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THE GULF MILITARY BALANCE IN 2012

Anthony H. Cordesman
Alexander Wilner

Arleigh A. Burke Chair in Strategy

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Please note that this document is a working draft and will be revised regularly. To comment, or to provide suggestions and corrections, please email Anthony H. Cordesman at acordesman@gmail.com.

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The Gulf military balance is dominated by five major groups of military forces: the Southern Gulf states, Iran, Iraq, outside powers like the US, and non-state actors like the various elements of Al Qaida, the Mahdi militia, and various tribal forces. These forces are evolving in many ways. Iran now presents a major threat in terms of asymmetric and proxy warfare, as well as a growing missile threat and a potential nuclear threat. The growing political unrest and instability in the region is creating new internal security threats, as well as risks that instability in countries like Yemen could create new threats that cross the Saudi and Omani borders. The threat of terrorism has so far been contained, but remains all too real. Moreover, it has driven many regional states to make major increases in their paramilitary, security and special operations forces.

The rising threats from asymmetric and proxy warfare, nuclear weapons, internal security threats, and terrorism make it difficult to assess the military balance. Hard numbers are only available on classic measures of conventional military strength or the total size of new force elements like paramilitary and missile forces. There is no clear way to measure the balance of conventional and irregular forces in asymmetric conflicts, or how missiles and proliferation will affect the balance.

Moreover, even the conventional balance is harder to assess. The numbers of major weapons platforms are still important, as are manpower totals and other classic measures of force strength but their relative importance is steadily diminishing over time. The deterrent and warfighting capability of conventional forces is increasingly shaped by factors like training, sustainability, the quality of munitions, sensors, battle management systems, and intelligence capabilities.

I. Key Trends

It is difficult to generalize about the trends affecting each key element of Gulf military forces. There are highly capable force elements in virtually every country, and elements that have limited value. Most countries have limited war fighting experience, but several have force elements that have considerable experience in given missions. In broad terms, however, each group of forces has the following capabilities:

The Southern Gulf states have large military resources, and many countries are making massive arms purchases. At the same time, many elements of their forces have limited real-world effectiveness, and the Southern Gulf states have only made limited progress towards collective and integrated defense. They are, however, making a major effort to improve their effectiveness and interoperability, as well as their ability to work with the US, Britain, and France to deter and contain Iran.

It is the US that now dominates the balance of Gulf military forces, along with allies like the United Kingdom and France. US land capabilities are, however, limited, and the US would face far more serious problems in dealing with a well-planned campaign for asymmetric or irregular warfare in the Gulf than it would in fighting a conventional conflict.

Iran has substantial assets for irregular and asymmetric warfare, has growing missile and long-range rocket forces, and may emerge as a nuclear power during the next three to five years. However, its conventional forces continue to age, lack effective unity and readiness, and are declining in overall capability.

Iraq's forces remain a work in progress and are still focused on counterinsurgency. Iraq lost virtually all of its heavy weapons in the US-led invasion in 2003. While it has begun to order replacements, Iraq will not have the ability to operate independently in large-scale conventional warfare for at least three to five years.

Non-state actors play an increasing role in shaping the security situation, but still have limited capability to do more than conduct low-level asymmetric and "terrorist" attacks. This may change. Al Qaida in the Arabian Peninsula (AQAP) has already benefitted from the political chaos in Yemen. Al Qaida in Mesopotamia (AQAM) and the various Sadr militias may benefit from the growing political divisions in Iraq. Bahrain could descend into a state of low-level civil conflict. The growing divisions between Sunni and Shi'ite in the region could trigger the emergence of new non-state elements.

Southern Gulf Forces and the Gulf Cooperation Council (GCC)

The Southern Gulf states are only beginning to adjust their national force plans to take account of the disappearance of Iraq as a major regional threat, and the need to deter and contain Iran. The GCC lacks effective unity of effort in war fighting, deterrence, and force development terms. It has proposed a wide range of useful projects to improve military interoperability and cooperation since its founding in 1980, but its members have made only limited progress:

- The one joint combat force the GCC has created – the GCC Rapid Deployment Force – has always been a hollow, token force. It had no clear mission after the fall of Saddam Hussein in 2003, and the end of Iraq as a serious threat. It was effectively disbanded in 2005.
- Its members have resisted the standardization of weapons and equipment throughout the GCC's existence. Nothing is changing.
- There is little or no focus on developing truly effective, interoperable forces that are integrated or shaped around common missions.
- An air defense integration contract offers some hope for the future, but has few of the features needed to actually integrate land-based and fighter defense operations in a real-world combat environment.
- Some cooperation has developed in naval exercises, and in areas like mine warfare, but Gulf navies and naval air operations would have little real-world effectiveness without US or British support.

Procurement paths still differ sharply across the Southern Gulf. There is little standardization or focus on interoperability in air forces and major land weapons. The UAE has focused on developing its fleet of fast naval interceptors to bolster coastal piracy deterrence and maritime anti-terrorism. In contrast, Saudi Arabian naval development has focused on developing a mix of large and medium surface assets with the intention of developing blue water capabilities.

The potential threat from Iran is, however, pushing the Southern Gulf states to improve national forces, and to create far more integrated and interoperable forces within the Gulf Cooperation Council (GCC). King of Abdullah made the need for more effective cooperation a key aspect of the December 2011 Ministerial meeting of the GCC. Ministers are due to report on proposals for such improvements at the June 2012 Ministerial and provide more detail plans in December.

The GCC states are beginning to create missile defense forces to deal with Iran's growing missile forces, and naval and air forces to counter Iranian capabilities for irregular warfare in the Gulf and in the Gulf of Oman. They are seeking ways to deal with the threat Iran may come to pose as a nuclear power. They are also adjusting their forces to limit the risk that a lasting power vacuum in Iraq will give Iran decisive influence over a Shi'ite-dominated Iraq. This risk seems limited, but cannot be ignored.

The Southern Gulf states are also making major arms purchases to modernize their forces. Saudi Arabia is upgrading its air force and the Saudi Arabian National Guard (SANG), and improving its capability in special operations and counter-insurgency (COIN) roles.[1]

Most Southern Gulf states share an increasing focus on upgrading and augmenting their holdings of short, medium and long-range surface-to-air missile (SAM) holdings, but at best they have only begun to create the level of real-time intelligence, sensor, and reconnaissance capabilities needed for effective air and missile defense. The UAE, Saudi Arabia, and Kuwait are acquiring modern Patriot Advanced Capability (PAC-3) systems. The UAE may also be the first Gulf state to buy Terminal High-Altitude Air Defense (THAAD) missile defense units.

While Russia has had only limited success in procuring to the Southern Gulf, Oman is reported to have acquired Pantsyr S1E short-range integrated gun and missile systems. It is unclear whether Saudi Arabia and the U.A.E. will procure Russian-made S-400 and S-300 long range SAM systems.

Nevertheless, the Southern Gulf must overcome a heritage of distrust and internal tension. Most Southern Gulf states do seem to have resolved many past border and territorial disputes. Some tensions do still exist, however, because of Qatari, Omani, and the Emirati fears of Saudi "dominance." Oman and Saudi Arabia are both concerned over the growing instability in over Yemen.

The lingering tensions between Bahrain and Qatar have largely ended, but Bahrain is now caught up in a major internal security struggle, and tensions between its ruling Sunni elite and Shi'ite majority. Kuwait has its own internal tensions as well concerns over the development of oil and gas resources in areas near Iraq.

In the wake of sectarian unrest in Bahrain, Saudi-led intervention in the country, and rising tensions with Iran, there also is increasing talk of deeper political integration amongst GCC member states, the end goal being a political union that resembles the EU. First proposed in December 2011 by King Abdullah of Saudi Arabia, such a union is envisioned to include Saudi Arabia, Kuwait, Bahrain, Qatar, the UAE, and Oman. Only Bahrain's leadership, however, has moved forward with the notion enthusiastically.

In a summit regarding the matter held in Riyadh on May 14, 2012, King Hamad of Bahrain, stated that the proposed union is a "response to changes and challenges that face us on international and regional fronts."[2] On May 13, 2012, Bahrain's Prime Minister, Prince Khalifa bin Salman stated that the "option of a (GCC) union has become urgent." [3] Lastly, Sheikh Abdulaziz bin Mubarak al-Khalifa, a spokesman for Bahrain's monarchy, stated that "the challenges we're going to be facing, whether it's security or other, are

going to be best faced in a more united front."[4] Given Saudi Arabia's roll in suppressing unrest in Bahrain in early 2011, such commentary is unsurprising.

Other members of the GCC, however, are less receptive to the proposed union; the leaders of the UAE and Oman, Sheikh Khalifa bin Zayed al-Nahyan and Sultan Qaboos, respectively, did not attend the aforementioned summit. Moreover, in February 2011, Kuwait's parliamentary speaker, Ahmed al-Saadoun, stated that Kuwait would have difficulty joining with "countries whose prisons are full of thousands who are guilty of speaking their minds."[5] As such, it seems clear that the Southern Gulf states are not enthusiastic to enter into a potentially lopsided political union with their much larger, more powerful, and more socially, politically, and religiously conservative neighbor.

The consequences of any potential union between the GCC's current member states on the regional military balance are unclear and unforeseeable. There is no guarantee that any such union would succeed – the last union between two Arab states (Syria and Egypt), the United Arab Republic, disintegrated in less than three years. If the same were to occur in a union of the Gulf states, it would likely leave them in a fractured, weakened condition with respect to regional security cooperation, and less able to deter Iran. Consequently, these efforts to forge a political union with the objective of bolstering regional security could have an unintended "boomerang" effect, and undermine the regional balance and their security.

The Role of the US

The US plays a key role in the Gulf military balance, and cooperates closely with the Southern Gulf states, Britain, and France in seeking to contain and deter Iran. The US and Saudi Arabia have very different political systems and views of Israel, but Saudi-US military cooperation was a key element in winning a quick coalition victory in the Gulf War. While some aspects of Saudi-US cooperation were curtailed as a result of the 9/11, they have since become close partners in the war on terrorism – particularly since Al Qaida began attacks in Saudi Arabia in 2003.

Active US combat forces left Saudi Arabia in 2003, following the Iraq War, but a strong US advisory presence remains, and US-Saudi cooperation was much closer in the Iraq War in 2003 than is generally apparent. Saudi Arabia provided substantial aid to US operations and allowed US Special Forces to stage out of Arar on the Iraqi border.

More broadly, the US has shifted the focus of its prepositioning and operations as a result of both the need to leave Saudi Arabia and as a result of its withdrawal from Iraq in 2011:

- Kuwait provided major air and staging bases for US forces in Iraq, as well as critical port facilities.
- Bahrain is the base for the US 5th Fleet, and a key staging point for both US naval and air operations.
- Qatar provides a major headquarters and air operations center, air base facilities, port facilities, and prepositioning facilities for a reinforced US brigade.
- The UAE provides extensive port facilities, ship repair facilities, and intelligence cooperation in dealing with Iran.

- Oman provides air and naval staging facilities, and prepositioning facilities at Masirah. Oman also cooperates closely with British forces.

A wide range of US advisory, training, and exercise activity takes place with Southern Gulf states, as well as with British and French forces. The US has consistently tried to encourage the Southern Gulf states to strengthen the GCC as part of this effort. For example, "Eagle Resolve" is an annual joint US-GCC cooperative exercise designed to enhance regional cooperative defense efforts of the GCC and US Central Command. It is part of a series of seminars and exercises designed to promote cooperation between the GCC states.[67]

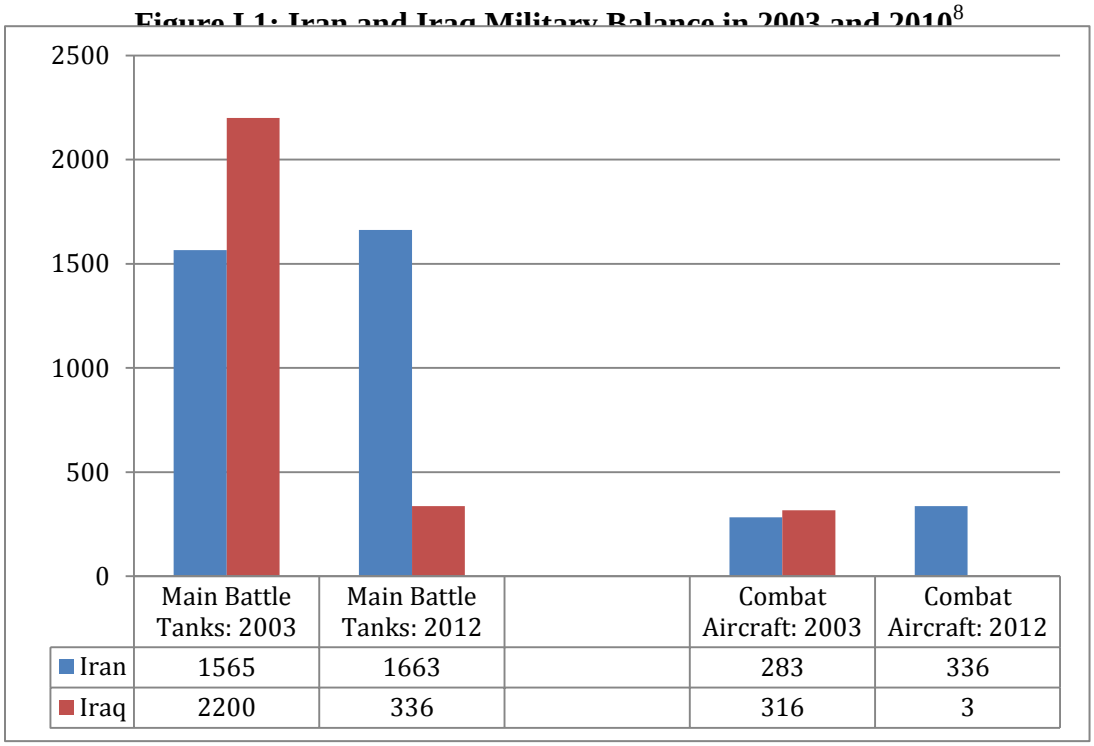
Iraq and the Upper Gulf

As **Figure I.1** shows, the virtual destruction of Iraq's military forces in 2003 fundamentally changed the Gulf military balance. In less than two weeks, Iraq lost virtually all of its conventional forces, and went from the strongest single military power in the Gulf to one of the weakest. Iraq has since created significant counterinsurgency and internal security forces after 2003 with the help of the US and other Coalition allies. It is just beginning to create new conventional forces, however, and still has no modern combat aircraft or surface-to-air missiles, and only limited armored and artillery forces.

Iraq is dependent on major new arms imports from the US and other states to equip its army, air force, and navy. It must rebuild its sustain and support facilities and create a new training base if it is to have conventional forces that can deter its neighbors and defend its territory.

This effort cannot succeed, however, unless Iraq's political process becomes more successful in unifying the country, defeating the remaining insurgency, and eliminating the threat from militias and violent extremists. This is a serious problem given Iran's ambitions, Turkish concern over the Kurdish issue, and potential civil war within Syria.

Figure I.1: Iran and Iraq Military Balance in 2003 and 2010[8]



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: The IISS Military Balance, various editions, and Jane's Sentinel series.

Iran and the Northern Gulf

The future of Iranian force development remains unclear. Many of Iran's claims to be improving its conventional forces have so far not been followed up by the deployment of major new capabilities and modern weapons. This aspect of Iran's military modernization efforts still lags badly behind the decline in conventional weaponry imposed by age, past combat, and wear.

Iran is attempting to solve some of its force development problems by creating a major domestic defense industry, and designing and producing its own advanced weapons systems. Given Iran's past problems in these areas, along with the difficulties encountered by more advanced nations like China and India, it is not clear how far Iran can advance along these lines.

Iran has shown that it can obtain some advanced weapons and technology from China, North Korea, and Russia. It has already shown that it can use such purchases to help increase its capabilities for asymmetric warfare by buying systems like submarines, various air and anti-ship missiles, more advanced air defense missiles, and a wide range of other systems. It has also bought some modern aircraft and more modern tanks from Russia. Iran must do a great deal to overcome the limits of its largely worn and obsolescent conventional forces, but may be able to accomplish a great deal over time.

Iran is also deploying long-range missiles. These include enhanced Scud-type weapons, and much longer-range developmental systems. Iran is deploying some Shahab-3 missiles, but it is far from clear what the final configuration of its long-range missiles will be, or how their warheads will be armed.

Another Iranian focus is in creating major capabilities for irregular or asymmetric warfare. Iran continues to develop its capabilities for asymmetric war both on land and at sea, as well as its ability to train and support potential proxies like various Iraqi militias, the Lebanese Hezbollah, and movements like Hamas and the Palestinian Islamic Jihad.

Yemen

While Yemen is seeking to find a new form of political stability following the resignation of President Saleh, it remains deeply divided. Its military forces are divided on a factional basis and can no longer secure parts of the country. It faces a Houthi rebellion in the north, divisions in its capital, problems with Southern separatism, and a near power vacuum in some areas that has allowed Al Qaida in the Arabian Peninsula to take control of some areas.

Non- State Actors

As noted above, Al Qaida in the Arabian Peninsula (AQAP) has benefitted from the political chaos in Yemen. Al Qaida in Mesopotamia (AQAM) and the various Sadr militias are benefitting from the growing political divisions in Iraq. Bahrain could descend into a state of low-level civil conflict. Saudi Arabia faces some problems with its Shi'ites, and Iran has been accused of supporting Shi'ite dissidents in both Bahrain and Yemen.

II. Trends in Comparative Total Force Strength

As previous overview of key trends has shown, the conventional military force strength of the Gulf states is only one aspect of the trends in Gulf security. It also is misleading in that there is no clear way to portray the forces that the US, Britain, and France might project in a given contingency – forces that could play a critical role in many contingencies and any major conflict between the Southern Gulf state and Iran.

