western states, and – as

WikiLeaks has made all too clear – Arab leaders often talk as if Iran were a friend in public while describing it as a threat in private.

Moreover, questions do arise over the unity of Iran's leaders and the relative role of key figures like its President and Supreme leader in shaping its military policies and force development. While the statements of its senior military officers in both its regular forces and the IRGC are relatively consistent, they are focused largely on external audiences and its not clear whether they agree on any overall strategy, plans for force development, or operational plans. Iranian exercises do seem to have a significant degree of operational consistency, but they are anything but transparent. While it is possible to speculate about such power relationships and differences, too few data exist to really make meaningful judgments.

Competition in Conventional Military Forces

The numbers and data are clearest in the counts of conventional forces and major weapons systems, as is the impact of the close ties between the US military and the forces of the Southern Gulf states – a de facto system of alliances that makes the US a key player in the Gulf military balance at every level, and creates a system of basing options and interoperability that allows US forces to rapidly reinforce both the US forces already in the Southern Gulf states and any Southern Gulf state that Iran should threaten or attack.

The end result is that the competition in conventional forces favors the US and its regional friends and allies, although – as is discussed in a later chapter – Iraq's lack of major conventional weapons makes Iraq a notable exception. The US and Southern Gulf states not only have larger and far more modern conventional forces, but there is little prospect that Iran can begin to catch up in the near and mid-term. It should be noted, however, that it is far harder for the US to exploit this advantage if Iran can present the threat of nuclear escalation or a nuclear crisis, or if Iran's total mix of conventional and asymmetric forces are taken into consideration.

The Role of the US in the Gulf Conventional Balance

There is no way to estimate exactly what mix of forces the US would deploy in any given contingency, or how rapidly the balance would change because of US deployments from outside the Gulf region. **Figure III.3** does, however, draw upon work by the US Senate Foreign Relations Committee to provide a summary of how US forces, advisory efforts, and arms transfers interact with the military forces of each Gulf state, and to sets the stage for a comparison of Gulf country forces.

Figure III.3: The US Military Role in the Gulf in 2012

Bahrain

Bahraini Military: Bahrain retains the smallest military force in the GCC at approximately 8,200 active duty troops, many of whom are apparently noncitizens from South Asia. The Bahraini force employs a small fleet of American-made F–5s and F–16s; an American-made frigate; a number of coastal patrol vessels and amphibious landing craft; and transport and attack helicopters. Twice, in 2008 and 2010, the Bahraini military assumed command of Combined Task Force-152, and in 2009, they deployed 100 police officers on a 2-year rotation to Afghanistan— the only other GCC country besides the UAE to make such a commitment. Bahrain has also deployed its frigate in support of U.S. operations in the Gulf. However, the Kingdom remains dependent on the United States and its GCC allies for external security. Bahraini forces leverage U.S. expertise during joint exercises such as Neon Response, a November 2011 bilateral engagement that facilitated explosive ordnance and disposal training

U.S. Military Presence: The United States security relationship with Bahrain dates back to 1948, with the establishment of the Middle East Force, a precursor to today's Fifth Fleet. The U.S. Navy leased part of the former British base in 1971, when Bahrain achieved formal independence. During the Persian Gulf War, Bahrain was home to 17,500 U.S. troops and 250 aircraft. 47 Bahrain signed a defense agreement with the United States in 1991, which still provides U.S. forces extensive access to military facilities, permission to store munitions, and establishes the groundwork for joint military training and exercises. By 1995, the U.S. Fifth Fleet and U.S. Naval Forces Central Command, operating from their headquarters in Bahrain, were managing the Navy's rotationally deployed assets to the Gulf.

Naval facilities in Bahrain, renamed Naval Support Activity, now span 60 acres and house roughly 6,000 military personnel and civilian employees.48 The Kingdom's ports regularly host U.S. carrier and amphibious battle groups and are the enduring home to U.S. Navy assets such as minesweepers and costal patrol boats. The United States has made a significant investment in military facilities, commencing a 5-year $580 million U.S.-funded construction project in 2010. Additionally, Bahrain is the base of international coalitions Combined Task Forces 151 and 152—partnerships dedicated to counter-piracy and maritime security cooperation.

U.S. Security Assistance and Training: The largest beneficiary of U.S. grant security assistance among the GCC States, Bahrain is slated to receive approximately $500,000 in Nonproliferation, Anti-terrorism, Demining, and Related assistance (NADR); $700,000 in International Military Education and Training (IMET); and $10 million in Foreign Military Financing (FMF) in fiscal year 2012. Bahrain agreed to purchase close to $91 million in U.S. defense equipment and training through Foreign Military Sales in fiscal year 2010, and in fiscal year 2011, it was granted U.S. Excess Defense Articles (EDA) worth more than $55 million. Training has also been a significant component of U.S. security assistance to Bahrain. In fiscal year 2010, 253 students were trained in competencies such as maritime security, leadership, maintenance, and counterterrorism at a value of $2.8 million.

Kuwait

Kuwaiti Military: The Kuwaiti military has made strides toward modernizing its force, and it is much improved in the area of missile defense, regularly competing against U.S.-manned Patriot batteries in training simulations. However, the small combined Army, Navy, and Air Force—close to 15,500 active duty troops—still relies on U.S. assistance in sustainment, logistics, maintenance, and intelligence fusion. To improve its capabilities, the Kuwaiti military is a willing recipient of U.S. training. In the words of one U.S. military officer, ''Their appetite for partnership exceeds our ability to provide it.'' Kuwait has also increasingly demonstrated a willingness to participate in international coalitions. In 2012, ahead of their regularly scheduled rotation, Kuwait assumed the lead of Combined Task Force-152, a 25-nation coalition dedicated to maritime security operations in the Gulf.

U.S. Military Presence: A U.S.-Kuwaiti defense agreement signed in 1991 and extended in 2001 provides a framework that guards the legal rights of American troops and promotes military cooperation. When U.S. troops departed Iraq at the end of 2011, Kuwait welcomed a more enduring American footprint. Currently, there are approximately 15,000 U.S. forces in Kuwait, but the number is likely to decrease to 13,500. Kuwaiti bases such as Camp Arifjan, Ali Al Salem Air Field, and Camp Buehring offer the United States major staging hubs, training ranges, and logistical support for regional operations. U.S. forces also operate Patriot missile batteries in Kuwait, which are vital to theater missile defense.

U.S. Security Assistance and Training: Kuwait has procured major weapon systems from the United States including M1A2 tanks, Patriot air-defense missile systems, and F/A–18 fighter aircraft. In fiscal year 2010, Kuwait agreed to purchase $1.6 billion of defense articles and services through the Foreign Military Sales program. Kuwait is not a recipient of U.S. grant assistance such as International Military Education and Training (IMET). However, through the Foreign Military Sales program in fiscal year 2010, 216 Kuwaiti military students were educated in proficiencies from intelligence to pilot training at a value of $9.7 million. Moreover, the Kuwaiti Government often uses its national funds to send officials to attend professional military schools and short-term training courses in the United States

Oman

Omani Military: Numbering approximately 43,000, the Omani military is the third-largest among GCC states.[89] With its historical ties to the British, much of the Omani military inventory comes from the United Kingdom. However, Oman's forces are increasingly looking for American equipment and training. For

example, in 2012, U.S. Army forces teamed with the Royal Army of Oman during a 2-week training exercise—Inferno Creek—that focused on infantry tactics at the squadron and platoon level.

***U.S. Military Presence*:** Oman formalized defense ties with the United States—the first Gulf country to do so—after the 1979 Iranian Revolution. It was from the Omani air base on Masirah Island in 1980, that the Carter administration staged a failed attempt to rescue American hostages held in Iran. During the 1980's Iran-Iraq War, U.S. forces used Omani installations as a base for maritime patrol and tanker support.In the early stages of Operation Enduring Freedom in Afghanistan, over 4,000 American troops and critical equipment, including a B–1 bomber aircraft, were positioned in Oman. A 2010 security agreement permits the United States to retain a small military footprint and grants U.S. forces access, on a prearranged basis, to military facilities in Masirah, Muscat, and Thumrait.

U.S. Security Assistance and Training: Oman, unlike most of its Gulf partners, is a recipient of U.S. grant security assistance, albeit at modest levels. In fiscal year 2012, the U.S. committed approximately $1.5 million in Non-Proliferation, Anti-Terrorism, Demining, and Related (NADR) funds, $1.65 million in International Military Education and Training (IMET) assistance, and approximately $8 million in Foreign Military Financing (FMF) to Oman.

Compared to its GCC counterparts, Oman has historically procured fewer U.S. weapons systems. In fiscal year 2010, Oman agreed to purchase $13.9 million in defense articles and services through the Foreign Military Sales program. However, a number of larger potential transfers were notified to Congress in 2010 and 2011 with a more significant price tag and a more robust support and training package. These agreements include missile components of a ground-based integrated air defense system totaling $1.2 billion and new acquisitions of F–16 fighter aircraft for as much as $3.5 billion.

The Sultanate's forces are regular participants in U.S. training evolutions. The Royal Air Force of Oman hosts exercises with the U.S. Navy and Air Force, and there is a possibility the Omanis will participate in advanced airborne combat exercises held in the United States. In fiscal year 2010, 291 Omani military students were trained through U.S. security cooperation programs in intelligence, leadership, logistics, procurement, maritime security, and counter-terrorism at a value of $2.8 million.

Qatar

Qatari Military: Qatar maintains a small but professional military force. With 11,800 active duty troops, it retains the second smallest active duty military in the GCC. Qatar lacks an integrated air defense system, and with a small fleet of coastal combatants and fighter aircraft it relies on American capabilities for its self-defense. Although its officers are well regarded, a military career is not highly sought after by Qatari youth.

In an attempt to make military service more attractive, the officer corps recently received a pay increase of 120 percent.61 Qatar has demonstrated a willingness to operate in the coalition environment. After natural disasters in Haiti and Pakistan, Qatar was among the first to deploy humanitarian supplies aboard its American-made C–17s. In addition to supplying $400 million to arm and train the Libyan resistance, Qatar provided Special Forces to lead the rebels in their August 2011 assault on Tripoli. Although Qatari fighter jets played a nominal part in air operations over Libya, one U.S. military official described Qatar's overall political and military contribution to the Libya effort as ''nothing short of decisive.''

U.S. Military Presence: In the aftermath of the liberation of Kuwait in 1991, Qatar granted U.S. forces substantial access to its military facilities. The following year, the two countries solidified their defense relationship by signing a cooperation agreement. Qatar invested $1 billion in the 1990s to expand Al Udeid Air Base. Now, with its 15,000-foot runway and considerable store of war reserve material, it is a critical logistical hub for regional operations. Although Qatar subsidizes much of the American presence, the United States has also invested in Qatar's security infrastructure. From 2003 to 2010, Congress authorized over $394 million for military construction projects. Home to approximately 7,500 American troops, Qatar is the forward deployed base of the U.S. Central Command and the Combined Air and Space Operations Center (CAOC). At the CAOC, U.S. military officials manage airspace authority, air defense, electronic warfare, and personnel recovery in 20 regional countries, including Afghanistan.

U.S. Security Assistance and Training: Qatar has traditionally relied on the French for its military equipment,64 but as the relationship with the United States develops, it is increasingly willing to procure American-made weapons including fighter aircraft and missile defense systems. In fiscal year 2010, Qatar agreed to purchase $16.8 million in

U.S. defense goods through the Foreign Military Sales program.65 Sensitive to what they perceive as costly administration fees, Qatar has been more inclined to acquire military equipment through the Direct Commercial Sales program although, with improved bilateral government-to-government relations, there are indications that this trend may be changing.

In fiscal year 2010, Qatar educated 205 students through U.S. military training programs, 35 percent of whom participated in programs through Foreign Military Sales at a value of $5.8 million. Qatar also spent a significant amount of its national funds to provide U.S. training for students in skills from operational planning to leadership.

Saudi Arabia

Saudi Military: The Saudi military is by far the largest within the GCC, numbering approximately 233,500 active-duty troops. The Saudi Arabian National Guard is a separate military force and a pillar of the regime, recruited predominantly from tribes loyal to the royal family and numbering over 100,000 members. Since the fall of Saddam, the Saudi military is the Gulf region's geo-political counterweight to Iran, though the Kingdom has not historically sought to project military force outside the Arabian Peninsula. Despite employing some of the most advanced equipment in the region—Patriot missile defense batteries, Typhoon and F–15 fighter aircraft, airborne refueling capability, M1–A2 Abrams tanks, and AH–64 attack helicopters—the Saudi military continues to face challenges developing proficiency in defense planning and sustainment.

***U.S. Military Presence*:** Although the United States maintained a troop presence in Saudi Arabia prior to the Gulf War, the deployment reached its zenith in 1991, with over 550,000 coalition forces mobilized in support of operations in Iraq. From 1992–2003, U.S. forces continued to maintain a residual footprint in Saudi Arabia, but in August 1996, Osama bin Laden declared war against the United States in the Kingdom. Subsequently, U.S. forces were victims of significant terrorist attacks.

Sensitive to perceptions of an overt American military presence in ''the Land of the Two Holy Mosques,'' U.S. personnel and combat equipment were withdrawn from Saudi soil by the end of 2003. Now security cooperation is facilitated by a relatively small contingent of U.S. military officers and contractors who work with the Saudi Ministry of Defense, Ministry of Interior, and the Saudi Arabian National Guard.

U.S. Security Assistance and Training: Despite the sometimes strained relationship, Saudi Arabia remains a major recipient of U.S. security assistance. In fiscal year 2010, Saudi Arabia agreed to over $2 billion in U.S. Foreign Military Sales and $409 million in Foreign Military Construction Agreements.22 From 2007 to 2010, Saudi Arabia agreed to purchase $13.8 billion in U.S. defense articles and services—more than any other nation in the world. These acquisitions included some of the most technologically advanced weapon systems available for export. In 2010, the Obama administration announced the potential sales of UH–60 Blackhawk and AH–64 Apache helicopters.

In December 2011, the administration announced that it had agreed to a foreign military sale with Saudi Arabia consisting of 84 F–15SA fighter aircraft, upgrades to its existing fleet of 70 F–15s, and a significant air-to-air and air-to-ground ordnance package. The sale, worth $29 billion, is the largest to a single recipient in the history of the United States. Although Congress did not block the sale, 198 Members wrote the administration in November 2010 to express concern over how the transfer of such sophisticated arms would impact the regional security balance.

In fiscal year 2010, 1,571 Saudi students were trained at a value of $69.5 million in such competencies as maintenance, English language, communications, logistics, financial management, and intelligence through U.S. security cooperation programs.

Ninety-four percent of the students were trained through the Foreign Military Sales programs. In past years, the Saudi Air Force has also participated in joint training such as Red Flag—a massive air combat exercise—at Nellis Air Force Base in Nevada.28 Saudi Arabia has at times received a nominal amount of International Military Education and Training (IMET) assistance, typically $10,000 or less, so that it can qualify for reduced pricing on U.S. training associated with Foreign Military Sales.

A May 2008 U.S.-Saudi technical cooperation agreement laid the groundwork for collaboration on critical infrastructure protection and border and maritime security. The agreement facilitated the Saudi's purchase of U.S. technical support through government contractors or U.S. private entities. The U.S. Central Command has also reportedly worked with Saudi Special Forces to improve their ability to protect oil infrastructure and future energy sites.

UAE

Emirati Military: With approximately 51,000 active duty troops, the UAE's military capabilities are second to none in the region. U.S. military officials assert that operators of the UAE Hawk surface-to-air missile system are ''on par with their U.S. counterparts'', and that UAE fighter pilots are ''combat ready.'' The UAE, which has NATO observer status, dedicated two squadrons of fighter aircraft to operations in Libya. In addition to the important statement made by the commitment, the UAE pilots proved to be capable tacticians and contributed to coalition air-to-ground strike operations. The UAE also retains a 250-troop contingent in Afghanistan dedicated to security, humanitarian aid, and development. Despite a number of recent setbacks and a strained U.S.-Afghanistan relationship, the UAE is poised to assume additional responsibilities in support of coalition efforts.

U.S. Military Presence: The UAE first turned to the United States as a guarantor of security during the 1991 Persian Gulf War with Iraq. In 1994, the UAE signed a bilateral defense pact with the United States that outlined a status of forces agreement and laid the groundwork for increased defense cooperation.

The relationship has since flourished, with the UAE's installations now home to a sizable U.S. footprint of almost 3,000 troops. The Emirates directly support much of the American presence by subsidizing facilities expansion and upgrades. More U.S. Navy ships visit the port at Jebel Ali than any other port outside the United States, and Al Dhafra Air Base retains U.S. fighter, attack, and reconnaissance aircraft. Like a number of other GCC States, the UAE also hosts U.S. Patriot missile batteries.

U**.S. Security Assistance and Training:** The UAE is a major recipient of U.S. defense equipment, having purchased in recent years F–16 fighter jets, Apache attack helicopters, Patriot and Terminal High Altitude Area Defense (THAAD) missile systems, and a bevy of advanced munitions.79 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—than any other country in the world with the exception of Saudi Arabia.

The purchase of U.S. weapons systems also contributes to the training of Emirati military students. In fiscal year 2010, 359 students were trained at a cost of $19.3 million through U.S. security cooperation programs—96 percent of whom received their training as part of the Foreign Military Sales program.

At the Air Warfare Center in Al Dhafra, the UAE and U.S. forces conduct extensive training exercises focused on command and control, early warning, air and missile defense, intelligence, and logistics. Biannually, the UAE hosts an advanced aviation seminar in offensive and defensive tactics, which includes two weeks of academics and four weeks of flying. There are 7 participating nations, 42 fighter aircraft platforms, and 3 helicopter types, facilitated by U.S. and French refueling, command, communications, and control assets. Graduates of the course include Qatari, Emirati, and Jordanian pilots.

The UAE is also host to the Integrated Air Missile Defense Center, the region's premier training facility of its kind. It not only facilitates U.S.-UAE interoperability but also U.S.-GCC coalition building. The United States and the GCC train in advanced tactics against ballistic missile, cruise missile, and airborne threats.83 In October 2011, for the first time, the GCC states participated in Falcon Shield, an integrated missile defense exercise with the United States.

The UAE has also hosted the Eagle Resolve multilateral exercise, which utilizes state of the art laboratory facilities to train participants in chemical, biological, and radiological defense and border security. The head of Central Command, General James Mattis said, ''Eagle Resolve will allow us to operate together as a team—it brings the U.S. forces an opportunity to learn from our Gulf partners and they from us in this regard, practicing how we will protect the region's populations if threatened.''

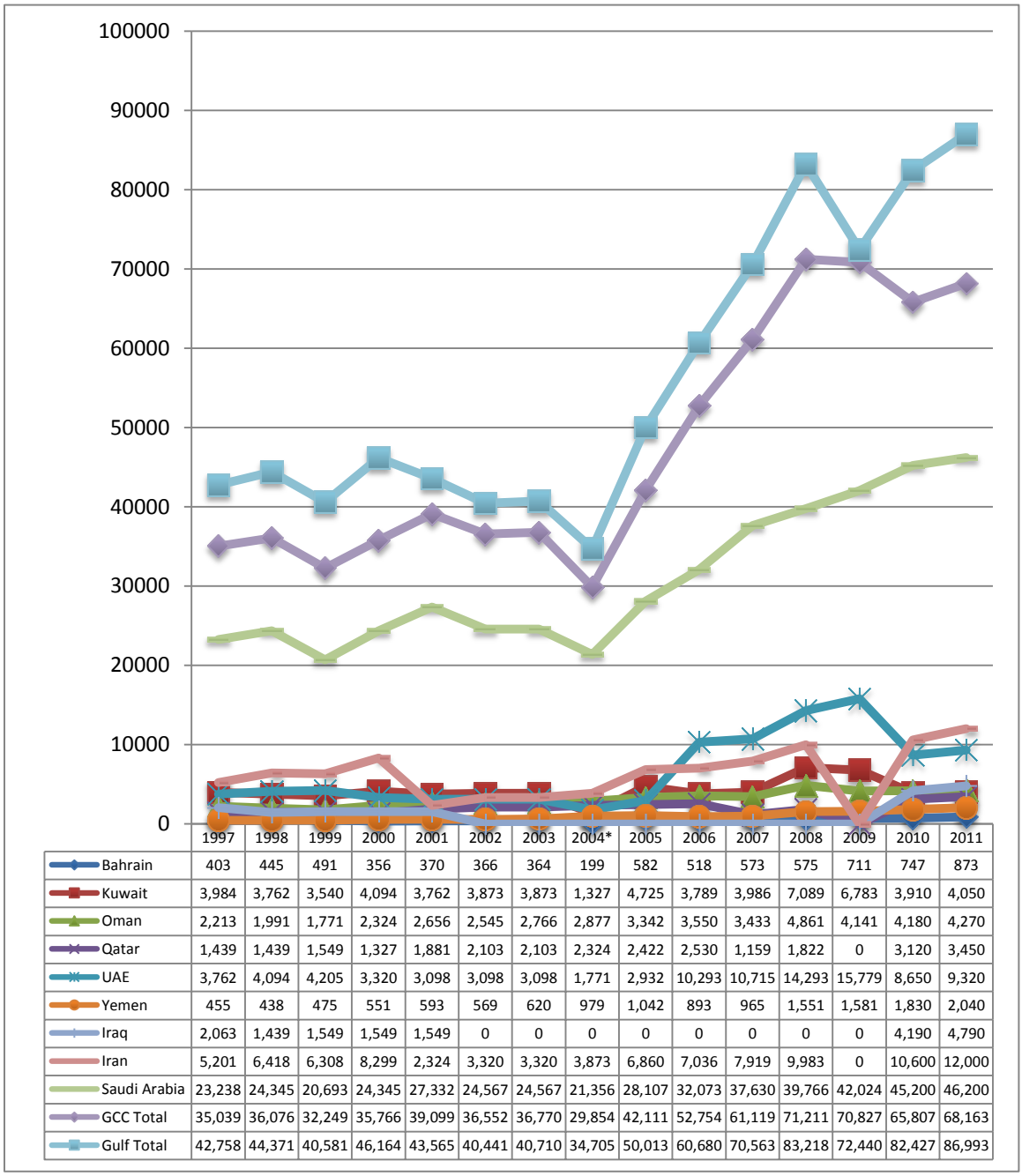
Source: This table is excerpted and adapted from a Majority Staff Report of the Senate Foreign relations Committee, *The Gulf Security Architecture: Partnership with the Gulf Cooperation Council*, June 19, 2012

Trends in Military Spending and Arms Transfers

Figures III.4 and III.5 show that Iran has been unable to compete in total military spending and importing advanced modern arms on the scale required to shift the balance. In spite of constant propaganda claims to the contrary, Iran has as yet been unable to create national defense industries that can produce the range of systems required.

Figure III. 6 also shows how important US arms transfers to the Gulf States have been in shaping US security policy both in the region an d relative to other areas of the world.

Figure III.4: Comparative Spending on Military Forces



	1997	1998	1999	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010	2011
Bahrain	403	445	491	356	370	366	364	199	582	518	573	575	711	747	873
Kuwait	3,984	3,762	3,540	4,094	3,762	3,873	3,873	1,327	4,725	3,789	3,986	7,089	6,783	3,910	4,050
Oman	2,213	1,991	1,771	2,324	2,656	2,545	2,766	2,877	3,342	3,550	3,433	4,861	4,141	4,180	4,270
Qatar	1,439	1,439	1,549	1,327	1,881	2,103	2,103	2,324	2,422	2,530	1,159	1,822	0	3,120	3,450
UAE	3,762	4,094	4,205	3,320	3,098	3,098	3,098	1,771	2,932	10,293	10,715	14,293	15,779	8,650	9,320
Yemen	455	438	475	551	593	569	620	979	1,042	893	965	1,551	1,581	1,830	2,040
Iraq	2,063	1,439	1,549	1,549	1,549	0	0	0	0	0	0	0	0	4,190	4,790
Iran	5,201	6,418	6,308	8,299	2,324	3,320	3,320	3,873	6,860	7,036	7,919	9,983	0	10,600	12,000
Saudi Arabia	23,238	24,345	20,693	24,345	27,332	24,567	24,567	21,356	28,107	32,073	37,630	39,766	42,024	45,200	46,200
GCC Total	35,039	36,076	32,249	35,766	39,099	36,552	36,770	29,854	42,111	52,754	61,119	71,211	70,827	65,807	68,163
Gulf Total	42,758	44,371	40,581	46,164	43,565	40,441	40,710	34,705	50,013	60,680	70,563	83,218	72,440	82,427	86,993

* Source: Adapted from the IISS, **Military Balance, 2012**; and the Jane's Sentinel series

Figure III.5: Comparative Spending on Arms Transfers

Arms Agreements (in Current $US Millions)

Recipient Country	U.S.	Russia	China	Major West European[a]	All Other European	All Others	Total
2007-2010							
Algeria	0	1,600	400	700	0	0	**2,700**
Bahrain	600	0	0	0	0	0	**600**
Egypt	7,800	200	400	0	200	0	**8,600**
Iran	0	300	0	0	300	100	**700**
Iraq	5,600	200	100	500	900	100	**7,400**
Israel	3,000	0	0	0	0	0	**3,000**
Jordan	1,500	0	0	0	200	0	**1,700**
Kuwait	2,400	700	0	0	0	0	**3,100**
Lebanon	300	0	0	0	0	300	**600**
Libya	0	100	0	1,200	200	0	**1,500**
Morocco	2,600	0	400	1,000	1,000	0	**5,000**
Oman	100	0	0	1,300	0	0	**1,400**
Qatar	200	0	100	700	0	0	**1,000**
Saudi Arabia	13,800	0	100	13,800	1,100	100	**28,900**
Syria	0	4,700	300	0	0	300	**5,300**
Tunisia	0	0	0	0	0	0	**0**
U.A.E.	10,400	100	100	3,400	1,100	0	**15,100**
Yemen	0	300	0	100	100	100	**600**

Arms Deliveries (in Current $US Millions)

Recipient Country	U.S.	Russia	China	Major West European[a]	All Other European	All Others	Total
2007-2010							
Algeria	0	3,600	400	200	0	0	**4,200**
Bahrain	300	0	0	0	0	0	**300**
Egypt	4,000	200	200	0	300	0	**4,700**
Iran	0	400	0	0	100	200	**700**
Iraq	2,000	100	0	100	300	100	**2,600**
Israel	4,500	300	0	0	100	0	**4,900**
Jordan	900	100	100	0	100	100	**1,300**
Kuwait	1,300	0	0	0	0	0	**1,300**
Lebanon	100	0	0	0	0	0	**100**
Libya	0	100	0	300	100	0	**500**
Morocco	200	100	300	100	0	100	**800**
Oman	300	0	0	500	0	0	**800**
Qatar	0	0	0	100	0	0	**100**
Saudi Arabia	5,300	0	700	2,200	400	100	**8,700**
Syria	0	1,200	300	0	0	200	**1,700**
Tunisia	0	0	0	0	0	0	**0**
U.A.E.	900	400	100	400	300	0	**2,100**
Yemen	0	200	0	0	200	100	**500**

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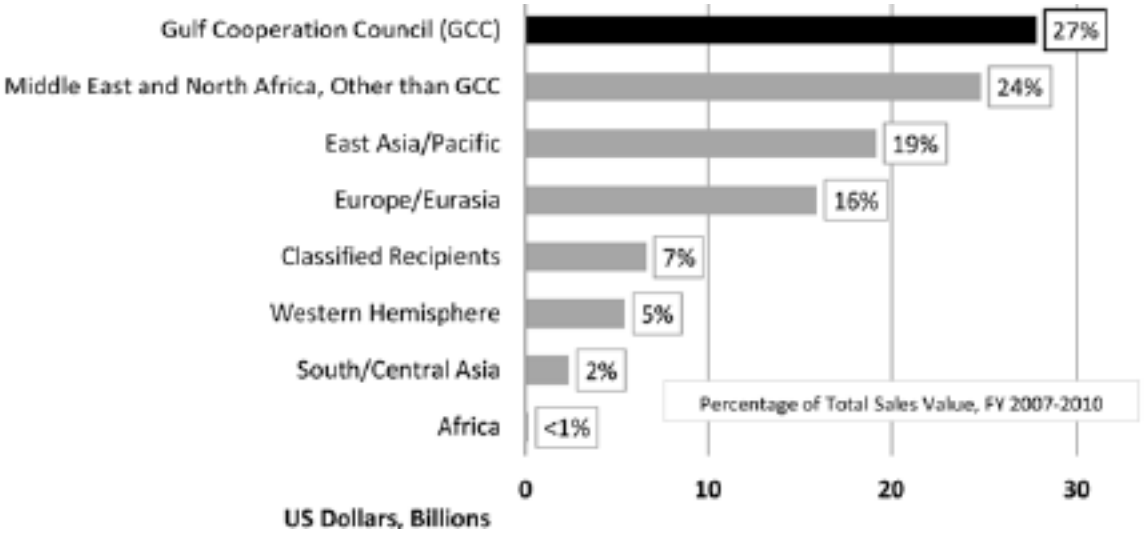
** 0 = Data less than $50 million or nil. All data rounded to the nearest $100 million.

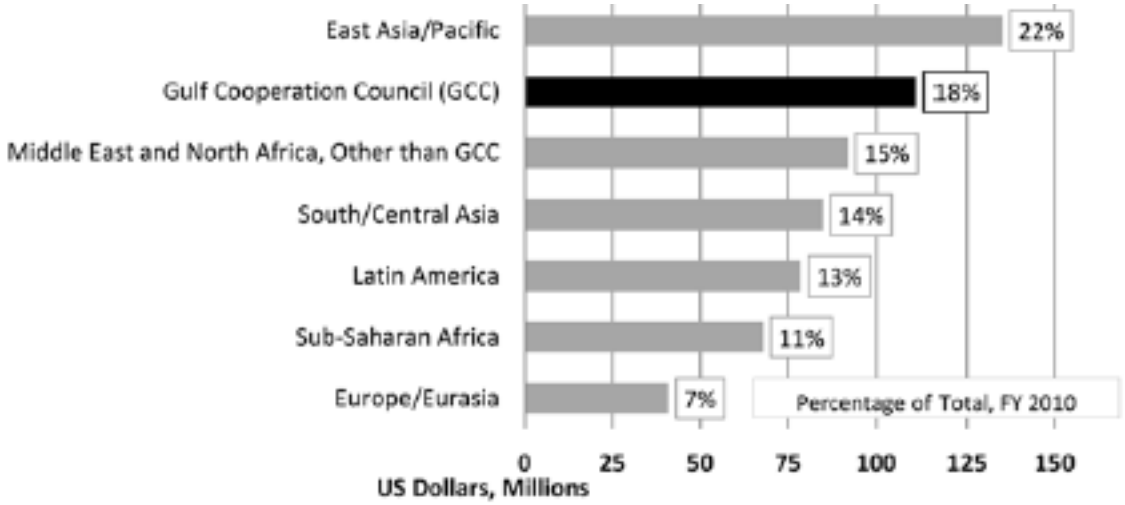
Source: Adapted from Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations, 2003-201, Congressional Research Service, R42017, September 22, 2011 pp. 44, and 58.

Figure III.6 The Role of US Arms Transfers and Military Education as a Percentage of US Global Efforts

US Foreign Military Sales Agreements by Region: FY 2007-FY2010*



Funding for US Foreign Military Education and training by Region: 2010 **



***** Data come from Defense Security Cooperation Agency 2010 Report on Foreign Military Sales, Foreign Military Construction Sales and Other Security Cooperation Historical Facts With the exception of the ''GCC'' grouping, which is drawn out of the ''Middle East and North Africa,'' the regional categories are equivalent to those used by the U.S. State Department.

**Data come from 2010–2011 Report on Foreign Military Training and Department of Defense Engagement Activities of Interest

Source: This table is excerpted and adapted from a Majority Staff Report of the Senate Foreign relations Committee, *The Gulf Security Architecture: Partnership with the Gulf Cooperation Council*, June 19, 2012

The Limits to Iran's Air Power

Air and sea power is the key to conventional combat in the Gulf region and any purely conventional, large-scale US/GCC engagement with Iran – although such a struggle would probably involve significant naval elements and be an air-sea battle. **Figures III.7** to **III.9** show that Iran lags badly behind the Gulf states in modernizing its air forces.

Iran's most advanced fighters consist of a small number of export versions of the Su-24 and MiG-29, whose avionics lag far behind their Russian counterparts. These limits to Iran's air force are particularly important as Iran has air bases that are only a few minutes flight time from critical targets in the Gulf and in the coastal areas of the southern Gulf states. They are also important because Iran's weaknesses in air-to-air combat, and its weaknesses in surface-to-air missile defense which are described shortly, leave it highly vulnerable to any US or US and Gulf attack and vulnerable to a major preventive strike by Israel.

The Uncertainties Affecting Iran's Air Capabilities

There are some important aspects of Iran's air capabilities that cannot be estimated on the basis of unclassified reporting. Taken at face value, Iran's air force is something of a military museum. It is a tribute to Iran's airmen that it can keep so many of its US-supplied and older Russian and Chinese aircraft flying, but none of the Western-supplied aircraft in Iran's inventory have been modernized by the US since the fall of the Shah.

This is a critical shortcoming since their US-flown counterparts – especially the 44 F-14s and 65 F-4D aircraft still in Iranian service – went through a long series of Multi-Stage Improvement Programs (MSIPs) to correct design problems, improve flight performance and sortie generation capability, and modernize their avionics and radars for air-to-air and air-to-ground/sea operations. Similarly, it is unclear that Russia ever systematically modernized Iran's early export versions of the 30 Su-24 and 35 MiG-29 – which lack the radar and avionics performance of their counterparts in Russian service.

Iran claims to have modernized the avionics on some of these aircraft, and to have adapted its F-14s to carry the Hawk air-to-surface missile as a long-range air-to-air missile to compensate for the fact its F-14s were sabotaged during the fall of the Shah and cannot make effective use of Phoenix missiles – which in any case are long beyond their useful life. It also claims to have created electronic warfare aircraft and to have modernized the avionics on its 3 PF-3 Orion maritime patrol aircraft – which are as close to an AWACs/airborne warning and control aircraft as Iran has. It also has claimed to have a mix of unmanned combat aerial vehicles (UCAVs and UAVs) it can use to make up for some of the limitation in its aircraft.

Iran has developed significant software skills and does produce some competent electronic warfare equipment. It is highly uncertain, however, that Iran can produce anything like the integrated capabilities necessary to systematically modernize its aircraft, and make them competitive in either munitions delivery or electronic warfare. It is also unclear that Iran has anything like the test facilities to determine how effective its modifications would be against US air forces and ships, and a properly trained modern Southern Gulf air force. There is no way to make such estimates without access to classified electronic order of battle and exercise data.

Moreover, one reason that Arab air forces have lost so decisively to Israel in past wars is that they could not generate anything like the surge sortie numbers, and sustain sortie numbers, that Israel could. Numbers of aircraft are never the critical measure of air strength. The issue is how many are operational at the start of a conflict, how well aircraft can be repaired or made ready in combat, and how many sorties can be generated over time.

Iran developed extensive illegal purchasing networks during the Iran-Iraq War and has maintained them ever since. It has kept many of its aircraft flying, although it is unclear that it can fly more than 60% of its 297-312 remaining combat aircraft at any given time. There is no way on the basis of unclassified data to estimate its sortie generation rate over time, and it is unclear that Iran has ever stressed its air force to find out the answer. It does seem likely that its sortie generation rate would be a fraction over time of the rate that the US and better Southern Gulf air forces could generate.

Iran's Problems in a Significant Air War

Once again, it is far easier to analyze Iran's order of battle than its warfighting capabilities. There are little meaningful data on the Iranian Air Force's real world warfighting capabilities. Like all the elements of the IRGC and other Iranian military forces, the Iranian Air Force does seem heavily dependent on conscripts and short-service personnel, and to have encountered problems in terms of its military politics and leadership.

There also are few data on the quality of the enablers Iran needs: Its real world IS&R, C4I, electronic warfare, and refueling capabilities. Basic pilot skills seem high, but this is not the same as advanced combat training -- particularly using the kind of large-scale air operations training used by the US and some of its Gulf allies. These skills are particularly critical in managing large air operations, where Iran's lack of modern technology for integrating operations and creating the most advanced situational awareness possible could be critical.

Iran did a consistently poor job of managing large-scale air operations in the Iran-Iraq War. Like the other elements of Iran's forces, it would now have to go to war with forces that have not had any real military combat experience since the end of the Iran-Iraq War in 1988 – a period of near a quarter of a century. This not only means it has no cadres with combat experience, the problem is compounded by the fact it plans to fight a very different kind of war than Iran has ever fought before.

This does not mean that the Iranian Air force should be discounted. An untested capability does not necessarily equate a lack of capability. The Iranian Air Force is operational in the Gulf and the Gulf of Oman, and no one can predict the way in which any air combat might emerge between Iran, the US, and its Arab numbers. That said, some factors do seem likely, given the limits to the unclassified data now available:

- Iran would need weeks of strategic warning to surges its air force to defensive readiness or conduct a major combat operation.
- Iran's sortie rate will drop even more precipitously now than it did at the beginning of the Iran-Iraq War – a factor that crippled it in competing with an incompetent and terribly led Iraqi Air Force.
- Iran could carry out a series of surprise strikes against Southern Gulf and Iraq targets, but not sustain either a long, intense air offense or a long, intense air defense screen.

- Iran lacks the air strength to defend the entire country, although enough warning capability will probably survive attack and suppression to provide some coverage of its coast and western border, and its defense capabilities will improve with the depth of enemy penetration into Iranian air space.
- Iran will face serious limits in electronic warfare and countering jamming and electronic intelligence (ELINT) operations from any US or US-led force.
- Iran's limited air control and warning environment will be vulnerable to jamming, spoofing, and a variety of anti-radiation weapons.
- Iran will have a major disadvantage in air-to-air missile combat and especially in beyond visual range air-to-air combat.
- Iran will not be able to penetrate into a properly maintain US or Southern Gulf air defense net in which anything like an AWACs-controlled air defense screen is present.
- Iran will be vulnerable to stealth systems like the B-2 and F-22, and the F-35 as it deploys. It will have very limited air to air defense capability against well-planned, well flown low altitude missions flown by cruise missiles, the B-1, and modern US and Southern Gulf strike fighters – with the possible exception of point defenses using its Russian supplied short-range TOR-M1 surface-to-air missiles.
- Iran will have problems in using its anti-ship and any other cruise missiles requiring a remote target system or airborne radar, and UCAVs/UAVs if US forces are present with modern electronic warfare and jamming capabilities, and in operating its maritime and intelligence aircraft both in the face of jamming and the treat from fighters.
- Iran would have serious problems in screening its critical targets. These not only include its nuclear facilities, but its missile facilities, major production facilities, refineries and fuel storage and distribution system, electrical grid, water purification facilities, and other key targets. A precision strategic bombing campaign could cripple much of Iran's economy and military production capability in a matter of days.
- Iran could engage in raids and limited air efforts, but would probably lose the ability to operate aircraft in numbers over the Gulf and southern Iran in a matter of days. It could not use its air force in numbers in sustained, survivable sorties to defend its ports, larger surface ships, or southern bases.

It should be stressed, however, that these comments apply to sustained levels of combat over time where the US is present or Southern Gulf air forces are prepared, properly trained, and made interoperable by either US support or reforms that are still very much a matter of discussion rather than implementation.

Iranian Claims to Air Modernization and Combat Capability

Iran's officers have also made very different claims. Moreover, Iran has sought more modern fighters from Russia, but past reports of sales have never materialized. As a result, Iran has sought to develop its own fighters, the most notable of which are the Saeqeh ("Thunderbolt") and the Azarakhsh ("Lightning"), both of which are based on the Northrop F-5. Iran also has made many claims to have modernized its fighters and their systems and munitions, although many such claims are clearly exaggerated:

- **"***Sukhoi fighter jet has been optimized by the Army Air Force experts and now has the capability to hit and destroy targets with high precision in absolute darkness."* – General Seyed Mohammed Alavi, Lieutenant Commander of the Iranian Air Force for Operations, April 25, 2011.
- *"The production of hi-tech and advanced military tools, weapons and equipments [sic] displays Iran's might and power and proves that sanctions against the country have been futile.*

  Iran has recently made good progress in the air industry and has succeeded in gaining the technical know-how for producing stealth aircraft and drones." – Brigadier General Ahmad Vahidi, Iranian Minister of Defense, October 7, 2011.

- *"Now the Islamic Republic of Iran is not only independent in the area of defense industries production, but also exports strategic defensive items."* – General Mostafa Mohammad Najjar, Iranian Defense Minister Brigadier, February 6, 2006.
- *"One of the most important actions taken in these drills was increasing the range of the anti-radar missiles mounted on Sukhoi-24 fighters… they hit the specified targets successfully.*

  The missiles enjoy a 100-percent precision capability, meaning that they can hit any target with a zero margin of error." – Brigadier General Hossein Chitforoush, Iranian Air Force Lieutenant Commander, September 15, 2011
- *"The squadron is the first fighter squadron equipped with fighters [Saeqeh] and equipments made inside the country.*

  The squadron is capable of detecting and confronting aggressive aircraft and enemy fighters." – General Seyed Mohammad Allavi, Lieutenant Commander of Army's Air Force for Operations, February 25, 2011.
- *"By mass-production of home-made Saeqeh fighters, we move past all the gorges of designing and building of this fighter and we will strive to use more high-tech and updated models in our fleet in the future."* – Brigadier General Hassan Shahsafi, Iranian Air Force Commander, September 9, 2009. [11]

The US, the Southern Gulf Problem, and Iran's Capability for Air Combat

Although Iran's air assets have aged considerably in comparison with those of its steadily modernizing Gulf neighbors, the Southern Gulf states do have some special vulnerabilities which could be exploited. They are dependent on critical infrastructure such as desalination facilities. Most are comparatively small countries and lack the same strategic depth that Iran possesses; and, they are vulnerable to Iran's large force holdings and selective attacks that aim to cripple their critical infrastructure and coastal facilities.

Furthermore, while the air forces of the member states of the Gulf Cooperation Council (GCC) are more advanced than Iran's, they are not necessarily a decisive factor in a conflict with Iran: the forces of the Gulf states need improved interoperability, specialization, and orientation around key missions. Additionally, while the GCC has the potential to serve as a unified military presence in the region, it now lacks effective unity of effort in war fighting, deterrence, and development terms.