Nevertheless, it important to understand how Gulf forces compare in size, and to illustrate some of the qualitative factors that also shape the conventional balance. **Figure II.1** provides a summary count of the most important major conventional weapons of Gulf forces. The fact Iraq's 2,600 main battle tanks and 316 combat aircraft are no longer part of the count illustrates just how much the regional balance has changed as a result of the Iraq War. At the same time, total tanks and aircraft are only a crude indicator. They do not represent weapons quality, the role of combined arms, or the importance of rotary wing aircraft or land-based air defenses. This is particularly true of countries like Iran that keep large amounts of obsolescent and low grade equipment in service.

Figures II.2 to II.5 summarize the trends in military manpower**.** These totals also have serious limits as measures of force strength. Manpower quality has always at least as important as manpower quantity, and the quality of training, exercise and combat experience, and leadership is now even more important as advances take place in military technology and tactics. Nevertheless, manpower does provide another broad indicator of the size of each nation's forces.

- **Figure II.2** shows the historical trend in military manpower. It is clear that Iran and Iraq have long had far larger forces than those of the Southern Gulf states. Saudi Arabia is, however, emerging as a major regional military power in terms of total force size, while Iraq's military posture is still recovering from the collapse of Iraqi forces after the US-led invasion in 2003.

  While Iraqi manning levels and combat deployments of the fledgling Iraqi Security Forces (ISF) continue to increase, the elimination of Iraq's holding of major weapons continues to make a critical difference in the relative meaning of Iraqi military manpower compared to the far better equipped forces of other Gulf states. Iran does continue to have far more military manpower than Saudi Arabia, but the effectiveness of Iranian military manpower is severely limited by the qualitative problems in Iran's pool of military equipment.

- **Figure II.3** provides a somewhat similar comparison that highlights the manpower numbers for each country. It is clear that Saudi manpower has increased sharply relative to that of other Gulf states over time, and that the Southern Gulf states have the cumulative manpower to support effective collective defense. In practice, however, coordination and interoperability remains limited, robbing the smaller Gulf States of much of their potential military effectiveness.

- **Figure II.4** shows military manpower by service. While ground force manning levels remain dominant, it illustrates a relatively heavy emphasis on air force and air defense manpower for most countries, while naval manning is often too small to support effective navies without extensive foreign civilian support. If the data on forces by service are compared to the later figures on land equipment and the procurement of new systems, it is also clear that the manpower pool of most of the smaller Southern Gulf countries is too limited to properly crew and support the pool of weaponry in their forces.

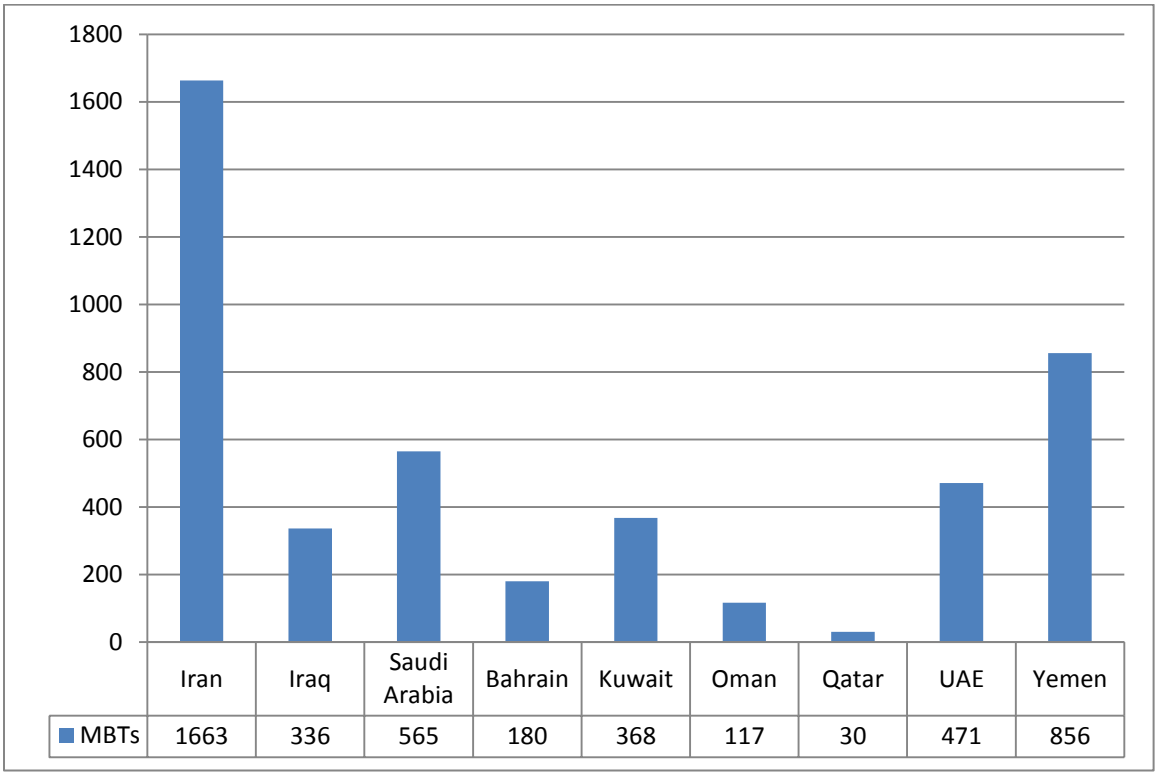
- **Figure II.5** shows the comparative strength of paramilitary forces. This comparison is highly uncertain. The data on paramilitary security and counterterrorism forces are suspect to say the least, and often do not reflect the radical increases and changes in role that have taken place since

> 2001, and the focus on counterterrorism and/or suppressing internal dissent that has taken place in several Gulf states. This is a reminder that one of the most critical aspects of the military balance has received far too little public reporting and analysis.

One count of military manpower is missing from these figures. There is no listing of reserve forces. Such counts are eliminated for two reasons. First, most Gulf forces do not have significant reserves. Second, those that report reserves do not report in ways that provide any meaningful totals for reserves that they can call up into effective units, or that are related to training and workable mobilization plans.

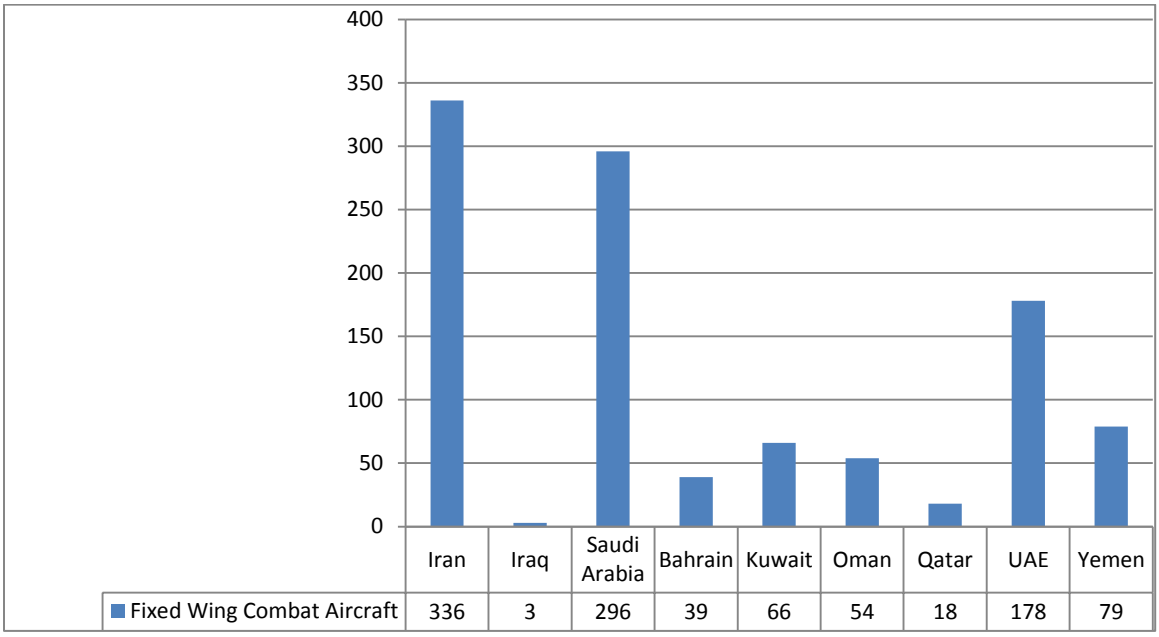
Figure II.1: Major Measures of Key Combat Equipment Strength in 2012

Total Main Battle Tanks in Inventory



	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
MBTs	1663	336	565	180	368	117	30	471	856

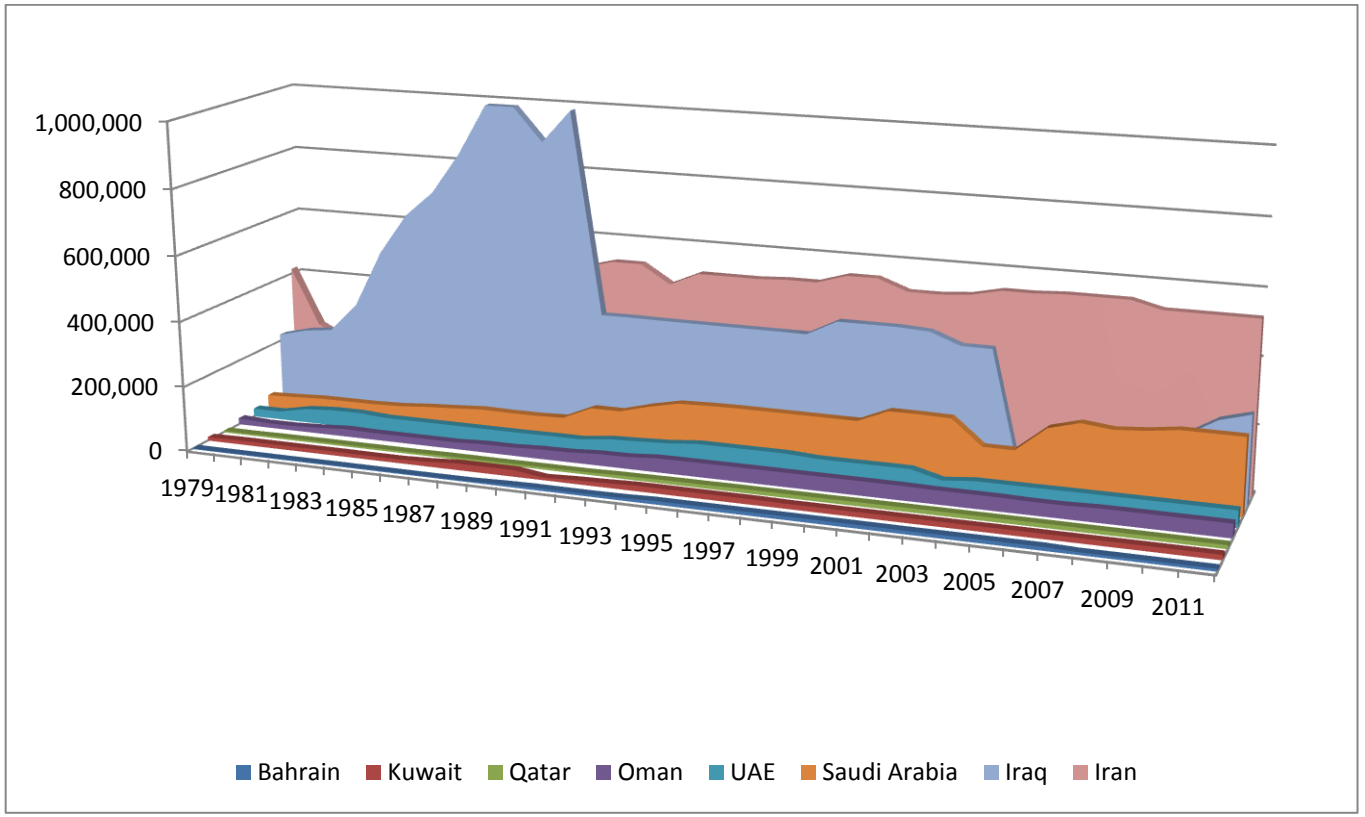
Total Fixed Wing Combat Aircraft



	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Fixed Wing Combat Aircraft	336	3	296	39	66	54	18	178	79

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 II/2: Comparative Trends in Gulf Total Active Military Manpower: 1979-2012



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Bahrain	2,300	2,500	2,500	2,550	2,700	2,800	2,800	2,800	2,800	2,850	3,350	6,000	7,450	7,150	7,150	8,100	10,700

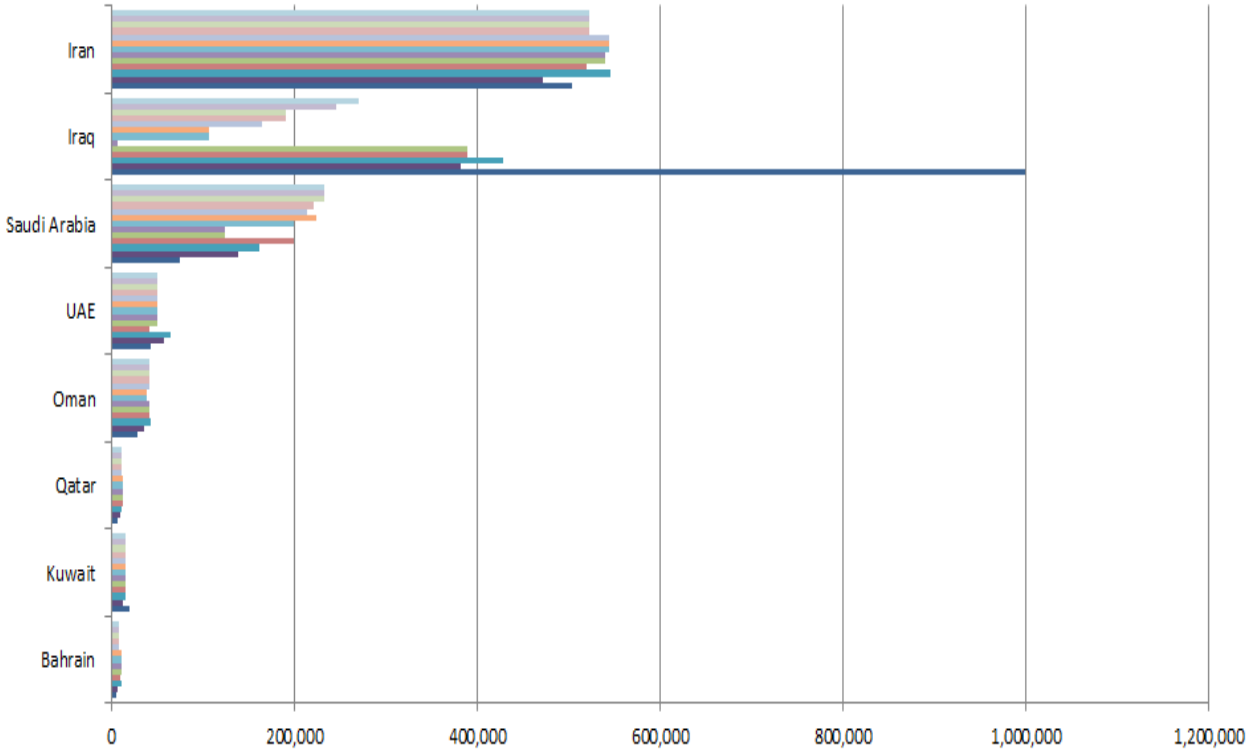
Kuwait	11,100	12,400	12,400	12,400	12,400	12,500	12,000	12,000	15,000	20,300	20,300	20,300	8,200	11,700	13,700	16,600	16,600
Qatar	4,700	4,700	5,700	6,000	6,000	6,000	6,000	6,000	7,000	7,000	7,000	7,500	7,500	7,500	9,500	10,100	11,100
Oman	19,200	14,200	14,500	18,000	23,550	21,500	21,500	21,500	21,500	25,500	25,500	29,500	30,400	35,700	36,700	42,900	43,500
UAE	25,150	25,150	42,500	48,500	49,000	43,000	43,000	43,000	43,000	43,000	43,000	44,000	44,000	54,500	57,500	61,500	70,000
Saudi Arabia	44,500	47,500	51,700	52,200	52,500	55,500	62,500	67,500	73,500	72,300	72,300	75,700	115,000	115,000	139,000	158,000	161,000
Iraq	220,000	242,250	252,250	342,250	517,250	642,250	720,000	845,000	1,000,000	1,000,000	900,000	1,000,000	382,500	383,500	382,500	382,500	382,500
Iran	415,000	240,000	195,000	235,000	455,000	555,000	605,000	704,500	654,500	604,500	604,500	504,000	528,000	528,000	473,000	513,000	513,000

	1996	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Bahrain	10,700	10,700	10,700	11,000	11,000	11,000	11,000	10,700	11,200	11,200	11,200	11,200	8,200	8,200	8,200	8,200	8200
Kuwait	16,600	16,600	16,600	15,300	15,300	15,300	15,500	15,500	15,500	15,500	15,500	15,500	15,500	15,500	15,500	15,500	15500
Qatar	11,200	11,800	11,800	11,800	11,800	12,330	12,330	12,400	12,400	12,400	12,400	12,400	11,800	11,800	11,800	11,800	11800
Oman	43,500	43,500	43,500	43,500	43,500	43,500	43,400	41,700	41,700	41,700	39,700	39,700	42,600	42,600	42,600	42,600	42600
UAE	70,000	70,000	70,000	64,500	64,500	65,000	65,000	41,500	50,500	50,500	50,500	51,000	51,000	51,000	51,000	51,000	51,000
Saudi Arabia	162,500	162,500	162,500	162,500	162,500	201,500	201,500	199,500	124,500	124,500	199,500	224,500	214,500	221,500	233,500	233,500	233,500
Iraq	382,500	382,500	382,500	429,000	429,000	429,000	424,000	389,900	389,900	7,116	107,000	107,000	165,800	190,744	191,957	245,782	271,400
Iran	513,000	518,000	518,000	545,600	545,600	513,000	513,000	520,000	540,000	540,000	545,000	545,000	545,000	523,000	523,000	523,000	523,000

Note: Saudi totals include full-time active National Guard, Omani totals include Royal Guard and Iranian totals include Revolutionary Guards, and Iraqi totals up to 2004 include Republican Guards and Special Republican Guards. Current Iraqi totals do not include Ministry of Interior forces.

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 II.3: Total Active Military Manpower in All Gulf Forces 1993-2012

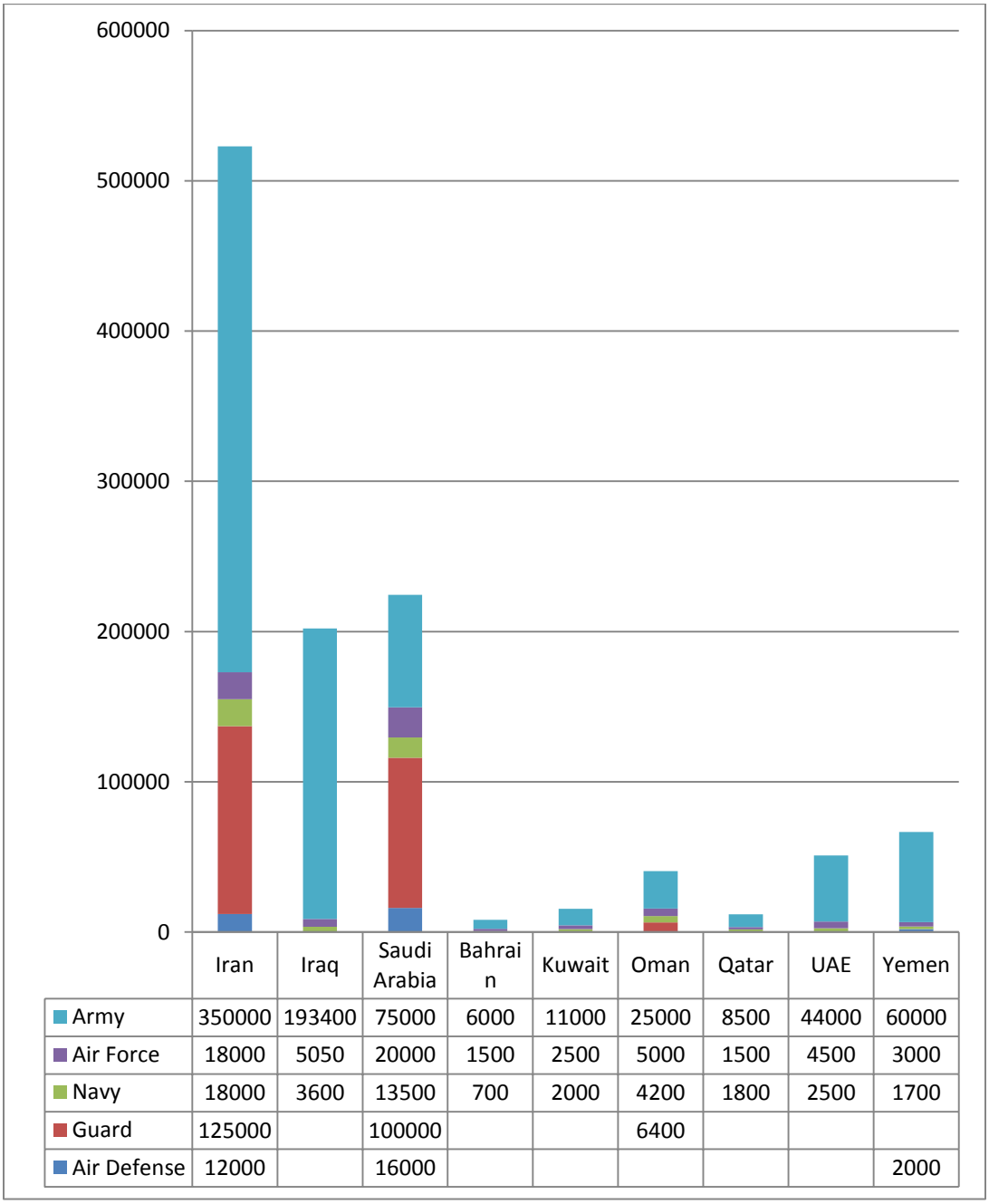


	Bahrain	Kuwait	Qatar	Oman	UAE	Saudi Arabia	Iraq	Iran
2012	8,200	15,500	11,800	42,600	51,000	233,500	271,400	523,000
2011	8,200	15,500	11,800	42,600	51,000	233,500	245,782	523,000
2010	8,200	15,500	11,800	42,600	51,000	233,500	191,957	523,000
2009	8,200	15,500	11,800	42,600	51,000	221,500	190,744	523,000
2008	8,200	15,500	11,800	42,600	51,000	214,500	165,800	545,000
2007	11,200	15,500	12,400	39,700	51,000	224,500	107,000	545,000
2006	11,200	15,500	12,400	39,700	50,500	199,500	107,000	545,000
2005	11,200	15,500	12,400	41,700	50,500	124,500	7,116	540,000
2004	11,200	15,500	12,400	41,700	50,500	124,500	389,900	540,000
2003	10,700	15,500	12,400	41,700	41,500	199,500	389,900	520,000
2000	11,000	15,300	11,800	43,500	64,500	162,500	429,000	545,600
1993	7,150	13,700	9,500	36,700	57,500	139,000	382,500	473,000
1990	6,000	20,300	7,500	29,500	44,000	75,700	1,000,000	504,000

Note: Saudi totals include full-time active National Guard, Omani totals include Royal Guard, Iranian totals include Revolutionary Guards, and Iraqi totals through 2003 include Republican Guards and Special Republican Guards. Iraqi data for 2006 do not include Special Forces, and data for 2007 and 2008 include only assigned and trained personnel. Current Iraqi totals do not include Ministry of Interior forces.

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.

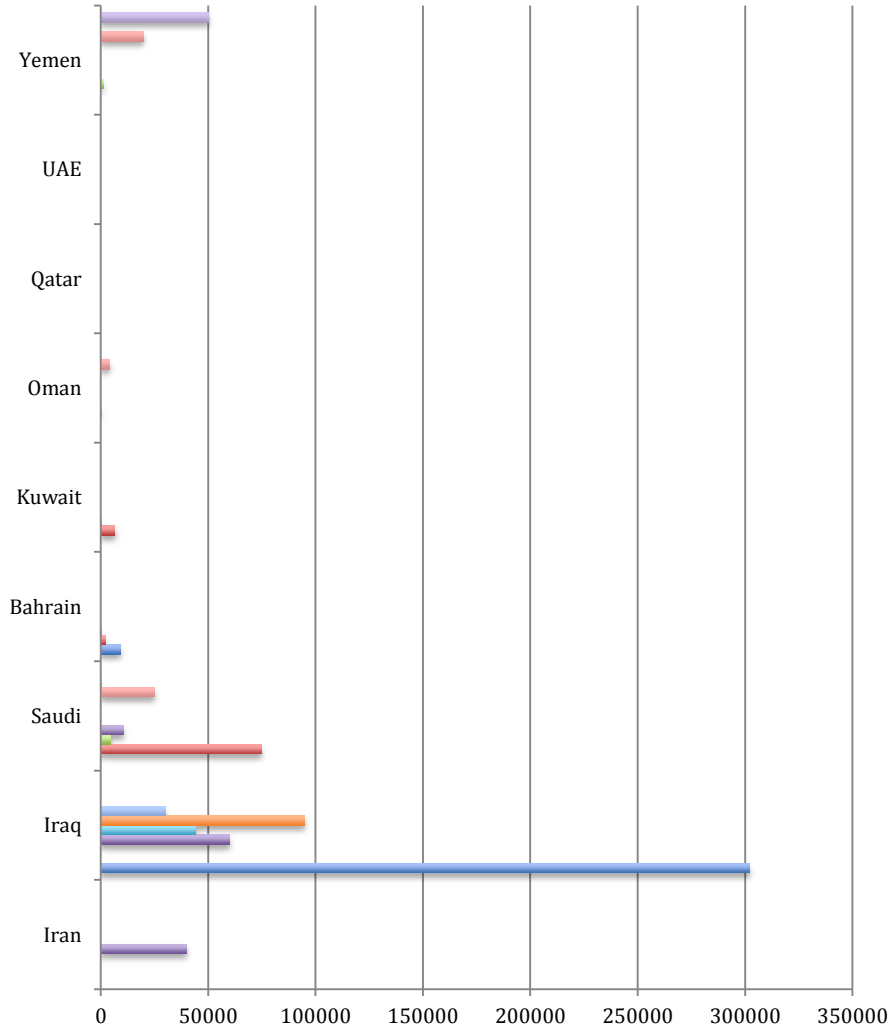
Figure II.4: Total Gulf Military Manpower by Service in 2012



	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Army	350000	193400	75000	6000	11000	25000	8500	44000	60000
Air Force	18000	5050	20000	1500	2500	5000	1500	4500	3000
Navy	18000	3600	13500	700	2000	4200	1800	2500	1700
Guard	125000		100000			6400			
Air Defense	12000		16000						2000

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 II.5: Paramilitary Forces by Type by Country in 2012



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Ministry of the Interior Forces									50000
Special Security Force			500						
Tribal Guard/Levies			25000			4000			20000
Oil Police		30000							
Facilities Protection		95000							
Federal Police		44000							
Border Enforcement	40000	60000	10500						
Coast Guard			4500	260	500	400			1200
National Guard			75000	2000	6600				
Police		302000		9000					

* Iran can mobilize approximately 1,000,000 Basij if necessary. This force is not represented in this graph.

Source: Adapted from IISS, The Military Balance

III. Trends in Land Forces

Figures III.1 through **III.9** display the trends in manpower, major combat units, armor, tanks, and artillery.

- **Figure III.1** shows active land force manpower. Once again, the most striking trends are the size of Iran's regular army and IRGC, the impact of the 2003 invasion on Iraq's manpower, the growth of Saudi manpower, and the comparatively small size of most other Southern Gulf forces. It should be noted that the totals for Yemen are nominal at best. The current force strength and cohesion of Yemeni forces is unknown.

  It should also be stressed that none of the manpower and equipment totals for land forces include US, British, and French power projection forces. The US did forward deploy two bridge equivalents at the time these data were collected. It is not clear, however, what US forces will be forward deployed or have prepositioned equipment in the future. Britain and France have no forward deployed or prepositioned land force combat units. The lack of prepositioning places a critical time constraint on the ability to deploy US and European land forces for any demanding combat mission requiring more than lightly equipped infantry or SOF forces.

- **Figure III.2** shows the declared numbers of major combat units in each army. There is limited value in trying to measure force size in terms of maneuver units, although each nation's declared numbers of combat units these do provide do indicate of force structure and content. Many combat units labeled as divisions, brigades, regiments do not have anything like this force size on even a nominal basis, and actual manning often falls critically short of authorized manning or has limited training. In many cases, the manpower present does not provide adequate combat recovery and maintenance capability, and a number of Southern Gulf forces are critically dependent on civilian contractors.

- **Figure III.3** shows that Iran and Saudi Arabia now dominate the Gulf land balance. Their holdings of armor differ radically in modernization and capability however, and Saudi equipment is more modern, less worn, and better maintained. Iraq is beginning to rebuild its armored forces, but has only a few modern M-12 tanks, and most of its AFVs and APCs are low-grade systems design for counterinsurgency.

- **Figure III.4** shows the importance of equipment modernization and capability. The totals for medium and high quality tanks are radically different from those in the previous figure, and Saudi numbers now have near parity with Iran (whose tanks are generally still sharply inferior to those of Saudi Arabia and the tanks in most of the smaller Southern Gulf states).

- **Figure III.5** shows that Iran does not have anything like the number of other armored fighting vehicles necessary to properly support its strength in main battle tanks, and how much the destruction of Iraq's land forces have changed this aspect of the balance. Kuwait and the UAE are the only smaller Southern Gulf states to have developed a good balance of tanks and other armored vehicles.

- **Figure III.6** shows the distribution of current holdings of other armored vehicles by kind. It reflects a lack of armored mobility in Iran's forces. At the same time, it is clear that each Southern Gulf states have developed a different force mix with little regard to interoperability.

- **Figure III.7** compares artillery strength. Iran's massive build up of such weapons during the Iran-Iraq War is still a major factor in the Gulf balance. This is the area where Iran has its greatest lead over the Southern Gulf states. However, that almost all of the Iranian lead is in towed weapons, and its artillery maneuver strength is severely limited.

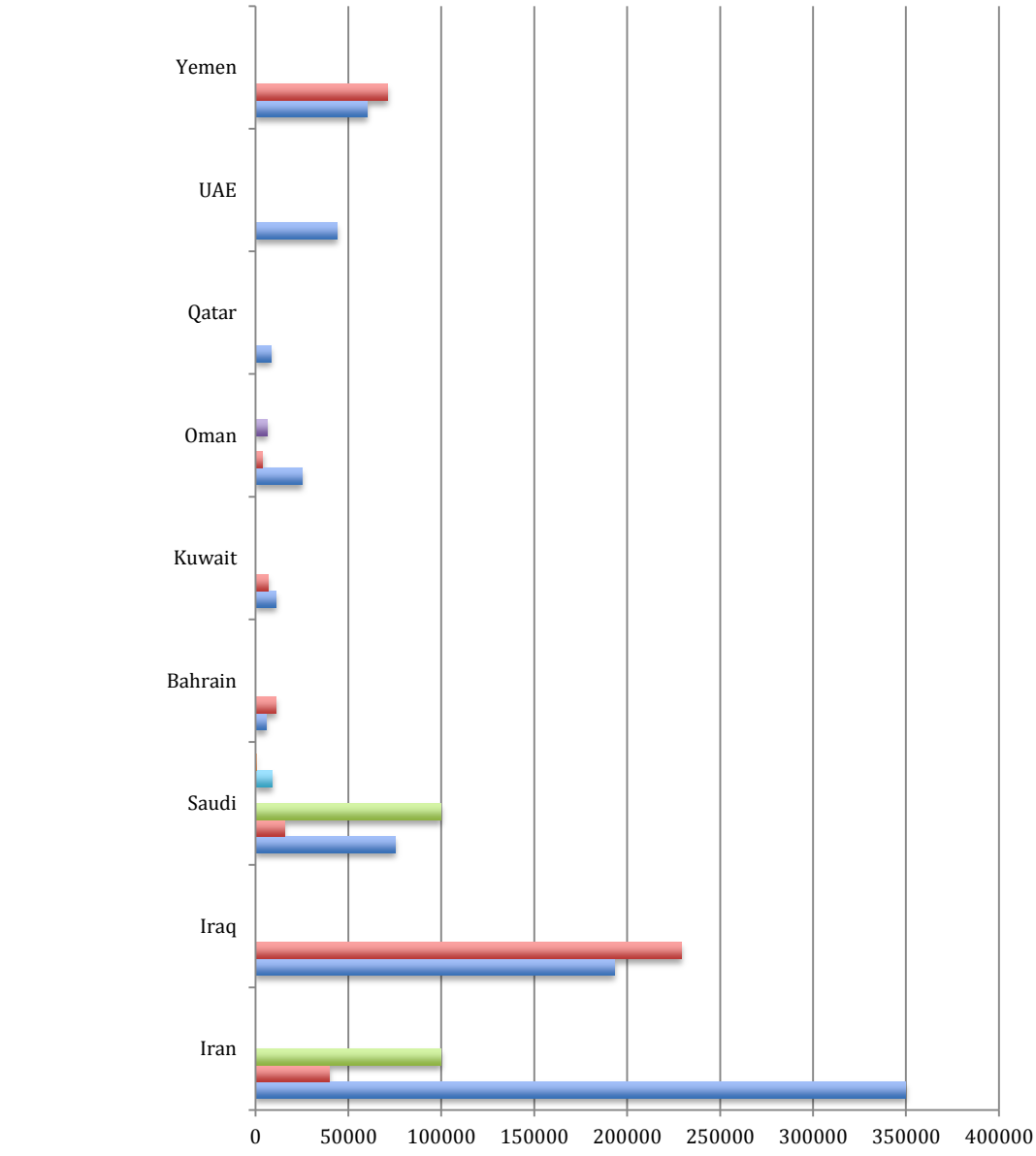
- **Figure III.8** and **Figure III.9** show the comparative strength of multiple rocket launchers. Once again, Iran has a major lead. Yemen also has comparatively large numbers of such weapons.

> Multiple rocket launchers provide a partial substitute for air power and can deliver large amounts of area fire, although generally with limited accuracy. Moreover, Iran has large numbers of log-range single rocket launchers and some analysts believe it is developing guided systems and weapons with terminal guidance that could be far more effective than unguided systems

It is important to note that these numbers do not reflect the very different levels of training, sustainment, and maneuver capability of the forces involved. It most cases, the forces involved have only limited realistic exercise experience, have only had counterinsurgency or counter terrorism experience since 1991, and lack a balanced mix of service support and sustainment capability for defensive – much less offensive warfare.

Gulf forces also differ radically in terms of their capability for combined arm, joint, and night warfare, and in battle management and intelligence, surveillance, and reconnaissance capability. It must again be stressed that quantitative comparisons have serve limits.