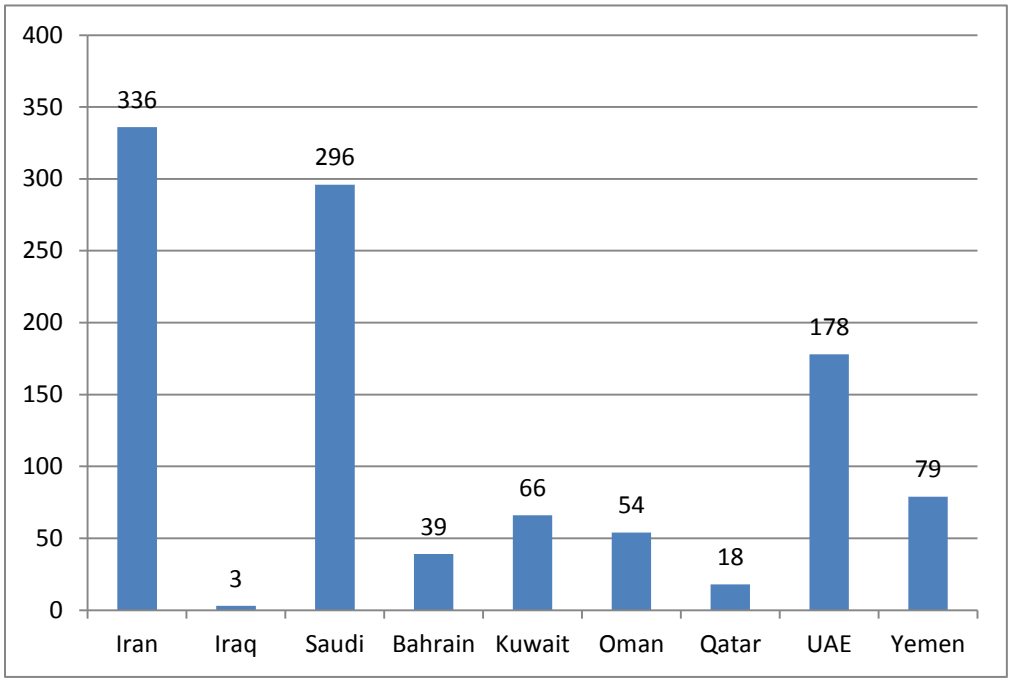
The Gulf Cooperation Council recognized the need for improvements in these areas during their December 2011 Ministerial meeting and has made improvements a key priority. It will, however, at best take several years for the GCC to act, and it has issued the right words before. If rhetoric were reality, virtually every nation in the world would be a superpower.

Much now depends on the extent to which all of the Gulf states would cooperate effectively with the US. The US cannot fight a modern air war using carriers and ship-based cruise missile alone – although these provide extremely powerful strike and defense capabilities for more limited engagements in the Gulf area. It would take a full range of US-enablers like the E-3C AWACs, electronic intelligence and warfare aircraft, land-based air defense and strike fighters, refuelers, and support/arming/recovery bases to fight such a conflict.

[11] Quotes taken from a number of Iranian news sources such as Fars News, PressTV, the Tehran Times, and others. Also included are quotes from Western news outlets such as CNN, the New York Times, and the Washington Post.

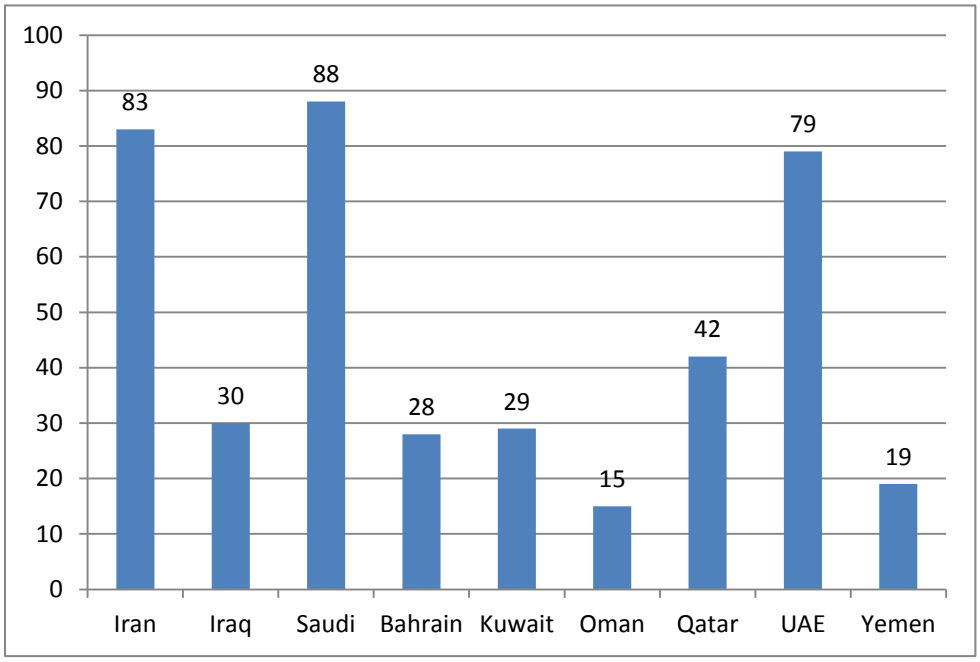
Figure III.7: Total Gulf Holdings of Combat Aircraft in 2011

Fixed Wing Combat Aircraft



Note: Only armed or combat-capable aircraft are counted, not trainers, recce or other aircraft. Iraq has 6 Cessna AC-208Bs fulfilling dual recce and attack roles.

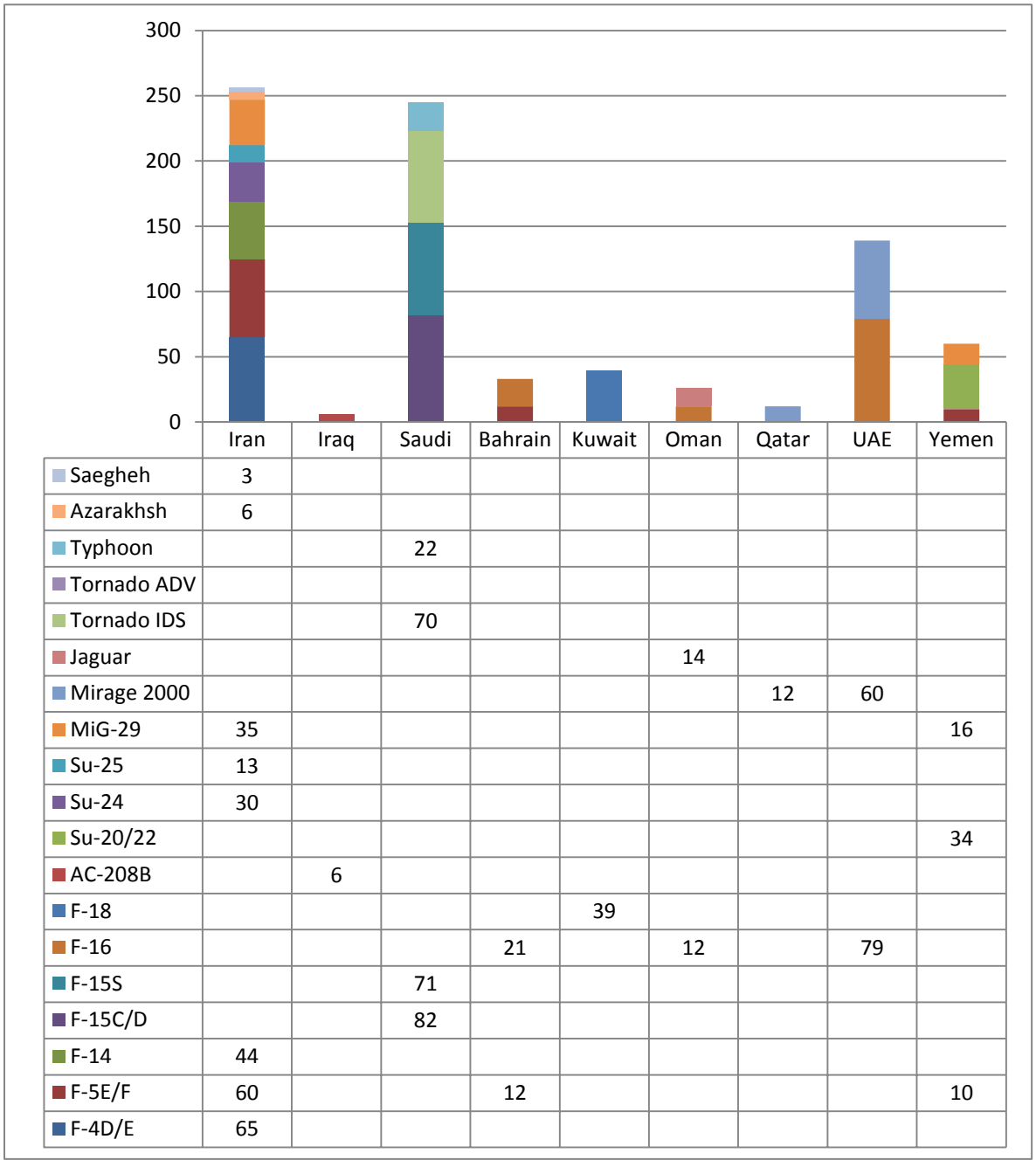
Armed and Attack Helicopters



Source: Adapted from IISS, The Military Balance, Periscope, JCSS, Middle East Military Balance, Jane's Sentinel and Jane's Defense Weekly. Some data adjusted or estimated by the author

Figure III.8: Comparative Modern Iranian and Gulf Air Forces

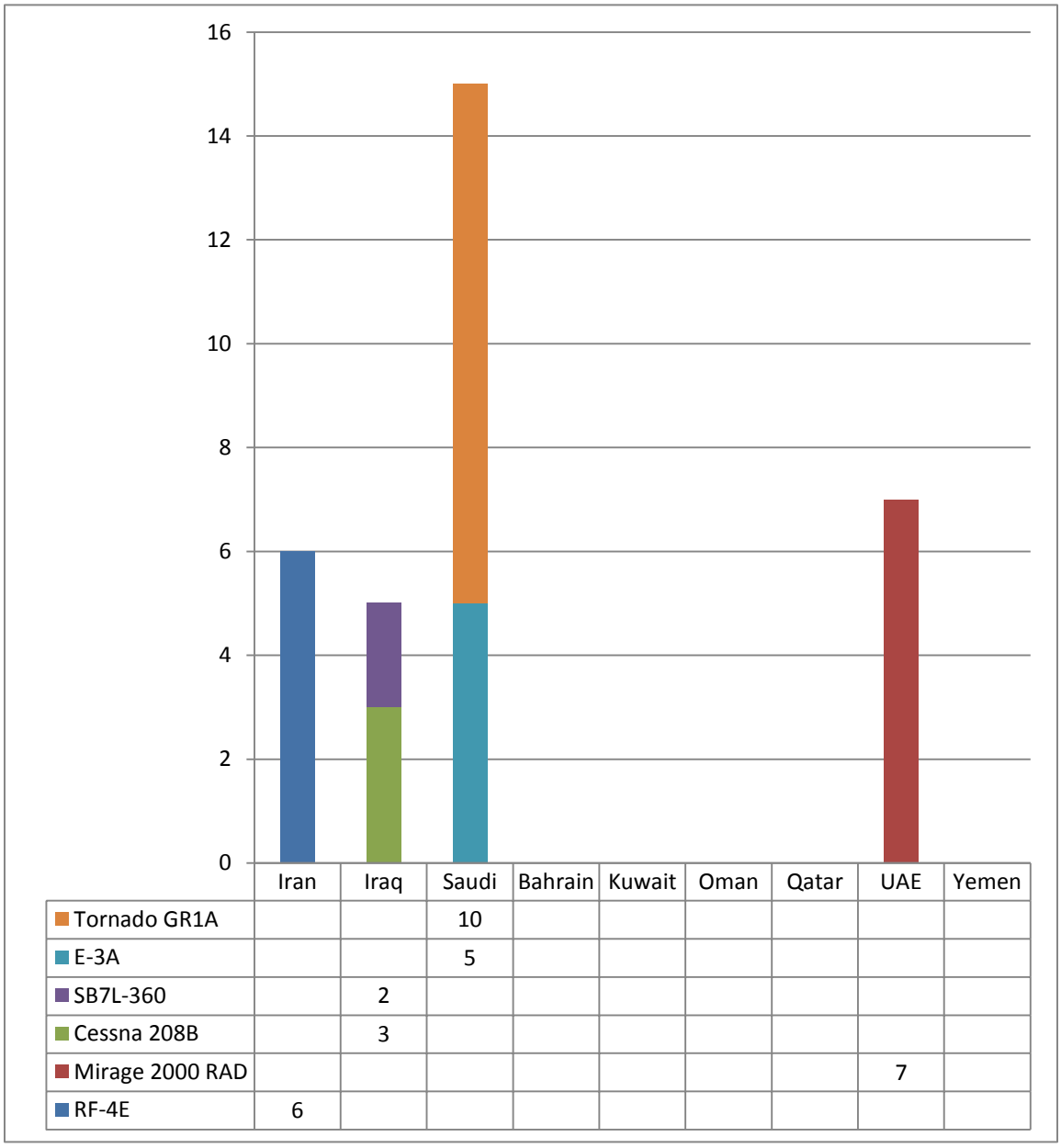
(Totals do not include combat-capable recce but does include OCUs and Hawk combat-capable trainers)



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Saegheh	3								
Azarakhsh	6								
Typhoon			22						
Tornado ADV									
Tornado IDS			70						
Jaguar						14			
Mirage 2000							12	60	
MiG-29	35								16
Su-25	13								
Su-24	30								
Su-20/22									34
AC-208B		6							
F-18					39				
F-16				21		12		79	
F-15S			71						
F-15C/D			82						
F-14	44								
F-5E/F	60			12					10
F-4D/E	65								

Source: Adapted from the IISS, **Military Balance, 2011**; and the Jane's Sentinel series.

Figure III.9: Gulf Reconnaissance and AWACS Aircraft in 2011



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Tornado GR1A			10						
E-3A			5						
SB7L-360		2							
Cessna 208B		3							
Mirage 2000 RAD								7	
RF-4E	6								

* These figures show that that Saudi Arabia has a monopoly of airborne warning and control systems, and that its AWACS aircraft give it a major advantage in battle management, some forms of intelligence collection and air force maritime patrol capability. They also reflect the limited emphasis on reconnaissance aircraft capability in the Gulf region, and the limitations to situation awareness and targeting. While Iraq has growing holdings, their impact and mission integration are more geared towards internal security and support for COIN operations. The problems for the southern Gulf States will, however, be of limited importance if they operate in a coalition with the US.

Source: Adapted from IISS, The Military Balance, Periscope, JCSS, Middle East Military Balance, Jane's Sentinel and Jane's Defense Weekly. Some data adjusted or estimated by the author.

Ground-Based Air Defenses

Iran faces many of the same problems in its land-based air defense forces that it does in its air force. **Figure III.10** shows that Iran has extensive surface-to-air missile assets, but most are obsolete or obsolescent. Iran's systems are poorly netted, have significant gaps and problems in their radar and sensor coverage and modernization, and a number of its systems are vulnerable to electronic warfare.

The Limits to Iran's Surface-Based Air Defenses

Iran did not have functioning, integrated land-based air defense system at the time the Shah fell. It had much of the sensors and command and control systems for a medium to high-altitude system, but not the software and technical support necessary to make the system function. It has since put together many of the elements of such a system using Russian, Chinese, US, European, and Iranian-designed and made equipment, but Iran does not have the design and manufacturing capability to create truly modern system, one that is immune to electronic warfare, and one that can function without become tactically vulnerable to anti-radiation weapons and other forms of active "suppression of enemy air defense" (SEAD) systems.

Iran has a titular holding of 150 IHawk systems and claims to be able to produce its own missiles. It is not clear from unclassified sources how many of the improvements US has made to IHawk in its MSIP and other programs over the years have leaked into Iranian hands, although it is clear that Iran has conducted a major covert espionage and purchasing effort. This is particularly critical because the Hawk is a US-made system and one where the US has unique knowledge of its vulnerabilities over any given generation. While it can be a highly capable system if fully modernized, it has limits even then. As an uncertain mix of technical upgrades, it is far less capable.

It is equally unclear how much Iran has modernized its various holdings of 45 SA-7 medium to high altitude, 10 SA-5 long-range medium to high altitude, and Chinese-supplied SA-2 clone systems. Certainly, these systems cannot be disregarded, and they have been modernized by other countries to some degree. These systems, however, are ancient in technology terms, and countermeasures to the basic design and a number of upgrades were developed by the time of the Vietnam War.

Pop-up emitter and remote sensor tactics can help, but such systems are inherently far more vulnerable than IHawk, particularly when they are not part of a layered, integrated system with a low-altitude surface-to-air missile like the SA-3 and mobile systems of the SA-6 system and it many far more capable Russian successors.

Iran has modernized its radars and dedicated C4I systems, and has shown in its exercises that it has developed a netted mix of radars and linked them to its air force and surface-to-air missile units, but it is unclear how survivable, effective, and electronic warfare-resistant these systems are. Iran has modernized its tactics and paid close attention to the lesson of the Vietnam War, Balkans conflict, Iraq War and other uses of land-based defenses. At best, however, Iran cannot compensate for the age and gaps in its systems, their lack of real-world missile defense capability, and having to create a patchwork system without the benefit of the technology base of a modern power, and the combat experience of states that have used such systems in the last decade.

Moreover, at least some unclassified exercise reporting indicates that Iran lacks effective test and evaluation methods and has politicized its technology to the point it sometimes believes its own rhetoric. This is sin common to all military powers, but there are signs that Iran sins more than most.

The Struggle to Modernize Iran's Surface to Air Missile Defenses

Once again, Russia is Iran's only current potential source of the modern long-range surface-to-air weapons Iran needs, and 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 change this situation.

Iran has augmented its largely obsolescent holdings of modern short-range air defense (SHORAD) systems through the acquisition of some 29-32 operational Tor-M1 (SA-15 Gauntlet) and Pantsyr S-1E (SA-22 Greyhound). These are capable short-range systems and can be used for point defense against cruise missiles and some precision-guided weapons – although there are no unclassified data on actual capability versus manufacturer claims. There also are no data on the kind of tactics, weapons, and countermeasures the US, Israel, and more advanced Gulf air forces could use to bypass, suppress, or destroy such systems.

Iran's key need is for a long-range, modern surface-to-air and missile system that can cover the country and replace its aging Russian, US, and Chinese-supplied 1970s vintage systems. It has no hope of buying such weapons – or the technology needed to integrate them into an advanced defense system from the West, and its only hope has been to buy some variation on the Russian S-300 and S-400 system.

Russia, however, rejected the delivery of modern S-300PMU1 (SA-20 Gargoyle) long range SAMs in 2010. 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 interacts with its weakness in airpower. Unless Iran can correct this weakness, it remains extent a hollow conventional force that cannot defend against outside air and cruise missile threats.

Iran has claimed it is building its own S-300 equivalents, but such claims seem to be sharply exaggerated:[12]

- *"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.

[12] "Kremlin Bans Sale of S-300 Missiles to Iran." BBC. September 22, 2010. http://www.bbc.co.uk/news/world-europe-11388680

- *"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.[13]

The US, the Southern Gulf Problem and Iran's Capability for Land-based Air Defense

Once again, there is no real readiness or effectiveness data on this aspect of Iranian military capability, and no one can predict the way in which Iran's surface-to-air missile defenses would affect air combat that might emerge between Iran, the US, and its Arab numbers. Some judgments do seem credible; however, seem likely – even given the limits to the unclassified data now available:

- Much of Iran's surface-to-air missile defense system is dependent on fire units and sensors that cannot be moved without disrupting the integration of the system, and which become vulnerable in near real time the moment it emits.
- Physically attacking the entire system would be difficult, but attacking given links and areas to create a corridor to penetrate deep into Iran would not be a major challenge.
- No matter how much progress Iran has made, it will be vulnerable to a mix of US targeting capabilities, and electronic warfare and suppression methods.
- Iran is a big country and has poor low altitude coverage of many areas. Many US fighters and the B-1 – as well as southern Gulf and Israeli strike fighters – could penetrate deeply and sometimes to stand-off air-to-surface missile range against a variety of Iranian targets.
- While Israel might be fuel-refueling limited in flying complex penetration corridors from unpredictable routes, the US would face less serious problems.
- Iran would have serious problems in trying to operate both air defense aircraft and surface-based missiles in the same areas in an environment where the US used its full attack and electronic warfare capabilities.
- Many US capabilities are transferrable to southern Gulf fighters and air forces in the form of anti-radiation missiles, electronic warfare pods, and to the Saudi AWACS.
- US cruise missiles, F-22 fighters, and B-2 bombers could penetrate most Iranian defenses, and the F-35 will soon add to that capability.
- Once Iran's air defenses were suppressed, the US and Southern Gulf air forces would have considerable freedom to restrike Iran at any time. Iran could try to deploy covert replacements, but would face serous problems in terms of UAV and satellite dictation and would still be vulnerable to any SEAD technique that worked in the initial US and/or Southern Gulf SEAD attacks.

It should again be stressed that these comments apply to sustained levels of combat over time where the US is present or Southern Gulf air forces are prepared, properly trained, and made interoperable by either US support or reforms that are still very much a matter of discussion rather than implementation.

The Southern Gulf Problem and Surface-to-Air Missile Defense

Figure III.11 shows Saudi Arabia and the smaller Southern Gulf states have a wide mix of far more modern surface-to-air missile assets than Iran, including upgraded IHawks, advanced

[13] Quotes taken from a number of Iranian news sources such as Fars News, PressTV, the Tehran Times, and others. Also included are quotes from Western news outlets such as CNN, the New York Times, and the Washington Post.

versions of the Patriot with some missile defense capability, and more modern short-range systems than any Iranian system other than Iran's 27-32 operational Tor-M1s.

These systems are considerably more capable than most of Iran's holdings, but many have been deployed in ways that offer limited interoperability with other Gulf states. Their effectiveness is also limited in some cases by a lack of effective long-range sensors, battle management systems training and readiness, and strategic depth. Once again, however, that the Southern Gulf states stressed the need for more coordination and interoperability in these areas of military cooperation at the Gulf Cooperation Council meeting in December 2011.

Moreover, the forces shown in **Figure III.10** – and **Figures III.7 to III.9** - do not include the massive air, surface-to-air missile, and ballistic missile defense forces the US could deploy. They also do not take account of the US ability to provide the GCC states and Iraq with IS&R, maritime surveillance, air control and warning, and missile defense data and command and control capabilities.

In practice, this could give combination of Gulf and US forces a decisive advantage, and one the US could reinforce with land-based surface-to-air and missile defense systems of its own and missile defense cruisers. This does, however, require both Southern Gulf willingness to call for such support, and much would depend on warning time and the quality and realism of contingency planning, simulations, and at least command post exercises.

Figure III.10: Comparative Land Based Air and Missile Defense Forces

Country	Major SAM	Light SAM	AA Guns
Bahrain	8 I Hawk MIM-23B 60	R BS-70 18 FIM-92A Stinger 15 7 Crotale	27 guns Oerlikon 35 mm 12 L/70 40 mm
Iran	16/150 I Hawk 3/10 SA-5 45 SA-2 Guideline	SA-7/14/16, HQ-7 29 SA-15 S o me QW-1 Misaq 29 TOR-M1 Some HN-5 5/30 Rapier 10 Pantsyr (SA-22) Some FM-80 (Ch Crotale) 15 Tigercat Some FIM-92A Stinge r	1,700 Guns ZSU-23-4 23mm ZPU-2/4 23mm ZU-23 23mm M-1939 37mm S-60 57mm ZSU-57-2
Iraq			
Kuwait	5 / 24 I Hawk Phase III 12 5/40 Patriot PAC-2 12	Aspide S t a rburst Aspide Stinger	12 Oerlikon 35mm
Oman	None	Blowpipe 8 Mistral 2 SP 12 Panstsyr S1E 34 SA-7 6 Blindfire S713 Martello 20 Javelin 40 Rapier	26 guns 4 ZU-23-2 23 mm 10 GDF-005 Skyguard 35 mm 12 L-60 40 mm
Qatar	None	10 Blowpipe 12 FIM-92A Stinger 9 Roland II 24 Mistral 20 SA-7	?
Saudi Arabia (NG)	16/128 I Hawk 4-6/16-24 Patriot 2 17/73 Shahine Mobile 16/96 PAC-2 launchers 17 ANA/FPS-117 radar 73/68 Crotale/Shahine	40 Crotale 500 Stinger (ARMY) 92 500 Mistral (ADF) 500 FIM-43 Redeye 500 Redeye (ADF) 128 73 -141 Shahine static	1,220 guns M-163 Vulcan 20 mm 30 M-167 Vulcan 20 mm 8 50 AMX-30SA 30 mm GDF Oerlikon 35mm 1 50 L-70 40 mm (in store) 130 M-2 90 mm (NG)
UAE	2/6/36 I Hawk	20+ Blowpipe 20 Mistral Some Rapier Some Crotale Some RB-70 Some Javelin Some SA-18	62 guns 42 M-3VDA 20 mm SP 20 GCF-BM2 30 mm
Yemen	S o me SA-2, 3 Some SA-6 SP	Some 800 SA-7 Some SA-9 SP Some SA-13 SP Some SA-14	530 guns 20 M-163 Vulcan SP 20mm 50 ZSU-23-4 SP 23 mm 100 ZSU-23-2 23 mm 150 M-1939 37 mm 50 M-167 20mm 120 S-60 57 mm 40 M-1939 KS-12 85 mm

Source: Adapted by Anthony H. Cordesman from IISS, The Military Balance, Periscope, JCSS, Middle East Military Balance, Jane's Sentinel and Jane's Defense Weekly. Some data adjusted or estimated by the author.

Source: Adapted from the IISS, **Military Balance, 2011**; and the Jane's Sentinel series.

Iran's Largely Defensive Land Forces

Iran is a major land power by regional standards, and has large ground forces that include both its conventional army and its Islamic Revolutionary Guards Corps. It can also mobilize a large military militia called the Basij that could total at least several hundred thousand on mobilization.

Figuress III.11 and III.12 show that Iran's land are well-equipped enough to present a serious threat, but the vast majority of its major land weapons are aging, of low to moderate capability, and lack modernization.

Strengths and Weaknesses in Iran's Army

Iran has made major efforts to reduce the divisions and tensions between its regular army and the Revolutionary Guards since 2003. It has reduced the degree of separation between force elements, and practiced defensive operations where its regular forces first fight an invading enemy with support from the IRGC, and then disperse and join the IRGC in a more asymmetric form of lasting national warfare to defeat in initial successes by the invader.

The Iranian Army is far too large a force to ignore. It has some 350,000 men (220,000 conscripts) organized into four corps, which the IISS reports has four armored divisions, six infantry divisions, six artillery groups, two commando divisions, an airborne division, aviation groups, and other smaller independent formations. These latter units include independent armored, infantry, and commando brigades.

In practice, each Iranian division has a somewhat different organization. Some reporting indicates only one to two of Iran's armored divisions are well enough equipped to be considered true armored divisions, Iran does have at least one elite Special Forces Division, which was formed in 1993–1994, and the 55th paratroop division. According to one source, the 23rd Special Forces Division has 5,000 full-time regulars and is one of the most professional units in the Iranian Army.

The regular army also has a number of independent brigades and groups. These include some small armored units, one infantry brigade, one airborne and two to three Special Forces brigades, coastal defense units, a growing number of air-defense groups, five artillery brigades/regiments, four to six army aviation units, and a growing number of logistic and supply formations. The land forces have six major garrisons and 13 major casernes. There is a military academy at Tehran, and a signal-training center in Shiraz.[14] The airborne and Special Forces train at a facility in Shiraz, too.[15]

Mass, however, is only as effective as quality permits. There is little meaningful data on the Army's real world capabilities. The Army does not seem to carry out meaningful joint warfare

[14] No reliable data exist on the size and number of Iran's smaller independent formations.

[15] There are reports that the lighter and smaller formations in the regular army include an Airmobile Forces group created since the Iran-Iraq War, and which includes the 29th Special Forces Division, which was formed in 1993-1994, and the 55th paratroop division. There are also reports that the regular army and IRGC commando forces are loosely integrated into a corps of up to 30,000 men with integrated helicopter lift and air assault capabilities. The airborne and special forces are trained at a facility in Shiraz. These reports are not correct. Note that detailed unit identifications for Iranian forces differ sharply from source to source. It is unclear that such identifications are accurate, and now dated wartime titles and numbers are often published, sometimes confusing brigade numbers with division numbers.

training or combined arms exercises in spite of the fact it does have large-scale exercises. The effectiveness of its C4I and IS&R systems is unclear, but many seem dated and their level of integration seems limited. Like the other elements of the Iran's military forces and the IRGC, the Army is heavily dependent on conscripts, and has encountered problems in terms of its military politics and leadership as the IRGC has become the dominant political element of Iran's forces and moved close to Iran's Supreme Leader.

Like the rest of Iran's forces, the Army would have to go to war with forces that have not had any real military combat experience since the end of the Iran-Iraq War in 1988 – a period of near a quarter of a century. This not only means it has no cadres with combat experience, the problem is compounded by the fact it plans to fight a very different kind of war than Iran has ever fought before.

Weaponry and Force Quality

Modernization, the ability to project land forces significant distances, and combined arms maneuver are also serious problems. Only 480–580 of Iran's 1,600+ main battle tanks can be described as "modern" by common standards: these include some 480 T-72s and the Zulfiqars. Iran has some 730-860 other operational armored fighting vehicles, 550–640 armored personnel carriers (APCs). It only has 310 self-propelled artillery weapons, but it has a very large array of over 2,000 towed artillery weapons, more than 870 multiple rocket launchers. It has developed its own rockets, some of which have modern cluster warhead and some of which are reported to have at some form of guidance system. This is a large inventory of major weapons, although many are worn and obsolete and date back to the time or the Shah or the Iran-Iraq War.

The Army also has about 1,700 air-defense guns and large numbers of light anti-aircraft (AA) missiles, large numbers of anti-tank weapons and guided missiles, and some 50 attack helicopters. It manufactures modern variants of Russian anti-tank guided weapons – including the AT-3 and possibly AT-4, and can manufacture tank and artillery ammunition, artillery weapons, and modern RPGs. It also makes an "improved" copy of the TOW missile, which it says it has reverse engineered from the missiles it received from the United States. This missile is said to exist in both a Toophan and a Toophan 2 version.

Iran has large numbers of SA-7 (Strela 2M) and SA-14 (Strela) man-portable surface-to-air missiles, some more modern SA-16s and HN-5/HQ-5s, as well as Misaq man-portable surface-to-air missiles. It may also have up to 500 SA-18s, which are advanced man-portable surface-to-air missiles.[16] Iran has some 50 Swedish RBS-70 low-level surface-to-air missiles. Iran seems to be producing some version of the SA-7, perhaps with Chinese assistance. It is not clear whether Iran can do this in any large number. Iran's land-based air-defense forces are also acquiring growing numbers of Chinese FM-80s, a Chinese variant of the French-designed Crotale. Some reports indicate that it has some SA-8s, but these may be token transfers obtained for reverse-engineering purposes.

The Iranian Army seems to retain 50 AH-1J Sea Cobra attack helicopters, 20 CH-47Cs, 50 Bell-214A/Cs, 68 AB-205As, 10 AB-206s, and 25 Mi-8/Mi-17 transport and utility helicopters. There are also reports that Iran signed orders for 4 Mi-17s in 1999 and 30 Mi-8s in 2001. Army

[16] http://www.fas.org/nuke/guide/iran/missile/mushak.htm.

aviation bases are located in Bakhtaran, Ghale Morghi, Isfahan, Kerman, Mashad, Tehran, and Masjed Soleiman.[17] These Western-supplied transport and support helicopters have low operational readiness, and they have little sustained sortie capability.

Iran's Ability to Defend Its Teritory and Project Land Power

Exercises in 2010 and 2011 reveal that Iran's land force posture still reflects a deep fear of US-led invasion that reached a height in years after the US invasion of Iraq in 2003. The Iranian Army is now trained and organized for defense in depth, and to fight in the face of an enemy with air superiority. As long as the Army is loyal to the regime, it represent a serious force and one that make talk of an invasion of Iran far easier than any real world effort to carry out such a threat. Iran has large enough ground forces to make any US invasion of Iran problematic at best.

Iran also can project power across its borders if it does not face a major air threat or cohesive resistance from the country involved. It is highly dependent on towed firepower, however, and it is not equipped to maneuver long distances outside of Iran or to sustain intensive operations outside the country. At the same time, Iran does have large elements of its conventional forces that it can use to supplement the forces it is developing for asymmetric warfare. Moreover, Iraq will lack the land air capabilities necessary to deter and defend against a major Iranian land attack through at least 2020, although Iran would lose air cover within days if Iraq appealed to the US and become highly vulnerable to air and cruise missile strikes against key Iranian military and strategic targets almost immediately.

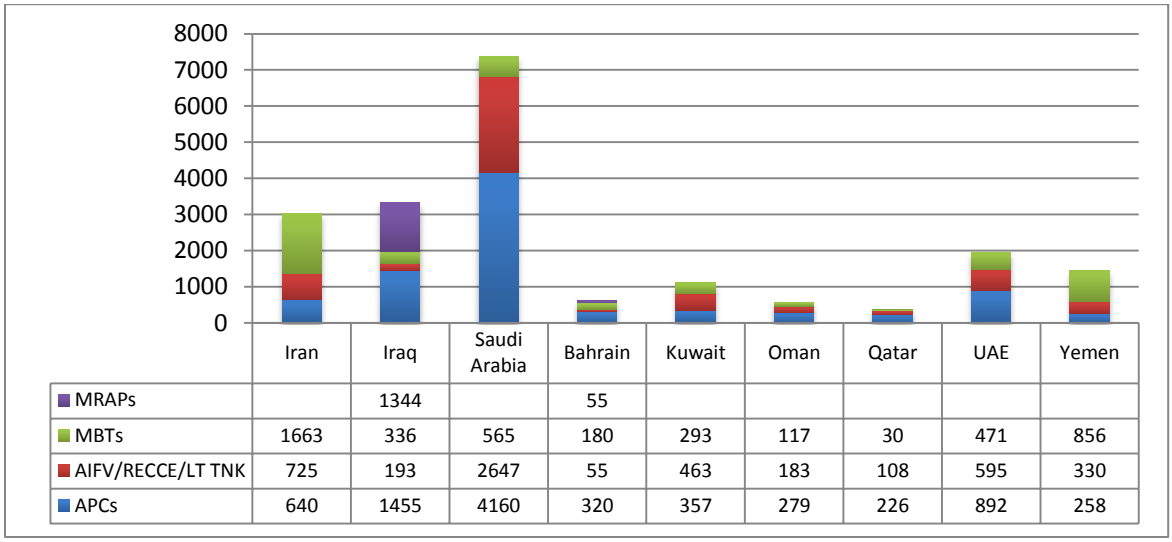
Iran might also seek to use its land forces attack though Iraq and Kuwait into the Upper Gulf, but would then face an immediate response from the US, the GCC, Britain, and France and would have to fight its way into and through Iraq in the face of massive US and GCC air superiority using ground forces designed for defensive operations on Iranian soil rather than offensives of any length. While Iran does have the ability to conduct amphibious, sea, and helicopter raids, it does not have the lift to move large forces any significant distance and particularly across the Gulf. Any major amphibious effort that was not totally permissive in crossing the Gulf and entering a Southern Gulf nation would be little more than suicidal in the face of US and GCC naval and air forces.

It is also important to realize that the air- surface-to-air and naval aspects of these data are almost certainly the most important data in any case other than an Iranian attack into Iran. In spite of some extraordinarily silly war scares during the US occupation of Iraq – and ones that led Iran to massive land defense exercises to prepare for a US invasion – the US never made even minimal practical preparations for such an attack which it was in Iraq. It now has no combat forces in Iraq, and limited ground forces equivalent to roughly two combat brigades in the rest of the Gulf. It does not have the forces, logistical base, or support capabilities to invade Iran from Afghanistan – a scenario that makes no geographic sense in any case.

[17] Jane's World Armies, *Iran*, October 26, 2006.

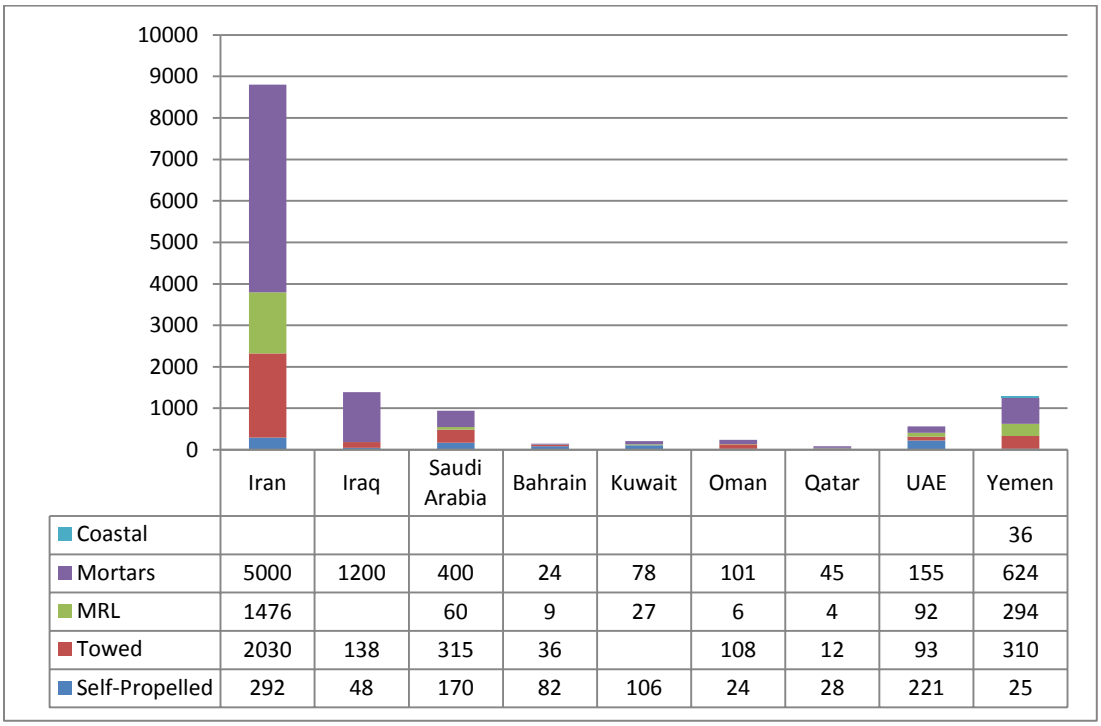
Figure III.11: Comparative Iranian and Gulf Land Forces

Comparative Armor



	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
MRAPs		1344		55					
MBTs	1663	336	565	180	293	117	30	471	856
AIFV/RECCE/LT TNK	725	193	2647	55	463	183	108	595	330
APCs	640	1455	4160	320	357	279	226	892	258

Comparative Artillery



	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Coastal									36
Mortars	5000	1200	400	24	78	101	45	155	624
MRL	1476		60	9	27	6	4	92	294
Towed	2030	138	315	36		108	12	93	310
Self-Propelled	292	48	170	82	106	24	28	221	25

Source: Adapted from the IISS, **Military Balance, 2012**; and the Jane's Sentinel series.