III.1: Land Force Manpower by Type in 2012



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Special Security Force			500						
Industrial Security Force			9000						
Royal Household Guard						6400			
Guard	100000		100000						
Paramilitary	40000	229000	15500	11260	7100	4000			71200
Army	350000	193400	75000	6000	11000	25000	8500	44000	60000

Source: Adapted from IISS, The Military Balance

III.2: 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)

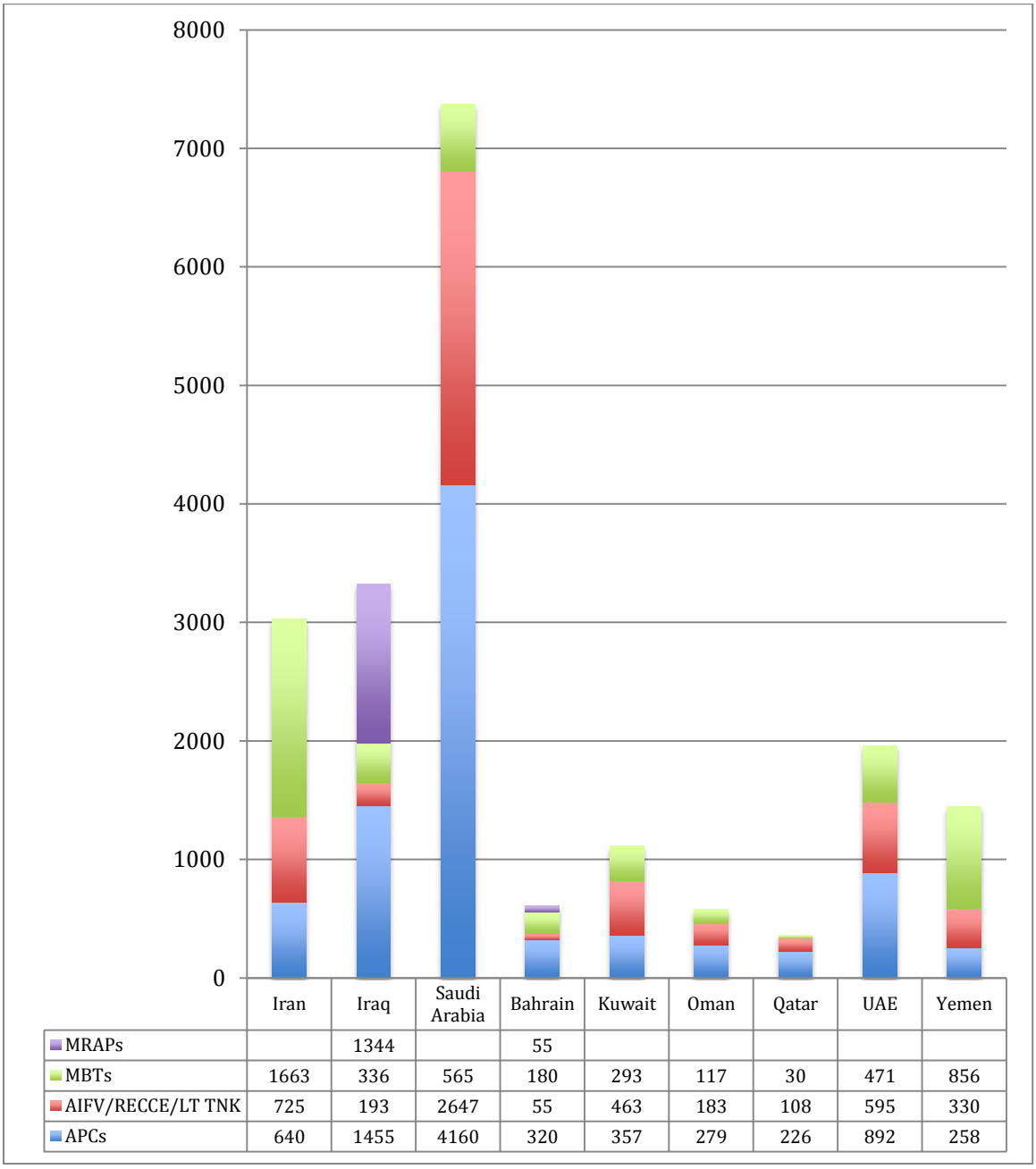
	Light 1 (Royal Guard) regt (3 lt inf bn) **Air Manoeuvre** 1 AB bde (2 AB bn, 3 SF coy) **Aviation** 1 comd (1 atk hel bde, 1 tpt hel bde)	
National Guard	**MANOEUVRE** **Mechanized** 3 mech bde (4 combined arms bn) **Light** 5 inf bde (3 combined arms bn, 1 arty bn, 1 log bn) **Other** 1 (ceremonial) 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

Figure III.3: Total Gulf Operational Armored Fighting Vehicles in 2012

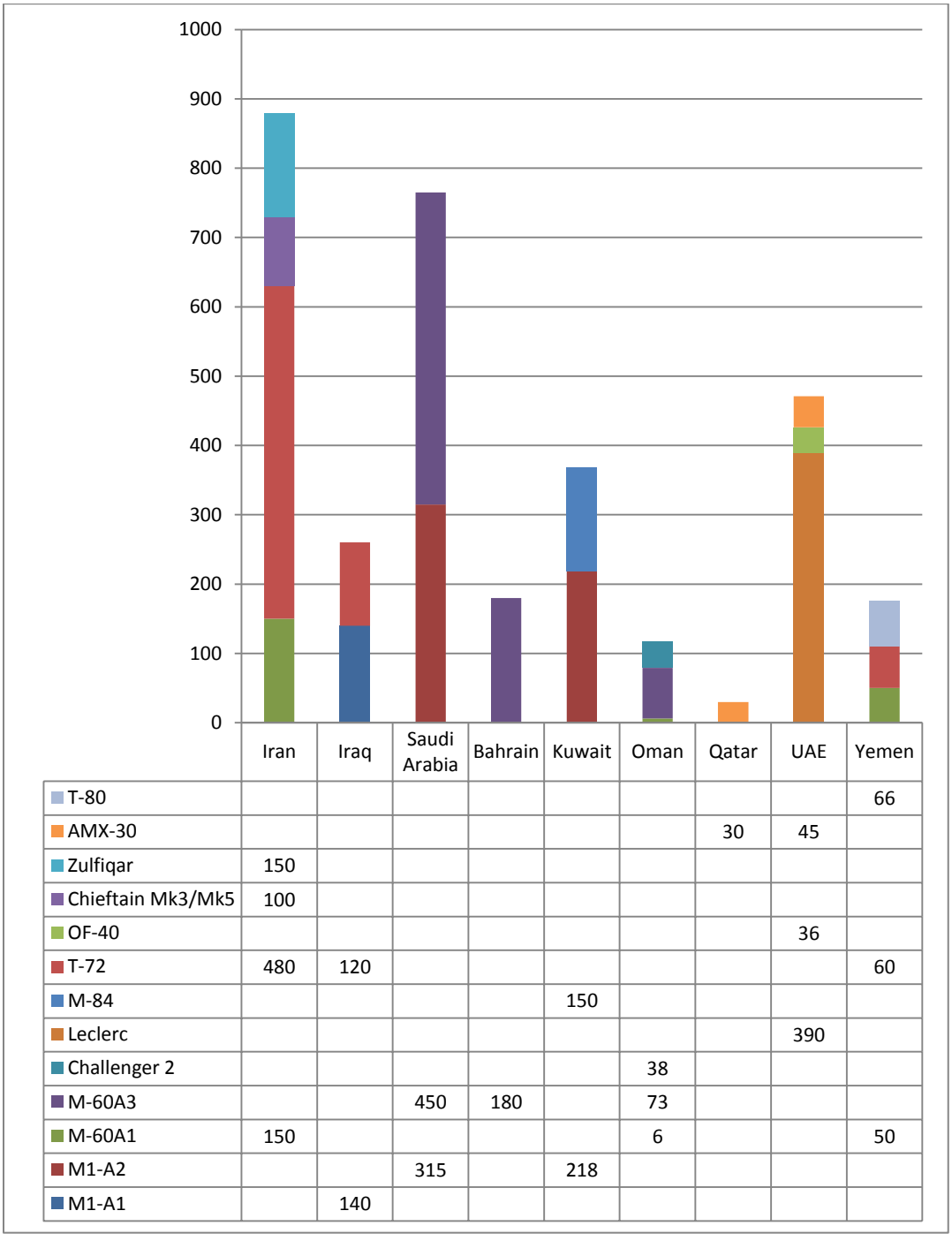


	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
MRAPs		1344		55					
MBTs	1663	336	565	180	293	117	30	471	856
AIFV/RECCE/LT TNK	725	193	2647	55	463	183	108	595	330
APCs	640	1455	4160	320	357	279	226	892	258

Note: Iranian totals include holdings in active forces in the Revolutionary Guards. Saudi totals include holdings in active National Guard & Navy Marines. Omani totals include Royal Household Guard.

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.

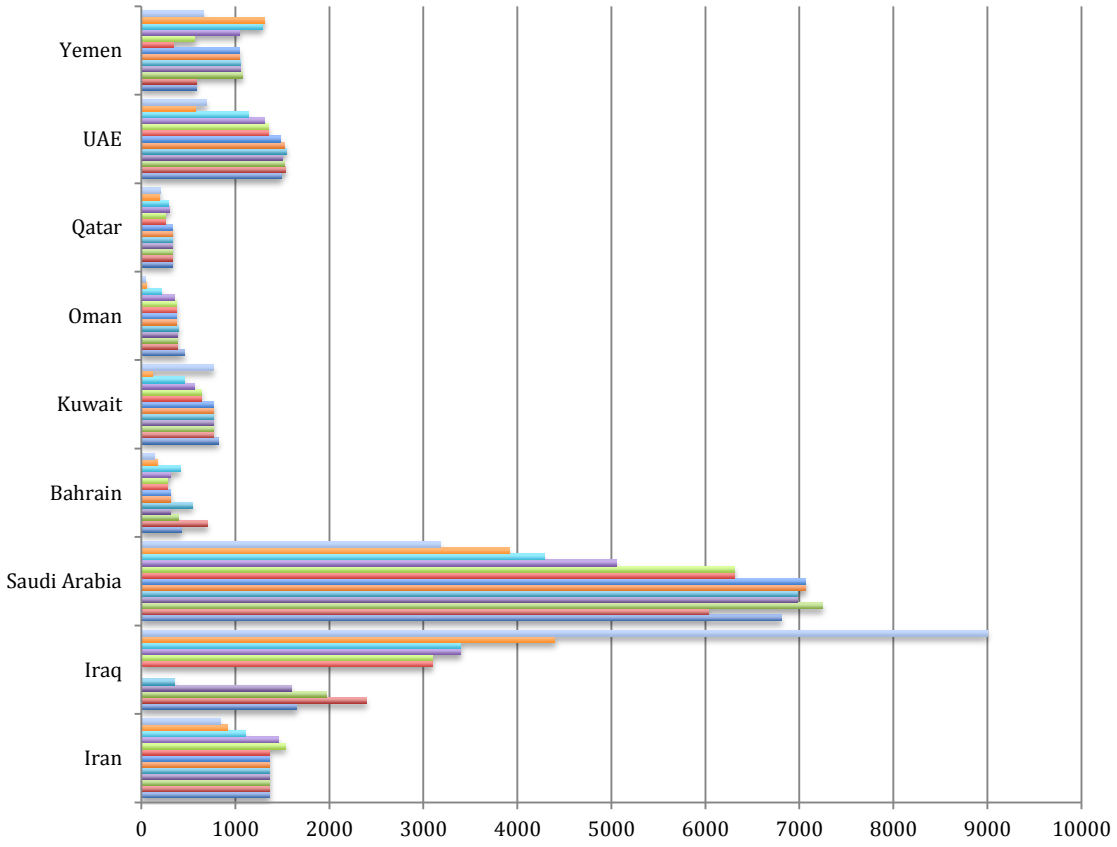
Figure III.4: Medium to High Quality Main Battle Tanks By Type in 2012



	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
T-80									66
AMX-30							30	45	
Zulfiqar	150								
Chieftain Mk3/Mk5	100								
OF-40								36	
T-72	480	120							60
M-84					150				
Leclerc								390	
Challenger 2						38			
M-60A3			450	180		73			
M-60A1	150					6			50
M1-A2			315		218				
M1-A1		140							

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.5: Total Operational Other Armored Vehicles (Lt. Tanks, LAVs, AIFVs, APCs, Recce) in Gulf Forces 1990-2012

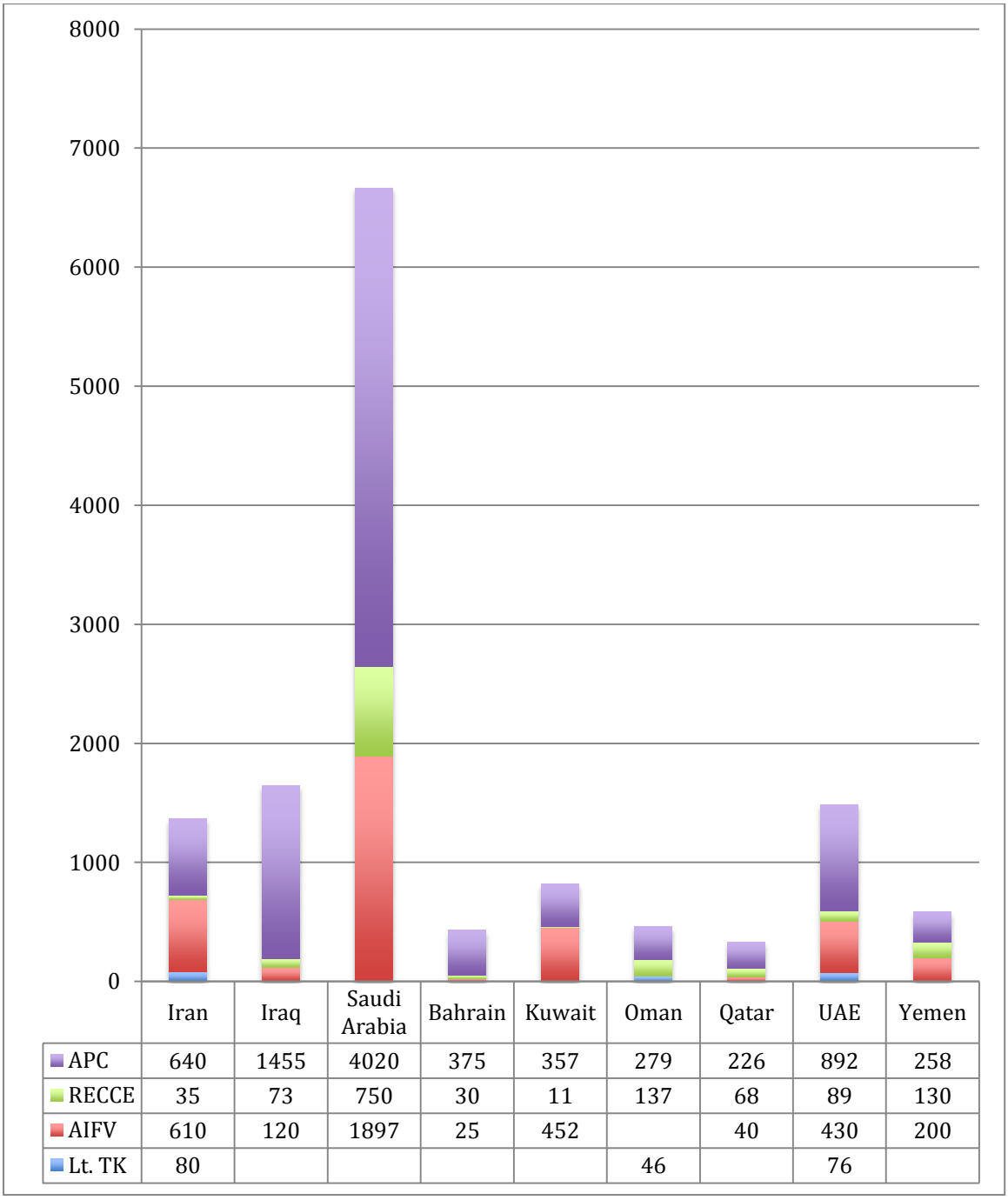


	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
1990	845	9,000	3,180	141	765	44	198	694	665
1993	920	4,400	3,915	168	120	51	190	571	1,305
2000	1,105	3,400	4,285	411	455	219	284	1,138	1,290
2003	1,455	3,400	5,057	306	561	349	302	1,305	1,040
2004	1,535	3,100	6,307	276	636	371	252	1,350	570
2005	1,364	3,100	6,307	276	636	371	252	1,350	340
2006	1,365		7,067	306	771	373	334	1,479	1,040
2007	1,365		7,067	306	771	373	334	1,525	1,040
2008	1,365	352	6,977	541	771	398	334	1,545	1,055
2009	1,365	1,599	6,977	306	771	380	334	1,499	1,055
2010	1,365	1,966	7,247	396	771	380	334	1,527	1,073
2011	1,365	2,391	6,037	705	771	380	334	1,533	588
2012	1365	1648	6807	430	820	462	334	1487	588

Note: Iranian totals include holdings in active forces in the Revolutionary Guards. Saudi totals include holdings in active National Guard & Navy Marines. Omani totals include Royal Household Guard.