Figure III.12: Land Force Combat Units by Country in 2012

Country	Combat Units*	Combat Support Units**
Bahrain	**SPECIAL FORCES** 1 bn **MANOEUVRE** **Armored** 1 armd bde(–) (1 recce bn, 2 armd bn) **Mechanized** 1 inf bde (2 mech bn, 1 mot bn) **Light** 1 (Amiri) gd bn	1 arty bde (1 hvy arty bty, 2 med arty bty, 1 lt arty bty, 1 MRL bty) 1 AD bn (1 ADA bty, 2 SAM bty) 1 engr coy
Iran		
Regular Forces	**COMMAND** 5 corps-level regional HQ **SPECIAL FORCES** 2 cdo div (3 cdo bde) 3 cdo bde 1 SF bde **MANOEUVRE** **Armored** 4 armd div (1 recce bn, 2 armd bde, 1 mech bde, 1 SP arty bn, 1 engr bn, 1 log bn, 1 tpt bn) 1 indep armd bde **Mechanized** 2 mech inf div (1 recce bn, 1 armd bde, 2–3 mech bde, 1 SP arty bn, 1 arty bn, 1 engr bn, 1 log bn, 1 tpt bn) **Light** 4 inf div (3–4 inf bde, 1 arty bde, 1 log bn, 1 tpt bn) 1 indep inf bde **Air Manoeuvre** 1 AB bde **Aviation** Some avn gp	6 arty gp
IRGC	**COMMAND** 31 provincial corps HQ (2 in Tehran) **MANOEUVRE** **Light** Up to 15 div (some divs are designated as armd or mech but all are predominantly infantry) Some indep bde (each bde allocated 10 Basij militia bn for ops) **Amphibious** 1 marine bde **Air Manoeuvre** 1 indep AB bde	Some arty bty Some AShM bty with HY-2 (CSS-C-3 *Seersucker)* AShM

Iraq	**SPECIAL FORCES** 2 SF bde **MANOEUVRE** **Armored** 1 armd div (3 armd bde, 1 lt mech bde, 1 engr bn, 1sigs regt, 1 log bde) **Light** 8 mot div (4 mot inf bde, 1 engr bn, 1 sigs regt, 1 log bde) 2 mot div (3 mot inf bde, 1 engr bn, 1 sigs regt, 1 log bde) 1 inf div (1 mech bde, 2 inf bde, 1 air mob bde, 1 engr bn, 1 sigs regt, 1 log bde) 1 inf div (4 lt inf bde, 1 engr bn, 1 sigs regt, 1 log bde) 1 inf div (3 lt inf bde, 1 engr bn, 1 sigs regt, 1 log bde) 2 (presidential) mot bde 1 (Baghdad) indep mot bde **Aviation** 1 sqn with Bell 205 (UH-1H *Huey* II) 1 sqn with Bell 206; OH-58C *Kiowa* 1 sqn with Bell T407 3 sqn with Mi-17 *Hip* H; Mi-171 1 sqn with SA342M *Gazelle*	
Kuwait	**SPECIAL FORCES** 1 SF unit (forming) **MANOEUVRE** **Reconnaissance** 1 mech/recce bde **Armored** 3 armd bde **Mechanized** 2 mech inf bde **Light** 1 cdo bn **Other** 1 (Amiri) gd bde	1 arty bde 1 engr bde 1 MP bn
Oman	**MANOEUVRE** **Armored** 1 armd bde (2 armd regt, 1 recce regt) **Light** 1 inf bde (5 inf regt, 1 arty regt, 1 fd engr regt, 1 engr regt, 1 sigs regt) 1 inf bde (3 inf regt, 2 arty regt) 1 indep inf coy (Musandam Security Force) **Air Manoeuvre** 1 AB regt	1 ADA regt (2 ADA bty)
Qatar	**SPECIAL FORCES** 1 SF coy **MANOEUVRE** **Armored** 1 armd bde (1 tk bn, 1 mech inf bn, 1 AT bn, 1 mor sqn) **Mechanized** 3 mech inf bn **Light** 1 (Royal Guard) bde (3 inf regt)	1 fd arty bn
Saudi Arabia		
Regular Army	**MANOEUVRE** **Armored** 3 armd bde (1 recce coy, 3 tk bn, 1 mech bn, 1 fd arty bn, 1 AD bn, 1 AT bn, 1 engr coy, 1 log bn, 1 maint coy, 1 med coy) **Mechanized** 5 mech bde (1 recce coy, 1 tk bn, 3 mech bn, 1 fd arty bn, 1 AD bn, 1 AT bn, 1 engr coy, 1 log bn, 1 maint coy, 1 med coy)	1 arty bde (5 fd arty bn, 2 MRL bn, 1 msl bn)

	Light 1 (Royal Guard) regt (3 lt inf bn) **Air Manoeuvre** 1 AB bde (2 AB bn, 3 SF coy) **Aviation** 1 comd (1 atk hel bde, 1 tpt hel bde)	
National Guard	**MANOEUVRE** **Mechanized** 3 mech bde (4 combined arms bn) **Light** 5 inf bde (3 combined arms bn, 1 arty bn, 1 log bn) **Other** 1 (ceremonial) cav sqn	
UAE	GHQ Abu Dhabi **MANOEUVRE** **Armored** 1 armd bde **Mechanized** 3 mech bde **Light** 2 inf bde **Aviation** 1 bde with AH-64 *Apache;* CH-47F Chinook; UH-60L *Black Hawk* **Other** 1 Royal Guard bde	1 arty bde (3 arty regt) 1 engr gp
Yemen	**SPECIAL FORCES** 1 SF bde **MANOEUVRE** **Armored** 8 armd bde **Mechanized** 6 mech bde **Light** 16 inf bde **Air Manoeuvre** 2 cdo/AB bde **Other** 1 (Central Guard) gd force	3 arty bde 1 SSM bde 2 AD bn

* Armored, mechanized, infantry, paratroop, and special forces units, including divisions, brigades, regiments, and independent battalions, and companies.

** Artillery, aviation, engineer, missile, and other combat support forces

Source: Adapted from IISS, The Military Balance, 2012

Iran's Naval Forces and Their Role in Asymmetric Warfare

Iran lacks modern conventional naval forces – with the exception of its submarines and some of its missile patrol boats. As **Figures III.13 to III.16** show, however**,** Iran's conventional naval forces are large enough to present a challenge during the initial phases of any major clashes. Iran also and they also has minelayers, as well as advanced mines that can be delivered by any surface vessel – including the stream of dhows that constantly crosses the Gulf.

Moreover, many elements of Iran's naval forces lend themselves to asymmetric warfare, and no assessment of Iran's capabilities for such warfare is complete without an examination of the strengths and weaknesses of its naval forces.

The Strengths and Weaknesses of Iran's Naval Forces

The Iranian Navy had some 18,000 men in 2012. According to the International Institute for Strategic Studies (IISS), this total included two marine brigades of some 2,600 men and a 2,000-man naval aviation force. It has bases at Bandar Abbas, Bushehr, Kharg Island, Bandar Anzali, Chah Bahar, Bander-e Mahshahar, and Bander-e Khomeini.

At the end of 2011, Iran's surface forces included 3 frigates, 2 corvettes, 11 missile patrol craft, 5 mine warfare ships, over 60 coastal and inshore patrol craft, and 13 amphibious ships. Its naval aviation branch is one of the few air elements in any Gulf navy, having 3 Orion 3PF maritime patrol aircraft and 13 armed helicopters. When combined with the Islamic Revolutionary Guards Corps (IRGC) naval branch, this brought the total maritime strength of Iran to 38,000 men, with significant capabilities for both regular naval and asymmetric naval warfare.

Iran's southern Gulf neighbors also have significant naval strengths, however, and the US can decisively intervene with massively superior force at any time. Iran also has a steadily aging force. It has given the modernization of its lighter naval forces limited priority, but its major surface ships are all old vessels with limited refits and aging weapons and fire-control systems.

Since the end of the Iran-Iraq War, Iran has attempted to compensate for the weaknesses of its surface fleet by obtaining new anti-ship missiles and missile patrol craft from China. Some reports also indicate that it has acquired midget submarines from North Korea, submarines from Russia, and modern mines. Iran has expanded the capabilities of the naval branch of the IRGC, acquired additional mine warfare capability, and upgraded some of its older surface ships. Iran's exercises have included a growing number of joint and combined arms exercises with the land forces and the air force.

Iran has also improved its ports and strengthened its air defenses, while obtaining some logistic and technical support from nations like India and Pakistan. In August 2000, the Islamic republic announced that it had launched its first domestically produced light submarine, which is called the Al-Sabiha 15. Iran has stated it can be used for reconnaissance and laying mines.[18]

Iran's major active surface ships are now all obsolete to obsolescent. Its main ships consist of two Bayandor- (PF103) class corvettes launched in 1963 and commissioned in 1964. Their weapons control, search/track radars, and sonars have not been modernized since the mid-1960s,

[18] Jane's, "Iran", 29 October 2001.

although some aspects of their electronic warfare capabilities, communications, and battle management system do seem to have been upgraded. The *Bayandor* and the *Naghdi* are probably the most active large surface ships in the Iranian Navy. However, neither is equipped with anti-ship and anti-air missiles, sophisticated weapons systems, sonars, or advanced electronic warfare equipment and sensors.[19]

Iran also has three somewhat more modern operational *Alvand*- (Vosper Mark 5) class frigates: the *Alvand,* the *Alborz,* and the *Sabalan*. They were launched during 1967-1968 and commissioned during 1968-1969. Two have been upgraded to carry four Chinese C-802 anti-ship missiles each on twin launchers. The C-802 is a sea-skimming missile with a range of 120 kilometers, a 165-kilogram warhead, and a maximum speed of Mach 0.9. Reports state that in 2003 Iran announced that it would launch a 1,400 destroyer named *Mouj* and a 350-ton missile frigate named *Sina* the same year. So far Iran has not been known as having either vessel in service.[20]

Iran's three Type 877EKM *Kilo*-class submarines and other submarines have offset some of the weaknesses of its major surface forces. The Kilo is a relatively modern and quiet submarine that first became operational in 1980. Each Kilo has six 530-mm torpedo tubes, including two wire-guided torpedo tubes. Only one torpedo can be wire guided at a time. The Kilo can carry a mix of 18 homing and wire-guided torpedoes or 24 mines. Russian torpedoes have guidance systems include active sonar homing, passive homing, wire guidance, and active homing. Some reports indicate that Iran bought over 1,000 modern Soviet mines along with the Kilos and that the mines were equipped with modern magnetic, acoustic, and pressure sensors.

In 2005, Iran announced that it was developing a new class of submarines called Ghadir.[21] In addition, Iran reportedly started producing mini-submarines in 2000. One of these vessels allegedly is called Al-Sabehat 15; it can accommodate two crew and three divers, and its mission supposedly is to plant mines and carry out reconnaissance missions.[22]

Iran's ability to use its submarines to deliver mines and fire long-range wake-homing torpedoes gives it a potential capability to strike in ways that make it difficult to detect or attack the submarine. Mines can be laid covertly in critical areas before a conflict, and the mines can be set to activate and deactivate at predetermined intervals in ways that make mining difficult to detect and sweep. Long-range homing torpedoes can be used against tanker-sized targets at ranges in excess of 10 kilometers and to attack slow-moving combat ships that are not on alert and/or that lack sonars and countermeasures.

Many areas of the Gulf do not favor submarine operations. The Gulf is about 241,000 square kilometers in area and stretches 990 kilometers from the Shatt al-Arab to the Straits of Hormuz. It is about 340 kilometers wide at its maximum width and about 225 kilometers wide for most of its length. While heat patterns disturb surface sonars, they also disturb submarine sonars, and the

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[19] Jane's Fighting Ships, 2005-2006, London, Jane's Information Group, pp. 336-343.

[20] http://www.globalsecurity.org/military/world/iran/navy.htm

[21] Ali Akbar Dareini, "Iran tests submarine-to-surface missile", *Washington Post*, August 27, 2006.

[22] BBC News, Iran launches its first submarine, August 29, 2000.

advantage seems to be slightly in favor of sophisticated surface ships and maritime patrol aircraft.

The Strait of Hormuz at the entrance to the Gulf is about 180 kilometers long, but has a minimum width of 39 kilometers, and only the two deep-water channels are suitable for major surface ship or submarine operations. Further, a limited flow of fresh water and high evaporation makes the Gulf extremely salty. This creates complex underwater currents in the main channels at the Strait of Hormuz and complicates both submarine operations and submarine detection.

The deeper parts of the Gulf are noisy enough to make ASW operations difficult, but large parts of the Gulf--including much of the southern Gulf on a line from Al Jubail across the tip of Qatar to about half way up the United Arab Emirates –are less than 20 meters deep. The water is deeper on the Iranian side, but the maximum depth of the Gulf--located about 30 kilometers south of Qeys Island – is still only 88 meters. This means that no point in the Gulf is deeper than the length of an SN-688 nuclear submarine. The keel to tower height of such a submarine alone is 16 meters. Even smaller coastal submarines have maneuver and bottom suction problems, cannot hide in thermoclines, or take advantage of diving for concealment or self-protection. This may explain why Iran is planning to relocate its submarines from Bandar Abbas, inside the Gulf, to Chah Bahar in the Gulf of Oman and is deepening the navy facility at Chah Bahar.[23]

There are some areas with considerable noise, but not of a type that masks submarine noise from sophisticated ASW detection systems of the kind operated by the United States and the United Kingdom. Further, the minimum operating depth of the Kilo is 45 meters, and the limited depth of the area around the Straits can make submarine operations difficult. Submarines are easier to operate in the Gulf of Oman, which is noisy enough to make ASW operations difficult, but such deployments would expose the Kilos to operations by U.S. and British nuclear attack submarines. It is unlikely that Iran's Kilos could survive for any length of time if hunted by a U.S. or British Navy air-surface-SSN (nuclear submarine) hunter-killer team.[24]

In any case, the effectiveness of Iran's submarines is likely to depend heavily on the degree of Western involvement in any ASW operation. If the Kilos do not face the U.S. or British ASW forces, they could operate in or near the Gulf with considerable impunity. If they did face U.S. and British forces, they might be able to attack a few tankers or conduct some mining efforts, but are unlikely to survive extended combat. This makes the Kilos a weapon that may be more effective in threatening Gulf shipping, or as a remote minelayer, than in naval combat. Certainly, Iran's purchase of the Kilos has already received close attention from the southern Gulf States and convinced them that they must take Iran more seriously.

Iran depends heavily on its anti-ship missile forces to make up for its lack of airpower and modern major surface vessels. Iran's Western-supplied missiles are now all beyond their shelf life, and their operational status is uncertain. Iranian forces are now systems largely supplied by the People's Republic of China (PRC) and have replaced most Western-supplied missiles with Chinese ones.

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[23] Jane's Fighting Ships, 2002-2003, London, Jane's Information Group, pp. 336-343,

[24] See David Miller, "Submarines in the Gulf," Military Technology, 6/93, pp. 42-45 David Markov, "More Details Surface of Rubin's 'Kilo' Plans," Jane's Intelligence Review, May 1997, pp. 209-215.

The Iranian Navy's missile patrol boats include 9-11 operational 275-ton French-made Combattante II (Kaman-class) fast attack boats, out of an original total of 12. These boats are reported to be armed with 2-4 C-802 Sardine anti-ship missiles, one 76-mm gun, and to have maximum speeds of 37.5 knots.

The Kaman-class fast attack boats were originally armed with four U.S. Harpoon missiles, but their Harpoons may no longer be operational. At least five had been successfully converted with launchers that can carry 2–4 C-801/C-802s. Iran supplied the C-802s that Hezbollah successfully used against one of Israel's most modern Sa'ar Class-5 missile ships during the fighting in 2006.

The terminology for the C-801 and C-802 series of missiles in Iranian naval forces is confusing and sources contradict each other as to the variant used on given Iranian platforms. Some sources refer to all of these missiles as part of the CSS-N-4/YJ-1 series:[25]

Iran now is believed to have at least 100 C-801s and C-802s. One source notes that Iran may have imported up to 100 C-801s and eight launchers in 1987-1988 and built its arsenal to 200 by 1994 as well as the ability to produce the C-801 indigenously (under the designation "Tondar").[26] Another sources notes that Iran may have deployed its C-701 missiles at launching bases under construction at Bandar Abbas, Bandar Lengeh, Bushehr, and Bandar Khomeini.[27]

Iran has sought to buy advanced anti-ship missiles from Russia, North Korea, and China, to buy anti-ship missile production facilities, and possibly even Chinese-made missile armed frigates. Some sources have claimed that Iran has bought eight Soviet-made SS-N-22 "Sunburn" or "Sunburst" anti-ship missile launch units from Ukraine and has deployed them near the Straits of Hormuz. However, U.S. experts have not seen firm evidence of such a purchase and doubt that Iran has operational holdings of such systems. The "SS-N-22" is also a title that actually applies to two different modern long-range supersonic sea skimming systems--the P-270 Moskit (also called the Kh-15 or 3M80) and the P80 or P-100 Zubi/Onika.

The Iranian navy has a number of large patrol craft and fast attack craft (120+), and the IISS Military Balance for 2011 provides a total of more than 146 patrol and coastal combatants. The operational ships of this type include 13 Kamen-class missile patrol boats, each with 2-4 CSS-N-4 Sardine anti-ship missiles. three North Korean–supplied 82-ton Zafar-class (Chaho-class) fast

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[25] Any classification of Iran's missile arsenal evades order and clarity. Most reports about Iran's missile express uncertainty about parts of Iran's program, and many reports contradict each other, at least partly, either deliberately or not. One source sheds some light into Iranian antiship missile capabilities, but cannot be seen as more than an rough indication:

Iranian designation	**Designation in country of origin**
Fajr-e-Darya	*FL-6 (Chinese)*
Kowsar	*FL-8 (Chinese)*
Nasr	*FL-9 (Chinese)*
Tondar	*C-802 (Chinese)*
Noor	*HY-2 (Chinese)*
Ra'ad	*HY-2/C-802*[25]

[26] http://www.fas.org/man/dod-101/sys/missile/row/c-801.htm

[27] Jane's Fighting Ships, Administration, Iran, February 19, 2007.

attack craft with I-band search radars and armed with 23-mm guns and a BM-21 multiple rocket launcher, two Kavian-class (U.S. Cape-class) 148-ton patrol craft armed with 40-mm and 23-mm guns, and three Improved PGM-71 Parvin-class 98-ton patrol craft supplied in the late 1960s, armed with 40-mm and 20-mm guns.

There are some 87 inshore patrol boats displacing less than 100 tons each. These include 11 China Cats (C 14), with C-701 guided missiles, although only 9 of those are believed to be operational. They also include large numbers of small port patrol boats, in addition those operated by the IRGC. Most of these craft are operational and can be effective in patrol missions. They do, however, lack sophisticated weapon systems or air defenses, other than machine guns and SA-7s and SA-14s. However, many reports allege that China Cats carry C-701 anti-ship missiles, although missile craft are believed to be under the command of the IRGC. Apparently, further procurement of China Cats is likely, although details are unknown.[28]

Iran has five to six BH-7 and seven to eight SRN-6 hovercrafts, believed to be operated by the IRGC. About half of these hovercrafts may be operational. They are capable of speeds of up to 60–70 knots. They are lightly armed and vulnerable, but their high speed makes them useful for many reconnaissance and unconventional warfare missions. They can rapidly land troops on suitable beaches, but the beaching angle is critical and some beaches are not appropriate. They also have unmanned combat air vehicles (UCAVs.

Iranian Officers and Officials on Iran's Naval Posture in the Gulf

Iranian officials and senior officers have made many claims that this gives Iran has major capabilities for naval warfare, and that Iran is buying new systems that are altering the naval balance in the Gulf:

- "*Today over 3,000 boats are in the Persian Gulf and involved in commerce, constantly passing by America's naval ships… The question is how can America engage us in war not knowing how it will get hit next? If they dare to take up arms, they will see how they will regret their act.*" – Morteza Mirban, Deputy Commander of the IRGC's Ground Forces, July 02, 2012. http://www.rt.com/news/iran-us-military-strike-254/

- *"Should the enemies desire to use the method and spirit of threats, we will naturally also threaten them. The (military) exercise by the armed forces of the Islamic Republic of Iran's Islamic Revolution, in fact, expresses the will to act against various types of threats that are targeting our national security."* - Hossein Salami, Revolutionary Guards Deputy, February 7, 2012. http://www.farsnews.com/newstext.php?nn=13901118000917

- *"[T]he recent statements made by the US and the West about the Strait of Hormuz shows that they are frightened by the awe of the (Islamic) Revolution, otherwise the Iranian nation considers the Strait of Hormuz as the strait of peace. However, the Iranian nation is determined to cut the hand of those who seek adventurism in the Persian Gulf, the Sea of Oman and the Strait of Hormuz."* – Ali Larijani, Speaker of Iranian Parliament, February 1, 2012. http://english.farsnews.com/newstext.php?nn=9010173255

- *"Tehran will not remain indifferent to US mischief in the region if Washington tries to cause problems for regional countries. The Strait of Hormuz is a region of peace and Iran has protected its peace for centuries*

[28] Jane's Fighting ships, China Cat (C 14) class (PTGF), February 19, 2007.

and will continue to do so in order to maintain calm in it,"-Ali Larijani, Speaker of Iranian Parliament, January 31, 2012.
http://www.presstv.ir/detail/223919.html

- *"The US has given a role to Saudi Arabia, Qatar and Turkey to direct the regional developments in a way that they move towards these countries' interests in line with the US policies and opposite to Iran's policies. Owing to the fact that Iran's Islamic Revolution serves as a role model for the regional and world nations in their fight against the tyranny of their rulers and arrogant powers, the US and its allies are attempting to prevent Tehran's further political influence in the region."* - Major General Yahya Rahim Safavi, Senior Military Aide to the Supreme Leader, January 31, 2012.
http://english.farsnews.com/newstext.php?nn=9010173133

- *"The United States did not dare to direct its aircraft carrier through the Strait of Hormuz alone; this is why the carrier was "escorted" by military vessels of other nations. If the Strait is closed, the aircraft carriers will become the war booty of Iran."* - Javad Karimi Qodousi, parliamentary National Security Committee member, January 24, 2012.
http://www.isna.ir/ISNA/NewsView.aspx?ID=News-1935908&Lang=P

- *"There is no decision to block and close the Strait of Hormuz unless Iran is threatened seriously and somebody wants to tighten the noose. All the options are on the table."* - Mohammad Khazaee, Iranian Ambassador to the United Nations, January 19, 2012.
http://www.bloomberg.com/news/2012-01-19/iran-s-un-envoy-says-closing-strait-of-hormuz-is-an-option-if-threatened.html

- "Our capability to provide security in the region, specially the Strait of Hormuz during sensitive times, will not experience any change due to the western warships' trafficking in the region." -Gholam Reza Karami, Iranian lawmaker and Chairman of the Parliamentary Defense Committee, January 16, 2012.
http://english.farsnews.com/newstext.php?nn=9010171403

- *"Today the Islamic Republic of Iran has full domination over the region and controls all movements within it."* - Navy Rear Admiral Ali Fadavi, Commander of Iran's Islamic Revolution Guards Corps (IRGC), January 6, 2012.
http://english.farsnews.com/newstext.php?nn=9007270592

- *"Iran has total control over the strategic waterway. Closing the Strait of Hormuz is very easy for Iranian naval forces."* -Rear Admiral Habibollah Sayyari, Iran's naval commander, December 28, 2011.
http://www.nytimes.com/2011/12/29/world/middleeast/noise-level-rises-over-iran-threat-to-close-strait-of-hormuz.html?_r=2

- *"If they impose sanctions on Iran's oil exports, then even one drop of oil cannot flow from the Strait of Hormuz."* - Mohammad-Reza Rahimi, Iran's first vice president, December 27, 2011.
http://www.nytimes.com/2011/12/28/world/middleeast/iran-threatens-to-block-oil-route-if-embargo-is-imposed.html?pagewanted=all

- *"Closure of the Strait of Hormuz is not on the Islamic Republic of Iran's agenda (at present), but if threats against Iran come to trample upon the rights of our nation while others use the strait for exporting their oil, then Iran will be entitled to the right to close the Strait of Hormuz. The international conventions reserve such rights for the Islamic Republic of Iran as well. For the time being, the Islamic Republic of Iran*

has not decided to close the strait, but this (closing the strait) depends on the conditions of the region." - Mohammad Taqi Rahbar, Iranian lawmaker, December 19, 2011.
http://english.farsnews.com/newstext.php?nn=9007277986

- *"According to the international laws, including Paragraph 4 of Article 14 of the Geneva Convention, in case Iranian oil is sanctioned, we will not allow even a single barrel of oil to pass through to reach the hostile countries"*. -Isa Jafari, Senior Iranian lawmaker, December 18, 2011.
http://english.farsnews.com/newstext.php?nn=9007277872

- *"The new equipment (submarines) are smaller and faster under water and operate similar to our small speedboats, which terrify our enemies on the surface.*

  We are trying to increase our operational range and reach enemy vessels there [in the Indian Ocean]." – Major General Mohammed Ali Jafari, Commander of the IRGC, April 11, 2011.

- *"Underwater is a good area (of activity) that is used by our forces but in an asymmetric and small-scale form, meaning that we are not seeking to build large and giant submarines since they are vulnerable.*

  These new high-speed small-sized equipments [sic] (vessels) will have an underwater function similar to the performance of small speedboats in seas, an ability that has worried the enemy.

  Accordingly, we must use the same asymmetric approaches in building tools and equipments and even in defining our tactics.

  In addition to rapid transfer of forces and detection of the enemy's surface and subsurface vessels, these submarines can identify military targets and carry special forces, while they also enjoy rapid swamp power and have radar (sonar) evading capability.

  The system enjoys high-precision in targeting." – Major General Mohammed Ali Jafari, Commander of the IRGC, April 24, 2011.

- *"And now the Navy plans to widen its presence in the high seas in a bid to protect the country's interests and provide security for the country's shipping lines.*

  In case of a final approval, the Army's naval fleet will be dispatched to the Atlantic Ocean." – Rear Admiral Habibollah Sayyari, Commander of Iran's Navy, September 21, 2011.

- *"Missile frigates and destroyers have been equipped with these missiles since long time ago and the surface-to-surface missiles of the logistic vessels were successfully tested and assessed during the recent naval war games, dubbed as Joushan.*

  Right now we are mounting air-defense missile systems onto a number of surface vessels. Other units will also be equipped with these systems after final tests." – Rear Admiral Seyed Mahmoud Mousavi, Deputy Commander for Operations of Iran's Navy, July 20, 2011.

- *"The Navy is in a good status in terms of training and equipments [sic], and the Navy is equipped with new weapons and systems every year.*

  The range of the Navy's missiles and its coastal defense power are increasing on a daily basis." Rear Admiral Habibollah Sayyari, Commander of Iran's Navy, April 26, 2011.

- *"By dispatching the Iranian navy ships to the Mediterranean Sea and through the Suez Canal, the Iranian Navy has increased the radius of its operations to 7,000 kilometers."* – Commander Fariborz Ghaderpanah, Commander of Iran's First Naval Zone, March 23, 2011.

- *"The Islamic Republic of Iran's Jammaran destroyer, Sina missile frigate and different submarines are examples of the products that have already been manufactured (domestically) shown powerful in*

> *accomplishing missions in the sea."* – Rear Admiral Habibollah Sayyari, Commander of Iran's Navy, December 7, 2010.[29]

The US, the Southern Gulf, and Iran's Capability for Naval Combat

Iran's military rhetoric cannot be disregarded, and as the following analysis of it asymmetric warfare capabilities shows, its Navy can play a significant role in intimidating other states and in threatening petroleum exports through the Gulf. The US Secretary of Defense notes in his annual report on Iranian forces to Congress, issued on June 29, 2012, that, [30]

> Iran's conventional capabilities continue to improve. Naval forces are adding new ships and submarines while expanding bases on the Gulf of Oman, the Persian Gulf, and the Caspian Sea. In addition, Iran continues to expand the breadth of its naval operations and in 2011 and early 2012 deployed two separate groups to the Mediterranean.

At the same time, Iran's navy is as vulnerable to a US or US-Gulf attack or counterattack as every other element of Iran's forces. It would be costly to destroy Iran's capabilities in an all-out naval conflict, and the political consequences would be subject to the law of unintended consequences, but Iran can win and no amount of Iranian bluster can disguise this.

The Arab Gulf states also have growing naval power, and could play a significant role in dealing with Iran's asymmetric naval threats and the sheer size of the smaller elements of its navy. At the same time, they have weaknesses like a lack of anti-submarine warfare and mine warfare capability, and Iran's air and naval forces can still be used to selectively raid and attack targets in the Gulf region.

Gulf naval forces need more effective standardization and interoperability, although once again, these problems have far less impact if Gulf navies cooperate closely with the US. Without US support, the Arab states are potentially vulnerable to Iranian conventional naval attacks despite their military resources given their lack of strategic depth, training, and real-world war fighting experience. With US support, Iran's weaknesses would be decisive in anything other than a carefully managed asymmetric struggle.

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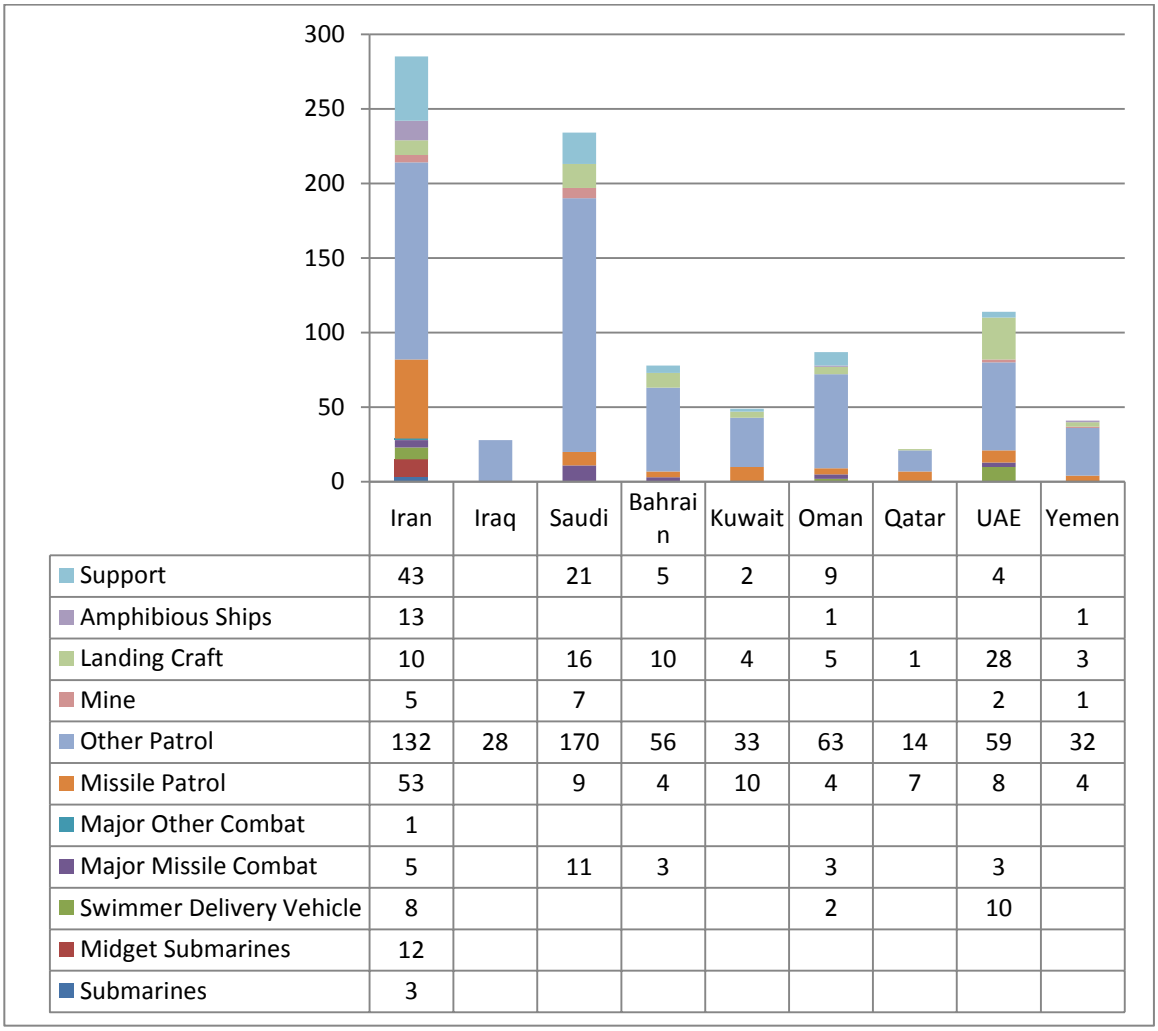
[29] Quotes taken from a number of Iranian news sources such as Fars News, PressTV, the Tehran Times, and others. Also included are quotes from Western news outlets such as CNN, the New York Times, and the Washington Post.

[30] Taken from unclassified edition of the *Annual Report on Military Power of Iran, April 2012*, as transmitted in Letter from the Secretary of Defense to the Honorable Carl Levin, chairman of the Senate Armed Services Committee, June 29, 2012, pp. 1,4.

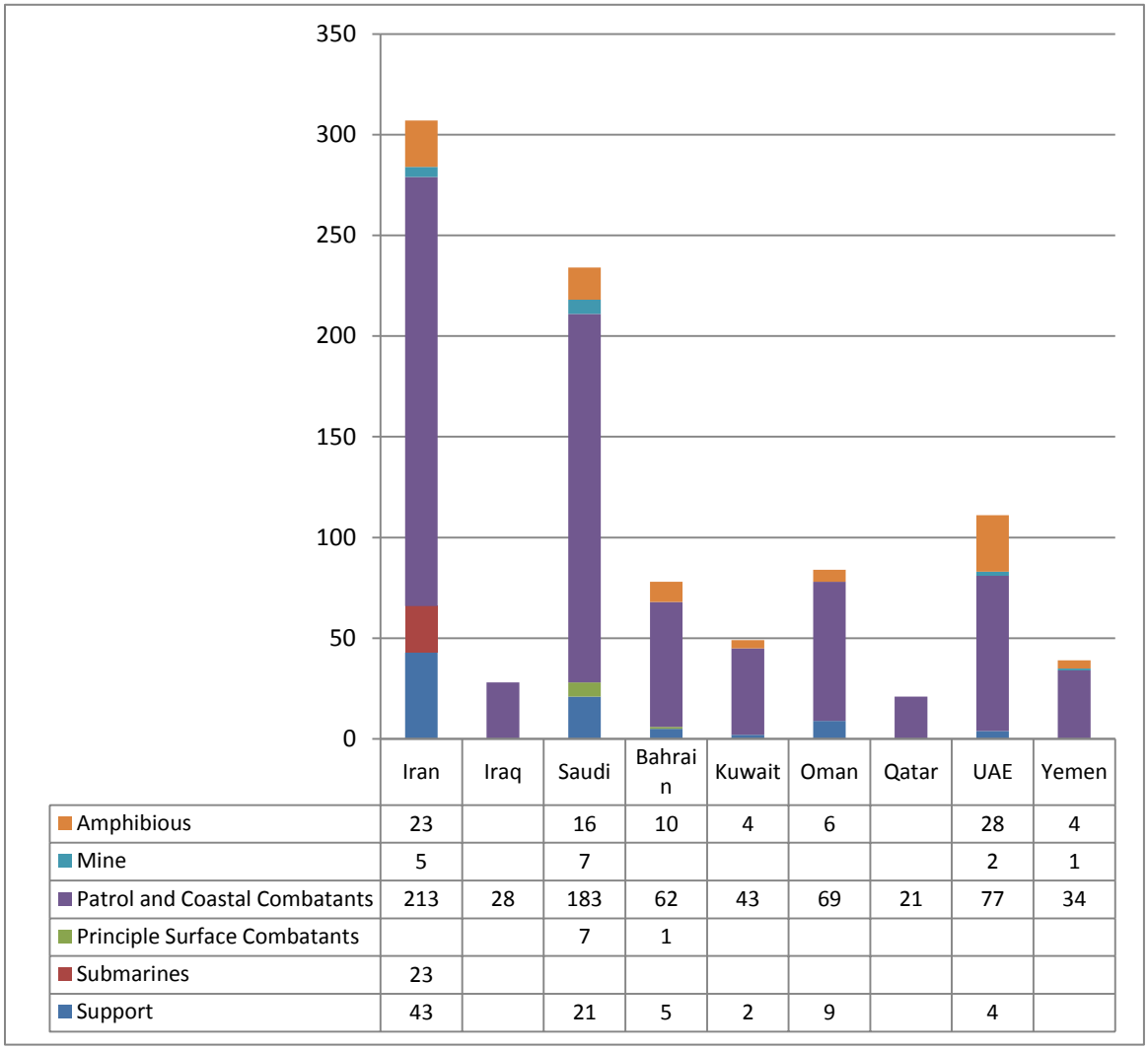
Figure III.13: Comparative Iranian and Gulf Major Naval Forces



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Support	43		21	5	2	9		4	
Amphibious Ships	13					1			1
Landing Craft	10		16	10	4	5	1	28	3
Mine	5		7					2	1
Other Patrol	132	28	170	56	33	63	14	59	32
Missile Patrol	53		9	4	10	4	7	8	4
Major Other Combat	1								
Major Missile Combat	5		11	3		3		3	
Swimmer Delivery Vehicle	8					2		10	
Midget Submarines	12								
Submarines	3								

Source: Adapted from the IISS, **Military Balance, 2012**; and the Jane's Sentinel series.

Figure III.14: Iranian and Gulf Smaller Naval Ships by Category in 2011

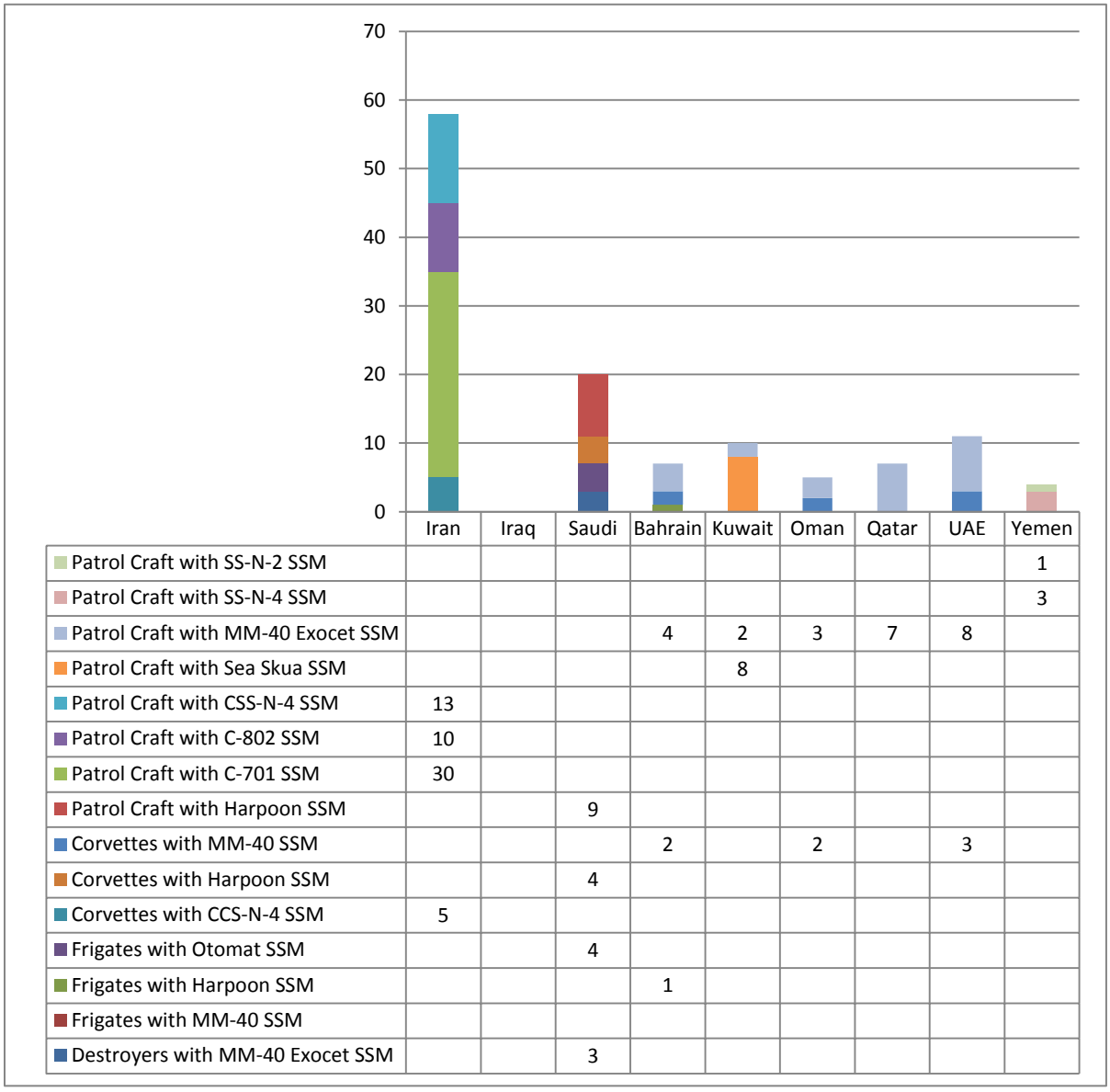


	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Amphibious	23		16	10	4	6		28	4
Mine	5		7					2	1
Patrol and Coastal Combatants	213	28	183	62	43	69	21	77	34
Principle Surface Combatants			7	1					
Submarines	23								
Support	43		21	5	2	9		4	

Note: Iranian totals include active forces in the Revolutionary Guards. Totals include coast guard-operated patrol and costal combatants where applicable.

Source: Adapted from IISS, The Military Balance, Periscope, JCSS, Middle East Military Balance, Jane's Sentinel and Jane's Defense Weekly. Some data adjusted or estimated by the author.

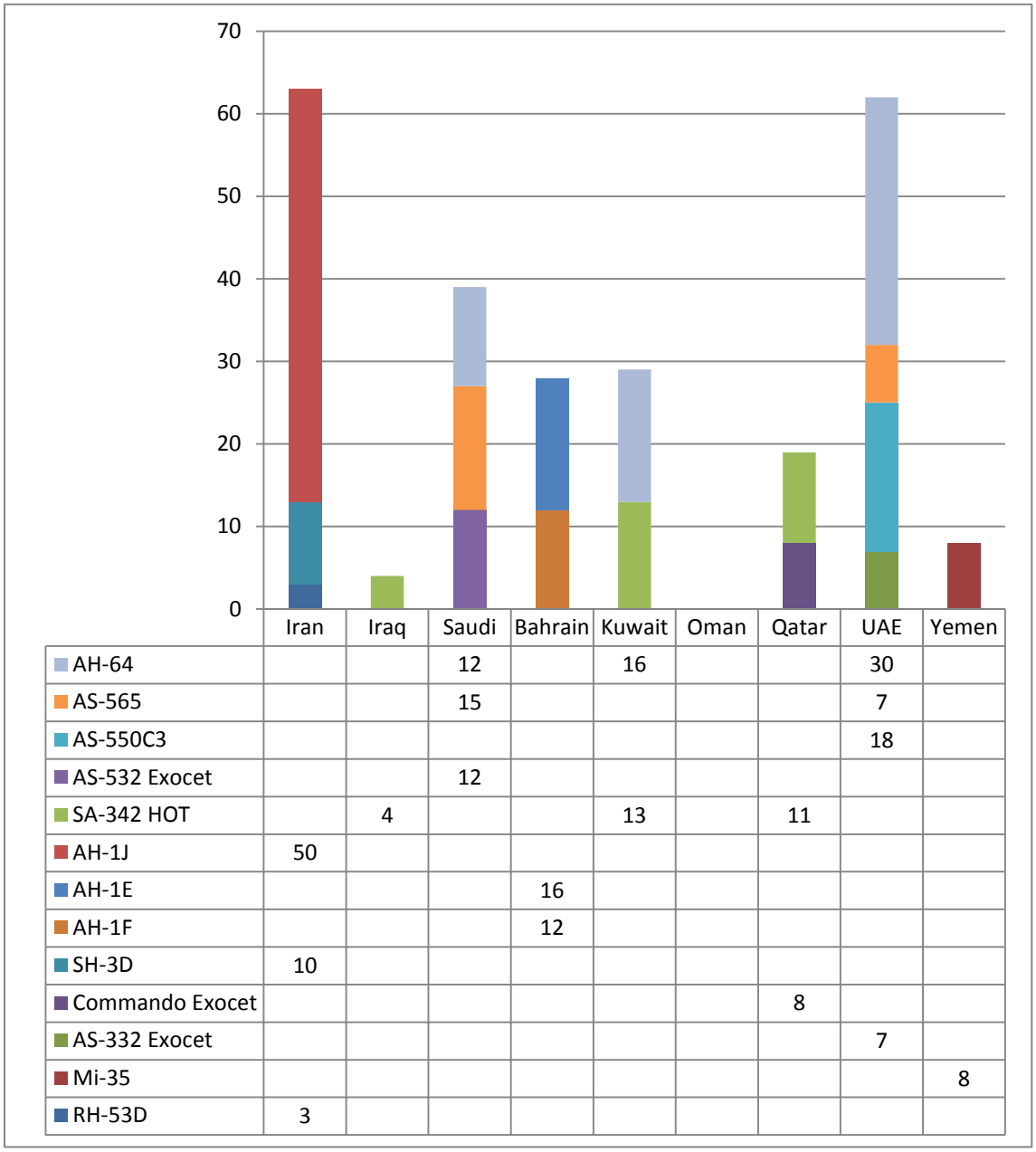
Figure III.15: Gulf Warships with Anti-Ship Missiles in 2011



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Patrol Craft with SS-N-2 SSM									1
Patrol Craft with SS-N-4 SSM									3
Patrol Craft with MM-40 Exocet SSM				4	2	3	7	8	
Patrol Craft with Sea Skua SSM					8				
Patrol Craft with CSS-N-4 SSM	13								
Patrol Craft with C-802 SSM	10								
Patrol Craft with C-701 SSM	30								
Patrol Craft with Harpoon SSM			9						
Corvettes with MM-40 SSM				2		2		3	
Corvettes with Harpoon SSM			4						
Corvettes with CCS-N-4 SSM	5								
Frigates with Otomat SSM			4						
Frigates with Harpoon SSM				1					
Frigates with MM-40 SSM									
Destroyers with MM-40 Exocet SSM			3						

Source: Adapted from IISS, The Military Balance, Periscope, JCSS, Middle East Military Balance, Jane's Sentinel and Jane's Defense Weekly. Some data adjusted or estimated by the author.

Figure III.16: Gulf Attack, Anti-Ship and ASW Helicopters in 2011



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
AH-64			12		16			30	
AS-565			15					7	
AS-550C3								18	
AS-532 Exocet			12						
SA-342 HOT		4			13		11		
AH-1J	50								
AH-1E				16					
AH-1F				12					
SH-3D	10								
Commando Exocet							8		
AS-332 Exocet								7	
Mi-35									8
RH-53D	3								

Source: Adapted from IISS, The Military Balance, Periscope, JCSS, Middle East Military Balance, Jane's Sentinel and Jane's Defense Weekly. Some data adjusted or estimated by the author.

Measuring the Overall Balance of US and Iranian Military Competition

In summary, Iran's conventional forces cannot compete with the US and Gulf states in any regular form of conventional warfare. Iran can, force the level of conflict to escalate sharply, but only at a tremendous cost to Iran. It is important to note, however, that Iran's official statements do take a very different stand on the overall balance of US and Iranian conventional capabilities and constantly challenge the legitimacy of the US conventional deployments to the region:

- *"Should the enemies desire to use the method and spirit of threats, we will naturally also threaten them. The (military) exercise by the armed forces of the Islamic Republic of Iran's Islamic Revolution, in fact, expresses the will to act against various types of threats that are targeting our national security."* - Hossein Salami, Revolutionary Guards Deputy, February 7, 2012.
  http://www.farsnews.com/newstext.php?nn=13901118000917

- *"[T]he recent statements made by the US and the West about the Strait of Hormuz shows that they are frightened by the awe of the (Islamic) Revolution, otherwise the Iranian nation considers the Strait of Hormuz as the strait of peace. However, the Iranian nation is determined to cut the hand of those who seek adventurism in the Persian Gulf, the Sea of Oman and the Strait of Hormuz."* – Ali Larijani, Speaker of Iranian Parliament, February 1, 2012.
  http://english.farsnews.com/newstext.php?nn=9010173255

- *"Tehran will not remain indifferent to US mischief in the region if Washington tries to cause problems for regional countries. The Strait of Hormuz is a region of peace and Iran has protected its peace for centuries and will continue to do so in order to maintain calm in it,"*-Ali Larijani, Speaker of Iranian Parliament, January 31, 2012.
  http://www.presstv.ir/detail/223919.html

- *"Tehran will not remain indifferent to US mischief in the region if Washington tries to cause problems for regional countries. The Strait of Hormuz is a region of peace and Iran has protected its peace for centuries and will continue to do so in order to maintain calm in it,"*-Ali Larijani, Speaker of Iranian Parliament, January 31, 2012.
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- *"The US has given a role to Saudi Arabia, Qatar and Turkey to direct the regional developments in a way that they move towards these countries' interests in line with the US policies and opposite to Iran's policies. Owing to the fact that Iran's Islamic Revolution serves as a role model for the regional and world nations in their fight against the tyranny of their rulers and arrogant powers, the US and its allies are attempting to prevent Tehran's further political influence in the region."* - Major General Yahya Rahim Safavi, Senior Military Aide to the Supreme Leader, January 31, 2012.
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- *"The United States did not dare to direct its aircraft carrier through the Strait of Hormuz alone; this is why the carrier was "escorted" by military vessels of other nations. If the Strait is closed, the aircraft carriers will become the war booty of Iran."* - Javad Karimi Qodousi, parliamentary National Security Committee member, January 24, 2012.
  http://www.isna.ir/ISNA/NewsView.aspx?ID=News-1935908&Lang=P

- *"There is no decision to block and close the Strait of Hormuz unless Iran is threatened seriously and somebody wants to tighten the noose. All the options are on the table."* - Mohammad Khazaee, Iranian Ambassador to the United Nations, January 19, 2012.

http://www.bloomberg.com/news/2012-01-19/iran-s-un-envoy-says-closing-strait-of-hormuz-is-an-option-if-threatened.html

- "Our capability to provide security in the region, specially the Strait of Hormuz during sensitive times, will not experience any change due to the western warships' trafficking in the region." -Gholam Reza Karami, Iranian lawmaker and Chairman of the Parliamentary Defense Committee, January 16, 2012.

http://english.farsnews.com/newstext.php?nn=9010171403

- *"Today the Islamic Republic of Iran has full domination over the region and controls all movements within it."* - Navy Rear Admiral Ali Fadavi, Commander of Iran's Islamic Revolution Guards Corps (IRGC), January 6, 2012.
  http://english.farsnews.com/newstext.php?nn=9007270592

- *"Iran has total control over the strategic waterway. Closing the Strait of Hormuz is very easy for Iranian naval forces."* -Rear Admiral Habibollah Sayyari, Iran's naval commander, December 28, 2011.
  http://www.nytimes.com/2011/12/29/world/middleeast/noise-level-rises-over-iran-threat-to-close-strait-of-hormuz.html?_r=2

- *"If they impose sanctions on Iran's oil exports, then even one drop of oil cannot flow from the Strait of Hormuz."* - Mohammad-Reza Rahimi, Iran's first vice president, December 27, 2011.
  http://www.nytimes.com/2011/12/28/world/middleeast/iran-threatens-to-block-oil-route-if-embargo-is-imposed.html?pagewanted=all

- *"Closure of the Strait of Hormuz is not on the Islamic Republic of Iran's agenda (at present), but if threats against Iran come to trample upon the rights of our nation while others use the strait for exporting their oil, then Iran will be entitled to the right to close the Strait of Hormuz. The international conventions reserve such rights for the Islamic Republic of Iran as well. For the time being, the Islamic Republic of Iran has not decided to close the strait, but this (closing the strait) depends on the conditions of the region."* - Mohammad Taqi Rahbar, Iranian lawmaker, December 19, 2011.
  http://english.farsnews.com/newstext.php?nn=9007277986

- *"According to the international laws, including Paragraph 4 of Article 14 of the Geneva Convention, in case Iranian oil is sanctioned, we will not allow even a single barrel of oil to pass through to reach the hostile countries"*. -Isa Jafari, Senior Iranian lawmaker, December 18, 2011.

- http://english.farsnews.com/newstext.php?nn=9007277872*"Iran is always one of the most powerful countries all throughout the world and enjoys the capability to confront any kind of threats by the enemies."* – General Kioumars Heidari, Lieutenant Commander of the Iranian Army's Ground Force, September 22, 2010.

- *"With our present technology, we can produce radars for different ranges and we can definitely detect enemies' stealth warplanes."* – General Hassan Mansourian, Deputy Commander of Khatam ol-Anbia Air Defense Base, September 19, 2010.

- *"The strong presence of the Islamic Republic of Iran's Navy in the high seas is promising and inspiring for nations.*

  The Islamic Republic of Iran doesn't favor aggression, but it favors presence in the high seas because these seas belong to all and are a ground for transfer of culture.

A naval force with such strategic features will play a decisive role in the country's politics, national dignity and honor, and independence." – Supreme Leader Khamenei, July 24, 2011.

- *"Iran is self-sufficient in making and mass-producing artillery, tanks, helicopters and warships.*

  In the recent resolution, arrogant powers banned weapons sales to Iran, but we do not need their weapons and we can even export such weapons." – Iranian Defense Minister Ahmad Vahidi, April 16, 2011.

- **"***Sukhoi fighter jet has been optimized by the Army Air Force experts and now has the capability to hit and destroy targets with high precision in absolute darkness."* – General Seyed Mohammed Alavi, Lieutenant Commander of the Iranian Air Force for Operations, April 25, 2011.[31]

The Wild Card in the Conventional Balance: A Weak Iraq

In the real world, the mix of US and Arab Gulf forces, bases, and resources give the US and Arab Gulf states a decisive advantage in virtually every aspect of conventional military competition. However, this same mix of Iranian and Arab Gulf strengths and weakness confronts the US with at least a decade in which it must compete with Iran by maintaining enough conventional forces in the Gulf, and credible surge capabilities, to deter and defend against the full spectrum of the Iranian threats to the Gulf region, including missiles, weapons of mass destruction, asymmetric forces, and conventional forces.

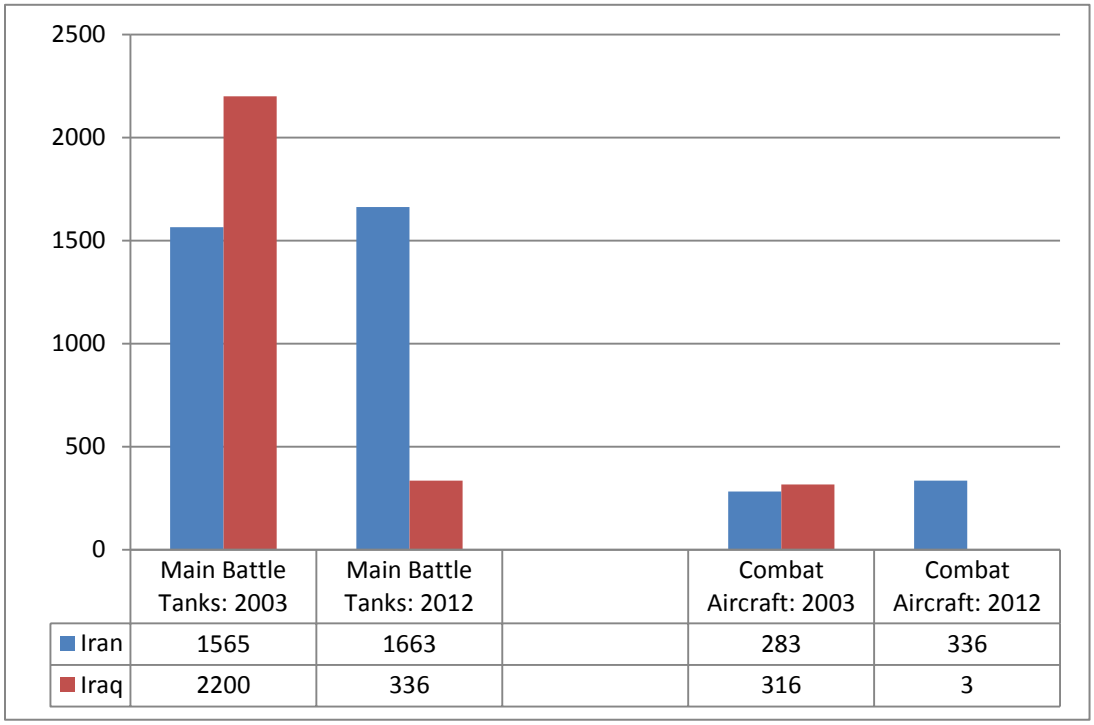
The US must also focus on building up southern Gulf forces that can deal with the same spectrum of threats, and compete with Iran for influence in Iraq and to create Iraqi security forces that can both provide internal security and deter and defend against Iran.

Finally, Iraq is a major wild card in the competition in conventional forces. Iraq lost almost all of its major conventional weapons during the US-led invasion in 2003. **Figure III.17** shows that the US invasion of Iraq stripped away Iraq's capability to deter and defend against Iran, and act as a regional counterbalance.

So far, the US has not been able to negotiate an effective Strategic Framework Agreement with Iraq following the withdrawal of US conventional forces in 2011. Even if the US can develop such an effective strategic partnership with Iraq, this is unlikely to give Iraq the conventional force strength it needs to duly deter and defend against Iran before 2020. Iraq now lacks any coherent plan for force modernization, and its plans for limited imports of M-1 tanks and F-16 aircraft are only the first step in rebuilding effective national defense capabilities.

[31] Quotes taken from a number of Iranian news sources such as Fars News, PressTV, the Tehran Times, and others. Also included are quotes from Western news outlets such as CNN, the New York Times, and the Washington Post.

Figure III.17: Shifting the Balance: Iran vs. Iraq in 2003 and 2012



Category	2003			2012		
	Iraq	Iran	Force Ratio	Iraq	Iran	Force Ratio
Active Manpower	424,000	513,000	4:5	271,000	523000	1:2
Reserve Manpower	650,000	350,000	19:10	NA	350000	NA
Main Battle Tanks	2,200	1,565	7:5	336	1663	1:5
OAFVs	1,300	815	8:5	193	725	1:3.8
APCs	2,400	590	4:1	1,455	640	2.3:1
Towed Artillery	1,900	2,085	9:10	138	2030	1:14.7
Self-Propelled Artillery	150	310	1:2	48	292	1:6
Multiple Rocket Launchers	200	889	1:5	NA	1476	NA
Combat Aircraft	316	283	11:10	3	336	1:112
Attack Helicopters	100	85	6:5	0	50	NA
Major SAM Launchers	225	205	11:10	0	234	NA

Source: Adapted from IISS, **The Military Balance 2012**, various editions and Jane's Sentinel series.

Competition in Asymmetric Forces

All of these same trends explain why Iran is seeking to compensate for its inability to modernize its conventional forces, the delays in its military production efforts, and the limits on its arms by building up different kinds of military forces called "asymmetric" or "irregular" forces. These efforts include a mix of weapons, and other military technologies to allow its conventional forces to try to exploit the weakness in US, allied, and Arab Gulf conventional forces.

They also include steadily growing land, air, missile, and naval capabilities for its Islamic Revolutionary Guard Corps (IRGC). These include small, hard to detect, elements for naval mine and missile warfare in the Gulf, training hostile and extremist elements in other countries, and steadily expanding long missile forces controlled by the IRGC that can already strike at targets anywhere in the region and are the logical delivery systems if Iran produces nuclear weapons.

While any use of such forces would have far less serious effects than any Iranian use of nuclear weapons, the events of the last year have shown they pose steadily growing risks. Iran has made more and more dramatic threats in response to the fact the US and EU have imposed far more serious sanction, and Iran's actual use of such forces would be much less provocative than missile or nuclear strikes and is much more probable. This makes this area of military competition critical to the Arab Gulf states, the secure flow of world energy exports, and the stability of the global economy.

Iran's Growing Asymmetric Forces

Iran's leaders and senior officers have provided a wide range of descriptions of the reasons for their efforts, and have made steadily more dramatic claims about their progress in building up its asymmetric forces and about the role they might place in US and Iranian military competition. Mohammad Ali Jafari, the commander in chief of the IRGC has made numerous statements regarding Iran's growing emphasis on asymmetric or irregular warfare, and the role it plays in US and Iranian military competition. One such statement notes that,

> "Asymmetrical warfare... is [our] strategy for dealing with the considerable capabilities of the enemy. A prominent example of this kind of warfare was [the tactics employed by Hezbollah during] the Lebanon war in 2006... Since the enemy has considerable technological abilities, and since we are still at a disadvantage in comparison, despite the progress we have made in the area of equipment, [our only] way to confront [the enemy] successfully is to adopt the strategy [of asymmetric warfare] and to employ various methods of this kind." – General Mohammad Ali Jafari, Commander of the IRGC

Other Iranian leaders and officials have echoed these themes and provided more detail:

- *"Our method (of choice in any possible war) is asymmetric warfare since enemy's systems and military doctrine have been designed based on the classical methods of battling."* – Brigadier General Farzad Esmayeeli, Commander of Khatam ol-Anbia Air Defense Base, August 28, 2011.
- *"At this stage of the war games, part of the special and professional units of the IRGC ground force successfully displayed asymmetric warfare tactics and techniques with full coordination and preparedness. He IRGC's cavalry units exercised new asymmetric warfare tactics in the initial phase of the drills today. "The armored and mechanized units of the IRGC Ground Force expanded the depth of their operation(al zone) through exercising new asymmetric warfare tactics and relying on mobile firepower, iron-shield and*

secure and impenetrable communications and then destroyed the hypothetical enemy." -General Hamid Sarkheili, spokesman of Shohaday-e Vehdar war games, January 8, 2012.[32]

- *"The Zolfaqar vessel is considered as a new model of the vessels of the same class which is capable of conducting operations in different marine conditions thanks to its sea-to-sea missiles and proper speed. The sea-to-sea cruise missile with high destructive capability and targeting power has immensely increased the vessel's power."* -Brigadier General Ahmad Vahidi , Iranian Defense Minister, January 2, 2012. http://english.farsnews.com/newstext.php?nn=9007279956

- *"Underwater is a good area (of activity) that is used by our forces but in an asymmetric and small-scale form, meaning that we are not seeking to build large and giant submarines since they are vulnerable.*

  These new high-speed small-sized equipments [sic] (vessels) will have an underwater function similar to the performance of small speedboats in seas, an ability that has worried the enemy.

  Accordingly, we must use the same asymmetric approaches in building tools and equipments and even in defining our tactics.

  In addition to rapid transfer of forces and detection of the enemy's surface and subsurface vessels, these submarines can identify military targets and carry special forces, while they also enjoy rapid swamp power and have radar (sonar) evading capability.

  The system enjoys high-precision in targeting." – Major General Mohammed Ali Jafari, April 24, 2011.

- *"We should sketch out plans in a bid to resolve problems, and our goal should be winning the upper hand in the balance of powers in asymmetric wars."* – Brigadier General Ahmad Miqani, Commander of Khatam ol-Anbia Air Defense Base, July 6, 2009.

- *"What makes up for asymmetries in wars against those countries which enjoy technological superiority and hi-tech military tools and equipment is faithful and highly motivated troops."*

  "This faith and motivation can resist against the enemies' superior equipment and make up for a given country's technological lacks and inferiorities. Therefore, Baseej, as a faithful and motivated force, plays a decisive, fundamental and pivotal role in asymmetric battles." – Major General Mohammed Ali Jafari, Commander of the IRGC, December 10, 2007.

- **"***We can use all the available military equipment and tools in any (possible) asymmetric war through creativity, initiative and employing new methods.*

  We should redefine methods for utilizing weapons in accordance with the type of the combat." – Brigadier General Mohammad Pakpour, Commander of the IRGC Ground Force, July 16, 2009.

- *"The new equipment (submarines) are smaller and faster under water and operate similar to our small speedboats, which terrify our enemies on the surface.*

  "We are trying to increase our operational range and reach enemy vessels there [in the Indian Ocean]." – Major General Mohammed Ali Jafari, Commander of the IRGC, April 25, 2011.

- *"All divisions of the Islamic Republic's military pay close attention to events in neighboring states and incorporate these into their asymmetric warfare training. For example, if we train pilots in aerial combat, we actively link those lessons with asymmetric warfare."* – Brigadier General Ataollah Salehi, commander-in-chief of the Iranian army, January 12, 2011.

- *"The Kaviran meets our needs in asymmetric warfare. Its high rate of fire could enhance our ability to confront helicopters and low-level planes."* – General Ahmad-Reza Purdastan, commander of the Islamic

[32] "IRGC Forces Exercise Asymmetric Tactics on Second Day of Drills". FARS News Agency, January 8, 2012. Available at http://english.farsnews.com/newstext.php?nn=9010170343

Republic of Iran Army Ground Force regarding the development of the new Kaviran all-terrain vehicle and its 7.62 mm Gatling gun, September 23, 2010.

- *"The Revolutionary Guards [Corps] will invest efforts in strengthening its asymmetrical warfare capabilities, with the aim of successfully confronting the enemies."* – Major General Mohammed Ali Jafari, Commander of the IRGC.
- *"After September 11, [2001], all [IRGC] forces changed their [mode of] operation, placing emphasis on attaining combat readiness. The first step [towards achieving] this goal was to develop [a strategy] of asymmetrical warfare and to hold maneuvers [in order to practice it]."* – Major General Mohammed Ali Jafari, Commander of the IRGC. [33]

These statements, and others like them, sometimes involve exaggerated and highly politicized rhetoric, but they also help illustrate the trends in a critical part of Iran's military perceptions, actions, and force development, and highlight key exercises and developments in military technology. Other open source evidence also shows that Iran is building an increasingly capable asymmetric capability relies on hard factual indicators like Iran's acquisition of fast-attack watercraft, midget submarines, anti-ship missiles, smart mines, light guided weapons, and UCAVs, all effective asymmetric tools to counter the superior conventional forces of its neighbors.

These assets include small, mobile, hard-to-detect platforms such as the Qadr-SS-3 midget submarine, high-speed combat boats such as the Seraj-1 and Zolfaqar, the Bavar-2 flying boat, the Kaviran all-terrain vehicle, and the ATV-500 *Jaguar*, among others, all of which fit into the IRGC's asymmetric doctrine.[34][35][36]

These systems, while low-tech and lightly-armed, are not capital-intensive and are intended to offset superior military technology through sheer numbers and high mobility. Iran understands that it cannot reasonably win a fight against the US in a conventional war or direct frontal confrontation, and these assets are designed to strike at vulnerable targets and critical infrastructure, such as Gulf shipping, oil tankers, oil platforms, and coastal desalination facilities.

They can be used to "swarm" civilian or military targets, or in slow battle of attrition that pose a constant low-level threat calculated to avoid a massive US or Gulf response. They can be widely dispersed, and can be used in unpredictable attacks. Moreover, they can be concealed away from ports and military bases. Iran can either escalate or drag out a constant crisis, seeking to wear down resistance to its demand or win grudging acceptance of its nuclear problems in the way that India, North Korea, and Pakistan have done. These capabilities include Iran's ability to threaten and intimate its Gulf neighbors, and threaten Gulf exports.

In short, Iran has developed a mix of land, air, and naval capabilities that can threaten its neighbors, challenge the US, and affect other parts of the Middle East and Asia. Iran may also be able to use state and non-state actors as proxies to threaten and manipulate a range of

[33] Quotes taken from a number of Iranian news sources such as Fars News, PressTV, the Tehran Times, and others. Also included are quotes from Western news outlets such as CNN, the New York Times, and the Washington Post.

[34] PressTV, August 10, 2010

[35] Tehran Iranian Student News Agency (ISNA), September 23, 2010.

[36] Internet Mashregh News, December 31, 2010.

neighboring states, including Afghanistan, Iraq, and Israel. These forces are the key military elements of Iranian strategic competition and are steadily increasing in size and capability.

Conventional Weakness vs. Asymmetric Capability

Iran's conventional weaknesses also need to be kept in careful perspective. Iran has spent two decades building up capabilities for asymmetric and irregular warfare. The end result is still a mix of Iranian forces the US can counter relatively quickly with the large-scale use of its own forces. Still, no one wants this kind of war, and , Iran's asymmetric warfare capabilities still give it a powerful capability to intimidate its neighbors. It is also a form of warfare that would be far harder for the US to defeat in a limited war of attrition or any other conflict where the US might not be able to act decisively, overwhelmingly, and disproportionately in striking Iranian forces and targets for political reasons or because of a lack of support from the Arab Gulf state.

Iran's military doctrine not only places heavy emphasis on asymmetric warfare, it sends signal that the US and Iran's neighbors cannot ignore:

- Iran sends signals about its use of asymmetric warfare through its military parades and exercises.
- The IRGC often claims to conduct very large exercises, sometimes with 100,000 men or more. The exact size of such exercises is unclear, but they are often a fraction of IRGC claims.
- By displaying both its real and virtual military (e.g. naval) fighting capabilities through electronic, printed and network media, and through official statements, Iran seeks to achieve the following politico-diplomatic and propaganda ends (4Ds):
    - Defiance (to maintain a course of resistance, targeting primarily the Western political will and system).
    - Deception (on the real state of Iranian warfighting capabilities, targeting the Western military establishments).
    - Deterrence (with the IRI military "might", targeting Western public opinion, delivered through the media).
    - Demonstration (of the outreach of its own power, targeting the Iranian people and the Moslem world).

Iran's asymmetric capabilities interact with its nuclear weapons development efforts to compensate for the limitations to its conventional forces. "Going nuclear" provides a level of intimidation that Iran can use as both a form of terrorism and to deter conventional responses to its use of asymmetric warfare:

- Even the search for nuclear power is enough to have a major effect on competition and perceptions.
- Development of long range missiles adds to Iran's credibility and pressure on Iran's competitors.
- Crossing the nuclear threshold in terms of acquiring a "bomb in the basement" option.
- Threats to Israel legitimize the capability to tacitly threaten Arab states. Support of Hamas and Hezbollah increase legitimacy in Arab eyes – at least Arab publics.
- Many future options: stockpile low enriched material and disperse centrifuges, plutonium reactors, underground tests, actual production, arm missiles, breakout arming of missiles.
- Declared forces, undeclared forces, leverage Israeli/US/Arab fears.

"Going asymmetric" also allows Iran to substitute asymmetric forces for weak conventional forces:

- Combined nuclear and asymmetric efforts sharply reduce the need for modern conventional forces – which have less practical value.
- Linkages to Syria, Lebanon, other states, and non-state actors like Hamas and Hezbollah add to Iran's ability to deter and intimidate/leverage.
- Iran can exploit fragility in the Gulf, world dependence on oil exports, and GCC dependence on income and imports.
- Threats to Israel again legitimize the capability to tacitly threaten Arab states.

Unlike Iran's nuclear and missile programs, Iran has also proven its capability to use such forces effectively. Iran's past actions have shown this threat is all too real:

- Iranian tanker war with Iraq.
- Oil spills and floating mines in the Gulf.
- Use of Al Qods Force in Iraq.
- Iranian use of UAVs.
- Border and coastal "incidents."
- Arms transfers, in cooperation with Syria, to Hezbollah.
- Pilgrimage "incidents" in Makkah.
- Support of Shi'ite groups in Bahrain.
- Missile and space tests; expanding range of missile programs (future nuclear test?).
- Naval guards' seizure of British boat, confrontation with US Navy, exercises in Gulf.
- Development of limited "close the Gulf" capability.
- Hamas/PIJ arms transfer and their rocket attacks on Eilat, Aqaba in August 2010.
- Iran regularly practices "swarming" targets in the Gulf with large numbers of small craft, shore-based anti-ship missiles, missile-armed aircraft, and increasing support from UAVs/UCAVs.
- Increasingly arming and supporting insurgents in Afghanistan.

As is noted throughout this analysis, however, there is a crucial difference between theory and practice. The US and its allies cannot ignore the need to make worst-case assumptions about the skill with which Iran can plan and operate in asymmetric warfare in the kind of medium to large-scale conflicts that it has never yet put into practice.

The fact remains, however, that there is little meaningful unclassified data on Iran's real world capabilities to actually exercise complex asymmetric warfare over time. As is repeatedly stressed throughout this analysis, the IRGC and every other relevant element of Iran's forces would have to go to war with forces and leaders that have not had any real military combat experience since the end of the Iran-Iraq War in 1988 – a period of near a quarter of a century. This not only means Iran has no cadres with combat experience, the problem is compounded by the fact it plans to fight a very different kind of war than Iran has ever fought before. While innovation can be a blessing, a lack of real-world experience can be a major curse.

Iran's Growing Mix of Asymmetric Warfare Forces

Iran has continued to improve the capabilities and training of its conventional forces for asymmetric warfare in recent years and, has also built up specialized elements within its force structure. As of 2012, some of the key recent developments in Iran's growing asymmetric capabilities included:

- The development of the *Karrar* and *R'ad* UCAVs in early 2010, both of which have a range in excess of 1000 km and can destroy targets with guided munitions.[37]
- The installation of a "Coastal Defense Missile" system along the country's 1,500 mile coastline, a move deemed the "appropriate strategy" to protect the country from attack.[38]
- The development of the *Khalij Fars* ("Persian Gulf") anti-ship ballistic missile.[39]
- The introduction of new high-speed combat boats armed with guided missiles and torpedoes such as the Seraj-1 and the Zalfaqar.[40]
- The introduction of the Bavar-2 flying boat, which is equipped with night vision and armed with machine guns and rockets.[41]
- The introduction of high mobility all-terrain vehicles such as the ATV-500 Jaguar and the Kaviran.[4243]
- Increasing use of SDVs ("Swimmer Delivery Vehicle"), which can be used for inserting special forces elements or laying mines covertly.

Unlike Iran's conventional forces, and its nuclear and missile efforts, the range of Iranian asymmetric optkions and forces is too wide to easily charterize or catalog. The core aspects of Iran's growing capabilities for asymmetrtic warfare are shown in **Figure III.18,** but this is only part of the story.

Figure III.18: Key Iranian Capabilities for Asymmetric Warfare

- **125,000+ men total in IRGC,**

[37] "Hizballah Possesses Advanced Iranian-Controlled Air Drone System." Al-Siyasah Online, November 6, 2010.

[38] Mashregh News Agency, January 3, 2011.

[39] "Iran mass producing smart ballistic missiles: IRGC chief." Tehran Times, February 8, 2011.

[40] PressTV, August 10, 2010.

[41] Ministry of Defense of the Islamic Republic of Iran, September 28, 2010.

[42] Tehran Iranian Student News Agency (ISNA), September 23, 2010.

[43] Internet Mashregh News, December 31, 2010.

- **Can draw on 1,000,000+ Basij.**
- **20,000 Naval Guards, including 5,000 marines.**
- **Armed with HY-3 CSS-C-3 Seersucker (6-12 launchers, 100 missiles, 95-100 km), and 10 Houdong missile patrol boats with C-802s (120 km), and 40+ Boghammers with ATGMs, recoilless rifles, machine guns.**
- **Large-scale mine warfare capability using small craft and commercial boats.**
- **Based at Bandar e-Abbas, Khorramshar, Larak, Abu Musa, Al Farsiyah, Halul, Sirri.**

  IRGC air branch reported to fly UAVs and UCAVs, and control Iran's strategic missile force.
- **1 Shahab SRBM Bde (300-500-700 km) with 12-18 launchers, 1 Shahab 3 IRBM Btn (1,200-1,280 km) with 6 launchers and 4 missiles each.**

The Islamic Revolutionary Guards Corps (IRGC)

The Islamic Revolutionary Guards Corps (IRGC, or "Sepah-e Pasdaran") is the key element in this aspect of US and Iranian military competition. Its current forces and capabilities are shown in **Figures III.19** to **III.21**:

- **Figure III.19** shows the expanding capabilities of the IRGC, and the pivotal role it is coming to play in shaping Iran's overall military capabilities. The IRGC is not only playing a growing role in Iran's overall force mix, but in its top leadership and economy.
- **Figure III.20** shows Iran's increasing arsenal of UAVs and UCAVs.
- **Figure III.21** describes the evolving military capabilities of the IRGC. They are tailored to both offensive and defensive irregular and asymmetric warfare.

The IRGC grew out of the Iranian Revolution of 1979. Ayatollah Ruhollah Khomeini established the force both to protect the Islamic order of the new Iranian government, and to act as a counter to the regular armed forces – which were perceived as still loyal to the Shah or as having uncertain loyalty to the new regime. The IRGC became the backbone of Iran's military forces during the Iran-Iraq War, as well as a key tool in dealing with internal opposition and providing support to other state and non-state actors outside Iran.

The IRGC has now evolved into a major political, military, and economic force – although not without internal power struggles and possibly at the cost of its military effectiveness. It reports directly to the Supreme Leader, and is believed to be loyal to Ayatollah Khamenei, but has its own factions – some of which have loyalties to President Mahmoud Ahmadinejad, who is a veteran of the IRGC. It is more political and ideological than the regular armed forces. A number of senior officers in the IRGC have relatives or close ties to Iran's leading clerics.

While unclassified sources are of uncertain reliability, the IRGC is generally reported to have approximately 125,000 men. It has significant conventional forces, and operates Iran's longer-range surface-to-surface missiles. It is believed to play a major role in Iran's effort to create nuclear weapons, and most or all other chemical, biological, radiological, and nuclear (CBRN) programs, and to be the force that would operate Iran's nuclear-armed forces if they are deployed.

The IRGC has substantial capabilities for asymmetric warfare and covert operations. It was members of the Naval Branch of the IRGC that seized 15 British sailors and Marines, who seem to have been in Iraqi waters, in March 2007.[44] The IRGC also includes the Al Qods Force and other elements that operate covertly or openly overseas – working with Hezbollah of Lebanon, Shi'ite militias in Iraq, and Shi'ites in Afghanistan.

IRGC Land Forces

The IRGC has small elements equipped with armor and has the equivalent of conventional army units, and some units are trained for covert missions and asymmetric warfare, but most of its forces are lightly equipped infantry trained and equipped for internal security missions. These forces are reported to have between 120,000 and 130,000 men, but such totals are uncertain as are all unclassified estimates of the strength, organization, equipment, and industrial base of the IRGC. This manpower pool includes conscripts recruited from the same pool as regular army conscripts, and training and retention levels are low. The IRGC land forces also seem to control the Basij (Mobilization of the Oppressed) and other paramilitary forces in most internal security operations and if they are mobilized for war.

Some sources, like the International Institute for Strategic Studies (IISS), report a force structure with 20 "divisions," but most IRGC units seem to be large battalion-sized elements. According to a *Jane's* report, estimates of the IRGC's organization differ sharply. Some sources claim that there are two armored, five mechanized, 18 infantry, and one Special Forces division, and about 15-20 independent brigades. The report concludes that many alleged divisions are equivalent to large brigades and the personnel numbers of the IRGC could support only three to five divisions.[45] The total manpower pool of the IRGC could support only about five to six light infantry divisions. There is supposedly also one airborne brigade.

Once again, there is little meaningful unclassified data on real world capabilities. The IRGC is heavily dependent on conscripts, and to have encountered problems in terms of its military politics and leadership. There is no way to appraise the quality of its C4I and IS&R capabilities in large-scale combat, r its capabilities for combined arms and joint warfare, or its levels of sustainability. There is no way to know just how politicized it has become, or the extent to which it's often hard line and extreme rhetoric is simply propaganda or reflects true lack of realism and capability for objective planning and management of its combat operations.

The IRGC often claims to conduct large exercises, sometimes with 100,000 men or more. The exact size of such exercises is unclear, but they are often a small fraction of what the IRGC claims. With the exception of a limited number of more elite elements, training is limited and largely suitable for internal security purposes. Most forces would require substantial refresher training to act in any mission other than static infantry defense and using asymmetric warfare tactics like hit-and-run operations or swarming elements of forces when an invader appears vulnerable.

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[44] Slackman, Michael. "Seizure of Britons Underlines Iran's Political Split." *New York Times*. April 4, 2007, p, 5; Lyall, Sarah. "Iran Sets Free 15 Britons Seized at Sear in March." *New York Times*. April 5, 2007.

[45] "Iran." *Jane's World Armies*. October 3, 2011

The IRGC is the center of much of Iran's effort to develop asymmetric warfare tactics to counter a US invasion. Work by Michael Connell of the Center for Naval Analysis notes that the IRGC has been systematically equipping, organizing, and retraining its forces to fight decentralized partisan and guerrilla warfare. It has strengthened the anti-tank and anti-helicopter weaponry of the IRGC battalions, and stressed independent battalion-sized operations that can fight with considerable independence even if Iran loses much of the coherence in its command, control, communications, and intelligence capabilities.[46] Its exercises have included simulated attacks on US AH-64 attack helicopters with Iran's more modern man-portable surface-to-air missiles (MANPADs), and used mines and improvised explosive device (IED)-like systems to attack advancing armored forces.

The IRGC, like the army and the Basij, have attempted to develop and practice deception, concealment, and camouflage methods to reduce the effectiveness of US and other modern imagery coverage, including dispersing into small teams and avoiding the use of uniformed personnel and military vehicles. While the credibility and effectiveness of such tactics are uncertain, the IRGC claims to be adopting tactics to avoid enemy radars and satellites. Both the IRGC and the army have also attempted to deal with US signals and communications intelligence collection capabilities by making extensive use of buried fiber optics and secure communications, while developing more secure ways to use the internet and commercial landlines. Iran claims to be creating relatively advanced secure communications systems, but its success is uncertain.[47]

Connell notes that the IRGC is developing such tactics in ways that could form a layered or "mosaic" defense with the army and air forces, where the IRGC could keep up constant pressure on any advancing US forces. He indicates that the IRGC has developed special stay-behind units or "cells" that would include some 1,900 to 3,000 teams of three to four soldiers whose main mission would be to attack US lines of supply and communication, strike at elements in rear areas, and conduct ambushes of combat troops. This could include sending units forward into countries like Iraq and Afghanistan to attack US forces there, or encourage local forces to do so, and sending teams to raid or infiltrate southern Gulf states friendly to the US.[48]

At the same time, Connell notes that if the Iranian Army were defeated and an attacker like the US moved into Iran's territory, the IRGC, the Iranian Army, and the Basij are now organized and trained to fight a much more dispersed war of attrition in which force elements would disperse and scatter, carrying out a constant series of attacks on US forces wherever they deployed as well as against US lines of communication and supply.

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[46] Connell, Michael. "The Influence of the Iraq Crisis on Iranian Warfighting Doctrine and Strategy." CNA Corporation, Alexandria, April 2007; Vision of the Islamic Republic of Iran Network, Network 1. 18:34 GMT, March 9, 2005.

[47] Iran has said that experts at its Hossein and Sharif Universities are working on an "impenetrable intranet communications network." Connell indicates that Iran claims such a system was fielded during the Eqtedar ("Power") exercises in February 2007. *Baztab*, Web edition, February 20, 2007.

[48] Connell, "The Influence of the Iraq Crisis on Iranian Warfighting Doctrine and Strategy." *Keyhan*, February 20, 2007, p. 14.

If the government allowed such force elements to act as their current doctrine calls for, such elements would have great independence of action, rather than relying on centralized command. The IRGC and the Iranian Army have clearly paid close attention to both the limited successes that Saddam's Fedayeen had against the US advance on Baghdad, and the far more successful efforts of Iraqi insurgents and militias in attacking US and other coalition forces following the fall of Baghdad.

One technique such forces attempt to organize for and practice is using cities and built-up areas as defensive areas that provide concealment and opportunities for ambushes, and for the use of swarming tactics, which forces an attacker to disperse large numbers of forces to try to clear and secure given neighborhoods. Connell indicates that some 2,500 Basij members staged such an exercise in the Western suburbs of Tehran in February 2007. Once again, Iran drew on the lessons of Iraq; however, Iran also employed such tactics with great success against Iraqi forces during the Iran-Iraq War, and it has closely studied the lessons of urban and built-up area fighting in Somalia and Lebanon.

Other reports indicate that the IRGC remains the center of Iran's hardline security forces, but has become steadily more political and bureaucratic, and most of its forces now have no combat experience – it has been more than twenty years since the end of the Iran-Iraq War in 1988. Corruption and careerism are growing problems, and the IRGC's role in the defense industry has led to financial abuses. As such, it is the elite elements of the IRGC that give it real meaning beyond serving the regime's need to control its population.

There are different opinions over the relative conventional role of the IRGC relative to other Iranian forces. One source identifies a trend that will eventually render the regular army more technologically advanced and more modern in general. Accord to this report, the IRGC, by contrast, is to focus on "less traditional defense duties," such as enforcing border security, commanding the country's ballistic missile and potential weapons of mass destruction forces, and preparing for a closing of the Strait of Hormuz militarily.[49]

The IRGC Air Force

The air force of the IRGC is believed to operate Iran's three Shahab-3 intermediate-range ballistic missile units, and may have had custody of its chemical weapons and any biological weapons.

It is not clear what combat formations exist within the IRGC, but the IRGC may operate Iran's ten EMB-312 Tucanos. It also seems to operate many of Iran's 45 PC-7 training aircraft, as well as some Pakistani-made trainers at a training school near Mushak, but this school may be run by the regular air force. It has also claimed to manufacture gliders for use in unconventional warfare. These are unsuitable delivery platforms, but could at least carry a small number of weapons.[50]

Figure III.18 reflects that Iran and the IRGC, by extension, has recently invested heavily in UAVs and UCAVs in recent years. Iranian officials regularly make lofty claims about theses

[49] "Iran." *Jane's World Armies*

[50] Reuters. June 12, 1996, 17:33.

crafts' capabilities, and there is scant data available regarding their operational history and performance. Consequently, it is difficult to assess their capabilities in any kind of hypothetical conflict with US forces. This data does show, however, that the IRGC perceives R&D into UAV/UCAV technology is a worthwhile investment, and a complement to its asymmetric tactics and strategy.