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.6: Gulf Other Armored Fighting Vehicles (OAFVs) by Category in 2012

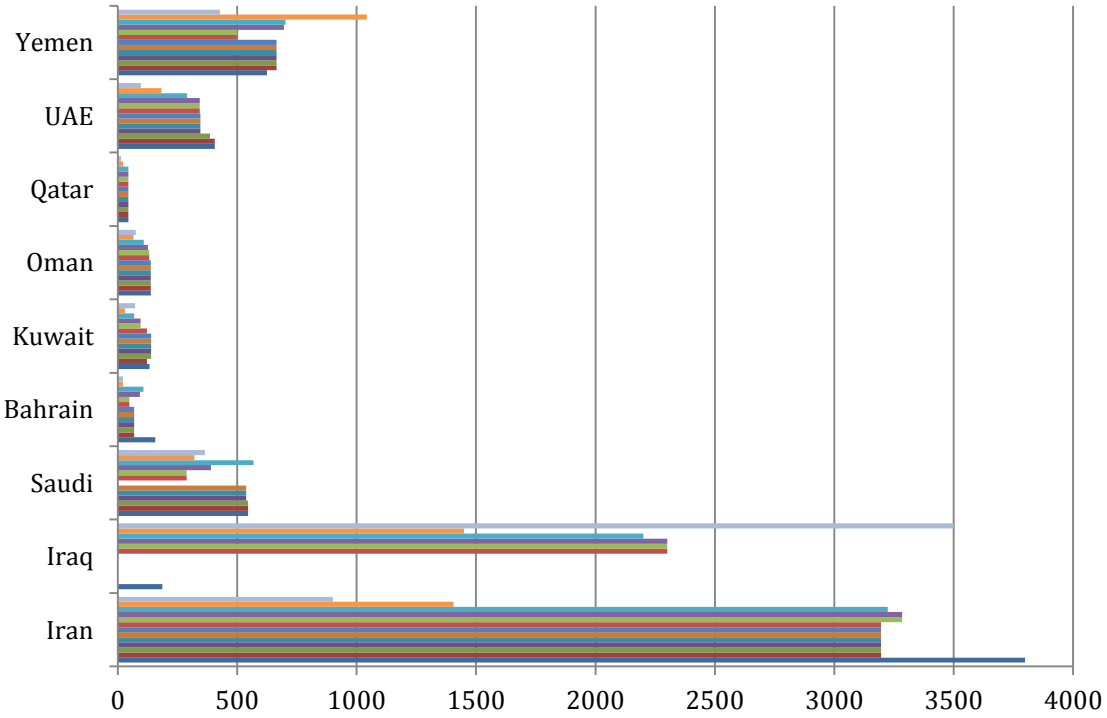


	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
APC	640	1455	4020	375	357	279	226	892	258
RECCE	35	73	750	30	11	137	68	89	130
AIFV	610	120	1897	25	452		40	430	200
Lt. TK	80					46		76	

Note: Iranian totals include active forces in the Revolutionary Guards. . Saudi totals include holdings in active National Guard & Navy Marines. Omani totals include Royal Household Guard.

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.7: Total Operational Self-Propelled and Towed Tube Artillery and Multiple Rocket Launchers in Gulf Forces 1993-2012

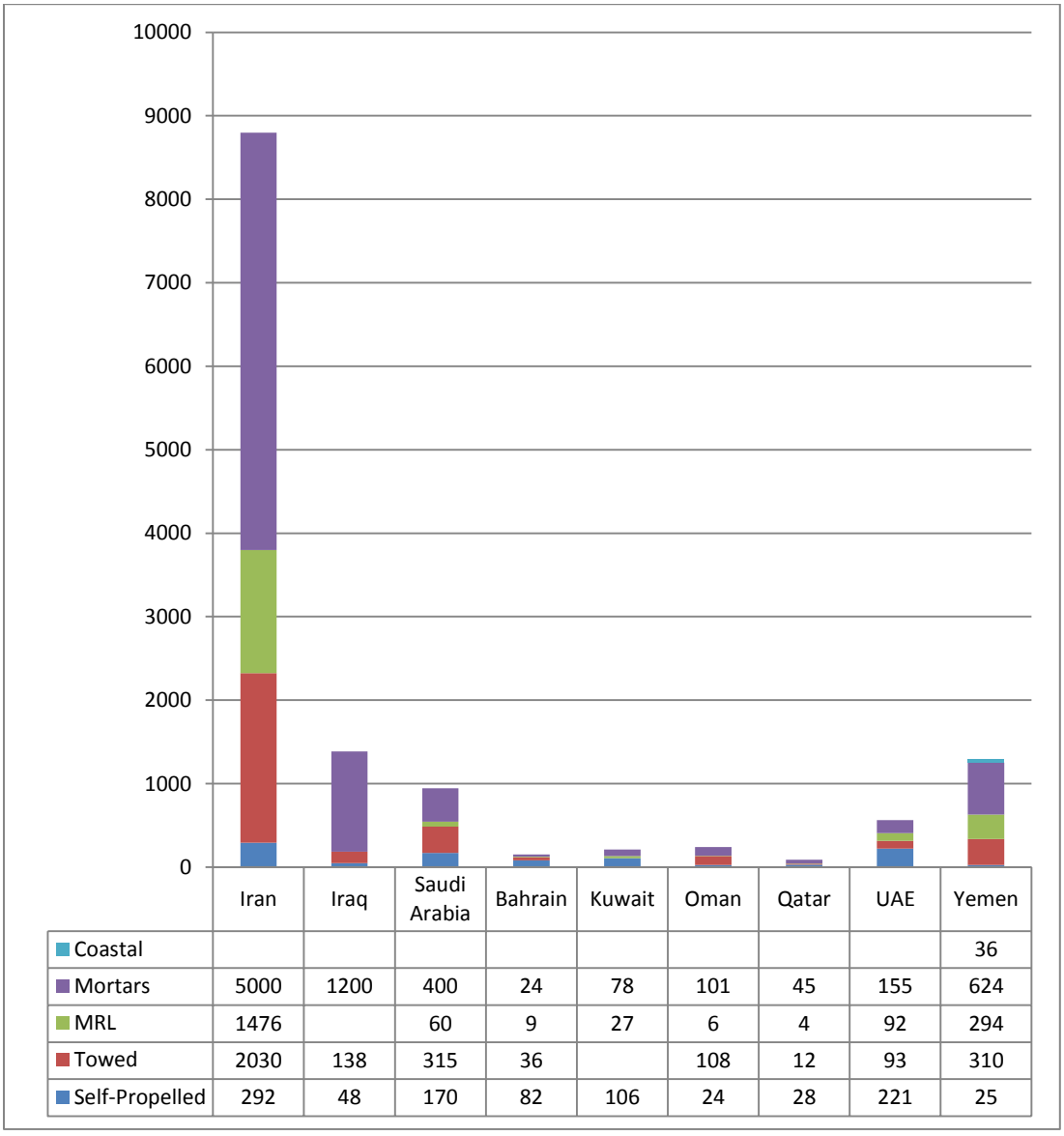


	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
1990	900	3,500	365	22	72	75	14	97	427
1993	1,405	1,450	320	22	29	66	22	182	1,042
2000	3,224	2,200	568	107	68	109	44	289	702
2003	3,284	2,300	390	93	95	126	44	343	695
2004	3,284	2,300	288	48	95	132	44	343	499
2005	3,196	2,300	288	48	122	132	44	343	499
2006	3,196		0	69	140	138	44	346	665
2007	3,196		538	69	140	138	44	346	665
2008	3,196		538	69	140	138	44	346	665
2009	3,196		538	69	140	138	44	346	665
2010	3,196		545	68	140	138	44	386	665
2011	3,196		545	68	122	138	44	406	665
2012	3798	186	545	157	133	138	44	406	624

Note: * Iranian totals exclude mortars and include active forces in the Revolutionary Guards. Saudi totals include active National Guard. Omani totals include Royal Household Guard. Data for Iraq not available after 2005.

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: Total Operational Gulf Artillery Weapons in 2012

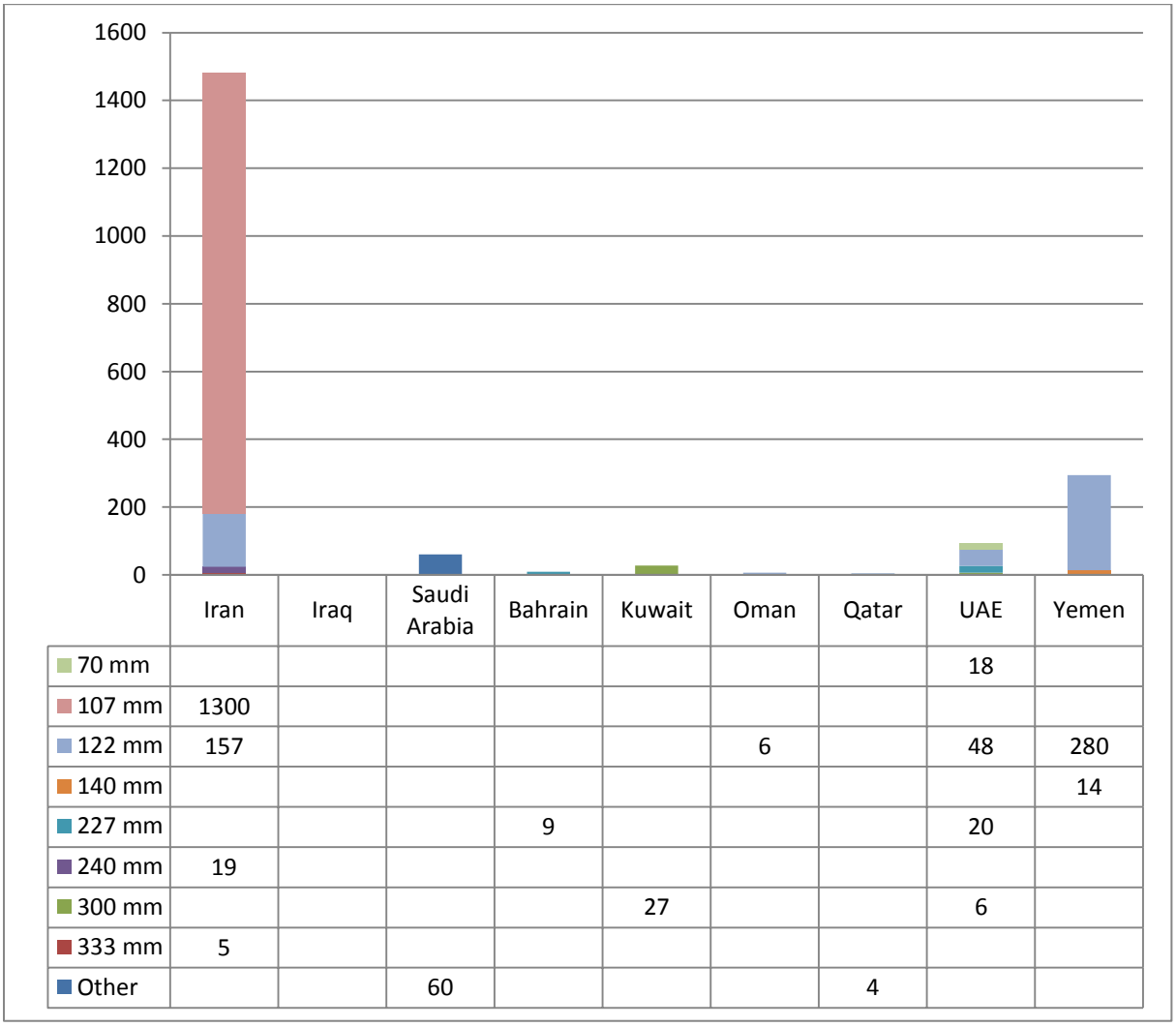


	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Coastal									36
Mortars	5000	1200	400	24	78	101	45	155	624
MRL	1476		60	9	27	6	4	92	294
Towed	2030	138	315	36		108	12	93	310
Self-Propelled	292	48	170	82	106	24	28	221	25

Note: Iranian totals include active forces in the Revolutionary Guards. Saudi totals include active National Guard. Omani totals include Royal Household Guard. Data for Iraq is unavailable.

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.9: Gulf Inventory of Multiple Rocket Launchers by Caliber in 2012



	Iran	Iraq	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
70 mm								18	
107 mm	1300								
122 mm	157					6		48	280
140 mm									14
227 mm				9				20	
240 mm	19								
300 mm					27			6	
333 mm	5								
Other			60				4		

Note: * Iranian totals include active forces in the Revolutionary Guards. Saudi totals include active National Guard. Omani totals include Royal Household Guard. Iraq has a total of approximately 200 Multiple-Rocket Launchers.

** Only 150 of Yemen's 12 2mm launchers are operational.

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.

IV. Trends in Air and Air Defense Forces

It is air, surface-to-air missile, and naval power that seem most likely to dominate any near term clash between Iran, the Southern Gulf states, and the US. There is no way to estimate the numbers of carrier-based and land-based aircraft, or cruise missiles the US would deploy in given contingencies. It is clear, however, that the US could rapidly reinforce the Southern gulf states, and basing facilities and munitions stocks would allow deploying US forces to begin combat operations in a matter of days

Figures IV.1 through **IV.6** display data on Gulf combat aircraft, armed helicopters, and electronic warfare aircraft.

- **Figure IV.1** shows the manpower strength of Air Force and Air Defense Forces by country. These totals often are too small to adequately support the forces in given states. However, they do not include large number of foreign and native civilian contractors performing support and sustainment functions. Pilot quality, aircrew quality, and maintenance and repair capabilities will be far more important in combat than total manning.

- **Figure IV.2** shows total operational combat air strength. Iran has slowly built up much of the strength it lost after the fall of the Shah and in the Iran-Iraq War, however an arms export ban to Iran under United Nations Security Council Resolution 1747 may make it difficult for Iran to continue upgrading its forces for some time.

  The Iraqi Air Force lost roughly half of its strength during the Gulf War in 1991, and effectively ceased to exist in 2003.

  Saudi Arabia has good strength figures, but limited training, readiness, and sustainability. The UAE has good numbers for a country its size, but limited real-world effectiveness.

  The Yemeni air force lost much of its forces because of civil war and an inability to budget for sustained air power development.

- **Figure IV.3** compares total fixed wing and armed helicopter strength. The growing importance of armed helicopters in the Southern Gulf is apparent. The Iranian holdings are largely worn and obsolescent and the Iraqi armed helicopter forces no longer exist. It also shows that Kuwait has modernized its tanks, and that the UAE is the only other Southern Gulf force with significant modern tank strength.

- **Figure IV.4** shows Saudi Arabia's advantage over Iran in terms of high quality aircraft. At the same time, the range of different aircraft types again illustrates the lack of standardization and the interoperability problems of the Southern Gulf states.

- **Figure IV.5** reflects the limited emphasis on battle management, reconnaissance, and intelligence aircraft in the Gulf region, and the resulting limitations to situation awareness and targeting.

  These problems will, however, be of limited importance to the southern Gulf States if they operate in a coalition with the US. 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.

- **Figure IV.6** shows the balance of combat helicopters. Saudi Arabia has been relative slow to build up its forces, but those of Iran are worn and obsolescent and Iraq's forces have effectively ceased to exist.

- **Figure IV.7** shows that Saudi Arabia has the most modern mix of advanced land-based air defenses in the Gulf.

  Iran has extensive assets, but many are obsolete or obsolescent, and they are poorly netted and vulnerable to electronic warfare. Iran was also reported to have augmented its holdings of modern

> short-range air defense (SHORAD) systems with the acquisition of some Tor-M1 (SA-15 Gauntlet) and Pantsyr S-1E (SA-22 Greyhound), and there is continued uncertainty when and whether Iran would receive modern S-300PMU1 (SA-20 Gargoyle) long range SAMs. There are reports that Iran conducted initial test fires of the Tor-M1 in late 2009.[9]
>
> Iraq's assets have effectively ceased to exist. The smaller Southern Gulf states have a wide mix of assets, purchased with little attention to interoperability and which generally would have limited effectiveness because of a lack of effective long-range sensors, battle management systems training and readiness, and strategic depth.

Comparisons of combat air strength have growing limits at a time when the number of major platforms is becoming steadily less important relative to the quality of platforms, sensors, precision munitions, and enablers.

The air and air defense balance are changing radically are a result of new fixed wing, rotary wing, and surface-to-air missile purchases by the Southern Gulf states. The purchase of F-16s will also allow Iraq to begin to recreate its air force. The modernization of major combat aircraft platforms is, however, only part of the story.

Refueling and tanker purchases are extending the range of operations. Shifts to precision guided bombs and rockets both greatly increase the effectiveness or air strikes and give strike aircraft the ability to strike from outside the range of surface-to-air missiles and use anti-radiation missiles to destroy them. Improvements in radars, avionics, and air-to-air missiles have sharply reduce the value of dogfighting capability and greatly increased the value of all weather and beyond visual range air-to-air combat capability.

Command and control aircraft, intelligence aircraft, and airborne warning and air control aircraft are greatly increasing the coordination and effectiveness of air operations. The deployment of maritime patrol aircraft and naval surveillance and targeting capabilities of aircraft like the E-3B has steadily improved air-sea battle capabilities, while UCAVs, other types of radars, and improvements in communications and digital data links have improved joint air-land operations capabilities.