Figure III.19: Key Elements of the IRGC

- **125,000+ men, capable of drawing upon drawing on 1,000,000 Basij.**
- **Key is 20,000 Naval Guards, including 5,000 marines.**
- **Armed with HY-3 CSS-C-3 Seersucker (6-12 launchers, 100 missiles, 95-100 km), and 10 Houdong missile patrol boats with C-802s (120 km), and 40+ Boghammers with ATGMs, recoilless rifles, and machine guns.**
- **Large-scale mine warfare capability using small craft and commercial boats.**
- **Based at Bandar e-Abbas, Khorramshar, Larak, Abu Musa, Al Farsiyah, Halul, and Sirri.**
- **• IRGC air branch reported to fly UAVs and UCAVs, and control Iran's strategic missile force.**
- **1 Shahab SRBM Bde (300-500-700 km) with 12-18 launchers, 1 Shahab 3 IRBM Btn (1,200-1,280 km) with 6 launchers and 4 missiles each.**
- **The IRGC has a wide variety of assets at its disposal to threaten shipping lanes in the Gulf, Gulf of Oman, and the Caspian Sea.**
- **3 Kilo (Type 877) and unknown number of midget (Qadr-SS-3) submarines; smart torpedoes, (anti-ship missiles?) and smart mine capability.**
- **Use of 5 minelayers, amphibious ships, small craft, commercial boats.**
- **Attacks on tankers, shipping, offshore facilities by naval guards.**
- **Raids with 8 P-3MP/P-3F Orion MPA and combat aircraft with anti-ship missiles(C-801K (8-42 km), CSS-N-4, and others).**
- **Free-floating mines, smart and dumb mines, oil spills.**
- **Land-based, long-range anti-ship missiles based on land, islands (Seersucker HY-2, CSS-C-3), and ships (CSS-N-4, and others. Sunburn?).**
- **Forces whose exercises demonstrate the capability to raid or attack key export and infrastructure facilities.**

Figure III. 20: Iranian UAVs and UCAVs

Prime Manufacturer	Designation	Development/ Production	Operation	Payload Wt.	Endurance (hr)	Range	Ceiling (ft)	Mission
Asr-e Talai	Alamdar MAV	Underway						Surveillance
Famas	Black Eagle							
	Unknown Unknown							
Faraz Asia Technologies Company	Faraz-2 MAV				0.5	10		Surveillance
FARC	Sobakbal	Underway	Deployed	.35	2	2.7-13.5 mi	19,686 ft	Surveillance
Ghods Aviation Industries	Ababil (Swallow) Mohajer-1/2/3/4 (Mirsad-1, Doma, Hodhod) Saeqeh-1/2 Tallash (Endeavor and Hadaf) Mohajer-5 Shekarchi (Hunter	Completed Completed Completed	Deployed Deployed Deployed Deployed	45		240 30-150	4,268 3,352	Attack (RPGs) Aerial Target Target drone – aka "Target 3000"
HESA (aka IAMI)	Ababil variants (?) Hadaf-1	Completed Underway	Deployed		1.5+	30-120	3,048	Aerial target; RSTA; long-range surveillance Aerial Target
Unknown	Karrar (Striker) Nazir (Harbinger)	Underway		Disputed, 115-700		1,000		Hunter-killer Hunter-killer
Unknown	R'ad (Thunder)							Hunter-killer
Unknown	Pehpad Stealth	Underway Underway	Testing Deployed			700		Hunter-killer R/S – announced 2/10/2007
Sharif University of Technology	Shahbal	Underway		5.5		12	3,000	Reconnaissance/ surveillance

Source: Adapted by Alexander Wilner using the AIAA 2011 Worldwide UAV Roundup

Figure III.21: The Evolving Capabilities of the IRGC

- **Iran's Deputy Army Commander Brigadier General Abdolrahim Moussavi has announced that Iran is committed to expanding its strategic reach, arguing that, "In the past, our military had to brace itself for countering regional enemies. This is while today we are faced with extra-regional threats."**
- **Iran upgraded a naval base at Assalouyeh in Iran's southern Bushehr province.**
- **This base is the fourth in a string of IRGC bases along the waterway that will extend from Bandar Abbas to Pasa Bandar near the Pakistan border.**
- **Part of, what IRGC's Navy Commander Rear Admiral Morteza Saffari describes as a new mission to establish an impenetrable line of defense at the entrance to the Sea of Oman.**
- **Forces can carry out extensive raids against Gulf shipping, carry out regular amphibious exercises with the land branch of the IRGC against objectives like the islands in the Gulf, and could conduct raids against countries on the southern Gulf coast.**
- **Iran could launch a coordinated attack involving explosives-laden remote-controlled boats, swarming speedboats, semi-submersible torpedo boats, FACs, kamikaze UAVs, midget and attack submarines, and shore-based anti-ship missile and artillery fire.**
- **Could "swarm" a US-escorted convoy or surface action group transiting the Strait of Hormuz, and barrages of rockets with cluster warheads could be used to suppress enemy defensive fire and carrier air operations.**
- **Naval Guards work closely with Iranian intelligence and appear to be represented unofficially in some embassies, Iranian businesses and purchasing offices, and other foreign fronts.**
- **Iran has launched a domestic weapons procurement campaign aimed at improving its defense capabilities and has announced the development of 109 types of advanced military equipment over the past two years.**
- **In December 2008 Iranian Navy Rear Admiral Habibollah Sayyari confirmed the delivery of two new domestically-built missile boats, Kalat (Fortress) and Derafsh (Flag), as well as a Ghadir-class light submarine to the Iranian navy.**
- **The deputy commander of the IRGC's navy, Rear Admiral Ali Fadavi, told the Fars News Agency on 11 November 2008 that both unmanned speedboats and UAVs are now mass-produced in the country.**
- **On December 6, 2008 the Iranian Navy test-fired a new surface-to-surface missile from a warship as part of exercises along a strategic shipping route. "The Nasr-2 was fired from a warship and hit its target at a distance of 30 km (19 miles) and destroyed it," Iranian state run radio reported.**

The IRGC Naval Forces

The IRGC's naval branch is reported to have some 20,000 men, including marine units of some 5,000 men. It is scarcely the largest element of Iran's IRGC or its asymmetric forces, but it plays such a critical role in Iran's military competition with the US and the Southern Gulf states that it merits special attention. The key aspects of the IRGC Naval Branch are summarized in **Figures III.22 to III.25**

- **Figure III.22** describes the special role of the naval branch of the IRGC and the critical role it can play in asymmetric warfare in the Gulf.
- **Figure III.23** shows Iran's strength in naval asymmetric warfare capabilities relative to that of other Gulf navies. It should be noted, however, that few Iranian Navy ships have had modern refits, and efforts to upgrade them have had mixed success – particularly in creating integrated command centers and sensor suites.
- **Figure III.24** shows Iran's strength in mine warfare capabilities relative to that of other Gulf navies. These totals disguise the fact that almost any ship can lay or drop mines, but mine hunting and sweeping is far more difficult than in the past, and other Gulf navies have very little mine sweeping capability.
- **Figure III.25** shows Iran's amphibious warfare capabilities relative to other Gulf navies.

As is the case with all Iranian forces, there is no way to assess current training levels and readiness, the level of C4I and IS&R capability, how consistent given units are in their effectiveness, ability to operate in combined arms and joint warfare, the quality of training and planning for different types of hybrid and asymmetric warfare, and the ability to carry out complex operations in the face of active US and Arab Gulf military opposition.

The IRGC's naval branch is more active than many other elements of Iran's forces, but there is little meaningful data on its real world capabilities. Like all the elements of the IRGC and other Iranian military forces, does seem heavily dependent on conscripts, and to have encountered problems in terms of its military politics and leadership. It also would have to go to war with forces that have not had any real military combat experience since the end of the Iran-Iraq War in 1988 – a period of near a quarter of a century. This not only means it has no cadres with combat experience, the problem is compounded by the fact it plans to fight a very different kind of war than Iran has ever fought before.

The IRGC Naval Branch does carry out large-scale exercises and demonstrates capabilities that it might be able to deliver conventional weapons, bombs, mines, and CBRN weapons into ports and oil and desalination facilities. It is operational in the Gulf and the Gulf of Oman, and could operate elsewhere if given suitable sealift or facilities. As of 2011, Iran's navy has sent warships into the Mediterranean and claimed intentions of sending ships into the Atlantic, but such a capability is doubtful.[5152]

The IRGC's naval branch has bases in the Gulf, many near key shipping channels and some near the Strait of Hormuz. These include a wide variety of facilities at Al-Farsiyah, Halul (an oil platform), Sirri, Abu Musa, Bandar-e Abbas, Khorramshahr, and Larak. It also controls Iran's

[51] Londono, Ernesto and Erdbring, Thomas. "Iran Hails Warships' Mission in Mediterranean." *Washington Post*. February 22, 2011.

[52] "Defense Minister Confirms Iran Plans to Deploy Vessels in Atlantic Ocean." *Tehran Times*. October 17, 2011.

coastal defense forces, including naval guns and an HY-2 Seersucker land-based anti-ship missile unit deployed in five to seven sites along the Gulf coast.

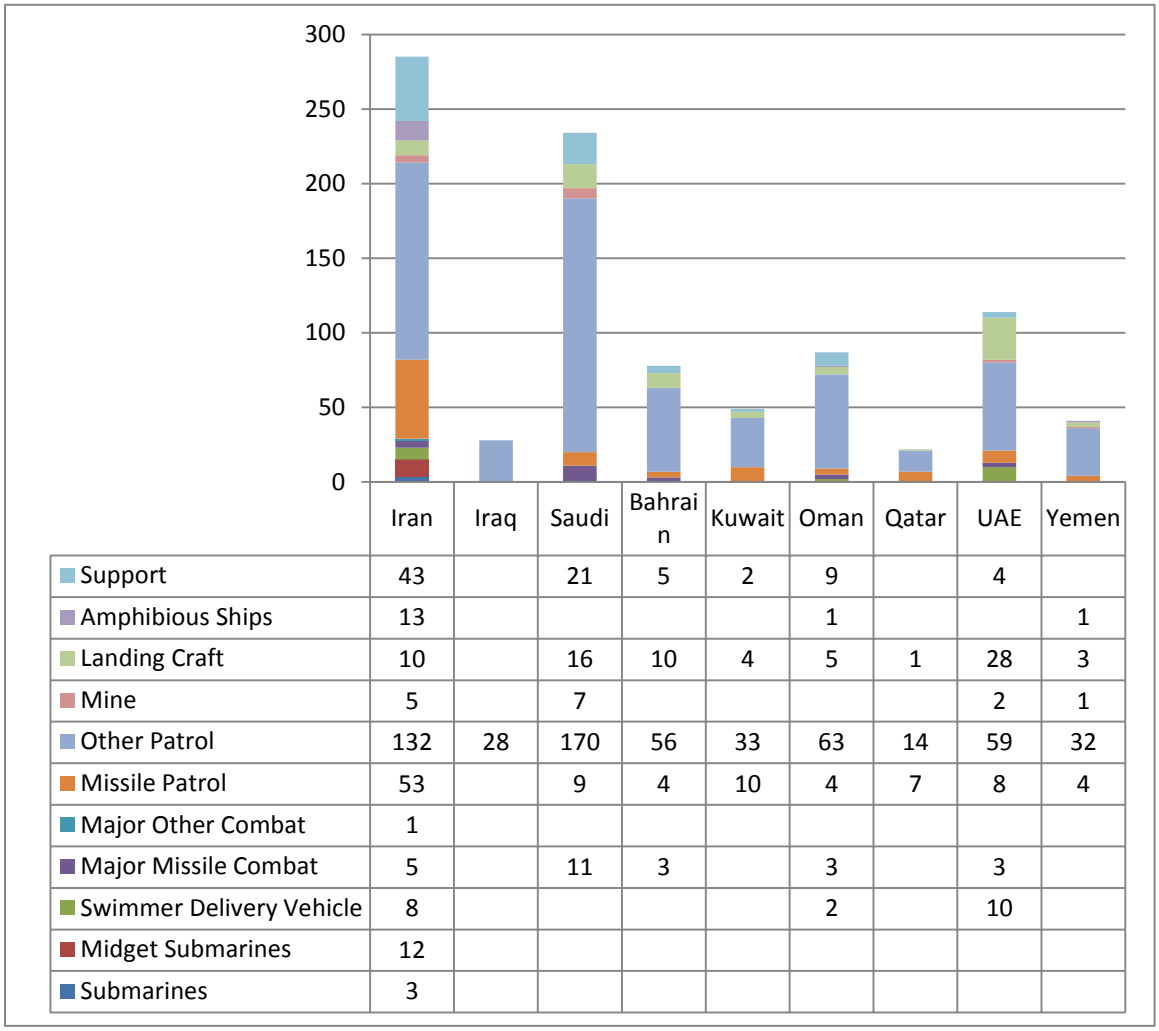
Its forces can carry out extensive raids against Gulf shipping, carry out regular amphibious exercises with the land branch of the IRGC against objectives like the islands in the Gulf, and could conduct raids against Saudi Arabia or other countries on the southern Gulf coast. They give Iran a major capability for asymmetric warfare. The Guards also seem to work closely with Iranian intelligence and appear to be represented unofficially in some embassies, Iranian businesses and purchasing offices, and other foreign fronts.

The IRGC naval forces have at least 40 light patrol boats, 10 Houdong guided missile patrol boats armed with C-802 anti-ship missiles, a battery of HY-2 Seersucker land-based anti-ship missiles, and a number of submarines, mini submarines, and swimmer delivery vehicles (SDVs). Some of these systems could be modified to carry a small CBRN weapon, but are hardly optimal delivery platforms because of their limited-range payload and sensor/guidance platforms that are unsuited for the mission.

Figure III.22: The Impact of the IRGC Naval Guards: Force Strength, Roles, and Missions

- **The IRGC has a naval branch consists of approximately 20,000 men, including marine units of around 5,000 men.**
- **The IRGC is now reported to operate all mobile land-based anti-ship missile batteries and has an array of missile boats; torpedo boats; catamaran patrol boats with rocket launchers; motor boats with heavy machine guns; mines as well as Yono (Qadir)-class midget submarines; and a number of swimmer delivery vehicles.**
- **The IRGC naval forces have at least 40 light patrol boats, 10 Houdong guided missile patrol boats armed with C-802 anti-ship missiles.**
- **The IRGC controls Iran's coastal defense forces, including naval guns and an HY-2 Seersucker land-based anti-ship missile unit deployed in five to seven sites along the Gulf coast.**
- **The IRGC has numerous staging areas in such places and has organized its Basij militia among the local inhabitants to undertake support operations.**
- **IRGC put in charge of defending Iran's Gulf coast in September 2008 and is operational in the Gulf and the Gulf of Oman, and could potentially operate elsewhere if given suitable sealift or facilities.**
- **Can deliver conventional weapons, bombs, mines, and CBRN weapons into ports and oil and desalination facilities.**
- **Force consists of six elements: surface vessels, midget and unconventional submarines, missiles and rockets, naval mines, aviation, and military industries.**
- **Large numbers of anti-ship missiles on various types of launch platforms.**
- **Small fast-attack craft, heavily armed with rockets or anti-ship missiles.**
- **More fast mine-laying platforms.**
- **Enhanced subsurface warfare capability with various types of submarines and sensors.**
- **More small, mobile, hard-to-detect platforms, such as semi-submersibles and unmanned aerial vehicles.**
- **More specialized training.**
- **More customized or purpose-built high-tech equipment.**
- **Better communications and coordination between fighting units.**
- **More timely intelligence and effective counterintelligence/deception.**
- **Enhanced ability to disrupt the enemies command, control, communications, and intelligence capability.**
- **The importance of initiative, and the avoidance of frontal engagements with large US naval surface warfare elements.**
- **Means to mitigate the vulnerability of even small naval units to air and missile attack.**
- **The IRGC has numerous staging areas in such places and has organized its Basij militia among the local inhabitants to undertake support operations.**
- **The naval branch has bases and contingency facilities in the Gulf, many near key shipping channels and some near the Strait of Hormuz.**
- **These include facilities at Al-Farsiyah, Halul (an oil platform), Sirri, Abu Musa, Bandaer-e Abbas, Khorramshahr, and Larak.**
- **Iran recently started constructing new naval bases along the coasts of the Gulf and the Sea of Oman for an "impenetrable line of defense."**
- **On October 27, 2008, Iran opened a new naval base at Jask, located at the southern mouth of the Strait of Hormuz, a strategic chokepoint for Persian Gulf oil.**

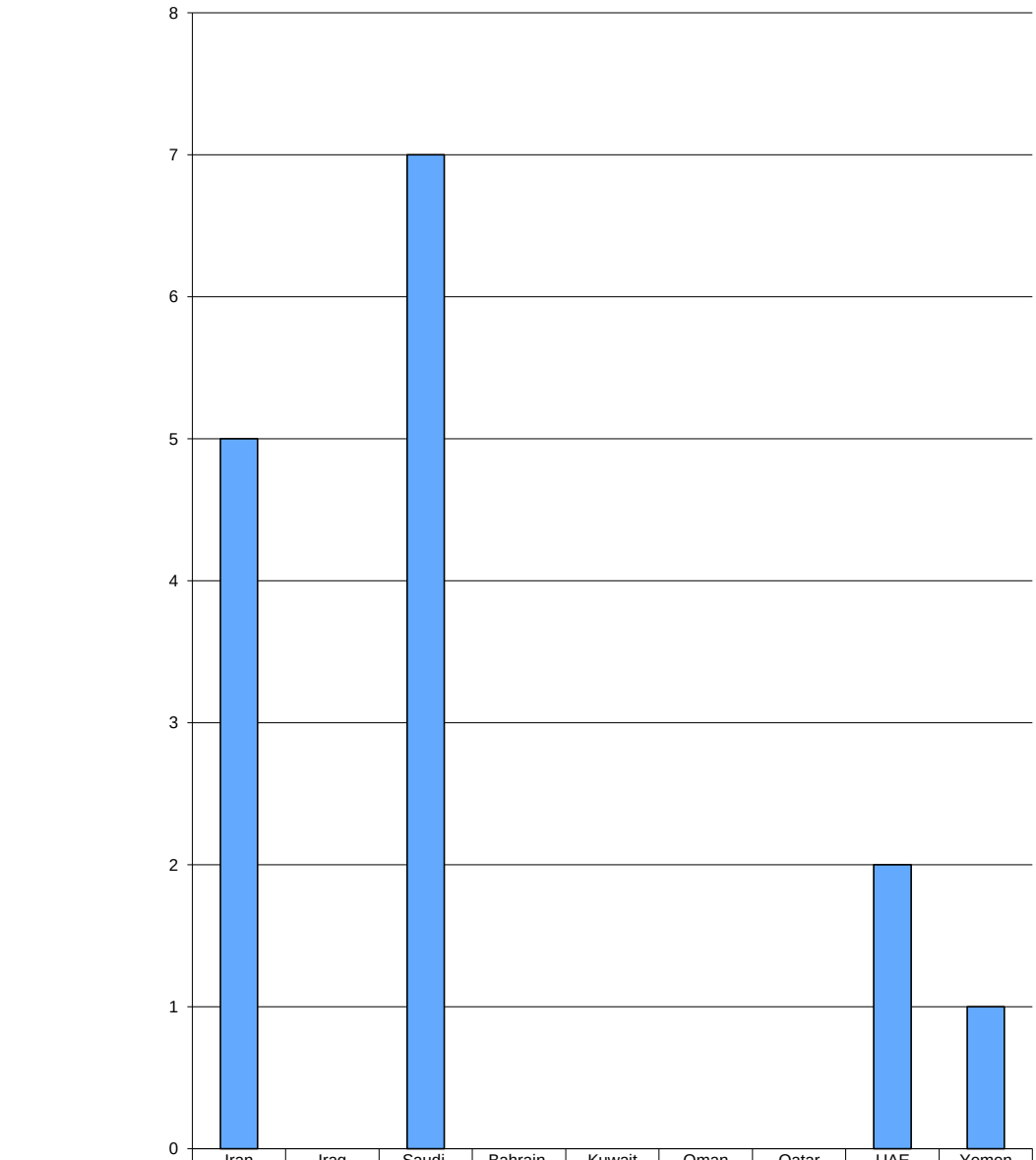
Figure III.23: Iranian Naval Capabilities for Asymmetric Warfare



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Support	43		21	5	2	9		4	
Amphibious Ships	13					1			1
Landing Craft	10		16	10	4	5	1	28	3
Mine	5		7					2	1
Other Patrol	132	28	170	56	33	63	14	59	32
Missile Patrol	53		9	4	10	4	7	8	4
Major Other Combat	1								
Major Missile Combat	5		11	3		3		3	
Swimmer Delivery Vehicle	8					2		10	
Midget Submarines	12								
Submarines	3								

Source: Adapted from IISS, The Military Balance, various editions; Jane's Sentinel series; Saudi experts

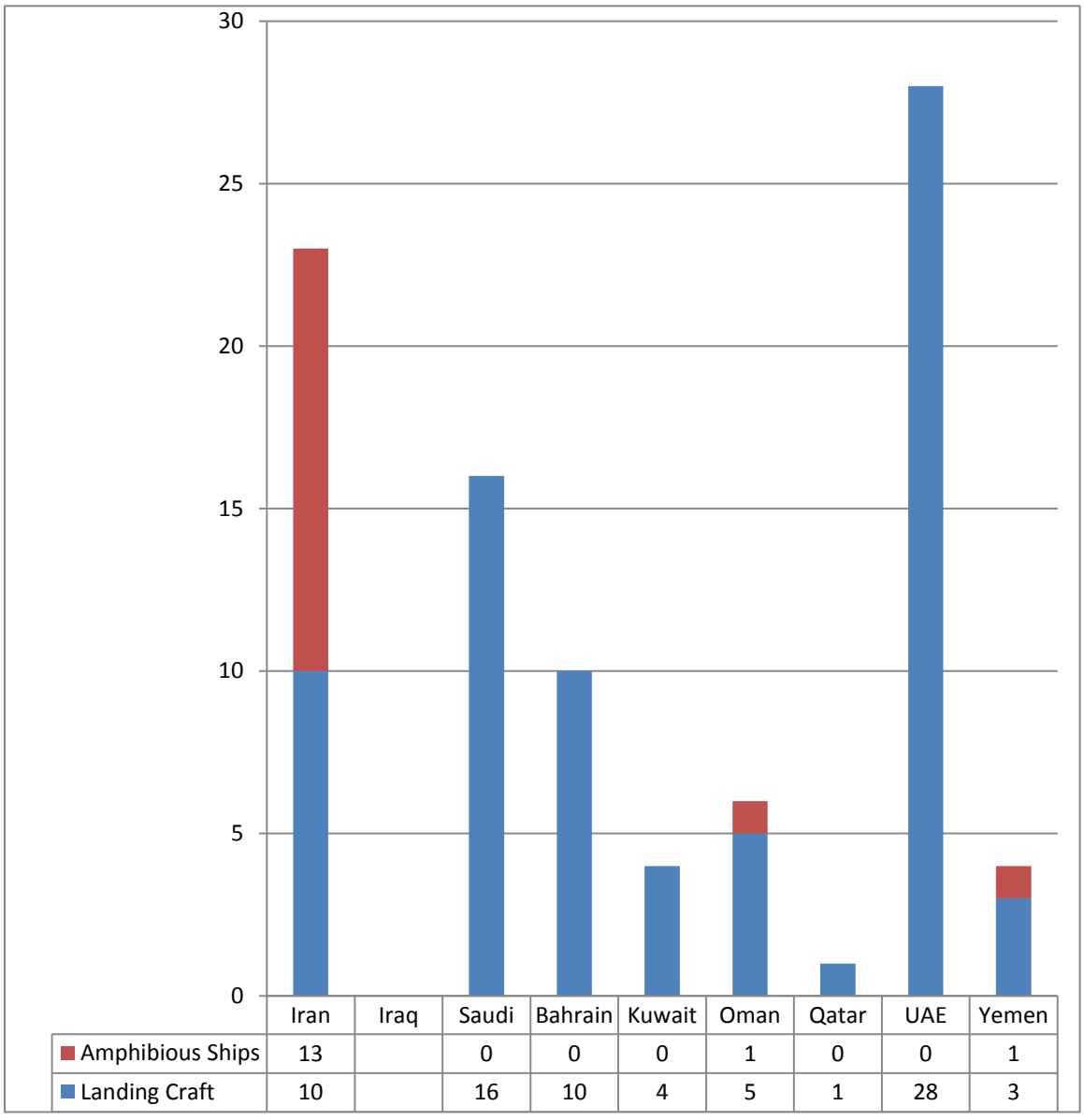
Figure III.24: Iranian Capabilities for Mine Warfare



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Mine Layers	0	0	0	0	0	0	0	0	0
Mine Countermeasure	5	0	7	0	0	0	0	2	1

Source: Adapted from IISS, The Military Balance, various editions; Jane's Sentinel series; Saudi experts

Figure III.25: Iranian Amphibious Warfare Capabilities



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Amphibious Ships	13		0	0	0	1	0	0	1
Landing Craft	10		16	10	4	5	1	28	3

Source: Adapted from IISS, The Military Balance, various editions; Jane's Sentinel series; Saudi experts

The Basij or Basij-e Mostaz'afin ("Mobilization of the Oppressed") or IRGC Ground Resistance Force

The Basij were founded in 1979 as a paramilitary organization to supported the revolution, and then became the source of the recruiting for many of the human wave forces Iran used during the Iran-Iraq War from 1980-1988. Some estimates put their total numbers in the millions during the war, but there are no reliable estimates of how large a force they were.

Today, some elements of the Basij are largely an internal security force. They are used to suppress opposition movements and create counter-demonstrations, and mobilization base for the regime than part of Iran's asymmetric forces and an element that plays are direct role in competition with the US.

The Basij now have specialized subunits – largely for political control and to enforce the regimes religious restrictions on social behavior – at every level from the school to professions to the mosque. Members include professional cadres and indoctrinators, volunteers, and part timers assigned to a mobilization base.

One needs to be careful about the credibility of how well structured and disciplined the Basij are today, but an estimate in the Wikipedia provides a good picture of the structure the Baij now has *in theory*:[53]

> Basij form the fifth branch of the Army of the Revolutionary Guard, and the "three main armed wings" of the Basij are the Ashoura and Al-Zahra Brigades, the Imam Hossein Brigades (composed of Basij war veterans who cooperate closely with the IRGC ground forces) and the Imam Ali Brigades (which deal with security threats).According to Radio Free Europe, the "backbone" of the Basij comprises 2,500 Al-Zahra battalions (all women) and Ashura battalions (male), numbering 300–350 personnel each. The IRGC aims to arm 30 percent of these battalions with semi-heavy and heavy weapons. However, all members of the battalions are trained to use light arms and rifles. They are trained "in riot-control tactics and how to deal with domestic uprisings,"and officially tasked with "defending the neighborhoods in case of emergencies."
>
> In addition, since 2007 the Basij have established "30,000 new combat cells, each of them 15-20 members strong, named Karbala and Zolfaqar". The cells "cooperate closely" or in emergency situations are "controlled by" the Revolutionary Guard …The current commander of the Basij is Mohammad Reza Naqdi, who replaced Hossein Taeb in October 2009. Hossein Taeb was appointed commander of the Basij on July 14, 2008… The first deputy commander General Mirahmadi was formally installed on 4 September 2005. The Tehran commander is Seyyed Mohammad Haj Aqamir. The deputy Basij commander for Tehran, General Ahmad Zolqadr, was formally installed on 5 September 2005; the new Basij commander in Tabrizi, Brigadier General Mohammad Yusef Shakeri, on 29 September 2005.[
>
> Estimates of the number of Basij vary, with its leadership giving higher figures than outside commentators. …According to a former commander of the Basij, Brigadier General Mohammad Hejazi, the strength of the force in 2004 was 10.3 million. By 2007, its strength stood at 12.6 million. The current commander of the Basij, Hasan Taeb, told the semi-official Fars news agency on November 25 that the force now numbers 13.6 million, which is about 20 percent of the total population of Iran. Of this number, about 5 million are women and 4.7 million are schoolchildren. ... In fact the Basij may be able to mobilize no more than 1.5 million men and women of military age.

[53] WikipediaA, "Basij, http://en.wikipedia.org/wiki/Basij.

Other elements have long received paramilitary training and have participated in exercises where the Iranian Army, IRGC, and Basij cooperate to resist a US-led invasion. Beginning in 2004-2005, these elements began to be used in urban defense exercises, and supposed were organized into some 2,000 "Ashura battalions" that had "riot-control responsibilities" and an internal security role, as well as a contingency mission of creating local resistance in the face of a supposed outside (US) invasion. These were to some extent imitations of the Ashura Bridges that Iran had created for its human wave operations during the Iran-Iraq War War.

These forces have since been made part of what Iran calls the IRGC Ground Resistance Force. In October 2009. Iranian media (FARS News Agency) reported on October 11, 2009, that,[54]

> The ground resistance force was formed after a number of changes in the (structure of) the IRGC," Iran's Armed Forces Chief of Staff Major General Hassan Firouzabadi said, speaking on the sidelines of a meeting on psychological warfare here in Tehran today. The Basij (volunteer) forces have recently merged into the IRGC ground forces for better coordination. "The IRGC's ground resistance force has been formed (as part of the IRGC's ground force) based on a two-year-long planning and Basij's defensive battalions and units will be reorganized and used in accordance with this planning," Firouzabadi added.
>
> He noted that IRGC ground forces are scheduled to utilize Basij's capabilities in a more specialized and integrated form.

An Iranian opposition group reported later in Rooz 1677 that Hassan Firouzabadi, the Joint Chief of Staff of the Armed Forces had confirmed the plan, and had said that,[55]

> after two years of study we concluded to change the IRGC's structure, for the Basij to work in areas such as software work and the propagation of the Basiji culture in society, and to delegate the tasks, duties and mobilization of Basij units to a new called the IRGC Ground Resistance in order to increase expertise among the units..in continuation of structural changes in the IRGC, the Basij resistance force will soon be merged into the IRGC ground force to boost coordination."

The same Rooz report stated that, [56]

> This news agency, which is affiliated with the Islamic Propaganda Organization, also reported, "Following the appointment of Major General Mohammad Ali Jafari to head the IRGC, we witnessed major changes in the IRGCs structure, the new stage of which is set to begin soon." Following the appointment of Mohammad Ali Jafari to replace Yahya Rahim Safavi as the IRGC chief, structural changes were implemented in the IRGC and were accompanied by repeated changes in leadership. In the first round, a large number of IRGC commanders were dismissed or reassigned, while new provincial IRGC units were established and the Basij resistance force was placed under the complete control of the IRGC. During that round, the various IRGC units were first dissolved and reassigned to 29 new units, one for each province, plus two additional units for the city and province of Tehran. The new units were charged with the task of confronting "foreign and domestic threats against the nation." The plan,

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[54] Fars, "IRGC Forms Ground Resistance Force," News Number 8807191529, 17:38, 2009-10-11.

[55] Bahram Rafiel, "Second Stage of Structural Change in Revolutionary Guards," **Rooz 1667**, July 8, 2012, http://www.roozonline.com/english/news3/newsitem/article/second-stage-of-structural-change-in-revolutionary-guards.html.

[56] Bahram Rafiel, "Second Stage of Structural Change in Revolutionary Guards," **Rooz 1667**, July 8, 2012, http://www.roozonline.com/english/news3/newsitem/article/second-stage-of-structural-change-in-revolutionary-guards.html.

> according to Mohammad Ali Jafari, "divides the country into defense mosaics," based on which "each defense mosaic will be used to confront threats in that specific area at a particular time."
>
> …While many analysts link changes in the IRGC's structure in the past two years to the recent presidential election and the institution's role in suppressing popular protests, recent changes and reassignments in IRGC's leadership confirms that link, particularly in light of the background of some commanders and their involvement in recent events. In this connection, last Sunday Ayatollah Khamenei appointed Mohammad Reza Naghdi to head the Basij. Naghdi is a notoriously brutal military commander and the former head of Iranian police's counter-intelligence unit with a controversial background in torturing prisoners. Ayatollah Khamenei also praised Hojjatoleslam Taeb, the former Basij chief who played an instrumental role in suppressing protesters, for his "dedicated efforts."
>
> **…**Simultaneous with recent developments in the IRGC, the state-run ILNA news agency and the Alef news website (managed by Ahmad Tavakkoli) reported last Monday and Tuesday that the IRGC's intelligence division will be transformed into the "Intelligence Organization." In its detailed report on this transformation, ILNA claimed that Hossein Taeb had been chosen to head the IRGC's Intelligence Organization because of his background, adding, "in light of the enemy's focus on soft warfare and the necessity of strengthening the security-intelligence apparatus to confront it, it can be discerned that the promotion of the IRGC's intelligence division to an Intelligence Organization led by Taeb, who is familiar with various kinds of intelligence and soft warfare…will bestow new responsibilities on the new organization." Hossein Taeb served as the ministry of intelligence's counter-intelligence director under Ali Fallahian. He joined the IRGC after being dismissed from the ministry and played a prominent role in suppressing popular protests in opposition to election results and the arrest of reformist leaders.

While the details in the Rooz report cannot be confirmed, US official source have confirmed that the IRGC Ground Resistance Force is becoming more active. The US Secretary of Defense summarized the role of the Al Qods Force as follows in his April 2012 report to Congress on Iranian Force,[57]

> In early 2012, the Islamic Revolutionary Guards Corps Ground Resistance Forces (IRGCGRF) conducted a series foe exercises in northeastern and central Iran. The exercises -- Martyrs of Unity in the Northeast and Supporters of Velayat and Valfajr in central Iran -- were the first significant exercises conducted by the IRGCGRF since its reorganization in 2008. The three exercises consisted of combined-armed maneuvers and were meant to show the IRGCGRF's offensive and defensive capabilities while offering limited training value for the participating units.

The regime also increasingly uses the Basij to try to mobilize its youth. As the US State Department report on human rights, issues on April 8, 2011 notes,[58]

> In November 2009 according to the Mehr news agency, the leader of the student Basij organization, Mohammad Saleh Jokar, announced that 6,000 Basij units would be created in the country's elementary schools. Jokar said the action aimed to expand and promote Basij and revolutionary ideals among young persons. He added that approximately 4.5 million students and 320,000 teachers were members of the Basij. An RFE report noted that the Basij also began a program to register baby girls for later training in the Basji Hossein Haj Mousaee Basij unit. The report also discussed "resource centers" being built at elementary schools to prepare children to join the units.

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[57] Taken from unclassified edition of the *Annual Report on Military Power of Iran, April 2012*, as transmitted in Letter from the Secretary of Defense to the Honorable Carl Levin, chairman of the Senate Armed Services Committee, June 29, 2012, p. 1.

[58] http://www.state.gov/j/drl/rls/hrrpt/2010/nea/154461.htm.

These efforts must also be kept carefully in mind in putting too much emphasis on the scale of Iranian popular resistance to the regime, and on the impact of activities like social networking. The regime has its own tools for winning and enforcing loyalty from Iran's young men, and indicators like cell phone polls indicate that these regime efforts can often be effective. It also takes minimal training to use a force of this kind to repress demonstrations, police civilian areas, and assist the security forces. Small arms, minimal equipment, and motivation are often more than enough to deal with popular resistance by those who lack arms, training, and enough experience to avoid being easy targets.

At the same time, there is little evidence to show that the Basiij/IRGC-GRF have the training, equipment, and structure to be a highly effective paramilitary force. Its training may have revised as a reaction to the growing tensions over Iran's nuclear programs, but it still seems large at the token level and as much an effort at political indoctrination as one at developing actual warfighting capability

Al Qods Force

Iran uses its intelligence service – the Vevak, its diplomats and attaches, "private" citizens, businesses and foreign business covers, and foreign nationals to support its efforts at asymmetric and political warfare. It has built up a specialized force to work with outside state and non-state actors called the Al Qods Force. The size and strength of this force is shown in **Figure III.26**.

The US Secretary of Defense summarized the role of the Al Qods Force as follows in the annual report on Iranian forces to Congress that he issued on June 29, 2012,[59]

> Iran established the Islamic Revolutionary Guards Corps-Qods Force in 1990 to provide arms, funding, and paramilitary training to extremist groups. We assess with high confidence that during the past three decades Iran has methodically cultivated a network of sponsored terrorist surrogates capable of targeting U.S. and Israeli interests; we suspect this activity continues. Iran's unconventional forces are trained according to its asymmetric warfare doctrine and would present a formidable force while defending Iranian territory.
>
> …through the IRGC-QF, Iran provides material support to terrorist or militant groups such as Hamas, Lebanese Hizballah, the Palestinian Islamic Jihad, the Taliban, and Iraqi Shia groups.

- In close cooperation with Syria, Iran has provided Lebanese Hizballah with increasingly sophisticated weapons, including a wide array of missiles and rockets that allow Hizballah to launch weapons from deeper in Lebanon or to strike Israel. We judge that the Iranian military trains Hizballah and Palestinian extremist groups throughout the region.
- Iran provides funding and possibly weapons to Hamas and other Palestinian terrorists in the Gaza strip.

The Al Qods Force is a branch of the IRGC that is assigned to special operations and unconventional warfare, and has had priority in terms of funding, training, and equipment. It plays a major role in giving Iran the ability to conduct unconventional warfare overseas using various foreign movements as proxies, and is thought to be composed of 5-15,000 men.

[59] Taken from unclassified edition of the *Annual Report on Military Power of Iran, April 2012*, as transmitted in Letter from the Secretary of Defense to the Honorable Carl Levin, chairman of the Senate Armed Services Committee, June 29, 2012, pp. 1,4.

In January 2007, Iran's Supreme National Security Council (SNSC) decided to place all Iranian operations in Iraq under the command of the Al Qods Force. At the same time, the SNSC decided to increase the personnel strength of the Al Qods to 15,000.[60] Exact force

The Al Qods Force is under the command of Brigadier General Qassem Soleimani and has supported non-state actors in many foreign countries. These include Hezbollah in Lebanon, Hamas and the Palestinian Islamic Jihad in the Gaza Strip and the West Bank, Shi'ite militias in Iraq, and Shi'ites in Afghanistan. Links to Sunni extremist groups like Al Qaeda have been reported, but never convincingly confirmed.

On January 11, 2007, the director of the Defense Intelligence Agency stated in testimony before the US Senate Select Committee on Intelligence that Iran's Islamic Revolutionary Guards Corps-Qods Force had the lead for its transnational terrorist activities, in conjunction with Lebanese Hezbollah and Iran's MOIS.[61] Other sources believe that the primary mission of the Al Qods Force has been to support Shi'ite movements and militias, and such aid and weapons transfers seem to have increased significantly in the spring of 2007.

The Al Qods Force has provided significant transfers of weapons to Shi'ite (and perhaps some Sunni) elements in Iraq. These include the shaped charge components used in some IEDs and the more advanced components used in explosively formed projectiles, including the weapon assembly, copper slugs, radio links used to activate such devices, and the infrared triggering mechanisms. These devices are very similar to those used in Lebanon, and some seem to operate on the same radio frequencies. Shaped charge weapons first began to appear in Iraq in August 2003, but became a serious threat in 2005.[62]

On January 11, 2007, the US military in Iraq detained five men accused of providing funds and equipment to Iraqi insurgents. According to US military sources, these men had connections to the Al Qods Force.[63] On January 20, 2007, gunmen dressed as US soldiers entered the Provincial Joint Coordination Center in Karbala and killed and wounded several US servicemen. According to some sources, including US military intelligence, the gunmen were members of the Al Qods Force. The sophisticated planning and execution of this attack made it unlikely that any Iraqi group was involved in it.[64]

General David H. Petraeus, the commander of US forces in Iraq at the time, stressed the growing role of the Al Qods Force and the IRGC in testimony to Congress in April 2007. He noted that the US had found Al Qods operatives in Iraq and seized computers with hard drives that included

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[60] IntelligenceOnline.com, Tehran Targets Mediterranean, March 10, 2006.

[61] Maples, Michael D. "Threat Assessment." Statement of Michael D. Maples Director, Defense Intelligence Agency U.S. Army before the Committee on Senate Select Intelligence, January 11, 2007.

[62] Gordon, Michael and Shane, Scott. "Iran Supplied Weapons in Iraq." *New York Times*. March 26, 2007

[63] Defense Department Documents and Publications, Coalition Targets Iranian Influence in Northern Iraq, January 14, 2007.

[64] Kaufman, Stephen. "Bush Says Iranian Group Certainly Providing Weapons in Iraq." February 14, 2007. http://usinfo.state.gov/xarchives/display.html?p=washfile-english&y=2007&m=February&x=20070214171942esnamfuak0.7028467

a 22-page document that had details on the planning, approval process, and conduct of an attack that killed five US soldiers in Karbala. Petraeus noted,

> "They were provided substantial funding, training on Iranian soil, advanced explosive munitions and technologies as well as run-of-the-mill arms and ammunition… in some cases advice and in some cases even a degree of direction… Our sense is that these records were kept so that they could be handed in to whoever it was that is financing them… And again, there's no question… that Iranian financing is taking place through the Al-Qods force of the Iranian Republican Guards Corps."[65]

The Al Qods Force plays a continuing role in training, arming, and funding Hezbollah in Lebanon and to have begun to support Shi'ite militia and Taliban activities in Afghanistan. Experts disagree on the scale of such activity, how much support it has provided to Sunni Islamist extremist groups rather than Shi'ite groups, and over the level of cooperation in rebuilding Hezbollah forces in Lebanon since the cease-fire in the Israel-Hezbollah War of 2006. The debates focus on the scale of such activity and the extent to which it has been formally controlled and authorized by the Supreme Leader and the President, however, and not over whether some level of activity has been authorized.

The exact relationship between the Al Qods Force, Hamas, and the Palestinian Jihad is speculative. Some Iranian arms shipments have clearly been directed at aiding anti-peace and anti-Israeli elements in the Gaza Strip. There is some evidence of aid in training, weapons, and funding to hostile Palestinian elements in both the Gaza Strip and the West Bank. Open sources do not, however, provide a clear picture of the scale of such activity.

Some reports indicate that the budget for the Al Qods Force is classified, directly controlled by the office of Supreme Leader Khamenei, and is not reflected in Iran's general budget. The active elements of the Al Qods Force operate outside Iran's borders, although it has bases both inside and outside of Iran. The Al Qods Force's troops are divided into specific groups or "corps" for each country or area in which they operate. There are Directorates for Iraq; Lebanon, Palestine, and Jordan; Afghanistan, Pakistan, and India; Turkey and the Arabian Peninsula; Asian countries of the former Soviet Union; Western nations (Europe and North America); and North Africa (Egypt, Tunisia, Algeria, Sudan, and Morocco).

The Al Qods Force has offices or "sections" in many Iranian embassies, which are closed to most embassy staff. It is not clear whether these are integrated with Iranian intelligence operations or if the ambassador in each embassy has control of, or detailed knowledge of, operations by the Al Qods staff. However, there are indications that most operations are coordinated between the IRGC and offices within the Iranian Foreign Ministry and MOIS. There are separate operational organizations in Lebanon, Turkey, Pakistan, and several North African countries. There are also indications that such elements may have participated in the bombing of the Israeli Embassy in Argentina in 1992 and the Jewish Community Center in Buenos Aires in 1994 – although Iran has strongly denied any involvement in either.[66]

The Al Qods Force seems to control many of Iran's training camps for extremists, terrorists, and unconventional warfare in Iran and countries like the Sudan and Lebanon. In Sudan, the Al Qods

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[65] Gertz, Bill. "US General Calls Al Qaeda 'Public Enemy No. 1' in Iraq." *Washington Times*, April, 27, 2007, p. 4.

[66] *New York Times*, May 17, 1998, p. A-15; *Washington Times*, May 17, 1998, p. A-13; *Washington Post*, May 21, 1998, p. A-29.

Force is believed to run a training camp of unspecified nature. It has at least four major training facilities in Iran. The Al Qods Force has a main training center at Imam Ali University that is based in the Sa'dabad Palace in northern Tehran. Troops are trained to carry out military and terrorist operations and are not indoctrinated in ideology.

There are other training camps in the Qom, Tabriz, and Mashhad governorates and in Lebanon and the Sudan. These include the Al Nasr camp for training Iraqi Shi'ites and Iraqi and Turkish Kurds in northwest Iran, and a camp near Mashhad for training Afghan and Tajik revolutionaries. The Al Qods Force seems to help operate the Manzariyah training center near Qom, which recruits foreign students in the religious seminary and which seems to have trained some Bahraini extremists. Some foreigners are reported to have received training in demolition and sabotage at an IRGC facility near Isfahan, in airport infiltration at a facility near Mashhad and Shiraz, and in underwater warfare at an IRGC facility at Bandar-e Abbas.[67]

Israeli defense experts state they believe the IRGC and the Al Qods Force not only played a major role in training and equipping Hezbollah, but may have assisted it in the Israeli-Hezbollah War in 2006. Israeli intelligence officers claim to have found command and control centers, and a missile and rocket fire-control center in Lebanon that was of Iranian design. They feel the Al Qods Force played a major role in the Hezbollah anti-ship missile attack on and Israeli Navy Sa'ar-class missile patrol boat and that Iran and Syria supported Hezbollah with intelligence from facilities in Syria during the fighting.

The Al Qods Force still seems to play a role in dealing with the Sadrists and other hardline Shi'ite forces in Iraq. It also may have helped some elements of the Syrian security forces during the unrest in Syria in 2011. It is often difficult, however, to confirm reports about Al Qods activity, or to separate out its role from other elements of the IRGC and branches of Iranian intelligence, like the Vevak. Some reports of its role seem dubious and others seem to credit the Al Qods Force without clear evidence that it actually has the lead.

On October 11, 2011, the Al Qods Force gained attention as a result of its role in planning Iran's alleged assassination plot against the Saudi ambassador to the US, Adel Al-Jubeir.[68] Several members of the Force have been sanctioned by the US for their role in this attempt, and it may reflect a new willingness of Iran to take risks in confronting the US and Arab states.

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[67] Venter, "Iran Still Exporting Terrorism," *Jane's Intelligence Review,* pp. 511-516

[68] Murphy, Brian. "Ambassador Plot Casts Light on Iran's Strike Force." Associated Press. October 12, 2011, http://www.google.com/hostednews/ap/article/ALeqM5gLiQoxfIOXE7F7fw-GQMaNq1ebqQ?docId=d3a283b005ee493c8703ec2a717dbfd7

Figure III.26: The Iranian Al Qods Force

- **Comprised of 5,000 - 15,000 members of the IRGC (Increased size of force in 2007)**
- **Equivalent of one Special Forces division, plus additional smaller units**
- **Special priority in terms of training and equipment**
- **Plays a major role in giving Iran the ability to conduct unconventional warfare overseas using various foreign movements as proxies**
- **Specialize in unconventional warfare mission**
- **Control many of Iran's training camps for unconventional warfare, extremists, and terrorists**
- **Has offices or "sections" in many Iranian embassies throughout the world**
- **Through its Al Qods Force, Iran provides aid to Palestinian terrorist groups such as Hamas, Lebanese Hezbollah, Iraq-based militants, and Taliban fighters in Afghanistan.**
- **Despite its pledge to support the stabilization of Iraq, Iranian authorities continued to provide lethal support, including weapons, training, funding, and guidance through its Al Qods Force.**
- **Al Qods Force continues to provide Iraqi and Afghani militants with:**
    - **specialized training,**
    - **funding,**
    - **Iranian-produced advanced rockets,**
    - **sniper rifles,**
    - **automatic weapons,**
    - **mortars,**
    - **Improvised Explosive Devices (IEDs)**
    - **and explosively formed projectiles (EFPs) that have a higher lethality rate than other types of IEDs**
- **Since 2006, Iran has arranged a number of shipments of small arms and associated ammunition, rocket propelled grenades, mortar rounds, 107mm rockets, and plastic explosives, possibly including man-portable air defense systems (MANPADs), to the Taliban.**
- **Israeli defense experts continue to state that they believe the IRGC and Al Qods Force not only played a major role in training and equipping Hezbollah, but may have assisted it during the Israeli-Hezbollah War in 2006, and played a major role in the Hezbollah anti-ship missile attack on an Israeli Navy Sa'ar-class missile patrol boat.**
- **The Al Qods Force is widely believed to have been behind the plot to assassinate Saudi Arabia's ambassador to the US, Adel al-Jubeir in 2011.**

The MISIRI, MOIS, or Vevak

Iranian intelligence plays a role in Iran's asymmetric warfare efforts as well. It is far from clear how the structure of Iranian intelligence operates, how clear the separation is from various elements of the IRGC and Al Qods forces, whether there is a clear separation of intelligence from internal security, how the diplomatic covers of Iran's intelligence arte run, and whether Iran's massive networks of over organizations, business fronts and use of bribery and intimidation to import weapons, parts and military technology hangs together.

What is clear is that Iran conducts all of these operations in extensive networks overseas, and that its main intelligence branch plays a key role. This branch is called the Ministry of Intelligence and National Security of the Islamic Republic of Iran (MISIRI). It is Iran's secret police and primary intelligence agency, which are embedded throughout Iranian embassies in Iraq and all over the world, as well as in Iranian commercial, education, NGO, and religious groups). (The MISIRI is more commonly referred to as the VEVAK (Vezarat-e Ettela'at va Amniyat-e Keshvar), VAJA, or MOIS (Ministry of Intelligence and Security).

It is this organization, rather than elements of the IRGC that seems to play a critical role in threatening and sometime killing opponents of regime overseas as well as supporting Iranian efforts use diplomatic covers and most of Iran's active civilian fronts to support asymmetric warfare at the political level. It was the IRGC, however, that seems to have run the assassination attempt on the Saudi Ambassador in Washington, and the relative roles of the two organizations are uncertain. There also seem to be separate fronts for importing military and nuclear technology dating back in some cases to fronts established during the Iran-Iraq War that are tied to elements in various ministries and sometimes academic institutions.

Similar uncertainties exist as to how the intelligence branches, IRGC, and military manage repression and internal security in Iran. They seem to have overlapping functions and each can sometimes play a role in influencing Iran's civil, military, and security courts, as well as manage its own detention facilities and prisons and use torture and sometimes attacks on both Iranian citizens in Ira and Iranian's overseas. Repression and intimidation are used to directly support the regime's ability to ensure there is no internal threat and enhance its ability to operate overseas.

As the US State Department report on human right issued on Aril 8, 2011 notes,[69]

> Several agencies share responsibility for law enforcement and maintaining order, including the MOIS, the Law Enforcement Forces under the Interior Ministry, and the IRGC. The Basij and informal groups known as the Ansar-e Hizballah (Helpers of the Party of God) were aligned with extreme conservative members of the leadership and acted as vigilantes. In October 2009 the government announced the merger of the Basij into the IRGC ground forces. While some Basij units received formal training, many units were disorganized and undisciplined. During government-led crackdowns on demonstrations, the Basij were primarily responsible for the violence against the protesters….Corruption and impunity were problems.

[69]Bureau of Democracy, Human Rights, and Labor, "2010 Human Rights Report: Iran"

2010 Country Reports on Human Rights Practices, April 8, 2011, http://www.state.gov/j/drl/rls/hrrpt/2010/nea/154461.htm.

Regular and paramilitary security forces committed numerous serious human rights abuses, but there were no transparent mechanisms to investigate security force abuses and no reports of government actions to reform the 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 rarely followed these procedures in practice. Authorities held detainees, at times incommunicado, often for weeks or months without charge or trial, frequently denying them prompt contact with family or timely access to legal representation. In practice there was neither a time limit for detention nor judicial means to determine the legality of the detention. According to the 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. Prisoners released on bail did not always know how long their property would be retained or when their trials would be held.

The intelligence arm of the IRGC reportedly conducted arrests during the year, sometimes without a warrant. Additionally, security forces executed general warrants to arrest protesters or those perceived as opponents of the government. The use of these general warrants precluded the need for individual warrants.

… By law the judiciary is independent from the executive and legislative branches; in practice it remained under the influence of executive and religious government authorities.

… In November 2009, according to the ICHRI, security forces arbitrarily arrested scores of students throughout the country in an attempt to stifle protests expected on Students' Day, December 7. For instance, on November 3, media reported that authorities had arrested civil activists and student leaders Hasan Asadi Zaidabadi and Mohammad Sadeghi. Zaidabadi was released in December 2009, and Sadeghi was released after 40 days of detention. There was no information as to whether the two were ever tried.

During protests in December 2009 after the death of Grand Ayatollah Hussein-Ali Montazeri and during Ashura celebrations, the ICHRI and IHRV reported that authorities detained between 200 and 1,000 persons, many of whom remained in prison at year's end, some facing death sentences. Death sentences were given to individuals who were accused of moharebeh (see section 1.a.) for participation in Ashura Day protests. On March 17, the ICHRI reported that Revolutionary Court judge Abolqasem Salavati sentenced teacher Abdolreza Ghanbari to death for moharebeh based on his participation in Ashura protests. According to the ICHRI, Ghanbari did not have access to a fair trial nor permission to select a lawyer for his defense. The Prosecutor's Office requested death sentences for at least 11 other individuals arrested during 2009 Ashura celebrations.

There were no reports of Iranian-American journalists arrested during the year; however, in 2009 and previous years, security forces arrested several Iranian-American journalists and academics on charges of espionage and "acting against national security." Prison authorities subjected the activists to harsh interrogation techniques and solitary confinement and in most cases kept them in prison for several months. At year's end one academic was free on bail but not permitted to depart the country.

…The government often charged individuals with vague crimes such as "antirevolutionary behavior," "moral corruption," "siding with global arrogance," moharebeh, and "crimes against Islam." Prosecutors imposed strict penalties on government critics for minor violations. When postrevolutionary statutes did not address a situation, the government advised judges to give precedence to their knowledge and interpretation of Islamic law. The head of the judiciary chose revolutionary court judges in part due to their ideological commitment to the system. Secret or summary trials of only five minutes' duration frequently occurred. Other trials were deliberately designed to publicize a coerced confession.

… Statistics regarding the number of citizens imprisoned for their political beliefs were not available, but human rights activists estimated the number in the hundreds. Approximately 500 democracy activists and journalists were in detention in Evin Prison alone at year's end. According to opposition press reports, the government arrested, convicted, and executed persons on questionable criminal charges, including drug trafficking, when their actual offenses were reportedly political. The government charged members of religious minorities and others with crimes such as "confronting the regime" and apostasy and followed the same trial procedures as in cases of threats to national security. During the year the government rounded up students, journalists, lawyers, and political activists to silence them or prevent them from organizing protests.

Authorities occasionally gave political prisoners suspended sentences or released them for short or extended furloughs prior to completion of their sentences, but they could order them to return to prison at any time. Suspended sentences often were used to silence and intimidate individuals. The government also controlled political activists by temporarily suspending baseless court proceedings against them and allowing authorities to rearrest them at any time, and it attempted to intimidate activists by calling them in repeatedly for questioning. The government issued travel bans on former political prisoners; for instance, authorities continued to prevent former political prisoner Siamak Pourzand from leaving the country to receive medical care and to join his wife, also a former political prisoner, and family abroad.

Authorities routinely held political prisoners in solitary confinement for extended periods and denied them due process and access to legal representation. Political prisoners were also at greater risk of torture and abuse in detention. The government did not permit international humanitarian organizations or UN special rapporteurs access to political prisoners.

…According to multiple sources, the government executed approximately 312 persons in summary executions during the year, many after trials that were conducted in secret or did not adhere to basic principles of due process. Some human rights groups reported the number was as high as 500 but had difficulty documenting the additional cases. Authorities did not release statistics on the implementation of death sentences, the names of those executed, or the crimes for which they were found guilty. Exiles and human rights monitors alleged that many persons supposedly executed for criminal offenses such as narcotics trafficking were actually political dissidents. The law criminalizes dissent and applies the death penalty to offenses such as apostasy (conversion from Islam), "attempts against the security of the state," "outrage against high-ranking officials," "enmity towards god" (moharebeh), and "insults against the memory of Imam Khomeini and against the supreme leader of the Islamic Republic." According to Amnesty International (AI), an increasing number of people were charged with moharebeh, a vaguely defined offense that carries the death sentence. According to Philip Alston, the UN special rapporteur on extrajudicial, summary, or arbitrary executions, moharebeh is "imposed for a wide range of crimes, often fairly ill defined and generally having some sort of political nature." Iran Human Rights (IHR) reported that 38 individuals were executed for the crime of moharebeh during the year.

… Common methods of torture and abuse in prisons included prolonged solitary confinement with extreme sensory deprivation (sometimes called "white torture"), beatings, rape and sexual humiliation, long confinement in contorted positions, kicking detainees with military boots, hanging detainees by the arms and legs, threats of execution, burning with cigarettes, pulling out toenails, sleep deprivation, and severe and repeated beatings with cables or other instruments on the back and on the soles of the feet. To intensify abuse, perpetrators reportedly soaked prisoners before beating them with electric cables, and there were some reports of electric shocks to sexual organs. Prisoners also reported beatings on the ears, inducing partial or complete deafness; blows in the area around the eyes, leading to partial or complete blindness; and the use of poison to induce illness.

Some prison facilities, including Evin Prison in Tehran, were notorious for cruel and prolonged torture of political opponents of the government. Authorities also maintained unofficial secret prisons and detention centers outside the national prison system where abuse reportedly occurred. The government reportedly

used white torture especially on political prisoners, often in detention centers outside the control of prison authorities, including Section 209 of Evin Prison.

Unfortunately, any assessment of the role that the MOIS/Vevak and other intelligence elements play in outside Iran in competing with the US and in operating in other countries requires access to sensitive intelligence data. It is clear than Iran has steadily built up cells and networks, and expanded the role of intelligence in its embassies, NGOs, Iranian owned or "cover" business, Iranian oversea workers and groups, religious organizations and charities, and education efforts.

It is also clear that some of the supposed Iranian academic groups, journalists, analytics, religious figures, and delegations sent to other countries and involved in second track diplomacy are active intelligence agents. This includes Iranians who act as if they are critics of the regime. This does not mean that the vast majority of Iranians in the opposition or who travel overseas are intelligence operatives, but it does mean that legitimate critics face seriously problems with covert infiltration and intelligence operatives, that the regime routinely uses such covers, and Iranians who are too frank or critical can face punishment on their return to Iran. Similarly, Iranians who are citizens of other countries – particularly those with relative still in Iran – face the threat of pressure or intimidation by such operatives..

It is not clear how these are structured, how well they penetrate into the Arab Gulf and regional states, or how deeply they reach into the US, Europe, Asia, and other areas. One must also be extremely careful of references to the IRGC and Al Qods force; in at least some cases, the actual operative is almost certainly Iranian intelligence.

Other Asymmetric Forces

The IRGC, Basij, and Al Qods Force, and MOIS are only part of Iran's steadily increasing pool of forces – which include elements of its regular armed forces, Vevak, and other elements of its intelligence community and cells within its embassies. The growing regional role of these forces is shown in **Figure III.27**. The potential impact of Iran's ties to Hezbollah and Hamas are shown in **Figure III.28** and **Figure III.29.**

- **Figure III.27** shows how the full range of Iranian security efforts work with other states and non-state actors and the expanding presence of Iranian cadres and intelligence elements.
- **Figure III.28** summarizes Iran's ties to Hezbollah and its role in Lebanon in cooperation with Syria. Hezbollah is now considerably better armed than in 2006, and has far better defense in depth.
- **Figure III.28** summarizes Iran's role in Gaza. Iran is not a key player, but even limited arms shipments allow it to play a spoiler role.

Iran's use of regional allies and proxies – including non-state actors like Hezbollah and state actors like Syria -- has become a key aspect of Iran's asymmetric strategy, although these forces are largely independent and Iran has only limited leverage over their behavior. Iranian ties to such proxies and the US' response to them are discussed in detail later in region-specific chapters, but they merit discussion as a cornerstone of Iran's asymmetric military strategy in the Middle East.

While data on the specific levels of Iranian assistance are incomplete and often inaccurate, there is general agreement that aid levels remain significant. Washington continues to view Iran as the

foremost state-sponsor of US-designed foreign terrorist organizations (FTO) and non-state proxy organizations opposed to US regional interests.[70] In a September 13, 2011 hearing before the Committee on Homeland Security and Governmental Affairs, Matthew G. Olsen, the Director of the National Counterterrorism Center, added:[71]

> "Iran is still the foremost state sponsor, and since 9/11 the regime has expanded its involvement with terrorist and insurgent groups—primarily in Iraq and Afghanistan—that target US and Israeli interests. Iran's Islamic Revolutionary Guard Corps-Qods Force and Ministry of Intelligence and Security have been involved in the planning and execution of terrorist acts and the provision of lethal aid—such as weapons, money, and training—to these groups, particularly Lebanese Hizballah."

On January 31, 2012, the US Director of National Intelligence, James R. Clapper, stated that the Iranian is becoming increasingly bolder in its support for regional proxies, namely the Syrian regime, Hezbollah, and Hamas, as well as various other burgeoning surrogates created in the wake of the Arab Spring.[72] More specifically, he stated that,

> "In its efforts to spread its influence externally, Iran continues to support proxies and surrogates abroad, and it has sought to exploit the Arab Spring but has reaped limited benefits, thus far. Its biggest regional concern is Syria because regime change would be a major strategic loss for Tehran. In Iraq, it probably will continue efforts to strengthen ties to Baghdad and the Kurdistan Regional Government. In Afghanistan, Iran is attempting to undermine any strategic partnership between the United States and Afghanistan."[73]

In addition to Hezbollah in Lebanon, Iran has supplied and trained a number of non-state clients across the region, including Shi'ite militias in Iraq, Afghan insurgents, Hamas in Gaza, and possibly to the Houthi rebels in Yemen. These groups, while weak in comparison to larger conventional forces, provide Iran with the ability to undermine regional governments allied with the US and the West, and, as in the case of Iraq, to harass US forces in active warzones. Iranian proxies (Shi'ite militias and Hezbollah, respectively) continue to undermine the consolidation of potentially pro-Western governments in Iraq and Lebanon, and have allowed Iran to impact their local politics and foreign policy orientations. As such, Iran's proxies are an effective asymmetric tool for Iran to undermine US regional influence while maximizing its own.

Iran's asymmetric efforts have spread beyond the region. In late 2011 an Iranian plot to assassinate the Saudi Ambassador to the US, Adel al-Jubeir came to light. Additionally, commander of Iran's navy, Admiral Habibollah Sayyari, announced Iran's intention to "establish a strong presence near U.S. marine borders" by sending warships to the east coast of the US.[74]

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[70] "Are We Safer?" Hearing Before the Senate Committee on Homeland Security and Governmental Affairs. September 13, 2011 http://www.dni.gov/testimonies/20110913_testimonies_olsen.pdf

[71] "Are We Safer?" Hearing Before the Senate Committee on Homeland Security and Governmental Affairs. September 13, 2011 http://www.dni.gov/testimonies/20110913_testimonies_olsen.pdf

[72] James R. Clapper. Unclassified Statement for the Record on the Worldwide Threat Assessment of the US Intelligence Community for the Senate Select Committee on Intelligence. January 31, 2012. http://www.dni.gov/testimonies/20120131_testimony_ata.pdf

[73] James R. Clapper. Unclassified Statement for the Record on the Worldwide Threat Assessment of the US Intelligence Community for the Senate Select Committee on Intelligence. January 31, 2012. http://www.dni.gov/testimonies/20120131_testimony_ata.pdf

[74] "Iranian plot to kill Saudi ambassador thwarted, U.S. officials say." CNN. October 11, 2011. http://articles.cnn.com/2011-10-11/justice/justice_iran-saudi-plot_1_informant-iranian-plot-saudi-arabia?_s=PM:JUSTICE

While the immediate implications and intent of these actions and statements are unclear, they are an unmistakable sign that Iran seeks to project its asymmetric reach beyond the Middle East, or at least appear to be capable of doing so. DNI Clapper's testimony of January 31, 2012 reflects the growing concern amongst US officials that Iran is increasingly willing to escalate its asymmetric competition with the US by striking at US interests or personnel overseas:[75]

> The 2011 plot to assassinate the Saudi Ambassador to the United States shows that some Iranian officials—probably including Supreme Leader Ali Khamenei—have changed their calculus and are now more willing to conduct an attack in the United States in response to real or perceived US actions that threaten the regime. We are also concerned about Iranian plotting against US or allied interests overseas.
>
> Iran's willingness to sponsor future attacks in the United States or against our interests abroad probably will be shaped by Tehran's evaluation of the costs it bears for the plot against the Ambassador as well as Iranian leaders" perceptions of US threats against the regime.

[75] James R. Clapper. Unclassified Statement for the Record on the Worldwide Threat Assessment of the US Intelligence Community for the Senate Select Committee on Intelligence. January 31, 2012. http://www.dni.gov/testimonies/20120131_testimony_ata.pdf

Figure III.27: Iranian Use of Other States and Non-State Actors

Iranian Actors	*Revolutionary Guards Related State/ Non-State Actors*	*Target/Country Where Operating*
Vevak/other intelligence	**Iran**	**Iraq**
Al Qods Force	**Syria**	**Lebanon**
Arms transfers	**Hezbollah**	**Israel**
Military and security Advisors	**Hamas**	**West Bank/Gaza**
Clerics, pilgrims, shrines	**Mahdi Army, Promised Day Brigades Special Groups**	**Yemen?**
Commercial training	**Yemeni "Shi'ites"?**	**Egypt**
Finance/investment	**Bahrani Shi'ites?**	**Kuwait**
Investment/training companies	**Afghan Hazara?**	**Bahrain**
Education: scholarships, teachers	**Saudi "Shi'ites"**	**Afghanistan**
Cultural exchanges		**Venezuela**
Athletic visits		

Figure III.28: Iran and the Hezbollah

- **Hezbollah was originally formed in 1982 by Iranian seminarians.**
- **Iran's aid packages (arms and money) to Hezbollah are said to exceed $100 million per year.**
- **Iran has gone from supplying small arms, short-range missiles and training to providing more sophisticated long-range missiles and other higher-end weaponry**
- **Iran exported thousands of 122-mm rockets and Fajr-4 and Fajr-5 long-range rockets to Hezbollah in Lebanon, including the Arash with a range of 21–29 kilometers.**
- **Between 1992 and 2005, Hezbollah received approximately 11,500 missiles and rockets; 400 short- and medium-range pieces of artillery; and Aresh, Nuri, and Hadid rockets and transporters/launchers from Iran.**
- **In 2005, Iran sent Hezbollah a shipment of large Uqab missiles with 333-millimeter warheads and an enormous supply of SA-7 and C-802 missiles, two of which were used in an attack on an Israeli ship.**
- **Iran also supplied Hezbollah with an unknown number of UAV's, the *Mersad*, that Hezbollah briefly flew over the Israel-Lebanon border on November 7, 2004, and April 11, 2005; at least three were shot down by Israel during the summer 2006 war.**
- **Iran supplied Hezbollah advanced surface-to-air missiles, including Strela-2/2M, Strela-3, Igla-1E, and the Mithaq-1. The same missiles were reported to have been used to target Israeli helicopters.**
- **During Hezbollah's summer 2006 war with Israel, Iran resupplied the group's depleted weapons stocks.**
- **Hezbollah has recovered from its 2006 confrontation with Israel and has been able to rearm and regroup, and Iran has been an important part of that recovery.**
- **Various Types of Rockets, reportedly increasing its stockpile to 27,000 rockets, more than double what Hezbollah had at the start of the 2006 war.**
- **Among the deliveries were 500 Iranian-made "Zelzal" (Earthquake) missiles with a range of 186 miles, enough to reach Tel Aviv from south Lebanon. Syria may have delivered Scuds.**
- **Fighting in Lebanon in 2006 seems to have increased Hezbollah's dependence on Iran. Both Hezbollah's loss of weapons and fighters in the conflict with Israel and the resulting damage to its reputation and position within Lebanon made it more reliant upon Iran.**
- **Elements of Hezbollah planned attacks in Egyptian Sinai; operate in Iraq**

Figure III.29: Iran and Hamas

- **Iran openly supported Hamas and spoke out against the lack of support for Hamas by Arab regimes throughout the Middle East during engagements between the IAF and Hamas in late 2008 and early 2009 in Gaza.**
- **Iran provided training, arms and logistical support to Hamas during the fighting in Gaza between Israeli forces and Hamas militants in late December 2008 and early January 2009.**
- **Israeli intelligence sources continued to report Iranian efforts to rearm Hamas after a ceasefire agreement was reached in January 2009.**
- **Arms transfers come through Sudan and Sinai.**
- **Level of Iranian financial support uncertain**
- **In February 2012, the Prime Minister of Hamas, Ismail Haniya, visited Iran. The visit likely reflects the continued good relations and ties between both entities, as well as Iran's continuing support to Hamas.**

"Closing the Gulf:" Iran's Real World Military Options for Asymmetric Warfare

Iran's recent threats to "close the Gulf" provide another tangible illustration of Iran's asymmetric warfare capabilities. In late December 2011 and early January 2012, Iran carried out military drills in the Gulf to demonstrate its stated capability to close the Strait of Hormuz, made threatening statements about the presence of the US' 5th Fleet in the region, and the Iranian parliament is considering a bill that would prohibit the presence of foreign warships in the Gulf without the permission of the Iranian navy.[76][77]

- *"Should the enemies desire to use the method and spirit of threats, we will naturally also threaten them. The (military) exercise by the armed forces of the Islamic Republic of Iran's Islamic Revolution, in fact, expresses the will to act against various types of threats that are targeting our national security."* - Hossein Salami, Revolutionary Guards Deputy, February 7, 2012.
  http://www.farsnews.com/newstext.php?nn=13901118000917

- *"[T]he recent statements made by the US and the West about the Strait of Hormuz shows that they are frightened by the awe of the (Islamic) Revolution, otherwise the Iranian nation considers the Strait of Hormuz as the strait of peace. However, the Iranian nation is determined to cut the hand of those who seek adventurism in the Persian Gulf, the Sea of Oman and the Strait of Hormuz."* – Ali Larijani, Speaker of Iranian Parliament, February 1, 2012.
  http://english.farsnews.com/newstext.php?nn=9010173255

- *"Tehran will not remain indifferent to US mischief in the region if Washington tries to cause problems for regional countries. The Strait of Hormuz is a region of peace and Iran has protected its peace for centuries and will continue to do so in order to maintain calm in it,"*-Ali Larijani, Speaker of Iranian Parliament, January 31, 2012.
  http://www.presstv.ir/detail/223919.html

- *"Tehran will not remain indifferent to US mischief in the region if Washington tries to cause problems for regional countries. The Strait of Hormuz is a region of peace and Iran has protected its peace for centuries and will continue to do so in order to maintain calm in it,"*-Ali Larijani, Speaker of Iranian Parliament, January 31, 2012.
  http://www.presstv.ir/detail/223919.html

- *"The US has given a role to Saudi Arabia, Qatar and Turkey to direct the regional developments in a way that they move towards these countries' interests in line with the US policies and opposite to Iran's policies. Owing to the fact that Iran's Islamic Revolution serves as a role model for the regional and world nations in their fight against the tyranny of their rulers and arrogant powers, the US and its allies are attempting to prevent Tehran's further political influence in the region."* - Major General Yahya Rahim Safavi, Senior Military Aide to the Supreme Leader, January 31, 2012.
  http://english.farsnews.com/newstext.php?nn=9010173133

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[76] CNN Wire Staff. "Iran Warns U.S. Over Aircraft Carrier." CNN, January 3, 2011, http://articles.cnn.com/2012-01-03/middleeast/world_meast_iran-u-s-_1_chabahar-iran-last-week-irna?_s=PM:MIDDLEEAST

[77] Abbate, Kenneth. "Iran Prepares Bill to Bar Foreign Warships from Persian Gulf." Washington Post." Washington Post, January 4, 2011, http://www.washingtonpost.com/world/middle_east/iran-prepares-bill-to-bar-foreign-warships-from-persian-gulf/2012/01/04/gIQAhlWYaP_story.html?tid=wp_ipad

- *"The United States did not dare to direct its aircraft carrier through the Strait of Hormuz alone; this is why the carrier was "escorted" by military vessels of other nations. If the Strait is closed, the aircraft carriers will become the war booty of Iran."* - Javad Karimi Qodousi, parliamentary National Security Committee member, January 24, 2012.
  http://www.isna.ir/ISNA/NewsView.aspx?ID=News-1935908&Lang=P

- *"There is no decision to block and close the Strait of Hormuz unless Iran is threatened seriously and somebody wants to tighten the noose. All the options are on the table."* - Mohammad Khazaee, Iranian Ambassador to the United Nations, January 19, 2012.
  http://www.bloomberg.com/news/2012-01-19/iran-s-un-envoy-says-closing-strait-of-hormuz-is-an-option-if-threatened.html

- "Our capability to provide security in the region, specially the Strait of Hormuz during sensitive times, will not experience any change due to the western warships' trafficking in the region." -Gholam Reza Karami, Iranian lawmaker and Chairman of the Parliamentary Defense Committee, January 16, 2012.
  http://english.farsnews.com/newstext.php?nn=9010171403

- *"Today the Islamic Republic of Iran has full domination over the region and controls all movements within it."* - Navy Rear Admiral Ali Fadavi, Commander of Iran's Islamic Revolution Guards Corps (IRGC), January 6, 2012.
  http://english.farsnews.com/newstext.php?nn=9007270592

- *"The Zolfaqar vessel is considered as a new model of the vessels of the same class which is capable of conducting operations in different marine conditions thanks to its sea-to-sea missiles and proper speed. The sea-to-sea cruise missile with high destructive capability and targeting power has immensely increased the vessel's power."* -Brigadier General Ahmad Vahidi , Iranian Defense Minister, January 2, 2012.
  http://english.farsnews.com/newstext.php?nn=9007279956

- *"Iran has total control over the strategic waterway. Closing the Strait of Hormuz is very easy for Iranian naval forces."* -Rear Admiral Habibollah Sayyari, Iran's naval commander, December 28, 2011.
  http://www.nytimes.com/2011/12/29/world/middleeast/noise-level-rises-over-iran-threat-to-close-strait-of-hormuz.html?_r=2

- *"If they impose sanctions on Iran's oil exports, then even one drop of oil cannot flow from the Strait of Hormuz."* - Mohammad-Reza Rahimi, Iran's first vice president, December 27, 2011.
  http://www.nytimes.com/2011/12/28/world/middleeast/iran-threatens-to-block-oil-route-if-embargo-is-imposed.html?pagewanted=all

- *"Closure of the Strait of Hormuz is not on the Islamic Republic of Iran's agenda (at present), but if threats against Iran come to trample upon the rights of our nation while others use the strait for exporting their oil, then Iran will be entitled to the right to close the Strait of Hormuz. The international conventions reserve such rights for the Islamic Republic of Iran as well. For the time being, the Islamic Republic of Iran has not decided to close the strait, but this (closing the strait) depends on the conditions of the region."* - Mohammad Taqi Rahbar, Iranian lawmaker, December 19, 2011.
  http://english.farsnews.com/newstext.php?nn=9007277986

- *"According to the international laws, including Paragraph 4 of Article 14 of the Geneva Convention, in case Iranian oil is sanctioned, we will not allow even a single barrel of oil to pass through to reach the hostile countries"*. -Isa Jafari, Senior Iranian lawmaker, December 18, 2011.
  http://english.farsnews.com/newstext.php?nn=9007277872

The Potential Strategic, Energy, and Global Economic Impacts of the Iranian Threat

Iran began to issue these threats in late 2011 and did so at a time that illustrates just how complex the mix of US and Iranian competition can be in the diplomatic, economic, and military dimensions. Iran backed its threats with a series of major naval exercises inside and outside the Gulf. It acted at time its nuclear programs were moving steadily closer to the point where Iran would have a "threshold" capability to make nuclear weapons, and Iran was moving its Uranium enrichment facilities into a deep mountain shelter near Fordow.

The US and EU in turn were imposing far stronger sanctions that threatened to cripple Iran's economy. Israel was suspected of assassinating Iranian nuclear scientists, and possibly sabotaging Iranian nuclear and missile sites. Iran was suspected of plotting to kill the Saudi Ambassador to the US and of bombings of Israeli diplomats. A power struggle was going on over the future of Syria between an Iran backing Assad and Arab world that largely called for him to leave. The US and Iran were competing for influence over Iraq. Additionally, a new round of public debates were taking place over whether Israeli might strike Iran to prevent it from acquiring nuclear weapons.

These conditions illustrate the growing complexity and seriousness of US and Iranian competition, and role that asymmetric forces can have even if they are only used as threat. Iran's illustrate its growing to threaten or attack US, Arab Gulf, and European interests – the most important of which is the flow of Gulf petroleum exports to the global economy.

These realities are sometimes disguised in the case of the US by politics and polices that claim the US can eliminate its strategic dependence on energy imports. As **Figure III.30** shows, however, estimates by the Energy Information Agency of the US Department of Energy indicate that the US will remain dependent on major energy imports through 2035 – the furthest period for which the EIA makes such estimates. Moreover, while US is not currently a major direct importer of Gulf oil, but it does have to pay world prices for oil and any reduction in global supply raises prices. Moreover, the US is deeply tied to a global economy dependent on the flow of Gulf energy exports to Europe and Asia and to manufactured imports that require such oil and gas exports.

Like wheat and other global commodities, the strategic importance of oil exports is not dependent on whether petroleum goes from one nation to another at any given time, but rather it is dependent on the supply of the overall global market and balance of supply and demand. While the volume of Gulf exports varies according to demand and the state of the global economy, the US Energy Information Agency estimated in January 2011 that the Strait of Hormuz, which is located between Oman and Iran, is the world's most important oil chokepoint. Some 15.5 to 17 million barrels a day have flowed through the Strait to world markets in recent years, or some 30% of global petroleum exports. This has been 33% to 40% of all seaborne traded oil, and some 17% of all oil traded worldwide, and these percentages ignore a substantial trade in liquid gas.

Saudi Arabia can export another 4.5 million barrels a day of crude and 2 million barrels a day of NGL and products through the Yanbu' terminal on the Red Sea, but this pipeline is already in

use and does not represent surplus capacity. Iraq has one major crude oil export pipeline, the Kirkuk-Ceyhan (Iraq-Turkey) pipeline, which transports oil from the north of Iraq to the Turkish Mediterranean port of Ceyhan. This pipeline has a capacity of around 300,000 barrels a day, but has been subject to repeated disruptions this decade, limiting exports from the northern fields. However, Iraq has signed an agreement with Turkey to extend the operation of the 1.6 million barrels per day pipeline, as well as to upgrade its capacity by 1 million barrels per day. This will add a total additional capacity of over 7 million barrels per day to the flow through the Strait of Hormuz.

The end result is that the US politics of calling for "energy independence" have little – if any – impact on either US threat perceptions or plans for the defense of the Gulf. In practice, US national security planners accept the fact that the Gulf is and will remain is the location of a strategically vital share of the world's petroleum resources.

Figure III.31 shows the importance of this aspect of US and Iranian military competition will increase indefinitely into the future. Both the US Energy Information Agency and International Energy Agency estimate there will be a steady increase in Gulf production capacity through 2030 – rising from some 25 million barrels a day of capacity in 2008 to some 35 million in 2035. The EIA report on the *International Energy Outlook* for 2010 estimates that Gulf oil production capacity will rise from 28 of the world total today to 31% in 2035 and do so in spite of major increases in production in other areas and in liquids from alternative fuels.

The Strait of Hormuz has become the symbol of this US and global dependence on energy exports, although it is only one military center of gravity among many affecting the flow of exports. In a report issued in January 2012, the Energy Information Agency of the US Department of Energy reported that a daily oil flow of almost 17 million barrels moved through the Strait of Hormuz in 2011, up from between 15.5-16.0 million barrels a day in 2009-2010. The flows through the Strait were roughly 35 percent of all seaborne traded oil in 2011, or almost 20 percent of oil traded worldwide.[78]

This EIA report was issued at a time when Iran was making a new set of threats to "close the Gulf" in reaction to the new and far stronger sanctions legislation being passed in the US and EU.[79] On average, 14 crude oil tankers per day passed through the Strait in 2011, with a corresponding amount of empty tankers entering to pick up new cargos. More than 85 percent of these crude oil exports went to Asian markets, with Japan, India, South Korea, and China representing the largest destinations. [80]

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[78] DOE/EIA, "World Oil Transit Chokepoints," December 30, 2011, http://www.eia.gov/cabs/world_oil_transit_chokepoints/full.html.

[79] Brian Murphy, "Iran's Roar Shows Widening Sway of Military," Associated Press,

January 11, 2012; By the Editors, " An Oil Strategy in Case Iran's Navy Shuts Down the Strait of Hormuz: View, Bloomberg, Jan 11, 2012. http://www.bloomberg.com/news/2012-01-12/an-oil-strategy-in-caseirans-navy-shuts-down-the-strait-of-hormuz-view.html.

[80] DOE/EIA, "World Oil Transit Chokepoints," December 30, 2011, http://www.eia.gov/cabs/world_oil_transit_chokepoints/full.html.

It is important to stress that Iran can threaten this traffic at many points inside the Gulf, and outside the Strait of Hormuz. The Strait, however, does force all shipping activity to move through a very narrow target area both in the Straits and on either side, particularly in the areas where the shipping channels pass by Iranian's held islands to the west of the Strait. The Strait 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. At its narrowest point, however, the Strait is 21 miles wide, but the width of the shipping lane in either direction is only two miles, separated by a two-mile buffer zone.

The Energy Information Agency report notes that,[81]

> Closure of the Strait of Hormuz would require the use of longer alternate routes at increased transportation costs. Alternate routes include the 745 mile long Petroline, also known as the East- West Pipeline, across Saudi Arabia from Abqaiq to the Red Sea. The East-West Pipeline has a nameplate capacity of about 5 million bbl/d. The Abqaiq-Yanbu natural gas liquids pipeline, which runs parallel to the Petroline to the Red Sea, has a 290,000-bbl/d capacity. Additional oil could also be pumped north via the Iraq-Turkey pipeline to the port of Ceyhan on the Mediterranean Sea, but volumes have been limited by the closure of the Strategic pipeline linking north and south Iraq.

But, it is important to note that it is not the Strait that is important but the secure flow of petroleum exports. Iran can attack or impede this flow from anywhere within the Gulf. Moreover, there is little near to mid-term possibility that the world's dependence on the Strait will be reduced to any meaningful sense. Iraq has sought to negotiate an agreement with Turkey to extend the operation of the 1.6 million barrels per day pipeline, as well as to upgrade its capacity by 1 million barrels per day.

The United Arab Emirates is also completing an Abu Dhabi Crude Oil Pipeline with a capacity of the 1.5 million barrels per day that will cross the emirate of Abu Dhabi and end at the port of Fujairah just south of the Strait. Other alternate routes could include the deactivated 1.65 million barrels a day Iraqi Pipeline across Saudi Arabia (IPSA), and the deactivated 0.5 million barrels a day Tapline to Lebanon. [82]

The effect of such changes, however, will be limited even when they are complete and will be largely offset by future increases in Gulf exports. Both the U.S. EIA and International Energy Agency (IEA) estimate there will be a steady increase in Gulf production capacity through 2030 – rising from some 25 million barrels a day of capacity in 2008 to some 35 million in 2035. The EIA report on the *International Energy Outlook* for 2010 estimates that Gulf oil production capacity will rise from 28 of the world total today to 31% in 2035 and do so in spite of major increases in production in other areas and in liquids from alternative fuels.[83]

This helps explain why senior US, Israel, Arab, European, and other policymakers actually do share a common perception that that the global economy is critically dependent on the stable

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[81] DOE/EIA, "World Oil Transit Chokepoints," December 30, 2011, http://www.eia.gov/cabs/world_oil_transit_chokepoints/full.html.

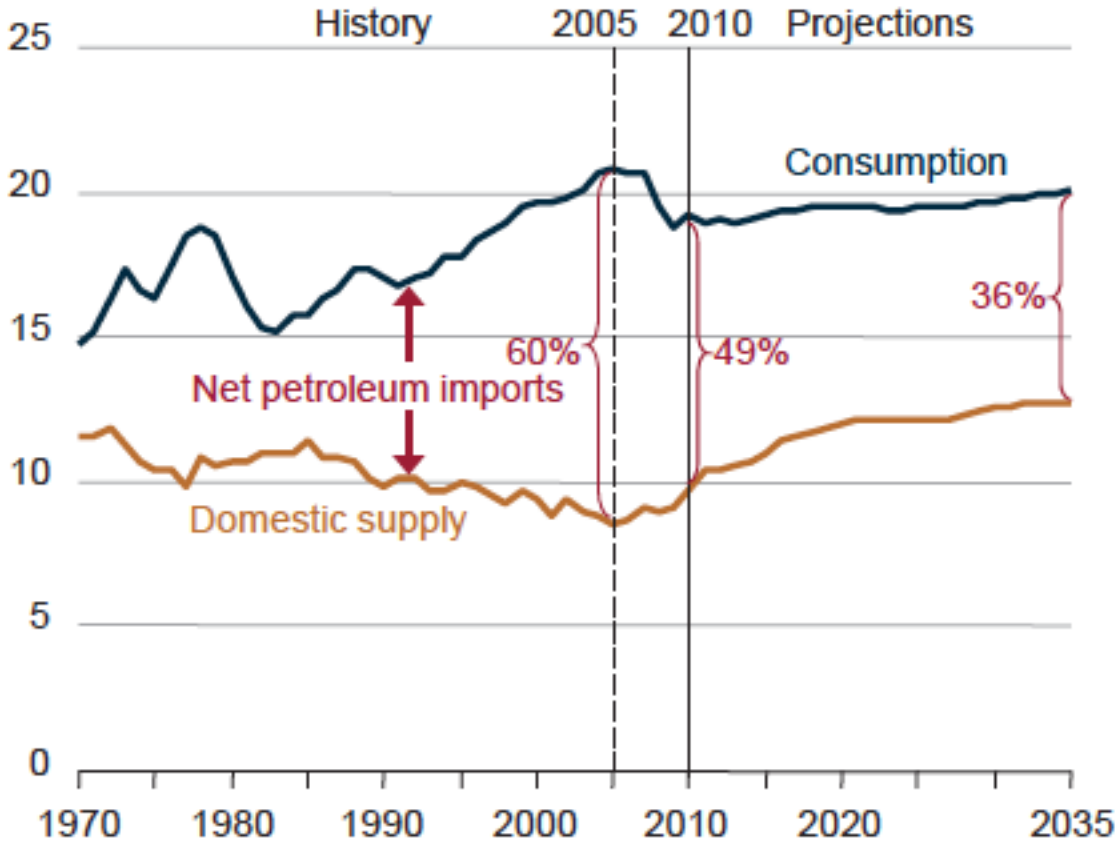
[82] :DOE/EIA, "World Oil Transit Chokepoints," December 30, 2011, http://www.eia.gov/cabs/world_oil_transit_chokepoints/full.html.