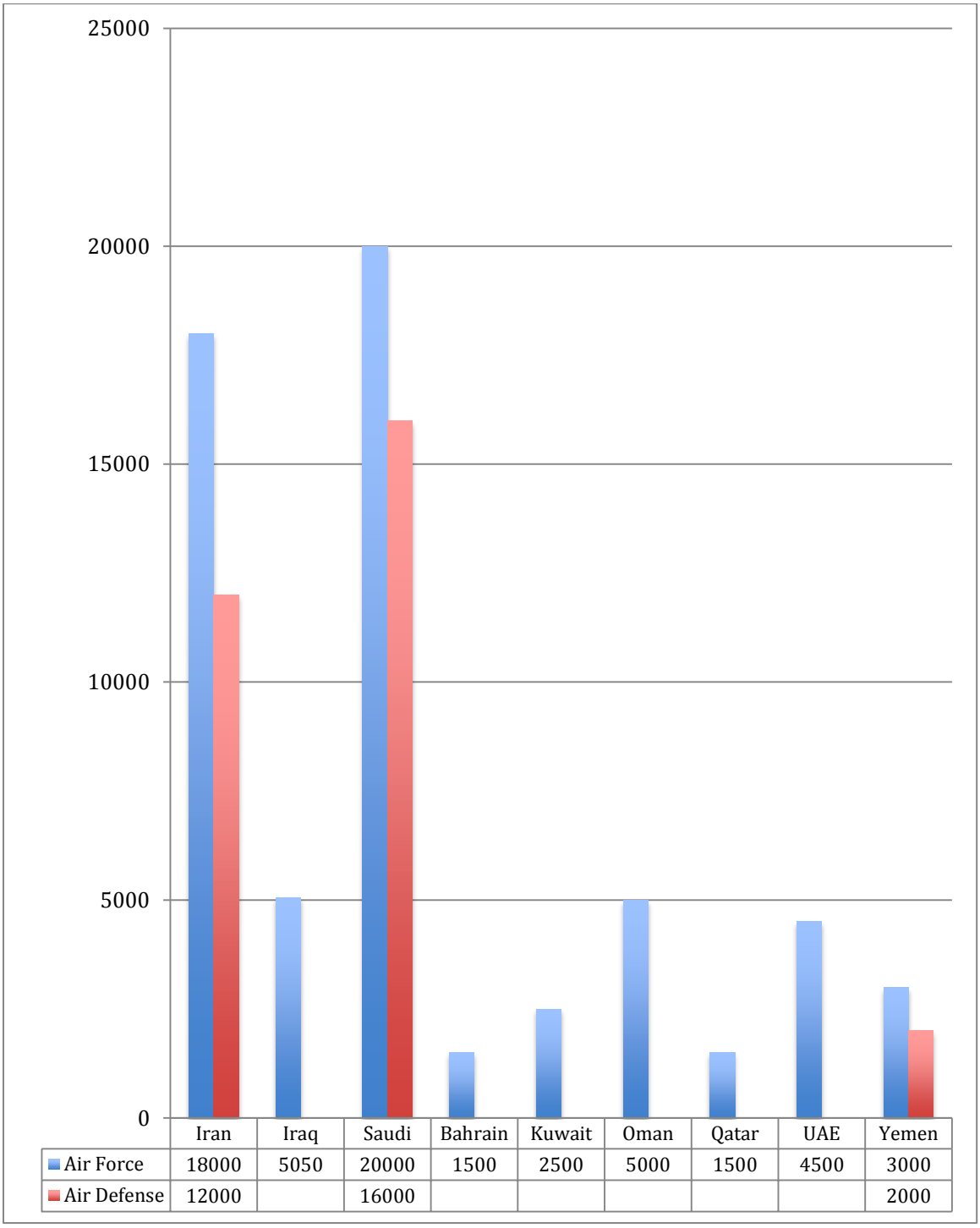
The Southern Gulf countries with such air assets have a decisive advantage over countries like Iran and Iraq that have limited or no capabilities in many areas. They also can benefit from being interoperable with US forces that have access to superior ELINT, other intelligence, and satellite capabilities, as well as more advanced electronic warfare assets. They also have growing rotary wing warfare capabilities using helicopters that are more advanced that Iran's aging fleets, and which give them the ability to strike rapidly as terrorists, distant land targets, and offshore or naval targets in the Gulf.

Southern Gulf forces do, however, require both better equipment and better training to take advantage of such capabilities. They need better joint warfare and exercise training. Most air regional forces lack the ability to sustain high sortie rates, and many Southern Gulf forces are highly dependent on support from foreign contractors.

Advances in surface-to-air missile forces also given the Southern Gulf a major advantage over Iran's largely obsolete surface-to-air missile forces and an Iraq, which no longer has such forces. The Southern Gulf is also acquiring steadily better missile defense capabilities, and the UAE may be the first Gulf state to buy THAAD – a "wide area" missile defense system. The GCC states do, however, badly need a far more advanced integrated air defense system, and the ability to integrate offensive air operations, as well

as a consistent and interoperable capability to conduct air-sea surveillance and combat operations.

Figure IV.1: Air and Air Defense Force Manpower by Type in 2012

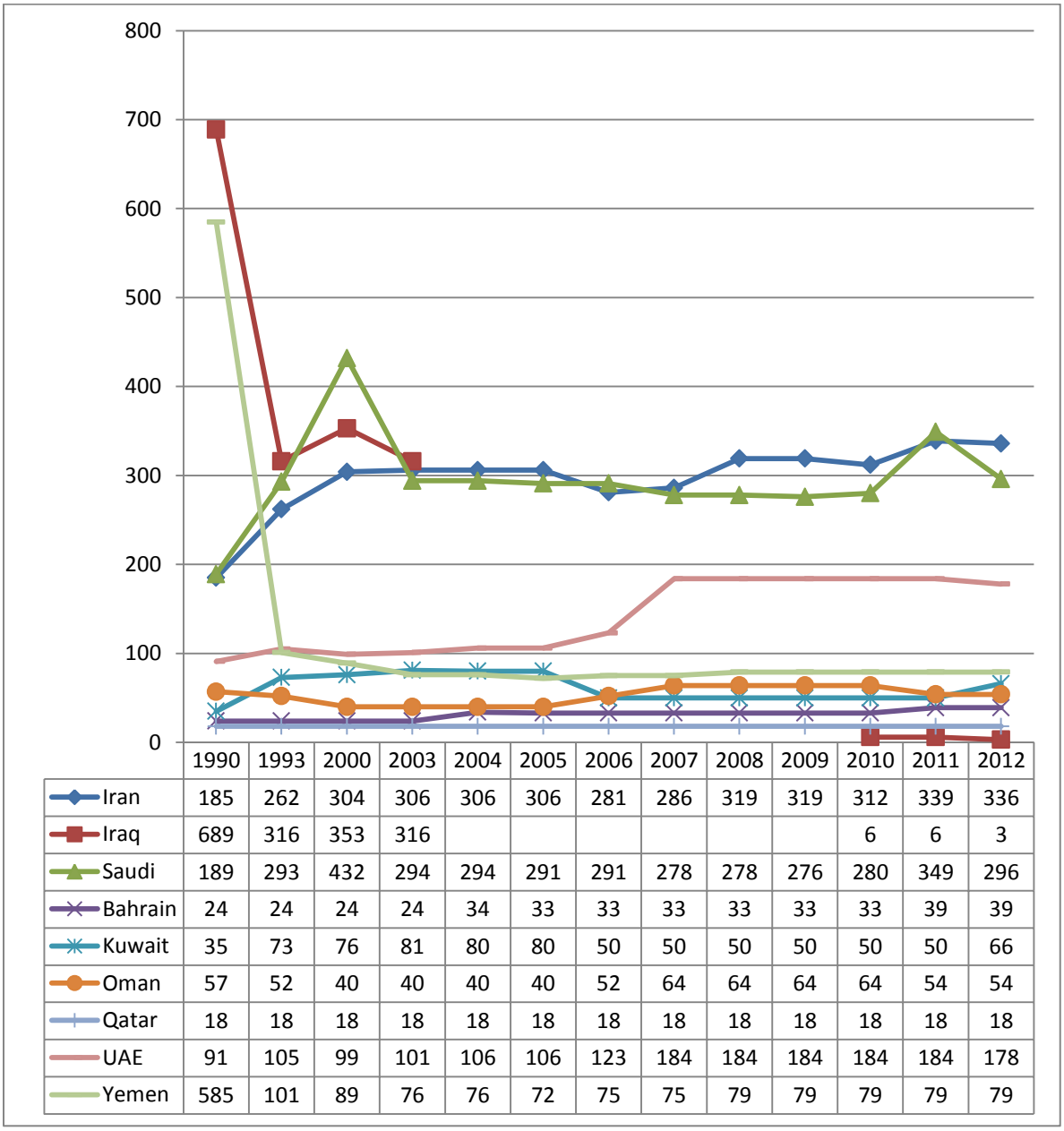


	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Air Force	18000	5050	20000	1500	2500	5000	1500	4500	3000
Air Defense	12000		16000						2000

Source: Adapted from IISS, The Military Balance

Figure IV.2: Total Operational Combat Capable Aircraft in All Gulf Forces 1993-2012

(Does not include stored or unarmed electronic warfare, recce or trainer aircraft)

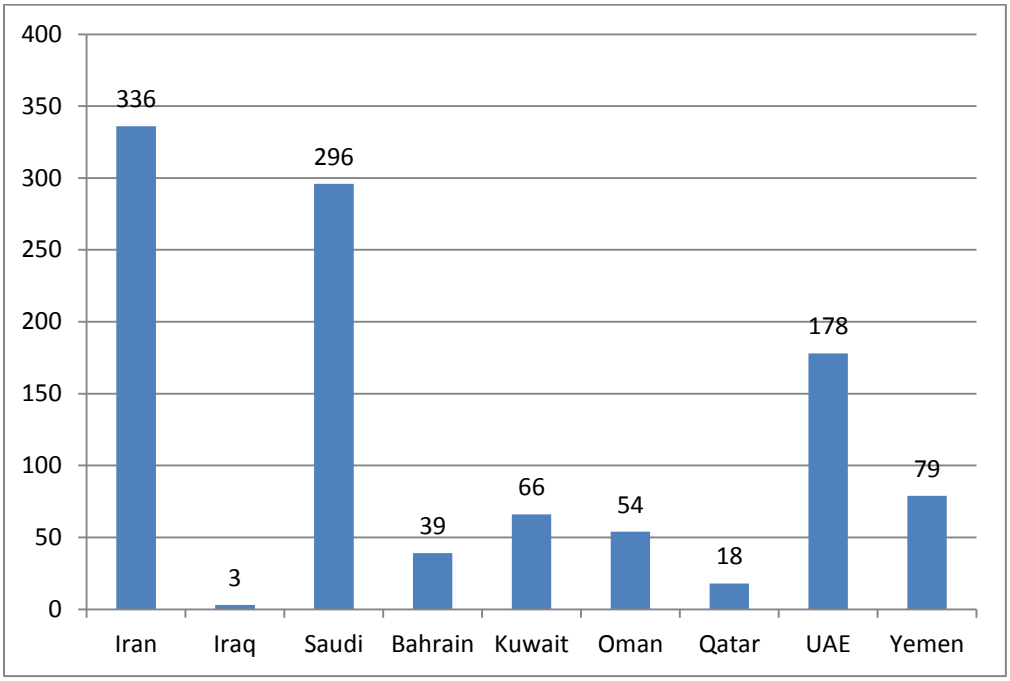


	1990	1993	2000	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Iran	185	262	304	306	306	306	281	286	319	319	312	339	336
Iraq	689	316	353	316							6	6	3
Saudi	189	293	432	294	294	291	291	278	278	276	280	349	296
Bahrain	24	24	24	24	34	33	33	33	33	33	33	39	39
Kuwait	35	73	76	81	80	80	50	50	50	50	50	50	66
Oman	57	52	40	40	40	40	52	64	64	64	64	54	54
Qatar	18	18	18	18	18	18	18	18	18	18	18	18	18
UAE	91	105	99	101	106	106	123	184	184	184	184	184	178
Yemen	585	101	89	76	76	72	75	75	79	79	79	79	79

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. Data for Iraq unavailable between 2004 and 2010.

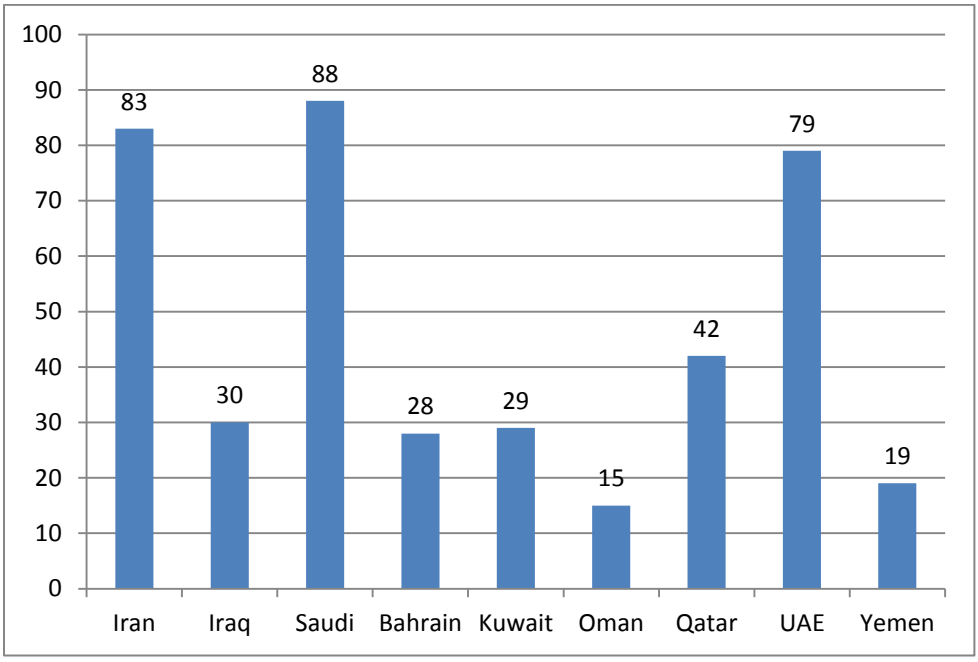
Figure IV.3: Total Gulf Holdings of Combat Aircraft in 2012

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.

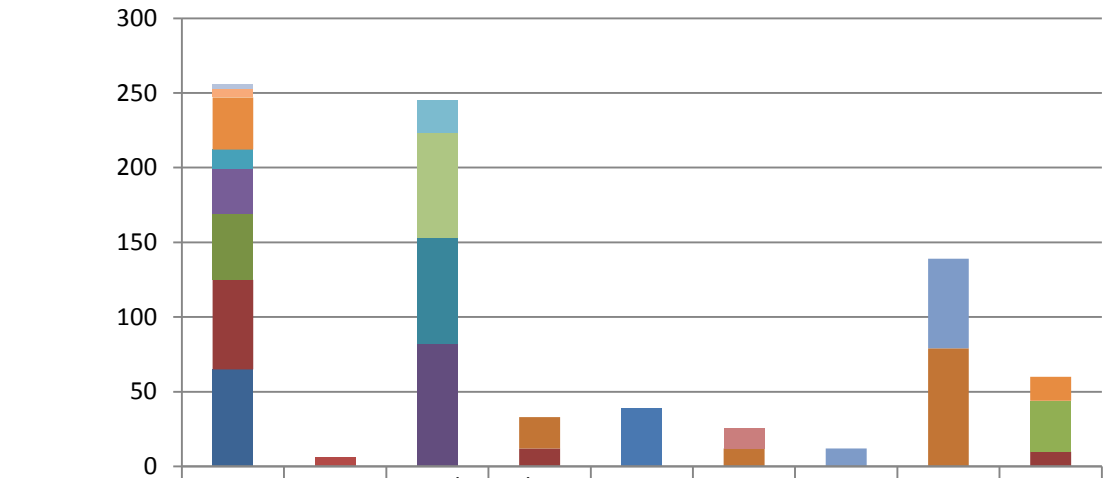
Armed and Attack Helicopters



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 IV.4: Gulf High and Medium Quality Fixed Wing Fighter, Fighter Attack, Attack, Strike, and Multi-Role Combat Aircraft By Type in 2012

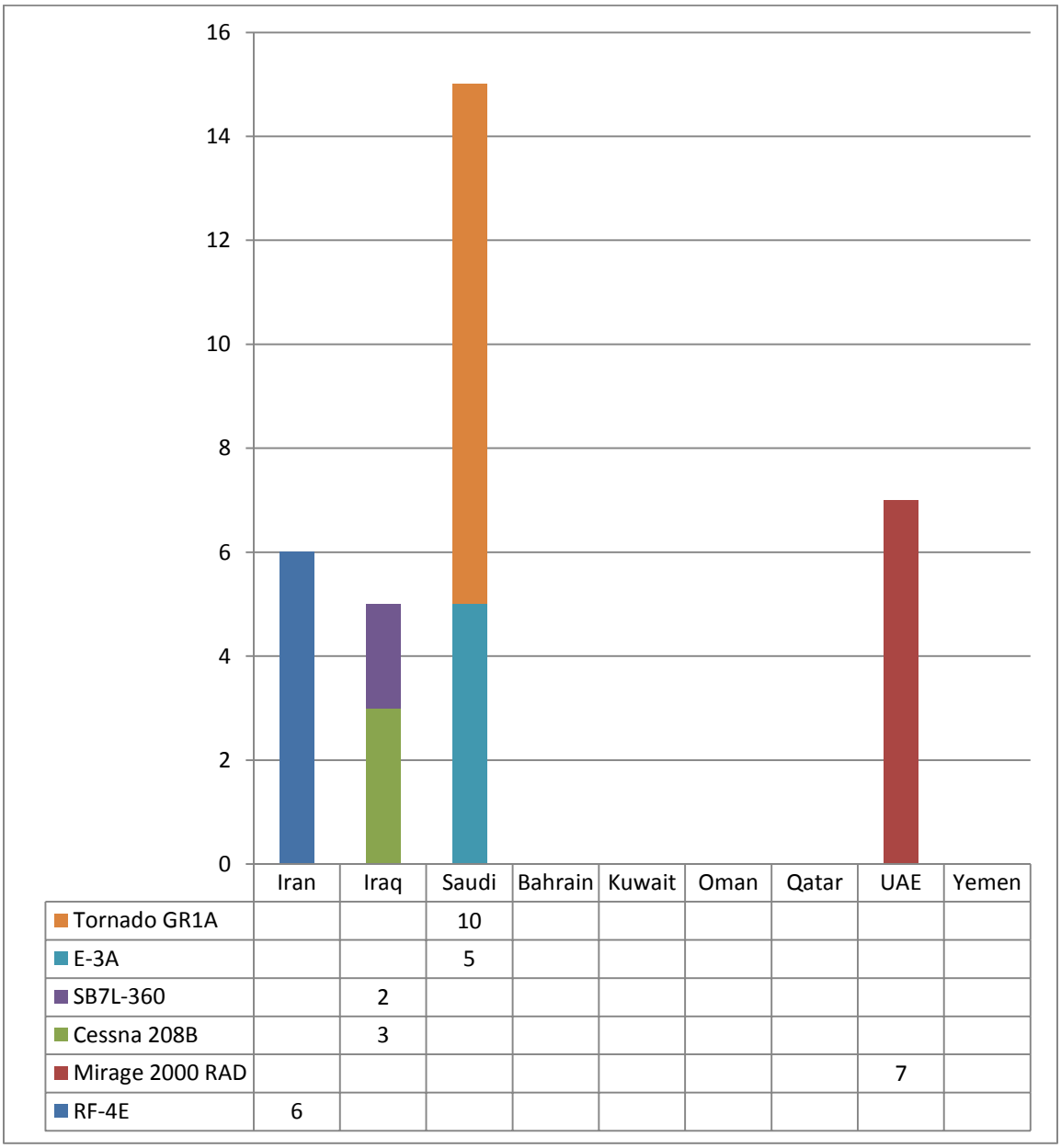
(Totals do not include combat-capable recce but does include OCUs and Hawk combat-capable trainers)



	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 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.