[83] U.S. Energy Information Administration, "International Energy Outlook 2010." July 2010. ftp://ftp.eia.doe.gov/forecasting/0484%282010%29.pdf

flow of Gulf oil exports. The politics of calling for "energy independence" have little – if any – impact on either U.S. threat perceptions or plans for the defense of the Gulf. In practice, U.S. national security planners accept the fact that the Gulf is and will remain is the location of a strategically vital share of the world's petroleum resources.

Figure III.30: Estimated US Dependence on Petroleum Imports: 1970-2035

(In Millions of Barrels Per Day, Reference Case)



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2012 Early Release Overview*, EIA/DOE, January 2012, p. 1, http://www.eia.gov/forecasts/aeo/er/.

Figure III.31: Growing Strategic Importance of Gulf Petroleum production: 2007-2035

In Millions of Barrels Per Day

	History (estimates)			Projections					Average annual percent change,
Region/country	2007	2008	2009	2015	2020	2025	2030	2035	2008-2035
OPEC*	**34.4**	**35.6**	**33.4**	**38.6**	**40.8**	**43.1**	**45.0**	**46.9**	**1.0**
Middle East	**23.1**	**24.2**	**22.5**	**27.0**	**28.9**	**31.2**	**33.3**	**35.2**	**1.4**
Iran	4.0	4.2	4.1	4.0	3.8	3.7	3.8	3.9	-0.3
Iraq	2.1	2.4	2.4	2.9	3.6	4.5	5.5	6.3	3.7
Kuwait	2.6	2.7	2.5	3.0	3.1	3.3	3.7	4.0	1.4
Qatar	1.1	1.2	1.2	1.9	2.1	2.3	2.5	2.5	2.7
Saudi Arabia	10.2	10.7	9.6	11.6	12.8	13.9	14.6	15.4	1.4
United Arab Emirates	2.9	3.0	2.8	3.6	3.5	3.5	3.3	3.2	0.2
North Africa	**4.0**	**4.1**	**3.9**	**3.5**	**3.4**	**3.4**	**3.3**	**3.2**	**-0.9**
Algeria	2.2	2.2	2.1	2.6	2.7	2.6	2.5	2.3	0.3
Libya	1.8	1.9	1.8	0.9	0.7	0.7	0.8	0.8	-3.0
Middle East (Non-OPEC)	**1.5**	**1.5**	**1.5**	**1.6**	**1.4**	**1.3**	**1.1**	**1.1**	**-1.3**
Oman	0.7	0.8	0.8	1.0	0.8	0.7	0.6	0.6	-1.1
Syria	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	-1.9
Yemen	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	-3.3
Other	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.6
Gas-to-liquids									
Qatar	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	15.5
Total world	**84.9**	**85.7**	**83.9**	**93.3**	**97.6**	**103.2**	**108.0**	**112.2**	**1.0**
OPEC share of world production	40%	42%	40%	41%	42%	42%	42%	42%	
Persian Gulf share of world production	27%	28%	27%	29%	30%	30%	31%	31%	

*OPEC=Organization of the Petroleum Exporting Countries (OPEC-13).
Note: Conventional liquids include crude oil and lease condensates, natural gas plant liquids, and refinery gains.
Sources: History: U.S. Energy Information Administration (EIA), Office of Energy Markets and End Use. Projections: EIA, Generate World Oil Balance

Source: EIA, "Reference Case," International Energy Outlook, 2011, pp. 229, 231

Iran's Growing Military Assets for Such a Mission

As the previous analysis has shown, the Iranian military establishment and the IRGC is steadily acquiring the kind of military assets that can halt or obstruct Gulf shipping and threaten the US' superior conventional naval forces in the region. Although US conventional power would defeat Iranian forces in a protracted conflict, Iran's arsenal of smart munitions, anti-ship cruise missiles (ASCMs), submarines, mines, and fast-attack craft potentially could inflict significant losses on US and allied forces and disrupt Gulf shipping in a surprise attack.

There is no one scenario Iran would have to use in "closing the Gulf." Iran might actually try to use all of its assets to close the Gulf, but this would almost force the US, its Southern Gulf allies, Britain, and France into an all out attack on Iran's conventional and asymmetric forces, and quite probably trigger a much broader set of attacks on Iran's nuclear, missile, and military production facilities. Such a war would also cut Iran off from exporting its own petroleum and from critical imposts – including food, refined petroleum products, and manufactured goods. Iran has far smaller economic reserves than the Southern Gulf states and is already vulnerable to being shit out of the world banking system.

In contrast, Iran has a host of different tools it could use to threaten traffic through the Gulf, harass shipping, carry sporadic "anonymous" or semi-deniable attacks, or conduct a careful campaign of attrition designed to keep up constant pressure but remain below the threshold that would provoke or justify a massive US-led campaign. If Iran stayed away from the Strait, it could also carry out such a campaign without threatening its own ability to export and import, and could seek the "weakest link" in the Southern Gulf to attack. Iran could play both a "short" and a "long" game – peaking its actions when this suited its interest, reducing or halting them if they became too provocative, and constantly changing its approach and tactics. This would also force the US and Southern Gulf states into a constant state of military alert and tension, greatly raising the cost to them ion countering Iran.

Iran's Submarines and Submersibles

Iran's most modern assets for challenging US conventional power in the Gulf and closing the Strait include submarines, surface craft, mines, anti-ship missiles, and a number of other systems[848586]

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[84] Gunzinger, Mark and Dougherty, Chris. "Outside-In: Operating from Range to Defeat Iran's Anti-Access and Area-Denial Threats." Center for Strategic and Budgetary Assessments. January 17, 2012. http://www.csbaonline.org/wp-content/uploads/2012/01/CSBA_SWA_FNL-WEB.pdf

[85] Binnie, Jeremy. "Iran Flexes Sea Denial Muscles." Jane's Defence Weekly. January 5, 2012.

[86] Richardson, Doug. "Iran Test-fires Missiles During 'Velayat 90' Naval Exercise." Jane's Missiles & Rockets. January 6, 2012.

Submarines[87][88]

Iran has attempted of offset some of the weaknesses of its major surface forces by obtaining three Type 877EKM Kilo-class submarines. The Kilo is a relatively modern and quiet submarine that first became operational in 1980. The Iranian Kilos are Type 877EKM export versions that are about 10 meters longer than the original Kilos and are equipped with advanced command and control systems.

Each Type 877EKM has a teardrop hull coated with anechoic tiles to reduce noise. It displaces approximately 3,076 tons when submerged, and 2,325 tons when surfaced. It is approximately 72.6 meters long, 9.9 meters in beam, has a draught of 6.6 meters, and is powered by three 1,895 horsepower generator sets, one 5,900 shaft horsepower electric motor, and one six-bladed propeller. It has a complement of 52 men and an endurance of 45 days. Its maximum submerged speed is 17 knots, and its maximum surface speed is 10 knots.

Each Kilo has six 530-mm torpedo tubes, including two wire-guided torpedo tubes. Only one torpedo can be wire guided at a time. The Kilo can carry a mix of 18 homing and wire-guided torpedoes or 24 mines. Russian torpedoes are available with ranges of 15-19 kilometers, speeds of 29-40 kn0ots, and warheads with 100-, 205-, and 305-kilogram weights. Their guidance systems include active sonar homing, passive homing, wire guidance, and active homing. Some reports indicate that Iran bought over 1,000 modern Soviet mines along with the Kilos and that the mines were equipped with modern magnetic, acoustic, and pressure censors. The Kilo has a remote anti-aircraft launcher with one preloaded missile in the sail, and Soviet versions have six SA-M-5 (Igla/SA-16) surface-to-air missiles stored inside. However, Russia supplied Iran only with the SA-14 (Strela). It can be modernized to carry Chinese YJ-1 or Russian Novator Alfa surface-to-surface missiles.

The Kilo has a maximum surface speed of 10 knots, a maximum submerged speed of about 17 knots, a minimum submerged operating depth of about 30 meters, an operation diving depth of 240 meters, and a maximum diving depth of 300 meters. The submarine also has a surface cruise range of 3,000-6,000 nautical miles and a submerged cruise range of 400 nautical miles – depending on speed and combat conditions.

Iran could use its submarines to strike against US naval forces, attack commercial vessels, and lay mines. Iran's ability to use its *Kilo*-class submarines to deliver mines and fire long-range wake-homing torpedoes give it a potential capability to strike in ways that make it difficult to detect or attack the submarine. Mines can be laid covertly in critical areas before a conflict, and the mines can be set to active and deactivate at predetermined intervals in ways that make mining difficult to detect and sweep. Long-range homing torpedoes can be used against tanker-sized targets at ranges in excess of 10 kilometers and to attack slow-moving combat ships that are not on alert and/or that lack sonars and countermeasures.

- 877EKM "*Kilo"*

[87] IISS Military Balance 2011

[88] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

- Number in Service: 3
- Speed: 17 kts
- Max Depth: 300 m
- Armament: 6 x 533 mm torpedo tubes; 18 torpedoes, or 24 mines

Iran does face significant operational problems in using its submarines in local waters, although not in most of the Gulf of Oman, or in the Arabian Sea and the Indian Ocean. Many areas of the Gulf do not favor submarine operations. The Gulf is about 241,000 square kilometers in area and stretches 990 kilometers from the Shatt al-Arab to the Straits of Hormuz. It is about 340 kilometers wide at its maximum width and about 225 kilometers wide for most of its length. While heat patterns disturb surface sonars, they also disturb submarine sonars, and the advantage to be slightly in favor of sophisticated surface ships and maritime patrol craft.

The deeper parts of the gulf are noisy enough to make ASW operations difficult, but large parts of the Gulf – including much of the southern Gulf on a line from Al Jubail across the tip of Qatar to about half way up the UAE – are less than 20 meters deep. The water is deeper on the Iranian side, but the maximum depth of the Gulf – located about 30 kilometers south of Qeys Island – is still only 88 meters.

This means that no point in the Gulf is deeper than the length of an SN-688 nuclear submarine. The keel to tower height of such a submarine alone is 16 meters. Even smaller coastal submarines have maneuver and bottom suction problems, cannot hide in thermoclines, or take advantage of diving for concealment or self-protection. This may explain why Iran is planning to relocate its submarines from Bandar Abbas inside the Gulf, to Chah Bahar in the Gulf of Oman, and is deepening the naval facility at Chah Bahar.[89]

The Strait of Hormuz at the entrance to the Gulf is about 180 kilometers long, but has a minimum width of 39 kilometers. In many areas, and only the two deep-water channels are suitable for major surface ship or submarine operations. Furthermore, a limited flow of fresh water and high evaporation makes the Gulf extremely salty. This creates complex underwater currents in the main channels at the Strait of Hormuz and complicates both submarine operations and submarine detection.

There are some areas in the Strait and the Gulf with considerable noise, but not of a type that masks submarine noise from sophisticated ASW detection systems of the kind operated by the US and the UK. Additionally, the minimum operating depth of the Kilo is 45 meters, and the limited depth of the area around the Straits can make submarine operations difficult.

Submarines are easier to operate in the Gulf of Oman, which is noisy enough to make ASW operations difficult, but such deployments would expose the Kilos to operations by US and British nuclear attack submarines. It is unlikely that Iran's Kilos could survive for any length of time if hunted by a US or British Navy air-surface SSN (nuclear submarine) hunter-killer team.[90]

In any case, the effectiveness of Iran's submarines will depend heavily on the degree of US involvement in ASW operations. The Arab Gulf navies only have token ASW capability. If the

[89] *Jane's Fighting Ships, 2002-2003,* pp. 336-343.

[90] See David Miller, "Submarines in the Gulf," *Military Technology,* 6/93, pp. 42-45; David Markov, "More Details Surface of Rubin's 'Kilo' Plans." *Jane's Intelligence Review*, May 1997, pp. 209-215.

Kilos do not face the US-led ASW forces, they could operate in or near the Gulf with considerable impunity. If they did face US-led forces, they might be able to attack a few tankers or conduct some mining efforts, but are unlikely to survive extended combat. This makes the Kilos a weapon that may be more effective in threatening Gulf shipping, or as a remote minelayer, than in naval combat. Certainly, Iran's purchase of the Kilos has already received close attention from the Southern Gulf states, and convinced them that they must take Iran more seriously.

In January-February 2012, Rear Admiral Farhad Amiri of the Iranian navy claimed that Iran was designing and producing two new indigenously developed submarines, the *Fateh*-class (500 tons) and the *Be'sat*-class (12,000 tons).[91] These claims, however, cannot be verified, and it is unclear, and it is unknown whether or not Iran will field these assets. They do, however, reflect the importance Iranian military personnel place on submarines as a potential asset to counter or upset US naval presence in the region.

Midget Submarines [92][93]

Iran's "midget" submarines represent another asset in the IRGC Navy's asymmetric doctrine. They are small, unobtrusive, and can operate in shallower waters than the much larger Kilo. While they are relatively unsophisticated in comparison to larger, more modern submarines, their small size and low noise profile can be used launch surprise attacks on US forces and covertly lay mines

- IS-120 Ghadir "midget" submarine
  - Number in Service: 19
  - Displacement: 120 tons
  - Speed: 11 kts surfaced/8 kts submerged
  - Max Depth: Unknown
  - Armament: 2 x 533 mm torpedoes. Can carry mines instead of torpedoes. Some reporting indicates that MANPADs are carried aboard.
  - Electronics: I Band surface search or navigation
  - Sonar: Active/Passive
- *Nahong*-class:
  - Number in Service: 1
  - Displacement: 100 tons
  - Speed: 8kts
  - Max Depth: 200 m
  - Armament: 2 x 533 mm torpedoes in drop collars. Can also carry 4 MDM-6 or EM-52 smart mines.
  - Electronics: Surface search or navigation radar.
  - Sonar: Bow-mounted active/passive sonar.
  - EW: ESM mast similar to Russian "Stop Light" type.

  Note: The *Nahong* is reportedly stationed in the Caspian Sea, but can be transported overland to the Gulf.

[91] Binnie, Jeremy. "Iranian sub fleet continues to expand." *Jane's Defence Weekly*. February 16, 2012.

[92] IISS Military Balance 2011

[93] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

While they would be unable to survive for any considerable length of time if they engaged prepared US forces, these small submarines can be widely dispersed, used without warning against targets without ASW capability or that seem to lack readiness. They do pose a threat to US forces or unprotected commercial craft in a limited asymmetric campaign or the opening stages of a major conflict. Importantly, it must be noted that the modern South Korean ASW corvette sunk by North Korea in 2010, the *Cheonan*, is thought to have been sunk by a North Koran *Yono*-class submarine, on which both the *Nahong*-class and the Ghadir are based.[94] Consequently, it is clear that these vessels are capable of posing a serious threat to better-equipped, more advanced forces.

Swimmer Delivery Vehicles (SDVs) [95][96]

The full capabilities of Iran's SDVs are not fully described in open source reporting. It is likely that their primary purpose is reconnaissance, sabotage, and the insertion of special operations soldiers and combat divers. They are likely restricted to short-range, coastal operations. Although it appears that their capability to threaten US forces directly are limited given their lack of armament and range, their small size and ability to elude detection render them potentially dangerous in a an asymmetric campaign, particularly in a sabotage capacity.

- Al-Sabehat 15:
  - Number in Service: 10 (est.)
  - Armament: Up to 17 limpet mines
- *Ghavasi*-class "Chariot":
  - Number in Service: 1
  - Armament: Unknown. Possibly limpet mines carried by combat divers, or a single 533 mm torpedo.

Iran's Bases and Other Assets for "Closing the Gulf"

Iran's submarines are only a small part of the assets it can use. While some analysis seems almost obsessed with combat at or near the Strait of Hormuz, Iran has naval bases, and small military, civil, and contingency facilities in many places in the Gulf and outside it in the Gulf of Oman. Quite aside from the Strait of Hormuz, it has the ability to operate from range of islands near the main shipping channels in the Gulf, including Sirri and three islands it has seized from the UAE: Abu Musa and the Greater and Lesser Tumbs.

Iranian Military Installations in the Gulf[97]

The numerous coastal and island facilities from which Iran could launch an asymmetric campaign to attempt to deny US forces access to the Gulf, or impede or halt commercial traffic include the following bases and facilities:

- Bandar-e Khomeini (30°25'41.42"N, 49° 4'50.18"E)

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[94] "South Korea Confirms North's Torpedo Sank Warship." Malaysian National News Agency. May 21, 2010.

[95] IISS Military Balance 2011

[96] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

[97] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

- The exact naval/military presence at Bandar-e Khomeini is unknown, and there does not appear to be one. However, given the this facility's strategic location, it likely has a military dimension.

- Bandar-e Mahshahr (30°29'43.62"N, 49°12'23.91"E)
  - This base is largely limited to housing patrol boats speedboats, some of which are armed with anti-ship missiles and torpedoes. As of June 30, 2009, its observable assets include the following:
    - 3 IPS-16 Paykaap
    - 5 Bavar
    - 1 IPS-18 Tir
    - 7 battle-ready speedboats
    - 30+ non-battle-ready speedboats
    - 1 Mk III patrol boat
    - 2 unknown patrol boats
    - 5-6 unidentified support/patrol boats

- Khorramshahr (30°26'2.71"N, 48°11'34.25"E)
  - Khorramshahr is the former headquarters of the Imperial Iranian Navy, and it is currently overseen and controlled by the IRGC-owned Shahid Mousavi industries group. It is the home to extensive repair and overhaul facilities of the IRGC Navy.

- Kharg Island (29°14'48.01"N, 50°19'48.88"E)
  - Kharg Island is the home of one of Iran's largest and most valuable petrochemical facilities. Its harbors are located alongside the protected eastern shore of the island with three observable individual harbors, though the other harbors are likely capable of hosting ships as well, and due to its strategic position, the island as a whole is probably capable of hosting much larger ships then what is visible.

    Kharg's visible naval assets are composed of medium-large sized fast-attack crafts (FACs) such as several unknown types such as a Thondar look-alike, but with smaller rear-mounted missiles and a different bridge. There are also four more FAC or patrol boat of an unknown type. In the same harbor, there are a number of high-quality speedboats.
    Three are also a number of other military installations on the island, including a HAWK battery as well as several HQ-2 SAM systems of questionable operability. As of March 4, 2004, observable assets at the base include the following:
    - 4 unknown patrol boats
    - 20+ speedboats
    - 1 unknown FAC

- Bandar-e Bushehr (28°58'2.58"N, 50°51'50.74"E)
  - This facility houses major assets of both the Iranian Navy and the IRGCN, as well as several of Iran's larger corvette-sized vessels. It also serves as a storage and repair/overhaul facility for Iran's naval assets.

    Bandar-e Bushehr is also the home base for two of the IRIN's *Bayandor*-class corvettes, one of which is the IRIS 82 Naqdi, which has been refitted with two C-802 anti-ship missiles and new guns, which gives it an appearance distinct from that of the 81 Bayandor. This facility also houses 6-7 Kaman/*Sina*-class missile boats, including possibly the P228 Gorz. The port also houses a number of speedboats and semi-submersible vessels, as well as two RH-53D Sea Stallions and six AB-212 ASW helicopters. As of June 16, 2009, observable assets at the base include the following:
    - 2 *Bayandor*-class corvettes
    - 6 Kaman/*Sina*-class FACs

- 2 Hendijan support ships
- Various speedboats

As of January 16, 2010, the following assets have been observed at the naval academy (28°53'47.19"N, 50°51'3.96"E):

- 1 unidentified midget submarine (23 m)
- 2 unidentified midget submarines (17 m & 13 m)
- 3 probably Al Sabehat 15 SDVs
- 1 hover craft
- Various other small craft

- Asalouyeh (27°27'21.08"N, 52°38'15.55"E
  - Inaugurated in 2008, this base is a recent addition to Iran's naval facilities. According to IRGCN Admiral Morteza Saffari, the base would house torpedo boats, FACs, shore-based anti-ship missiles, and possibly IPS-series patrol boats and Thondar FACs.

- 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)

  - Bandar-e Abbas has been the headquarters of the Iranian navy since 1977, and is located in the Strait of Hormuz itself. It is Iran's largest and most important naval base, as well as the home of the majority of Iran's submarines fleet, naval aviation assets, and hovercraft. Moreover, it also the home of Shahid Darvishi shipbuilders, which produces a large number of Iranian naval assets, including submersibles, landing craft, and tugboats. As of June 29, 2009, observable assets of the base include the following:
    - 1 Bandar Abbas support ship
    - A number of unknown support ships
    - 1 Jamaran (Mouj) frigate
    - 1 Alvand frigate
    - 3 Thondar missile boats
    - 2 IPS-16
    - 4 IPS-18
    - 31+ speedboats

- Jask (25°40'40.90"N, 57°51'4.54"E)
  - IRGC base located approximately 150 km to the east of the Straits of Hormuz. It is suspected to house Ghadir midget submarines, as well as F-27 maritime patrol craft.

- Bostanu (27° 2'58.22"N, 55°59'3.22"E)
  - Recently-established IRGCN FAC and midget submarine base. It is known to house ship repair and building facilities. Located approximately 25 km to the west of Bandar-e Abbas

- 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)
  - IRGC base. Suspected to house midget submarines and is suspected to house a large number of coastal anti-ship ballistic missile bunkers. As of December 21, 2003, observable assets at the base include the following:
    - 34+ speedboats

- 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)
        - Occupied by Iran but claimed by the UAE. Home to heavily fortified airstrips and AA guns.

Iran can also use shore-based anti-ship missile sites, other commercial ports, small harbors and contingency facilities to support and deploy a wide range of military assets. These assets include surface ships, mines, land-based anti-ship missiles, maritime patrol aircraft, combat aircraft with anti-ship missiles, UAVs, and UCAVs.

While Iran's asymmetric assets do not provide it with the ability to win a major direct conflict with US forces, the coordinated, simultaneous use of Iran's submarines, ASCMs, fast-attack craft, and swarm tactics in a first strike could inflict costly losses on US naval forces and commercial shipping in the Strait. These assets and tactics, in combination with Iran's large arsenal of naval mines, likely render Iran capable of closing the Gulf for a short while.

Moreover, Iran can retrofit many of the country's civilian watercraft with rockets, heavy machine guns, and the ability to lay mines. They do, however, represent Iran's most modern and potent resources for striking against US forces in the Gulf and rendering the Strait impassable.

Major Surface Warships[9899]

Iran's key surface ships have been described earlier, but a summary analysis of their size and armament illustrates the range of surface threats that Iran might deploy:

- *Sa'am*-class light patrol frigates:
    - Number in service: 3
    - Displacement: 1,100 tons
    - Crew: 125-146
    - Speed: 39 kts
    - Armament: BM-21 artillery rockets, 3 x GAM-B01 20mm cannon, 1 x 76mm gun, 2 x SM-1 SAM launchers, 4 x C-802 anti-ship missiles (CSS-N-4 *Sardine?)*, 2 x triple 324mm torpedo tubes (6 eff.), 1 x 114 mm gun

- *Mouj*-class corvette:
    - Number in service: 1
    - Displacement: 1,400 tons
    - Crew: 120-140
    - Speed: 28+ kts
    - Armament: 4 x C-802 anti-ship missiles (CSS-N-4 *Sardine?)*, 4 x SM-1 SAM launchers, 1 x 76mm gun, 2 x GAM-B01 20mm cannons, 1 x Bofors 40mm AA gun, 2 x triple 324mm torpedo tubes (6 eff.), 1 x 76mm gun

- *Bayandor* (PF-103) missile/gun corvette:
    - Number in service: 1
    - Displacement: 900-1,135 tons
    - Crew: 140
    - Speed: 20 kts
    - Armament: 4 x C-802 anti-ship missiles (CSS-N-4 *Sardine?)*, 1 x 76mm gun, 1 x Bofors 40mm AA gun, 2 x triple 324mm torpedo tubes

[98] IISS Military Balance 2011

[99] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

- Electronics:
  - Radar: AN/SPS-6C D Band Air Search, Decca 1226SS I band surface search, Raytheon 1650 I Band Nav, Mk 36 I/J band FC
  - Sonar: AN/SQS-17 Active/Passive sonar
  - EW: AN/WLR-1 ESM, AN/UPX-12B IFF

They are an uncertain asset. Their air and missile defenses are poor to mediocre, they are highly visible targets, and they are easy to detect by radar. Committing them to combat almost ensures their loss – as the US-Iranian "tanker war" during 1987-1988 demonstrated. Moreover, if Iran does use them, they constitute a highly visible act of act that is clearly attributable to Iran – justifying an immediate and massive response.

Fast-attack Watercraft, Speedboats, Patrol Craft, and Hovercraft.[100][101]

Iran seems much more likely to focus on the use of smaller ships. The IRGC Naval Branch and Iranian Navy have a wide range of smaller vessels that they can use for asymmetric warfare:

- *Kaman*-class and *Sina*-class guided missile patrol boats:
  - Number in service: 9 *Kaman*, 3 *Sina*
  - Armament: 4 x C-802 anti-ship missiles, 1 x OTO-Melara 76mm Rapid Fire gun, 1 x Bofors 40mm AA gun. Some *Sina* are equipped with a 20mm cannon instead of the Bofors 40mm
  - Electronics:
    - Radar: Signaal WM28 I/J band surface search and FC radar, Decca 1226SS I band surface search.
    - EW: Alligator ECM

- *Thondor*-class missile boat:
  - Number in service: 10
  - Displacement: 205 tons
  - Crew: 28
  - Speed: 35 kts
  - Armament: 4 x C-802 anti-ship missiles, 1 x twin 30mm AA gun, 1 x twin 23mm AA gun

- C-14 China Cat:
  - Number in service: 4-10
  - Displacement: 19 tons
  - Crew: 10
  - Speed: 55 kts
  - Armament: 4 x TL-10 Kowsar light anti-ship missiles, or 2 x C-704 Nasr anti-ship missiles, or 1x 122mm MLRS (16 barrels), 1 x 23mm cannon, and 1 x 12.7mm heavy machine guns on some craft

- Mk-13 Patrol Craft:
  - Number in service: 4-10
  - Armament: 2 x TL-10 anti-ship missile launchers, 2 x 324mm torpedo tubes

- *Kajami*-class (Taedong-B) Submersible Torpedo Boat
  - Number in service: 1-3 (est.)
  - Speed: 40 kts (est.)
  - Submerged speed: 4 kts (est.)

[100] IISS Military Balance 2011

[101] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

- Armament: 2 x 324mm torpedoes

- *Gahjae*-class (Taedong-C) semi submersible torpedo boat:
  - Number in service: 5 (est.)
  - Speed: 40 kts (est.(
  - Submerged speed: unknown
  - Armament: 2 x 324mm torpedoes

- IPS-28 *Tir*-class torpedo boat:
  - Number in service: 10
  - Displacement: 28.16 tons
  - Crew: 6
  - Speed: 52 kts
  - Armament: 2 x 533mm, 1 x 12.7mm heavy machine gun

- IPS-16 fast attack craft (*Peykaap, Bavar, Zolfaqar*):
  - Number in service: 20 (est.) *Paykaap*, 10-25 (est.) *Bavar*, 8-10 (est.) *Zolfaqar*
  - Displacement 13.75 tons
  - Crew: 3
  - Speed: 52 kts
  - Armament:
    - *Paykaap*: 2 x 324mm torpedo tubes, small arms
    - *Bavar*: 2 x C-701 "Kowsar"anti-ship missiles, 2 x 324mm torpedo tubes, small arms
    - *Zolfaqar*: 2 x C-704 "Nasr" anti-ship missiles, 2 x 12.7 mm heavy machine guns

- *Dalam*-class torpedo boat:
  - Number in service: 2 (est.)
  - Status largely unknown. Capable of firing Russian Shkval (Hoot) supercavitating rocket torpedoes

- *Tarlan*-class torpedo boat:
  - Number in service: 15 (est.)
  - Displacement: 8.5 tons
  - Speed: 58 kts
  - Armament: 1 x Shkval (hoot) rocket torpedo or other 533mm torpedo, 1 x 12.7mm heavy machine gun

- Explosive motor boat:
  - Number in service: unknown
  - Crew: 1
  - Warhead: 500lb shaped charge (est.)
  - Escape vehicle: 1 x Yamaha Waverunner VX Sport jet ski
  - Note: This craft is designed to destroy larger vessels by ramming them. The pilot, however, is not intended to die in the attack, and is theoretically capable of escaping the vehicle before impact on a jet ski. The craft is rumored to be piloted by specially IRGC special forces operatives similar to combat divers.

- *Seraj-1*-class (Bladerunner) MLRS boat:
  - Number in service: unknown
  - Displacement: 2.5 tons
  - Speed: 50-62 kts
  - Armament: 1 x 12.7mm heavy machine gun mounted on the bow, 107mm MLRS mounted above the cockpit

- FB RIB-33 high speed patrol boats:

- Number in service: unknown
- Displacement: 3.2+ tons
- Crew: 3
- Speed: 57 kts (max.)
- Armament: 1 x 11-barrel MLRS

- FB MIL-40 MLRS craft:
  - Number in service: unknown
  - Displacement: 6 tons
  - Crew: 3
  - Speed: 62 kts
  - Armament: 1 x 11-barrel 107 mm MLRS, 1 x 12.7mm heavy machine gun

- MIL-55 HSPB:
  - Number in service: unknown
  - Displacement: 15.3 tons
  - Crew: 5
  - Speed: 68 kts
  - Armament: 1 x 11-barrel 107mm MLRS, 1 x 12.7mm heavy machine gun, mines

- *Torough*-class Patrol Boat (Boghammar):
  - Number in service: unknown
  - Displacement: 6.4 tons
  - Speed: 45 kts
  - Armament: Variable. Typical armament consists of 1 x 12.7mm heavy machine gun and 1 x 107mm MLRS

- *Ashoura*-class (MIG-G-0800):
  - Number in service: unknown
  - Armament: Variable. Typical armament can consist of 1 x 12.7mm heavy machine gun, 1 x 12-barrel 107mm rocket launcher, or 1 x M-08 (Sadaf-1/2) mine. Other possible armaments include 107mm recoilless rockets, RPG-7 launchers, and small arms.

- Type-4 high-speed patrol boats:
  - Specific stats unknown. Reportedly similar to the *Ashoura*-class of speed boats.

- Murce MIG-G-0900:
  - Number in service: 20
  - Armament: 1 x 12.7mm heavy machine gun, 1 x 11-barrel 107mm MLRS.

- Parvin PGM-9
  - Number in service: 3
  - Displacement: 102-142 tons
  - Crew: 30
  - Speed: 17 knots
  - Armament: 1 x 40mm cannon, 2 x 20mm cannons, 2 x 12.7mm heavy machine guns, 1 x 81mm mortar
  - Electronics: Furunno I Band Navigation

- MIG-S-2600:
  - Number in service: unknown
  - Displacement: 82 tons
  - Speed: 40 kts
  - Armament: 1 x BM-21 MRLS, 1 x twin ZU-23mm cannon
  - Radar: Decca 1226

- 65' Mark III patrol boat:
  - Number in service: 10
  - Displacement: 28-36 tons
  - Crew: 5
  - Speed: 26 kts
  - Armament: Variable. Armament can consist of 12.7mm heavy machine guns, 7.62mm machine guns, Mk 16 20mm cannon, Mk 19 40mm grenade launcher, Mk3 40mm Bofors cannon, Mk4 60mm, or Mk2 81mm mortar. Small arms.

- Pashe (MIG-G-1900):
  - Based on US patrol boats. Reportedly armed with a ZU-23 23mm cannon. Also equipped with surface search/navigation radar.

- Ghaem (MIG-S-1800):
  - IRGCN patrol craft. Armament reportedly limited to small arms.

- Kashdom-II inshore patrol craft:
  - Number in service: 15
  - Displacement: 17.5 tons
  - Speed: 50 kts
  - Armament: 1 x 23mm cannon, 1 x 12.7 mm heavy machine gun

- Peterson patrol boat:
  - Number in service: 30
  - Displacement: 20.1 tons
  - Crew: 5
  - Speed: 26 kts
  - Armament: 2 x 12.7mm heavy machine guns

- BH-7 "Wellington" Mk5 hovercraft:
  - Number in service: 2-6
  - Displacement: 50 tons
  - Speed: 30-60 kts
  - Armament: 2 x C-802 anti-ship missiles, 2 x 12.7mm heavy machine guns

These craft are capable of carrying machine guns, rockets, missiles, and torpedoes, and can be adapted for to lay mines. These assets, while unsophisticated, could be used to swarm US ships and overwhelm their defenses through sheer mobility and volume of fire. Alternatively, they could be used to conduct sporadic attacks in a long battle of attrition operating unpredictably from bases or hidden small sites anywhere in the Gulf or outside it.

Shore and Ship-based ASCMs [102][103]

Iran possesses a large number of shore, ship-based, and air-launched anti-ship missiles and cruise missiles (ACSMs), most of which are operated by elements of the IRGC. These assets include shore batteries of ASCMs along Iran's coast and on its islands in the Gulf, many of which are on mobile launchers. It is notable that the US never successfully targeted Iraq's anti-ship missile assets during the war to liberate Kuwait although they were deployed along a far smaller coastal

[102] IISS Military Balance 2011

[103] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

area. Many of Iran's missiles can be deployed on the smaller, harder to detect, and more expendable ships and boats in the Iranian Navy and the Naval Branch of the IRGC, or on Iran's fighters. Some could be remotely target by maritime patrol aircraft or UAVs.

Most of Iran's missiles are either Chinese-made, or derive from Chinese designs. They include the CSS-N-2 Silkworm, CSS-C-3 Seersucker (C-201), CSS-N-4 Sardine (C-801 Noor, C-801K), CSS-N-8 Saccade (C-802), C-701/TL-10 Kowsar, Sedjil, Ra'ad, Nasr, and the Ghader.[104][105]

- CSS-N-4 Sardine/C-801 Noor*
  - Number in service: 60-200 (includes all C-800 series missiles)
  - Range: 80km
  - Warhead: 165 kg
  - Speed: High subsonic
  - Launch platform(s): Truck launchers, Alvand/Mouj FFGs, Bayandor FSG, Hamzeh FSG, Kaman PTG, Thondar PCFG. Kilo possible.
  - * In January 2012, *Janes* reported that Iran tested a reportedly upgraded version of the C-802 Noor missile during the Velayat-90 war games. The new missile, called the "Ghader," has a 200 km range according to Iranian sources. The credibility of these reports, as well as potential launch platforms for the missile remain uncertain.[106]
  -
- C-801K (air-launched version of the C-801 Noor):
  - Range: 37 km
  - Warhead: 165 kg
  - Speed: High subsonic
  - Launch platforms: F-4 Phantom, Su-24 Fencer, Mi-17 Hip.
  -
- CSS-N-5 Saccade/C-802
  - Range: 120 km
  - Warhead: 165 kg
  - Speed: High subsonic
  - Launch platforms: Truck launchers, Alvand/Mowj FFGs, Bayandor FSG, Hamzeh FSG, Kaman PTG, Thondar PCFG.
  - In 2010, Iran displayed the air-launched C-802k "Ghaem" next to a photo of an F-4 Phantom, which could potentially reflect its intended delivery platform. Some reporting indicates that this version of the missile possesses a greater operational range than the C-802.
  -
- C-701/TL-10 Kowsar:*
  - Launch platforms: trucks, shore batteries, ships, helicopters, and jets.
  - Kowsar TL-10A:
    - Range: 3-15 km
    - Speed: Mach .85
    - Warhead: 30 kg semi-armor piercing
    - Guidance: TV
  - Kowsar 1/C-701T:
    - Range: 4-15 km
    - Speed: Mach .8

[104] IISS Military Balance 2011

[105] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

[106] Richardson, Doug. "Iran Test-Fires Missiles During 'Velayat 90' Naval Exercise." Jane's Missiles & Rockets, January 6, 2012.

        - Warhead 29 kg semi-armor piercing
        - Guidance: TV
    - Kowsar 2:
        - Little info. Likely IR-guided.
    - Kowsar 3/C-701R:
        - Range 4-25 km
        - Speed: Mach .78
        - Warhead: 29 kg
        - Guidance: Radar
        - * In February 2, *Jane's* reported that Iran unveiled a domestically-produced version of the C-701 called the "Zafar." Its exact capabilities remain unknown and unconfirmed.[107]
- C-704/Nasr:
    - Range: 8-35 km
    - Warhead: 130 kg
    - Speed: Mach .9
    - Guidance: Radar
    - Launch platforms: Shore and ship-based launchers
- CSS-C-3 Seersucker/HY-2
    - Number in service: 300
    - Range: 90 km
    - Warhead: 450 kg
    - Speed: High subsonic
    - Launch platforms: Truck or tracked launchers.
- Ra'ad:
    - Number in service: Unknown
    - Range: 360 km (claimed/unverified)
    - Warhead: 450 kg
    - Speed: High subsonic
    - Launch platforms: Truck or tracked launchers.
- RGM-84A Harpoon:
    - Range: 140 km
    - Warhead: 221 kg penetrating blast
    - Speed: Mach .8
    - Note: These missiles date to the late 1970s. Long thought to have been withdrawn from service, they have been sighted at Iranian military parades. The continued effectiveness of these units cannot be verified.

While many of these missiles are relatively short-ranged, the Strait of Hormuz is only 34 miles wide at its narrowest point, and Iran has many islands near the shipping channels. Smaller ships and boast are harder to detect by radar, and Iran might mount some missiles on commercial ships – a tactic it has practiced with other types of missiles. Some experts also feel that Iran could potentially use high-volume missile barrages to overwhelm US shipboard defenses and impede minesweeping operations.

Anti-Ship Ballistic Missile: The Khalij Fars

Iran is seeking to acquire and deploy far more advanced anti-ship missiles, although its claims seem grossly exaggerated. For example, the commander of the IRGC, Brigadier General

[107] Binnie, Jeremy. "Iran Rolls Out Zafar Missiles." Jane's Defence Weekly. January 6, 2012.

Mohammed Ali Jafari, announced the deployment of a "smart" anti-ship ballistic missile, the *Khalij Fars*, in a February 8, 2011 press conference. According to Iranian press reports, the *Khalij Fars* is allegedly capable of striking at moving ships in the Gulf at ranges of up to 150 km.[108]

- Khalij Fars
  - Number in Service: Unknown
  - Warhead: 650 kg
  - Speed (terminal): Mach 3 (est.)

The *Tehran Times* has reported that Jafari also claimed that Iran had developed "supersonic" smart ballistic missiles which "cannot be tracked and can hit targets with high precision" as well as "coastal radars with a range of 300 km."[109] General Jafari also stated that the IRGC had recently completed studies on two mobile radars with a range of 60 km, which could be attached to small destroyers. Similarly, the Islamic Republic News Agency quoted General Jafari as stating that, "Iran is mass producing a smart ballistic missile for sea targets with a speed three times more than the speed of sound." The Iranian Students News Agency quoted General Jafari as stating the following regarding the new weapon:

> "As the enemy's threats will likely come from the sea, air, and by missiles, the Revolutionary Guard has been equipped with capabilities to neutralize the enemy's advanced technology."[110]

While these claims remain unconfirmed and some seem sharply exaggerated, Iran could potentially upset the regional balance if it did reach such a level of sophistication in guidance, range, reliability, and operational accuracy. It not only would threaten the naval balance, but potentially allow Iran to develop conventionally armed missiles that could strike at high-value targets such as desalination plants, power plants, oil platforms, and military installations with precision.

Naval Mines

Naval mines can be used in a wide range of ways ranging from free floating, scattered mines that Iran could deny it had deliberately employed to sophisticated laying of "smart" mines. Iran could use almost any ship – Navy, IRGC, or commercial – to try to limit the freedom of movement for US and allied naval forces, block traffic into ports and petroleum facilities, and impede Gulf shipping traffic.

Iran has a considerable capacity to lay mines. It has a stock of some 2,000-3,000 naval mines, as well as the number of vessels it could muster to lay them. In addition to the aforementioned combat vessels, Iran could use a wide range of other surface ships to mine a given portion of the Gulf (any surface ship can release mines).

Although the exact composition of Iran's arsenal of mines is highly uncertain, it is thought to include significant stocks of more advanced "smart mines" like the Russian MDM-6 and the Chinese EM-52, as well as the Chinese MC-52, the EM-55, the EM-31, and the EM-11.

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[108] "Iran mass producing smart ballistic missiles: IRGC chief." Tehran Times, February 8, 2011.

[109] "Iran mass producing smart ballistic missiles: IRGC chief." Tehran Times, February 8, 2011.

[110] Iranian Students News Agency, February 7, 2011.