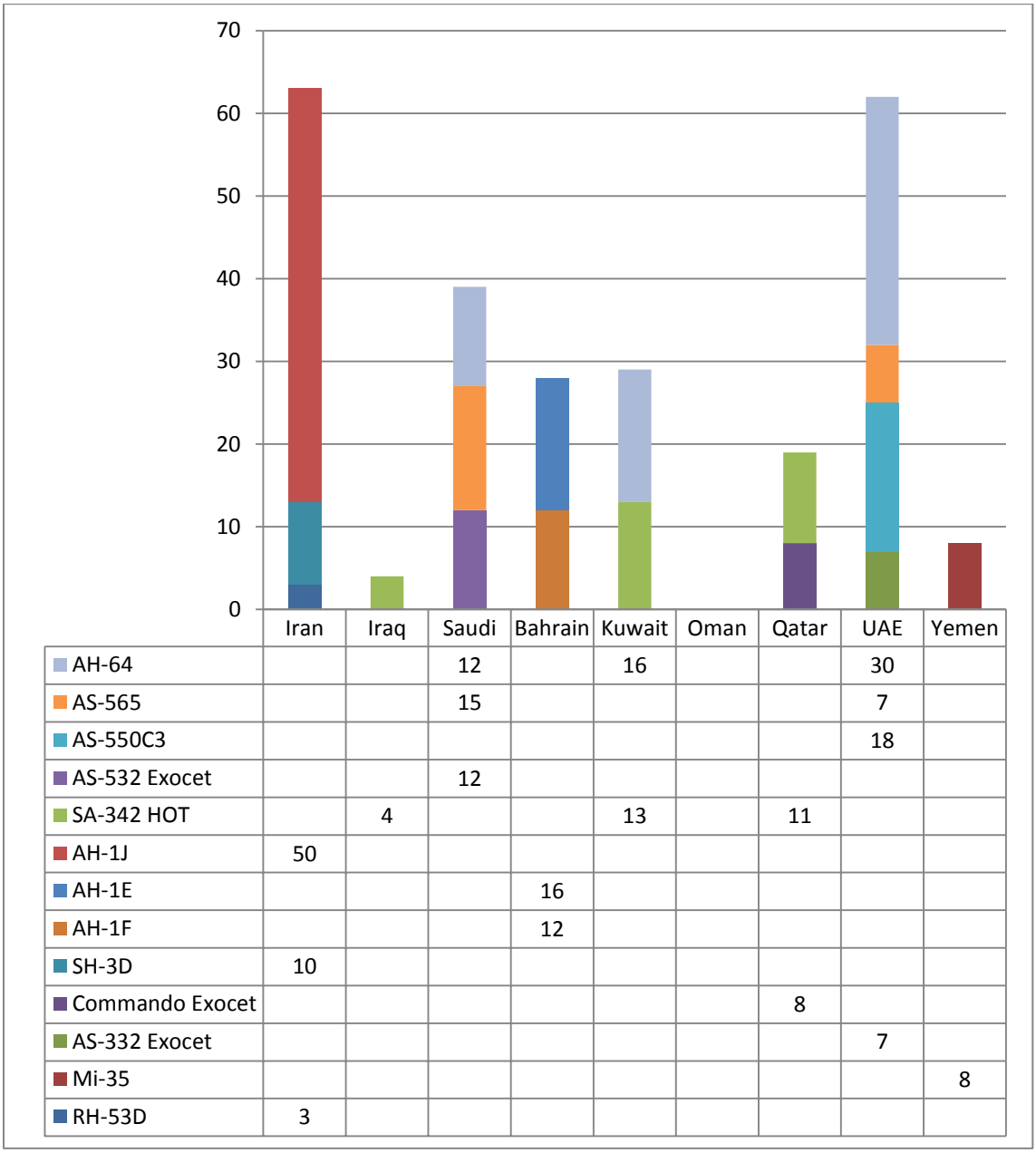
Figure IV.5: Gulf Reconnaissance and AWACS Aircraft in 2012



	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								

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 IV.6: Gulf Attack, Anti-Ship and ASW Helicopters in 2012



	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.

Figure IV.7: Land Based Air Defenses by Country in 2012

Country	Major SAM	Light SAM	AA Guns
Bahrain	8 I Hawk MIM-23B	60 RBS-70	27 Guns
		18 FIM-92A Stinger	15 Oerlikon 35 mm
		7 Crotale	12 L/70 40 mm
Iran	150 I Hawk MIM 23B	10 Pantsyr S-1E (SA-22 Greyhound)	1,700 Guns
		29 SA-15m Gauntlet (Tor-M1)	ZPU-2/4 14.5 mm
	10 SA-5	30 Rapier	ZSU-23-4 23 mm
	45 SA-2 Guideline	15 Tigercat	ZPU-2/4 23 mm
		Some SA-7/14/16, HQ-7	ZU-23 23 mm
			35mm
		Some HN-5; QW-1 Misaq	M-1939 37 mm
		Some FM-80 (Crotale)	ZSU-57-2 57 mm
		Some FIM-92A Stinger	S-60 57 mm
Iraq			
Kuwait	40 PAC-2 Patriot	12 Aspide	12+ Oerlikon 35mm
	24 MIM-23B I Hawk Phase III	48 Starburst/FIM-92A Stinger	
	12 Skyguard/Aspide		
Oman	None	12 Pantsyr S1E SPAAGM	34 Guns
		8 Mistral II	9 VAB VDAA 20 mm
			4 ZU-23-2 23 mm
		34 Javelin	10 GDF-005 Skyguard 35 mm
		34 SA-7	12 L-60 40 mm
		40 Rapier	
		6 Blindfire	
		S713 Martello	
Qatar	None	10 Blowpipe	None
		12 FIM-92A Stinger	
		9 Roland II	
		24 Mistral	
		20 SA-7	
Saudi Arabia	96 PAC-2	40+ Crotale	1,220 guns
	128 MIM-23B I-Hawk	500 FIM-92AStinger (ARMY)	92 M-163 Vulcan 20 mm
	73 Shahine	500 Mistral (ADF)	30 N-167 Vulcan 20 mm (NG)
	68 Crotale/Shahine	500 FIM-43 Redeye (ARMY)	850 AMX-30SA 30 mm

		500 FIM-43Redeye (ADF)	128 GDF Oerlikon 35 mm
		400 FIM-92A Avenger (ADF)	150 L-70 40 mm (in store)
			130 M-2 90 mm (NG)
UAE	I-Hawk MIM-23B	20+ Blowpipe	62 guns
		20+ Mistral	42 M-3VDA 20 mm SP
		Some Rapier	20 GCF-BM2 30 mm
		Some Crotale; Javelin	
		Some RB-70; SA-18	
Yemen	Some SA-2, 3, 6	~800 SA-7, 9, 13, 14	530 guns
			50 M-167 20 mm
			20 M-163 Vulcan SP 2 0mm
			50 ZSU-23-4 SP 23 mm
			100 ZSU-23-2 23 mm
			150 M-1939 37 mm
			120 S-60 57 mm
			40 M-1939 KS-12 85 mm

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.

V. Trends Affecting Naval Forces

Figure V.1 to **Figure V.6** compare various aspects of naval strength. The qualitative issues affecting the forces have been described earlier. Iran is the only significant Gulf navy with relatively large holdings of ship-to-ship missile (SSM)-equipped patrol craft. Saudi Arabia has significant total ship strength, and better and more modern ships with growing amphibious capabilities, but limited readiness and proficiency.

While most Southern Gulf states are in the process of acquiring newer surface assets, the lack of interoperability, specialization, and orientation around key missions leaves most Southern Gulf navies with only limited ability to cooperate. So does a lack of effective airborne surveillance, modern mine warfare ships, and ASW capabilities.

The major naval mission in the Gulf is also likely to be driven by Iran's focus on asymmetric warfare and the threat posed by its submarine, submersible, mine, anti-ship missile, and Naval Guards forces. It seems unlikely that a major conventional war will take place between naval forces, and equally unlikely that it will be dominated by naval versus air sea operations.

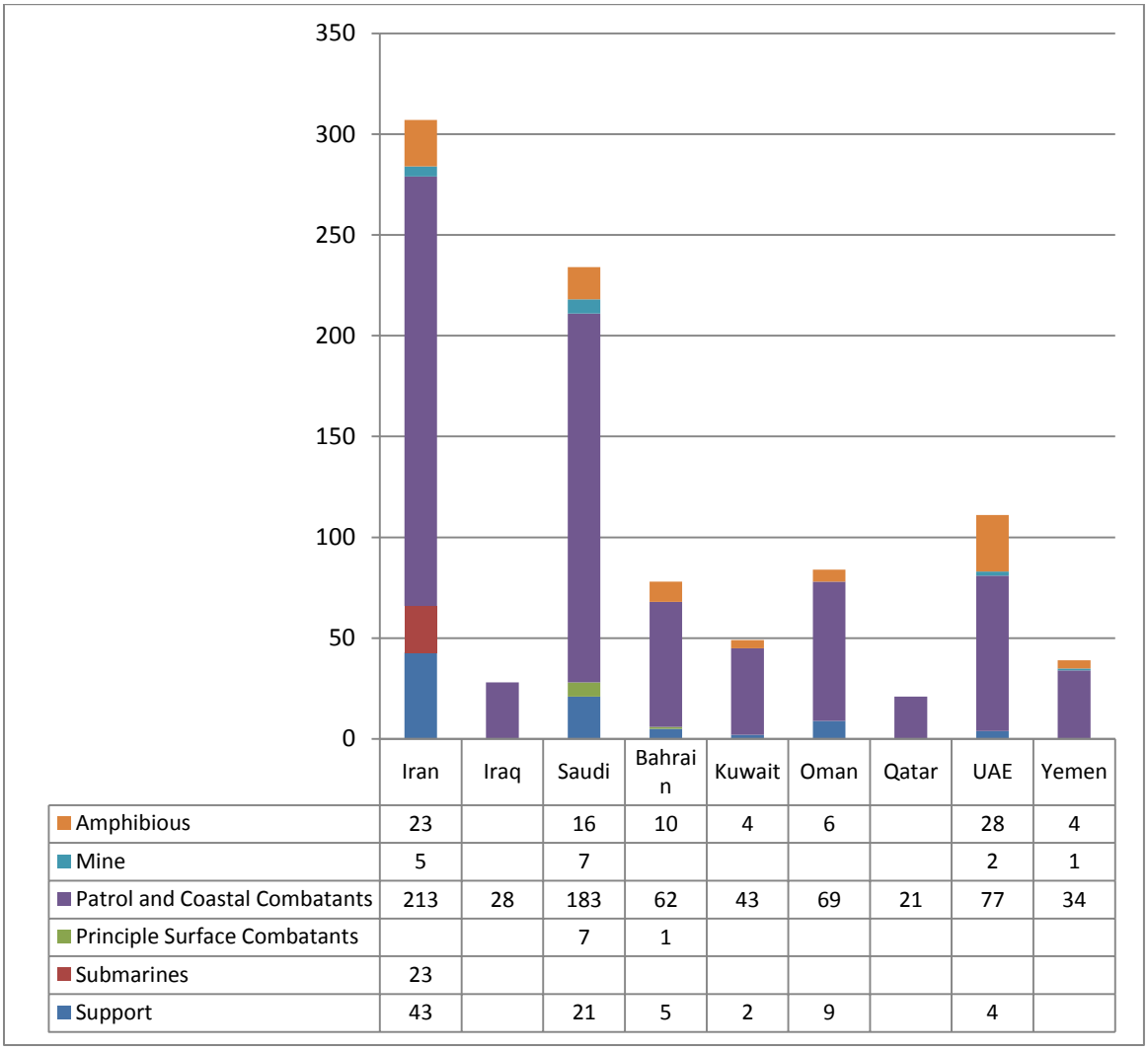
- **Figure V.1** shows the comparative manpower strength of Gulf naval forces. Training and readiness remains limited, although Iran is now conducting serious major exercises, and Southern Gulf capabilities are slowly improving.
- **Figure V.2** shows the strength of the combatant ships in Gulf navies by type. Iran and Saudi Arabia are the largest Gulf navies. In practice, however, the US Navy and US Air Force would lay a critical role in the naval balance in any major contingency.

  Many Iranian vessels have the disadvantage that they have not been fully refitted or modernized. Some Southern Gulf vessels, however, are over-designed and over-armed and difficult to operate, and
- **Figure V.3** shows the comparative strength of forces armed with anti-ship missiles. These forces seem likely to dominate surface engagements. They also, however, can strike at commercial vessels and tankers, and some systems can target offshore facilities and land targets.

  Ships without anti-ship and anti-air missiles – or with older such weapons, sensors, and combat centers – will be at a serious disadvantage.
- **Figure V.4** shows the number of mine warfare vessels in Gulf navies. These comparisons understate a critical problem. Iran has significant stocks of mines and of at least two types of smart mines. It can use any commercial ship or military ship to lay dumb mines or release free floating mines, and configure them to lay smart mines.

  The Southern Gulf forces have little real mine detection and sweeping capability, although several do have mine sweeping helicopters.
- **Figure V.5** shows the comparative strength of amphibious ships. Iran is the only Gulf power with a significant marine force, although Saudi Arabia has some such forces. No Gulf country carries out serious amphibious forced entry exercises, but such ships can be used to move forces to any passive or friendly port, and to occupy islands and offshore facilities. Countries with ferries would also have extensive additional commercial sealift.

Figure V.2: Gulf Naval Ships by Category in 2012

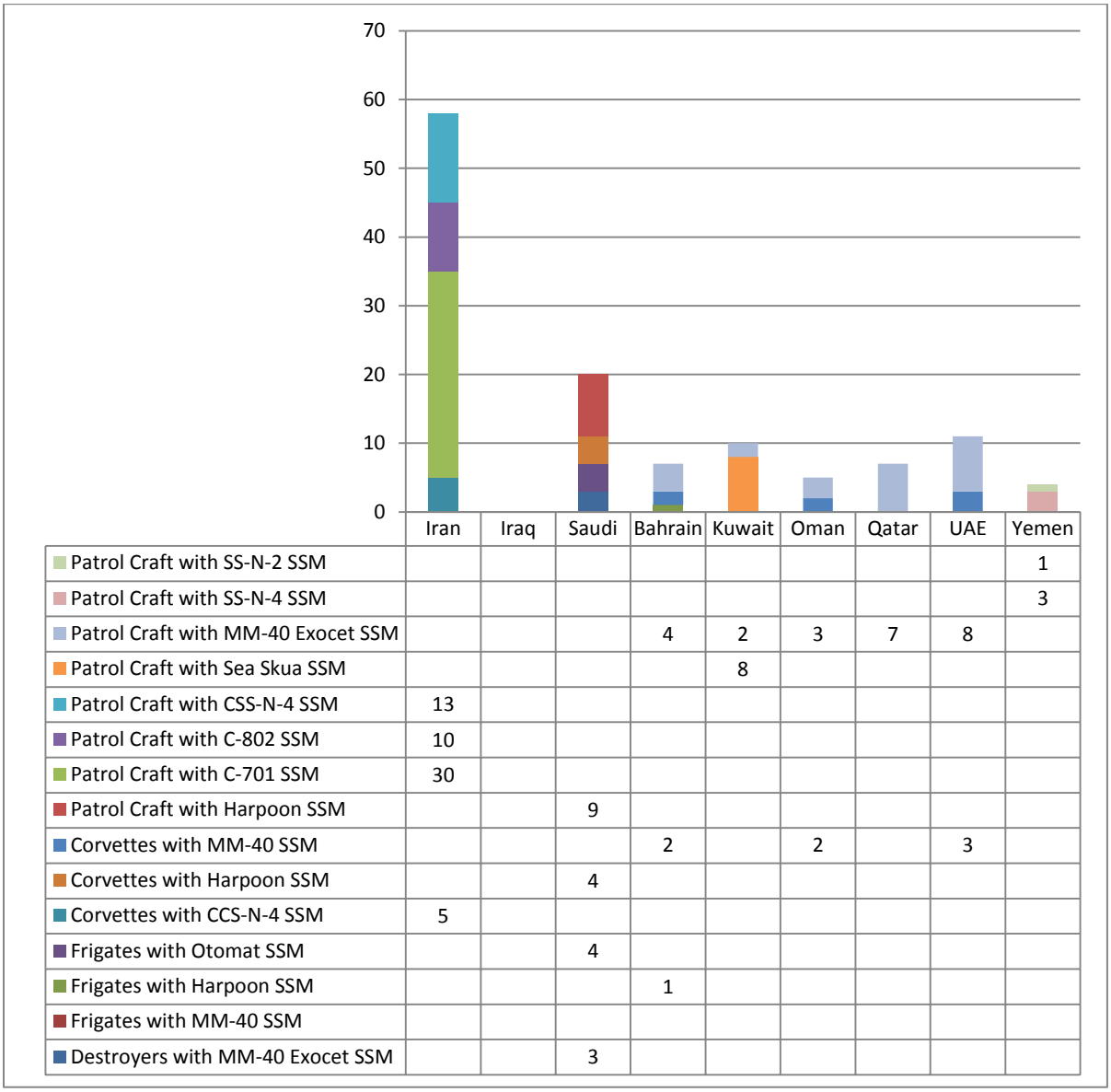


	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Amphibious	23		16	10	4	6		28	4
Mine	5		7					2	1
Patrol and Coastal Combatants	213	28	183	62	43	69	21	77	34
Principle Surface Combatants			7	1					
Submarines	23								
Support	43		21	5	2	9		4	

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.