- MDM-6:
  - Type: Bottom
  - Warhead: 1,100 kg
  - Operational Depth: 12-120 m
  - Fusing: Magnetic, acoustic, pressure

  Note: The MDM-6 is a sophisticated mine that detonates in response to magnetic, acoustic, or pressure influences within a radius of 50-60 meters, and it has an operating depth of approximately 12-120 meters. It is a moored mine that fires a torpedo-like warhead when it senses a ship, and the mine's warhead consists of 1,100 kg of high explosive. The MDM-6 can be laid by number of systems, including the 533 mm torpedo tubes of Iran's *Kilo*-class submarines, or from surface ships with the appropriate rail and stern ramps.[111]

- EM-52:
  - Type: Bottom, rising
  - Warhead: 300 kg
  - Operational Depth: 4.8-183 m
  - Fusing: Acoustic

  Note: This mine is guided in its "rocket" ascent phase. It can be deployed with a submarine's torpedo tubes. It is considered to be Iran's most potent mine, and, according to some reporting, may be able to pierce the keel of a US aircraft carrier.[112]

The EM-52 and the MDM-6, as well as any other similar "smart" mines in Iran's arsenal, are capable of tracking multiple targets, and can be difficult to detect as they rest on or near the seafloor. Even relatively unsophisticated "dumb" mines, however, present a threat to US forces and Gulf shipping, as they are not easily detected or removed, and can be laid in large numbers by almost any ship that has the capacity to physically carry them.

For instance, an Iranian M-08 World War I-era mine nearly sank the USS Samuel B Roberts after the ship struck it on April 14, 1988.[113] Although the M-08 is an antiquated moored contact mine, it nearly sank an advanced US naval ship that was caught off guard. Consequently, Iran's ability to lay a large number of mines in a short period of time remains a critical aspect to its stated capability to deny US forces access to the Gulf, and impede or halt shipping through the Strait.

The fact that Iran can lay mines in so many different ways over so wide an area also presents major problems in terms of mine warfare. The US can deploy a force of at least four minesweepers, an extensive ship-based force of minesweeping helicopters, and unmanned undersea vehicles. The Saudi Navy has four aging US Navy MSC-322 (Addriyah-class) minesweepers, and three modern UK Sandown (Al Jawf-class) mine hunters, and several southern Gulf navies have minesweeping helicopters. The US has also made upgrading its mine warfare capabilities in the Gulf a key part of the new strategy that it announced in January 2012, and the US Navy has extensively planned for both mine warfare in the Gulf under current conditions and upgrading its forces and cooperation with its allies in the future.

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[111] Talmadge, Caitlin. "Closing Time: Assessing The Iranian Threat to Close the Strait of Hormuz." http://belfercenter.ksg.harvard.edu/files/IS3301_pp082-117_Talmadge.pdf

[112] Fisher, Richard D. "China's Military Modernization: Building for Regional and Global Reach." September 2008

[113] Love, Robert William. "History of the US Navy." Harrisburg: Stackpole Books. 1992

The US and its Arab Gulf allies do, however, now have limited assets relative to the area that have to be covered to deal with some many possible forms of mine laying over so wide and area, however, and the Sandowns failed to detect an Iraq mine field during the naval campaign in 1991. This helps explain why the US announced in early 2012 that would deploy a "mothership" (converted amphibious assault ship) to the Gulf to support mine warfare vessels and SOF.

Maritime Patrol Aircraft[114][115]

Iran's P-3F maritime patrol aircraft and reconnaissance are aging, and are large, vulnerable slow fliers that are easy to detect. Nevertheless, Iran has some smaller aircraft for these missions and any of these aircraft could still play a significant role in some asymmetric scenarios

- P-3F Orion:
  - Number in service: 2-3
  - Iran's Orions are the most capable patrol aircraft of Iran's navy, and they carry out ASW and maritime patrol operations. According to reports from the Gulf, however, these sensors these aircraft possess have degraded as a result of wear and tear, and a lack of spare/replacement parts.

- Da-20A Falcon:
  - Number in service: 1-3
  - Iran's Da-20As have reportedly been fitted for electronic warfare and electronics intelligence missions. Their configuration and mission capability is uncertain.

- C-130H:
  - Number in service: 5 (est.)
  - Iran uses its C-130s for transport as well as aerial reconnaissance. These aircraft could potentially be used as a platform for laying mines as well.

- Fokker F-27 400M and 600M Friendship:
  - Number in service: 4 (2 of each class)
  - These aircraft are used by the IRGCN as logistics and patrol aircraft. Some reporting indicates that they have been adapted for mine-laying operations.

- DO-228:
  - Number in service: 2 (est.)
  - Twin engine maritime patrol aircraft fitted with surface search radar.

Helicopters[116][117]

Iran's naval aviation assets include a number of multipurpose helicopters, most which are used for transport, logistics, and can be fitted with machine guns and rockets. Iran also possesses approximately 50 AH-1J dedicated helicopter gunships. Their capabilities, however, have likely deteriorated without access to spare parts and modern weapons.

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[114] IISS Military Balance 2011

[115] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

[116] IISS Military Balance 2011

[117] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

Torpedoes[118][119]

As noted earlier, Iran has a variety of torpedoes. Some can be used at long ranges. Others can equip remotely controlled small craft or suicide vessels

- 53-65KE:
  - Range: 26 km at low speed, 11 km at high speed
  - Speed: 44-65 kts
  - Guidance: Wake-homing
  - Fusing: Contact and magnetic
  - Warhead: 300 kg
  - Depth: 0-366 m

- TEST-71MKE & ME-NK:
  - Range: 12.8 km-26 km
  - Guidance: Active/Passive homing (wire guided)
  - Fusing: Contact and magnetic
  - Warhead: 205 kg
  - Depth: 0-366 m

- PT-97W/YT534W1:
  - Range: 8.7 km-13 km
  - Speed: 35-40 kts
  - Guidance: Passive acoustic homing, wake-homing
  - Fusing: Contact and magnetic
  - Warhead: 250 kg
  - Depth: 2-14 m

- CHT-02D:
  - Range: 8.7-13 km
  - Speed: 35-40kts
  - Guidance: Passive acoustic homing, wake-homing
  - Fusing: Contact and acoustic
  - Warhead: 250 kg
  - Depth: 2-14 m

- VA-111E Shkval "Hoot":
  - Range 11-15 km
  - Speed: about 200 kts
  - Guidance: Internal – straight line
  - Fusing: Magnetic or timer
  - Warhead: 700 kg
  - Depth: 6 m

  Note: The VA-111E is a supercavitating torpedo. This means that the torpedo generates a gas cavity around itself while it moves through water, which enables it to move at extremely high speed. As a result, however, it does not have sonar tracking, and can only travel in a straight line. These properties render the VA-11E an excellent weapon for an ambush or first strike on unsuspecting targets, but disadvantage it in the sense that it cannot "lock on" a target.

- Mk-44/46 & ET-52:

[118] IISS Military Balance 2011

[119] "Iranian Military Capability 2011." Open Source Intelligence Project 2011. January 2011.

- Range: 5.6 km
- Speed: 30 kts
- Guidance: VHF active. Capable of helical search patterns.
- Fusing: Contact
- Warhead: 34 kg
- Depth: 0-305 m

- DPRK 32 cm Torpedo:
  - Range: 4.8 km
  - Speed: Approximately 30 – 35 kts
  - Guidance: Passive acoustic homing, wake-homing
  - Fusing: Contact and magnetic
  - Warhead: Approximately 45 kg
  - Depth: 2-14 m

UCAVs and UAVs

Iran possesses a number of UAVs and UCAVs of varying sophistication and capability, including the *R'ad*, the *Karrar*, the *Ababil*, and *Mohadjer*. Outfitted with explosives, they could be used as remotely-piloted bombs. As in the case of Iran's ASCMs and light fast-attack craft, significant numbers of these assets armed with an explosive charge could be able to swarm US ships and overwhelm their defenses. Both the *Karrar* and the *R'ad* are known to have ranges in excess of 1,000 km, and can destroy targets with guided munitions.[120]

Figure III.20 provides a rough unclassified summary of the names, stated purposes and capabilities, and the ranges of Iran's UAVs and UCAVs.

US and Arab Gulf Options for Competing with Iranian

Many of the US and Southern Gulf options for dealing with Iran's conventional and asymmetric forces have already been discussed. The US, Britain and France, the Southern Gulf states, and other Arab states have long been reacting to both the threat posed by Iran's conventional forces and growing asymmetric capabilities**,** and its ties to non-state actors. Nevertheless, the net impact of Iran's extensive asymmetric assets and doctrine on Iranian, US, and Gulf capabilities remains uncertain. Neither the US nor any other conventional power has yet engaged asymmetric forces of the same size and magnitude of those of Iran, and a net assessment of Iran's capabilities on the Gulf military balance is problematic and theoretical at best.

What is certain is that Iran's doctrine of using light fast-attack watercraft, submarines, mines, missile barrages, and other irregular warfare assets provides Iran with the ability to strike at critical infrastructure, Gulf commerce, larger conventional forces with little or no warning, and give it the potential capability to halt shipping in and out of the Gulf for a short period of time. This makes Iran's asymmetric warfare capabilities are of key concern when assessing Iran's capacity to challenge the US and other large conventional military forces in the region.

US Forces in the Gulf

The US and its Gulf allies have established a major conventional presence in the Gulf in response to Iran's expanding capacity to wage asymmetric warfare. The US maintains

[120] "Hizballah Possesses Advanced Iranian-Controlled Air Drone System." Al-Siyasah Online, 06 Nov. "10.

installations in Kuwait (several jointly operated air and military facilities);, Qatar (key air and command and control facilities), Bahrain (where the US 5th fleet is currently based), and Oman (preposition and contingency facilities).

The US cooperates closely with Saudi Arabia and the UAEs, and has large military divisor and contractor support groups in both countries. Britain and France also play a major role. Britain is particularly important in supplying key weapons to Saudi Arabia and in supporting Oman, and France plays an important role in Djibouti and the security of the Red Sea.

The US is strengthening its own forces. In January of 2011, the US announced that it would retool and modify an aging amphibious transport ship, the USS Ponce, to become what the US military has designated as an Afloat Forward Staging Base (AFSB) for military operations in the Middle East. According to US military documents obtained by the Washington Post, the purpose of this vessel will be a floating base for US special operations personnel, mine-clearing craft (MH-53 Sea Dragon helicopters), and will support patrol boats.

The documents indicated that the command vessel will be able to launch the high-speed watercraft and helicopters used by US Special Forces.[121] Additionally, it must be noted that this ship will serve as an interim vessel before two purpose-built AFSBs can enter service in 2014.[122] Given its stated capabilities and area of operations, this AFSB and its predecessors will likely be employed as bases to counter Iran's mature arsenal of mines, and strike at Iran's asymmetric assets in the Gulf if necessary. There already have been reports that the US is also building up its mine forces in the Gulf for this purpose and beginning to deploy added special forces capabilities.

The US is also reshaping its entire force posture in the Gulf to take account of its withdrawal from Iraq and the growth of the Iranian threat in other ways. It is deploying advanced missile defense cruisers to the Mediterranean, and can rapidly deploy added defenses to the Gulf. It is steadily improving its intelligence, surveillance, and reconnaissance capabilities in the region, and is equipping its long-range B-2 stealth bombers with new hard target bombs. In a crisis, it could rapidly deploy its F-22 fighters that have an additional stealth attack capability.

In addition to traditional conventional systems, the US has developed several assets to counter the kinds of threats that Iran's asymmetric fast-attack craft and swarming tactics present – although most are still in the R&D stage. These assets include the Littoral Combat Ship (LCS) and the US Navy's Spike missile program. The LCS was designed to act as a counter to the kinds of threats posed by Iran's light fast-attack craft and other asymmetric assets. It has a shallow draft, and its design emphasizes speed, maneuverability, and mission flexibility.[123]

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[121] "US Plans to Send 'Floating Commando Base' to Mideast, Documents Show." Haaretz. January 28, 2012. http://www.haaretz.com/news/middle-east/u-s-plans-to-send-floating-commando-base-to-mideast-documents-show-1.409634

[122] Cavas, Christopher P. "New Floating Base Ships Coming for U.S. Navy." Defensenews.com. January 27, 2012. http://www.defensenews.com/article/20120127/DEFREG02/301270010/New-Floating-Base-Ships-Coming-U-S-Navy

[123] US Congressional Research Agency. "Navy Littoral Combat Ship (LCS) Program: Background, Issues, and Options for Congress." RL33741, March 18, 2011. Ronald O'Rourke. http://assets.opencrs.com/rpts/RL33741_20110318.pdf

The Spike missile, while not yet in active service, is a small guided missile being developed by the US Navy as an armament for UAVs and surface ships. The Spike is an optically-guided fire-and-forget missile with a range of approximately two miles and carries a 2.2 kg warhead.[124] While versatile, the Spike could be used to great effect against Iran's light, fast-attack crafts. Although these systems are unproven, they are revealing in terms of the US' perception of asymmetric threats and its continuing efforts to counter such threats directly.

The US Navy's weakness in countermine warfare, however, remains a critical area of concern for US military planners and policy makers in the case of a conflict with Iran. In 2006-2007, the US Navy retired and sold its modern *Osprey*-class minesweepers, and its CH-53/MH-53 helicopters are aging. The Navy has decided to replace both systems with the LCS and the MH-60S Seahawk helicopter in the stead of the *Osprey* and the CH-53/MH-53, respectively. While the Navy currently has 12 LCS' and 154 MH-60 helicopters in service, the systems they employ to detect and destroy mines have suffered setbacks in terms of development, performance, and delivery, and are largely untested in conflict.[125][126] These include the following: [127][128]

- Raytheon Airborne Mine Neutralization System (AMNS – MH-60S only)
- BAE Systems Archerfish (expendable underwater vehicle that destroys or detonates mines)
- Northrop Grumman Rapid Airborne Mine Clearance System (RAMICS)
- Raytheon AN/AQS-20A towed sonar
- Northrop Grumman Airborne Laser Mine Detection System (AN/AES-1 ALMDS)
- EDO Corporation Organic Airborne And Surface Influence Sweet (OASIS)

Moreover, the mine warfare modules for the LCS are still in development. The LCS class is not currently as capable in countermine warfare as a dedicated minesweeping platform such as the *Osprey*, and the MH-60S will be forced to rely on the systems listed above as, it does not have the power to pull the same hydrofoil mine detecting platforms that the MH-53 can. These weaknesses and uncertainties present a challenge when confronting Iran's ability to lay large numbers of mines in a relatively short period of time.

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[124] Felix, Steven. "U.S. Navy Spike Missile System: A New Generation of Miniature Precision Guided Weapons." May 1, 2006. http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA500538

[125] "LCS & MH-60S Mine Counter-Measures Continue Development." Defense Industry Daily. February 28, 2012. http://www.defenseindustrydaily.com/mh60s-airborne-mine-countermeasures-continues-development-01604/

[126] US Congressional Research Agency. "Navy Littoral Combat Ship (LCS) Program: Background, Issues, and Options for Congress." RL33741, March 18, 2011. Ronald O'Rourke. http://assets.opencrs.com/rpts/RL33741_20110318.pdf

[127] "LCS & MH-60S Mine Counter-Measures Continue Development." Defense Industry Daily. February 28, 2012. http://www.defenseindustrydaily.com/mh60s-airborne-mine-countermeasures-continues-development-01604/

[128] US Congressional Research Agency. "Navy Littoral Combat Ship (LCS) Program: Background, Issues, and Options for Congress." RL33741, March 18, 2011. Ronald O'Rourke. http://assets.opencrs.com/rpts/RL33741_20110318.pdf

The US Partnership With Southern Gulf, Other Regional, British, and French forces

As has already been summarize in **Figures III.3** and **III.4**, US forces in the region are complimented by those of its Gulf allies – which already possess advanced aircraft, surface-to-air missiles, ships, and land weapons, its ties to other allies like Jordan, and its long standing partnership with Britain and France.

As is described in more detail in Chapter VI, the US continues to furnish its regional allies with advanced weapons systems. **Figure III.32** and **Figure III.33** provide a comprehensive list of arms sales to Iraq and the Southern Gulf states from 2002 to the present. On October 20, 2010, the US Defense Security Cooperation Agency (DSCA) notified Congress of a 10-year $60 billion US arms sale to Saudi Arabia. The deal includes 84 F-15 Saudi Advanced (SA) fighter aircraft, upgrades for the existing fleet of Royal Saudi Air Force F-15S multi-role fighters, 70 AH-64 Apache attack helicopters (24 of which will be equipped with the Longbow Fire Control Radar system), 72 UH-60M Blackhawk utility helicopters, 36 AH-6I "Little Bird" light attack helicopters, and 12 MD-530F light turbine helicopters, among other weapons systems.[129]Similarly, the US and the UAE announced a $5 billion US arms sale on November 8, 2010 that included the sale of 60 AH-64D Apache helicopters.[130] Lastly, the UAE also opened a new naval base at Al Fujairah near the eastern entrance to the Strait of Hormuz on October 10, 2010.[131]

The heightening tensions between Iran, and the US and the Arab Gulf states, during 2011 has led to the finalization of sales of advanced aircraft and air and missile defense systems to the US' regional allies. On December 24, 2011, the Obama administration announced that it had concluded a deal with Saudi Arabia to transfer the aforementioned 84 F-15SA fighters for approximately $29.4 billion US. The aircraft are scheduled to start delivery in 2015, and accompany upgrades to Saudi Arabia's existing fleet of 70 F-15s and munitions.[132]

On December 29, 2011, Andrew J. Shapiro, the Assistant Secretary of Political-Military Affairs, stated the following in a special joint press briefing on this and potential future arms sales to Saudi Arabia,[133]

> We are pleased to announce that over this past weekend, the United States and Saudi Arabia signed a letter of offer and acceptance for the sale of up to 84 advanced F-15SA fighter aircraft. It also includes upgrades to its current fleet of 70 F-15 aircraft, as well as munitions, spare parts, training, maintenance, and logistics.

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[129] Wasserbly, Daniel. "US Reveals Details of $60bn Sale to Saudi Arabia." Jane's Defence Industry. 28 Oct. '10

[130] Gelfand, Lauren. "US Agrees $5bn Boeing Apache Deal with UAE." Jane's Defence Weekly. 9 Nov. '10

[131] "UAE Opens New Strait of Hormuz Naval Base." Jane's Intelligence Weekly. 25 Oct. '10

[132] Landler, Mark and Myers, Steven Lee. "With $30 Billion Arms Deal, U.S. Bolsters Saudi Ties." New York Times. December 29, 2011. http://www.nytimes.com/2011/12/30/world/middleeast/with-30-billion-arms-deal-united-states-bolsters-ties-to-saudi-arabia.html

[133] Special Joint Press Briefing On U.S. Arms Sales to Saudi Arabia, December 29, 2011. http://www.state.gov/r/pa/prs/ps/2011/12/179777.htm

This sale is worth $29.4 billion. These F-15SA aircraft, manufactured by the Boeing company, will be among the most sophisticated and capable aircraft in the world. This agreement serves to reinforce the strong and enduring relationship between the United States and Saudi Arabia. It demonstrates the U.S. commitment to a strong Saudi defense capability as a key component to regional security.

Since announcing in June – in 2010 our intent to conclude this sale, the Departments of State and Defense have worked closely with the Saudi Government and industry to finalize the particulars of the deal. Jim and I both recently made separate trips to Saudi Arabia, in part to discuss the sale.

Let me outline a few of the reasons why this defense package is so important and historic, and how it will advance U.S. national interests. This sale will send a strong message to countries in the region that the United States is committed to stability in the Gulf and broader Middle East. It will enhance Saudi Arabia's ability to deter and defend against external threats to its sovereignty. It will advance interoperability between the air forces of our two countries through joint training and exercises. And lastly, this agreement will positively impact the U.S. economy and further advance the President's commitment to create jobs by increasing exports. According to industry experts, this agreement will support more than 50,000 American jobs. It will engage 600 suppliers in 44 states and provide $3.5 billion in annual economic impact to the U.S. economy. This will support jobs not only in the aerospace sector but also in our manufacturing base and support chain, which are all crucial for sustaining our national defense.

I also wanted to note that this sale was carefully assessed under the U.S. Government's Conventional Arms Transfer Policy. This policy requires such sales be deemed in the national security interests of the United States, are consistent with the country's legitimate security needs, and support U.S. regional security objectives. With this agreement, the United States and Saudi Arabia have accomplished a historic achievement in our longstanding security partnership, a partnership that furthers security and stability in the Gulf region. Our longstanding security relationship with Saudi Arabia and other partners in the region has been a primary pillar of regional security for decades. And this sale further illustrates the firm commitment of the United States to the security and stability of the Gulf region.

The Principal Deputy Under Secretary of Defense of Policy, Dr. James N. Miller, elaborated further on the package as well as the intentions of the sale:

Let me start by reiterating that the United States is firmly committed to the security of the Kingdom of Saudi Arabia, as we have been for nearly seven decades, and that more broadly, the United States and Saudi Arabia have a strong mutual interest in the security and stability of the Gulf. Close cooperation between our militaries is central to that security and stability, and we are really announcing today the most recent example of that cooperation.

On December 24th in Riyadh, the United States and Saudi Arabia finalized the letter of offer and acceptance, or LOA, for the purchase of 84 F-15SA aircraft and, as Andrew said, for the upgrade of an additional 70 F-15SA aircraft to this SA configuration. And this government-to-government or foreign military sale is valued at $29.4 billion.

I'd like to say just a few words about the capabilities that are under consideration. This aircraft, the F-15SA, will be the most capable and versatile aircraft in the Royal Saudi fighter inventory. And indeed, it will be one of the most capable aircraft in the world. The F-15SA will have the latest generation of computing power, radar technology, infrared censors, and electronic warfare systems. As one example, the F-15SA will be equipped with an active electronically-scanned array radar, or AESA. This radar includes the latest technology and will ensure that Saudi Arabia has the capability to operate against regional air threats. This sale also includes AMRAAM and AIM-9X air-to-air missiles, which provide both radar and infrared guided capability. The F-15SA will be able to strike targets day or night in all weather with a variety of precision-guided munitions. The air-to-ground weapon capability includes laser-guided and GPS-

> guided weapons, along with missiles that can attack ground-based radars and missiles – the Harpoon in particular specialized for maritime attack capabilities.
>
> The communications systems of the F-15SA will allow the U.S. Air Force and Royal Saudi Air Force to operate effectively together in the same airspace. And the system's interoperability will also allow both countries to – excuse me – to participate in coalition training, which is a priority for both of our countries. And in fact, this F-15SA package includes not just aircraft and munitions but the training and logistics support that Andrew talked about, and it's a very robust package. Much of the Saudi training in the F-15SA will occur alongside U.S. forces. This will enhance our already strong defense relationship. And approximately 5,500 Saudi personnel will be trained through 2019 – 5,500 through 2019, further strengthening the bonds between our forces and between our countries.
>
> I've provided just a very high-level overview of the F-15SA's impressive capabilities, and I know that the Air Force and the Boeing company will be glad to offer a lot more details. As Andrew said, the U.S.-Saudi security relationship has been a pillar of regional security for decades. And this F-15SA sale demonstrates the firm commitment of the United States to the kingdom, and reinforces our mutual commitment to security and stability in the Gulf….
>
> We expect the first delivery of the F-15SA of the new aircraft in early 2015 and expect the upgrades of the F-15S to the SA configuration to start in 2014. That's the expectation now. Of course, schedules are as schedules are.
>
> With respect to the internal capability of the aircraft, it has very substantial capabilities. I'll give you just a little bit more in terms of the – I mentioned the – some of the munitions – the HARM anti-radiation missile that goes against radars for precision strike capabilities. We've got the Joint Direct Attack Munition, JADM; also the Paveway, which has an analogous capability, the Harpoon anti-ship missile; a very capable system called the Sensor Fuzed Weapon; and for the Defense people in the room, with the Wind Corrected Munitions Dispenser, which is just an incredibly capable system against moving vehicles; and of course air-tro-air AMRAAM and AIM-9X capabilities as well. So very significant capabilities.
>
> There's always the possibility that the Saudis would ask for more. This provides them everything that they asked for in their letter of request, and I know we have ongoing discussions that – where something else could be provided in the future.

In addition to purchasing US F-15SA fighters AH-64 Apache attack helicopters, Saudi Arabia agreed to purchase 72 Eurofighter Typhoons in 2006, which are currently in the process of being delivered.[134] This versatile 4.5 generation fighter is far more advanced and capable than any of Iran's aircraft, and will greatly empower Saudi Arabia to deter foreseeable Iranian aggression.

On December 25, 2011, the US finalized an agreement to sell a $3.5 billion US anti-ballistic missile system known as Theater High Altitude Area Defense (THAAD) to the UAE in the first foreign sale of the system. The system is designed to target and shoot down SRBMs and MRBMs inside and outside of the Earth's atmosphere.

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[134] "The 2006 Saudi Shopping Spree: Eurofighter Flies Off With Saudi Contract." Defense Industry Daily, August 16, 2010. http://www.defenseindustrydaily.com/the-2006-saudi-shopping-spree-eurofighter-flying-off-with-10b-saudi-contract-updated-01669/

More specifically, the deal includes two full THAAD batteries, 96 missiles, two Raytheon AN/TPY-2 radars, 30 years worth of spare parts, and support and training to the UAE.[135] The deal was announced during Iran's execution of the Velayat-90 naval exercises during which Iran tested missiles, mines, and other naval assets. Moreover, this deal follows a 2011 $1.7 billion US commercial contract to upgrade Saudi Patriot anti-missile systems, and a $900 million US sale of 209 Patriot missiles to Kuwait.[136] The transfer of missile defense systems of this scale and sophistication is unprecedented, and they reflect the threat perceptions of both the US and its regional allies in the Gulf regarding Iran's robust ballistic missile capabilities.

These arms transfers and others like them to virtually every Arab Gulf State represent a trend in Gulf procurement that began in the mid-1990s. Given the strong presence of US and other conventional forces in the region, any Iranian successes, while damaging and disruptive, would be limited in scope and duration by the overwhelming conventional power of the US and its allies.

They have also been supported by a steady increase in joint exercises between US forces, Gulf and other Arab forces, and European air and naval forces. These developments make it clear that US is determined to outfit America's Gulf allies with some of the most advanced systems available in the pursuit of security in the Gulf and the Strait of Hormuz.

Moreover, these arms transfers and the joint military exercises in the Gulf, emphasize interoperability between US and Arab Gulf forces. In light of recent heightened tensions between the US and Iran over the Gulf and the presence of US forces in the region, these statements send a subtle, yet clear message that the US fully intends to bolster its military ties with its allies in the Gulf, an objective that includes supplying them with advanced weapons systems. This aid will provide the armed forces of the US' allies in the Gulf with a qualitative superiority over their Iranian counterparts.

More broadly, the US has taken a multifaceted approach to confronting Iran's allies and proxies. In addition to direct military action in Iraq and Afghanistan, the US equipped and trained the security forces and intelligence services of regional allies and client states such as Saudi Arabia, the UAE, Iraq, Lebanon, and Kuwait to provide a counterweight to Iran and its own proxies.

Notable examples include US assistance to the Lebanese Armed Forces, Saudi Arabia's campaign against the Houthi rebels along its border with Yemen, and US efforts to train and equip Iraq's security forces in counterinsurgency tactics.[137][138][139] Lastly, the US took steps to curb

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[135] Wolf, Jim. "U.S. in $3.5 Billion Arms Sale to UAE Amid Iran Tensions." Reuters. December 31, 2011. http://www.reuters.com/article/2011/12/31/us-usa-uae-iran-idUSTRE7BU0BF20111231

[136] Wolf, Jim. "U.S. in $3.5 Billion Arms Sale to UAE Amid Iran Tensions." Reuters. December 31, 2011. http://www.reuters.com/article/2011/12/31/us-usa-uae-iran-idUSTRE7BU0BF20111231

[137] Arrott, Elizabeth. "Saudi Arabia Says Houthi Rebels Forced Out." Voice of America. January 27, 2010 http://www.voanews.com/english/news/middle-east/Saudi-Arabia-Says-Houthi-Rebels-Forced-Out-82801117.html

[138] US Congressional Research Service. US Security Assistance to Lebanon (R40485, January 19, 2011), by Casey L. Addis. http://www.fas.org/sgp/crs/mideast/R40485.pdf

[139] July 2011 SIGIR Report: Quarterly Report and Semiannual Report to the United States Congress. July 30, 2011 http://www.sigir.mil/files/quarterlyreports/July2011/Report_-_July_2011.pdf

arms trafficking, and engaged in information campaigns that sought to attack and delegitimize Iran and its allies.

Figure III.32: US Arms Sales to the GCC states and Iraq: 2002-2012

Bahrain

- **Sept. 14, 2011** – The Defense Security Cooperation Agency notified Congress 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 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** – 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. 12, 2011** – The Defense Security Cooperation Agency notified Congress 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 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. 5, 2011** – The Defense Security Cooperation Agency notified Congress 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 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 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 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 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 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 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 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 (CMDS); (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 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 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 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 AgustaWestland 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 AgustaWestland 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** – 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** – 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** – 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** – 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** – 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** – 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** – 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** – 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** – 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** – 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 Vue 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** – 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

- **Feb. 24, 2012** – The Defense Security Cooperation Agency notified Congress 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 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 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 (CMDS), 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 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 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 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 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** – 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** – 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** – 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** – 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** – 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

- **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

- **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

- **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, 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

- **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, 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: Defense Security Cooperation Agency (DSCA), http://www.dsca.mil/

Figure III.31: US and Non US Arms Sales in the Gulf

Kuwait

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Due	Notes
Mk V	PBF	10	US$461m	US	USMI	2009	July 2011	For navy. Final delivery due in 2013.
KC-130J	Tkr ac	3	US$245m	US	Lockheed Martin	2010	2013	Deliveries to be complete in early 2014.

Bahrain

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Date	Notes
M113A2	APC Upgrade	n.k.	n.k.	TUR	FNSS	2007	n.k.	Refit with MKEK 81mm

Qatar

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Due	Notes
AW139	MRH Hel	18	US$413m	ITA/UK	Agusta Westland	2008	2010	Twelve delivered by end of 2011.
AW139	MRH Hel	3	n.k.	ITA/UK	Agusta Westland	2011	n.k.	-

Oman

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Date	Notes
Project Khareef	FFGHM	3	US$785m	UK	BAE Systems	2007	2011	-
C-130J-30 *Hercules*	Tpt ac	1	n.k.	US	Lockheed Martin	2009	2012	-
C-130J-30 *Hercules*	Tpt ac	2	n.k.	US	Lockheed Martin	2010	2013	Delivery due in 2013-2014.
NH90TTH	Tpt Hel	20	n.k.	NLD	EADS	2003	2010	First Delivered

								in June 2010.

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.**
M113	**APC (T) Upgrade**	**300**	**US$200m**	**TUR**	**FNSS**	**2007**	**2008**	**Upgrade. Follow-on contract could upgrade entire fleet of 2,000 M113. Delivery status unclear.**
CAESAR 155mm	**155mm SP arty**	**100**	**n.k.**	**FRA**	**Nexter Systems**	**2006**	**2009**	**For national guard.**
Eurofighter *Typhoon*	**FGA ac**	**72**	**US$8.9bn**	**Int'l**	**Eurofighter**	**2005**	**2008**	**First 24 delivered by Sept. 2011.**
Saab 2000 *Erieye*	**AEW&C ac**	**1**	**US$670m**	**SWE**	**Saab**	**2010**	**n.k.**	**-**
A330 MRTT	**Tkr/Tpt ac**	**6**	**US$600m**	**FRA**	**EADS**	**2008**	**2011**	**Three more purchased in 2009.**
S-76	**Tpt Hel**	**15**	**n.k.**	**US**	**Sikorsky**	**2007**	**n.k.**	**For Interior Ministry**
UG-60L *Black Hawk*	**Tpt Hel**	**22**	**US$286m**	**US**	**Sikorsky**	**2008**	**2010**	**Delivery to be complete in 2012.**

UAE

Designation	Type	Quantity	Contract Value	Supplier Country	Prime Contractor	Order Date	First Delivery Due	Notes
Patriot Advanced AD System *Capability* (PAC) 3	AD System	10 fire units, 172 msl	US$3.3bn	US	Raytheon	2008	2009	To replace HAWK
96K6 Pantsir-S1E	AD	50	US$734m	RUS	Rosoboron-export	2000	2004	To be mounted on mAN SX 45 8x8 trucks.
Agrab (Scorpion) MMS	120mm SP Mor	48	US$106m	RSA/SGP/UAE/UK	IGG	2007	2008	Delivery status unclear
Javelin	MANOAT	100	US$135m	US	Raytheon/Lockheed Martin	2008	2009	1,000 msl
Abu Dhabi-class	FFGHM	1	n.k.	ITA	Fincantieri	2009	2011	Launched Feb. 2011
Baynunah-class	FSGHM	6	US$820m	FRA/UAE	ADSB	2003	2006	Delivery complete by 2014.
Falaj II	FS	2	US$117m	ITA	Fincantieri	2009	2012	Delivery of both vessels scheduled for late 2012.
Project 'Ghannatha'	PBFG	12	AED771m	UAE	ADSB	2009	2011	-
Project Al Saber	PB	12	US$34.6m	UAE	ADSB	2009	2011	For coast guard.
Saab 340 *Erieye*	AEW&C ac	2	US$234m	SWE	Saab	2009	2011	-
A330 MRTT	Tkr/Tpt ac	3	n.k.	Int'l	EADS	2008	2011	Delivery scheduled for 2012.
C-17 *Globemaster*	Tpt ac	2	n.k.	US	Boeing	2010	2012	-
C-130 *Hercules*	Tpt ac	12	AED5.9bn	US	Lockheed Martin	2009	n.k.	-
PC-21	Trg ac	25	US$492.4m	CHE	Pilatus	2009	2011	Deliveries underway
UH-60M *Black Hawk*	Tpt Hel	10	n.k.	US	Sikorsky	2007	2010	-
UH-60M *Black Hawk*	Tpt Hel	14	US$171m	US	Sikorsky	2009	n.k.	To be delivered by end of 2012.

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**	**-**
Swiftships 35m	**PB**	**15**	**US$181m**	**US**	**Swiftships**	**2009**	**2012**	**For navy.**
F-16C/D *Fighting Falcon* Block 52	**FGA ac**	**18**	**US$3bn**	**US**	**Lockheed Martin**	**2011**	**n.k.**	**-**
Beech 350ER *King Air*	**Tpt ac**	**6**	**US$10.5m**	**US**	**Hawker Beechcraft**	**2008**	**2010**	**-**
C-130J *Super Hercules*	**Tpt ac**	**4**	**US$292.8m**	**US**	**Lockheed Martin**	**2009**	**2012**	**Delivery to begin in 2012 and continue through 2013.**
C-130J-30	**Tpt ac**	**2**	**US$140.3m**	**US**	**Lockheed Martin**	**2009**	**n.k.**	**For air force.**
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.**	**-**
Bell 407	**Tpt Hel**	**24**	**US$60.3**	**US**	**Bell**	**2009**	**n.k.**	**For air force**

Source: IISS Military Balance 2012

Changing the Ground Rules: What If Preventive Strikes – Not Sanctions – Trigger Iranian Efforts to Close the Gulf

As is discussed in the next chapter, however, there is a major potential problem with such an analysis. It assume a level of Iranian escalation based on a confrontation over sanctions and negotiations, not the level of conflict that might result if the growing confrontation over sanctions coincided with an Israeli preventive strike or some radical change in the US assessment of Iran's capabilities that led the US to carry out such a strike.

This is a critical caveat. As is discussed in the next Chapter, Iran can use ballistic missiles and long range rockets for attacks. If Israel does launch a preventive strike on Iran, Iran might escalate even though its conventionally armed ballistic missiles lack the accuracy and lethality to do serious damage to Israel except through an incredibly lucky strike. Such an Iranian use of missiles might trigger Israeli follow-on strikes, particularly if Israeli missile defenses failed.

Similarly, any major rocket attack on Israeli population centers from Lebanon or Hamas, and particularly one that produce serious damage of casualties as the result of a major volley or lucky hit, could lead Israel to respond with a massive strike on targets in Gaza or Lebanon, or again lead to restrikes on Iran. It is unclear that either Hamas or Hezbollah would support Iran in this way, or take such risks, but Iran's leadership might feel it had to counter-escalate in the most dramatic way possible, or simply overreact out of anger or ideology, and might get support from Hamas or Hezbollah if it chose to do so.

The same could be true in the Gulf. Iran might chose to use a far higher level of asymmetric force to punish the US for its ties to Israel and punish "Great Satan" for the actions of the "Lesser Satan." It would be particularly likely to do so if it felt this would win Arab support, and/ort if the Iranian leadership assumed the US had given Israel tacit permission or a "green light."

It is even harder to estimate what Iran would do if the US carried out a preventive strike, or if an asymmetric conflict in the Gulf escalated to major air and cruise missile strikes on Iran. Iran could not win any such escalation, or even do critical damage; with conventionally armed long-range range missiles or rockets without the terminal guidance and precision strike capabilities current evidence indicates it lacks.

Similarly, even if it tried to saturate Gulf air defenses using the remainder of its air force in some last ditch strike, it would be likely to lose almost all of its forces while doing minimal damage. Iran would need precision guided missiles and rockets and the ability to saturate Arab Gulf and US missile defenses to change this equation, or the ability to successfully deliver nuclear weapons or some other form of highly lethal weapon of mass destruction.

The problem is that the Iran leadership might again feel it had to lash out in extreme ways to discourage further attacks, to maintain popular credibility in Iran, to try to win outside support or intervention, or out of anger and ideology. Iran's leaders have in the past shown that they are both rationale and deterrable, but they also escalated and prolonged the Iran-Iraq War in ways that went far beyond the level of conflict that many US and outside experts predict once Iraq was forced to withdraw from Iran. Game theory, rational bargaining, and escalation ladders based on shard perceptions are useful tools, but history warns that wars generally occur because the sides involved so not share the same calculations, perceptions, or values.

Similarly, the preceding analysis does not examine the risks Iran might take in using missiles and rockets, committing all of its conventional or forces in a quick or spasmodic conflict, or its willingness to persist and escalate in months or years of confrontation and escalation if its leadership feels its survival is at stake or is willing to take risks that seem "irrational" to outside planners. It is a long distance in miles, time, and culture from Sarajevo, but no one in the West should forget the West's miscalculations of risk and the consequences of escalation in the 20th Century – much less all of its preceding history. There are no rules that behind Iran or the course of some future conflict – only uncertain probabilities

Implications for US Policy

This makes it all too clear that Iran's asymmetric strategy presents significant challenges to US policy makers, the Arab Gulf states, and other regional powers despite US and allied conventional superiority. Iran is linking the steady expansion of its asymmetric forces to new uses of its conventional forces and is building up its missile and its nuclear capabilities – at least in part – to deter retaliation against its use of asymmetric warfare.

While many of Iran's unconventional assets remain unproven in conflict, as do their capabilities against US forces, Iran has gone to great lengths to expand these forces to deter invasion and to expand its regional influence and reach. Iran almost certainly recognizes that US conventional superiority would give the US the upper hand in a serious conflict where the US can use all of its capabilities to attack the full range of Iranian military forces. In a limited war of attrition, however, assets such as Iran's light fast attack craft, smart munitions, and submarines, among others, could inflict losses on US forces or those of US regional allies, damage critical infrastructure, and disrupt or halt Gulf commerce with little or no warning.

Iran's robust mine warfare capability and the current weaknesses in the countermine operations capability of the US and Arab Gulf navies could pose a serious threat to the security of the Gulf. Virtually any military or commercial vessel is capable of laying mines if it has the physical capacity to carry them. Consequently, the IRGCN and the Iranian navy are capable of seeding the Gulf and Strait of Hormuz with a large number of mines in a relatively short period of time. Iran would likely seek to use this capability as well as its large arsenal of both modern smart mines and antiquated moored contact mines to deny US forces access to the Gulf and render it impassable to commercial traffic. To properly contain and deter Iranian aggression in the region, the US must prepare for a serious countermine warfare campaign and properly develop the necessary assets to do so.

If the US is to successfully neutralize this complex mix of threats that can be used in so many different ways and at some many different levels of escalation, the US must continue to maintain strong forces in the Gulf to contain, deter, and – if necessary – engage Iran's forces. The US must be able to join with its Arab Gulf allies and decisively win a battle to keep Gulf shipping and exports flowing in in a period of weeks. At the same time, it must be able to join with its Arab Gulf allies in defeating any Iranian efforts to conduct a battle of attrition in the Gulf or near it, and deal with contingencies like Iran's use of free floating mines, unattributable attacks, and any other form of asymmetric warfare than threatens friendly Gulf states and the flow of world energy exports from the region.

The US must seek to deter war, and limit escalation in every way possible if some incident or clash occurs. As is discussed in the following chapters, the US must persuade its regional allies,

its European allies and other states that it will seek to avoid war, and escalation if an incident or clash does occur. It cannot win their support if they feel the US is reckless or does not consider their interests. The US must also consider than any clash or even the risk of a clash will have an impact on world prices and the global economy. At the same time, the US must strong enough to use its air and land forces to destroy Iran's conventional and asymmetric capabilities, secure Iraq, and protect its Arab allies.

The US must work closely with the Arab Gulf states and other Arab states to improve their deterrent and defense capabilities. It must work closely with allies like Britain and France, and seek the cooperation of key allies like Turkey. At a more technical level, the US must continue to equip, modernize, and train the forces of its regional allies to confront asymmetric threats.

The US must be fully prepared for the range of other military options Iran is developing. Iran's ties to the Hezbollah, Hamas, Sadrist and other Shi'ite militias in Iraq, Syria, and Shi'ite minorities in other Gulf states, create relationships where it may be able to use state and non-state actors in asymmetric warfare.

Iran has already used some of these assets against Israel and to undermine the internal stability and cohesion of US allies in the Middle East (most notably Lebanon and Iraq), to indirectly attack US forces in Iraq, and to help Hamas seize power in the Gaza Strip, seized political power. Given the strategic importance of these states in the regional balance, the US cannot to allow Iran to continue to cultivate and strengthen such threatening movement and create potential proxies. The US must continue to fund, support, and train its regional allies to counter Iran's proxies within their borders. Furthermore, the US must work to stem Iranian material and financial support to these groups.

More broadly, the US must plan for the fact that Iran and the US will continue to compete militarily with the US and friendly regional states as long as anything like the present Iranian regime remains in power, the Strait of Hormuz remains strategically critical, and Iran seeks to establish itself as a regional power. Iran is constantly stepping up its efforts to challenge and undermine the US presence in the Middle East. The US cannot afford to be lax or dismissive in confronting Iran's strategy. To effectively engage Iran, the US must put Iran's perceptions of military competition, as well as its aforementioned conventional and asymmetric capabilities in careful perspective, and continue to develop the means to counter Iran's evolving assets throughout the region.