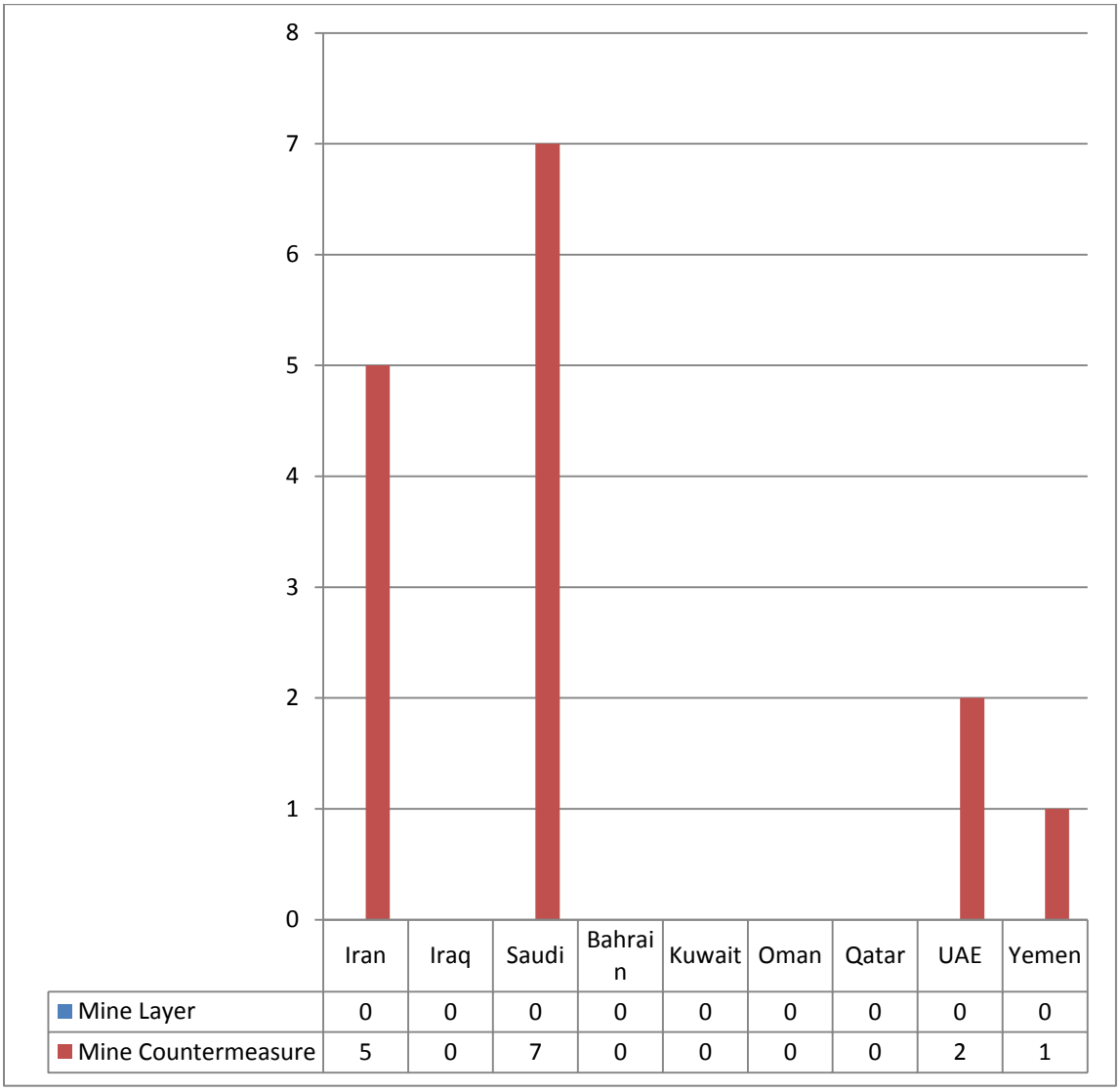
Figure V.3: Gulf Warships with Anti-Ship Missiles in 2012



	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						

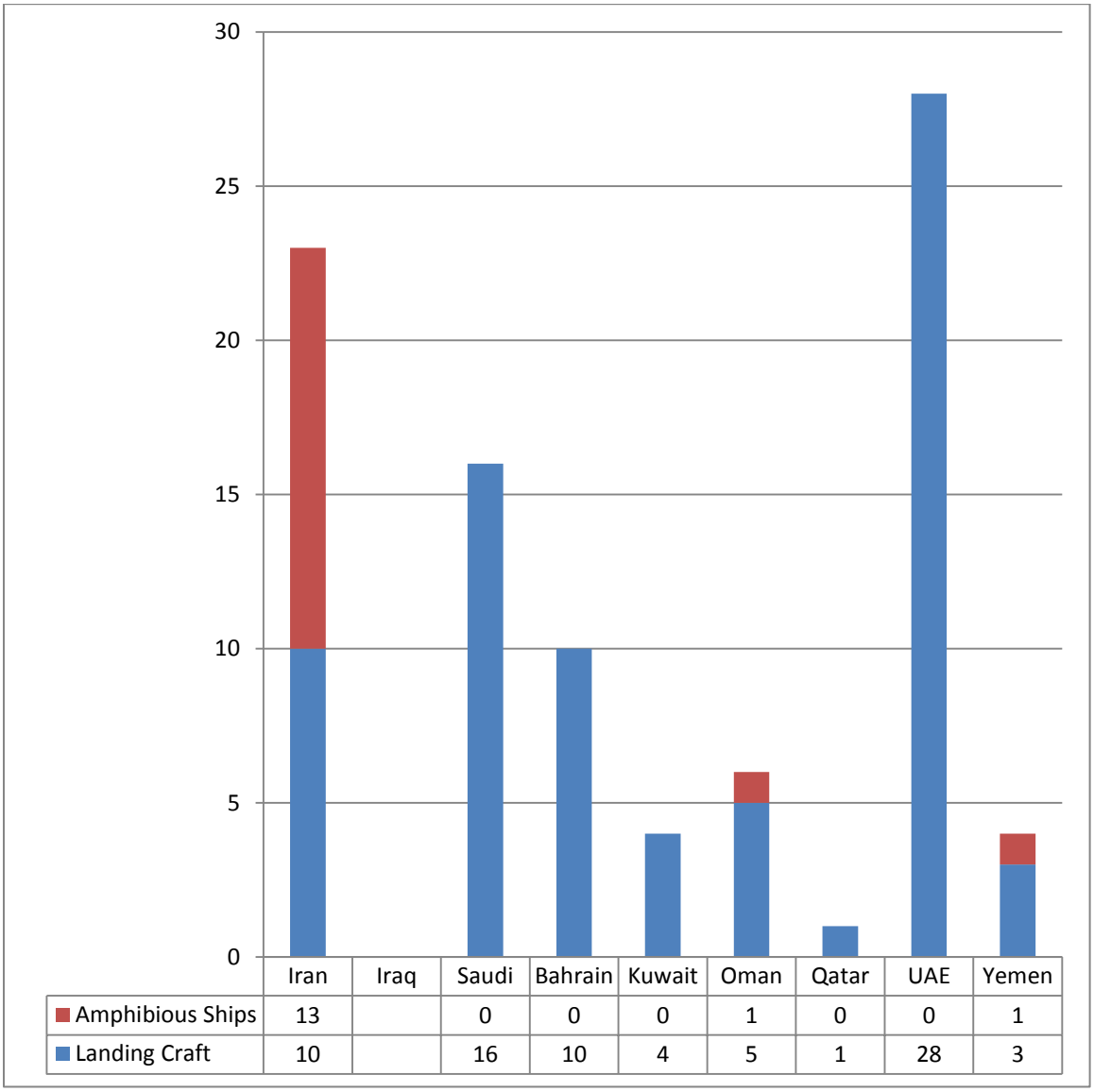
Source: Adapted from IISS, The Military Balance, Periscope, JCSS, Middle East Military Balance, Jane's Sentinel and Jane's Defense Weekly. Some data adjusted or estimated by the author.

Figure V.4: Gulf Mine Warfare Ships in 2012



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 V.5: Gulf Amphibious Warfare Ships in 2012

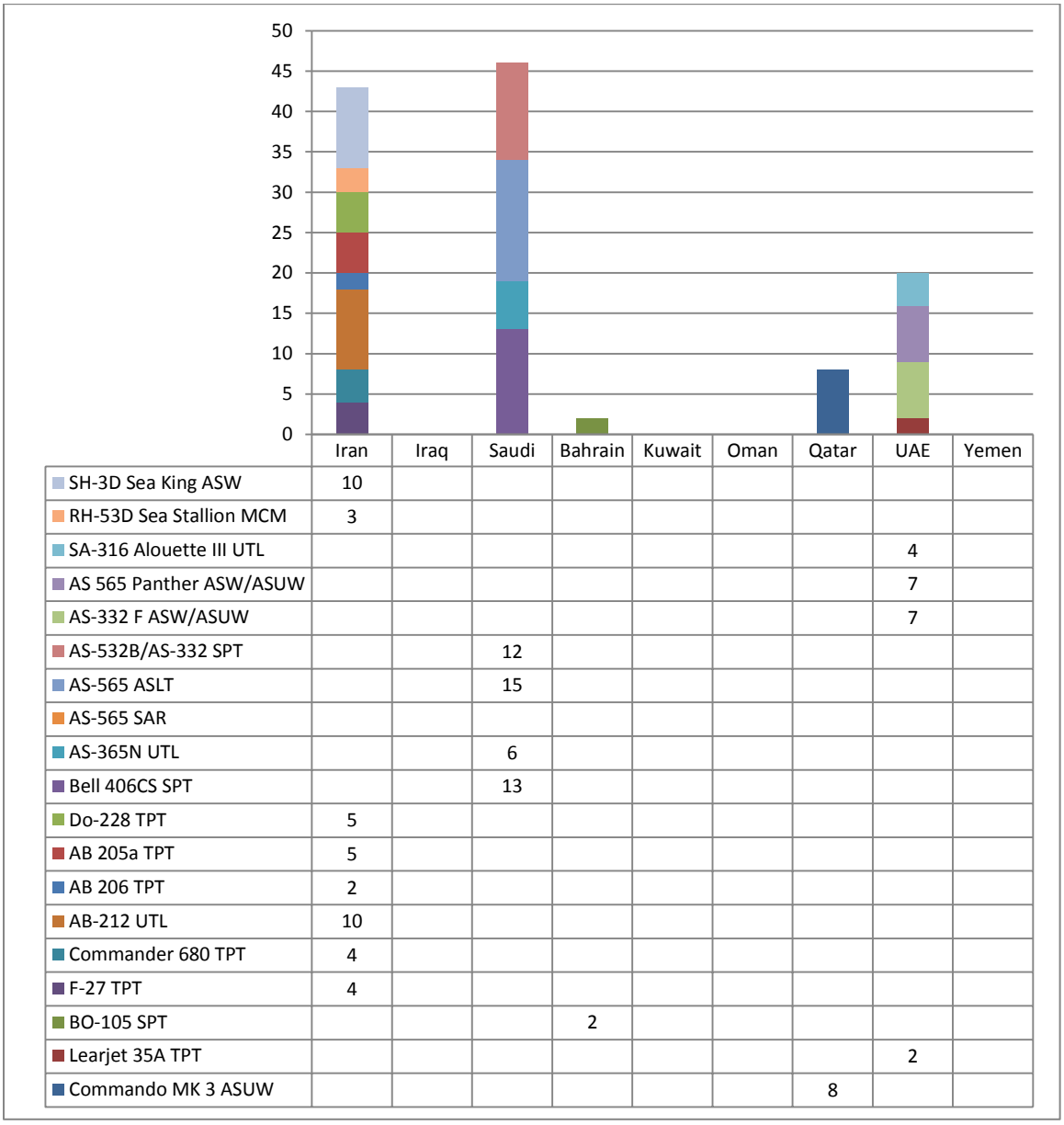


	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
Amphibious Ships	13		0	0	0	1	0	0	1
Landing Craft	10		16	10	4	5	1	28	3

Note: Saudi totals include 8 UCAC and 5 LCAC from the Saudi Coast Guard.

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 V.6: Gulf Naval Aircraft and Helicopters Aircraft in 2012



	Iran	Iraq	Saudi	Bahrain	Kuwait	Oman	Qatar	UAE	Yemen
SH-3D Sea King ASW	10								
RH-53D Sea Stallion MCM	3								
SA-316 Alouette III UTL								4	
AS 565 Panther ASW/ASUW								7	
AS-332 F ASW/ASUW								7	
AS-532B/AS-332 SPT			12						
AS-565 ASLT			15						
AS-565 SAR									
AS-365N UTL			6						
Bell 406CS SPT			13						
Do-228 TPT	5								
AB 205a TPT	5								
AB 206 TPT	2								
AB-212 UTL	10								
Commander 680 TPT	4								
F-27 TPT	4								
BO-105 SPT				2					
Learjet 35A TPT								2	
Commando MK 3 ASUW							8		

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.

VI. Trends in Military Spending and Arms Imports

It is clear from both arms transfer and military expenditure data that Iran cannot hope to keep pace with the Southern Gulf states in terms of resources. Iraq's spending is only now beginning to reflect major self-financing, but it will be a half decade or more before Iraq can begin to develop a self-defense capability that might be able to meet a serious challenge from any of its neighbors. There is no current prospect that it can again become a major conventional power in the next decade.

The vast Southern Gulf superiority in military spending and arms imports, however, comes at vast cost without providing the unity and focus on integrated defense and key missions necessary to create effective forces, deterrence, or balance warfighting capabilities. The Southern Gulf states spend immense amounts on their military forces and arms purchases.

- **Figure VI.1** reflects a shift in the nature of the Gulf military build-up that began to emerge before Iran's defeat in the Iran-Iraq War, and Iraq's defeat in the Gulf War, but which has accelerated ever since. Southern Gulf military expenditures increased exponentially after the US-led invasion of Iraq and have continued to grow in part due to Iranian regional hegemonic aspirations. The Southern Gulf leads the regional arms race that the Northern Gulf states began. **Figure 23** shows that Saudi Arabia has by far been the largest spender in the Gulf, although several small Southern Gulf states – notably the UAE, Kuwait and Oman – have been very large spenders in proportion to their size.
- As **Figure VI.2** shows, in some years one or more of the small Southern Gulf states have nearly equaled the expenditures of much larger Northern Gulf states. **Figure VII.2** contrasts with the higher levels of military expenditures shown **Figure VII.1**, in that military spending overall has been either consistent or in light decline as a percentage of GDP in GCC States, Iran, Iraq and Yemen over the 1989-2009 period.
- **Figure VI.3** shows the cumulative arms imports of Gulf States over the 1984-1999 period. Saudi Arabia is the largest arms importer in the Gulf, with higher levels than the other Gulf States, Iran, Iraq and Yemen combined. Kuwait and the UAE also received non-negligible arms levels, but there was a relatively high degree of fluctuation of import levels across this period throughout the GCC. Iraq has made negligible arms imports in the post-Gulf War period, and Iran has been unsuccessful in securing high levels of imports in the 1990s.
- **Figure VI.4** touches on the data in **Figure VI.3** and shows comparative Gulf arms agreements and deliveries from 1993 to 2008. Here too we see its higher levels of deliveries and orders, however, we see Saudi Arabia gradually declining in recent years and the UAE making major new imports during the 1997-2004 period. As is the case with military expenditures, the Southern Gulf states have massively outspent the Northern Gulf states. For Iran, this is partly a matter of choice and partly a matter of economic weakness, further exacerbated by a 2007 UN-imposed ban on arms exports to Iran. For Iraq, it has been forced upon Iraq by a UN arms embargo from September 1990 to the fall of Saddam Hussein in March 2003, and by its massive defeat in the US-led invasion that drove Hussein from power.
- **Figure VI.5** shows that the US is the major arms supplier for most of the Gulf States, although major Western European suppliers have recently begun to play an increasing role in supplying Saudi, Emirati and Omani armed forces. As mentioned earlier, Iraq is now mainly dependent upon US support to increase its force capabilities, and Iran is the sole primary recipient of arms supplies from Russia. Other Gulf States have chosen to include Russian arms imports as part of a broader force mix of systems from the US and Europe.

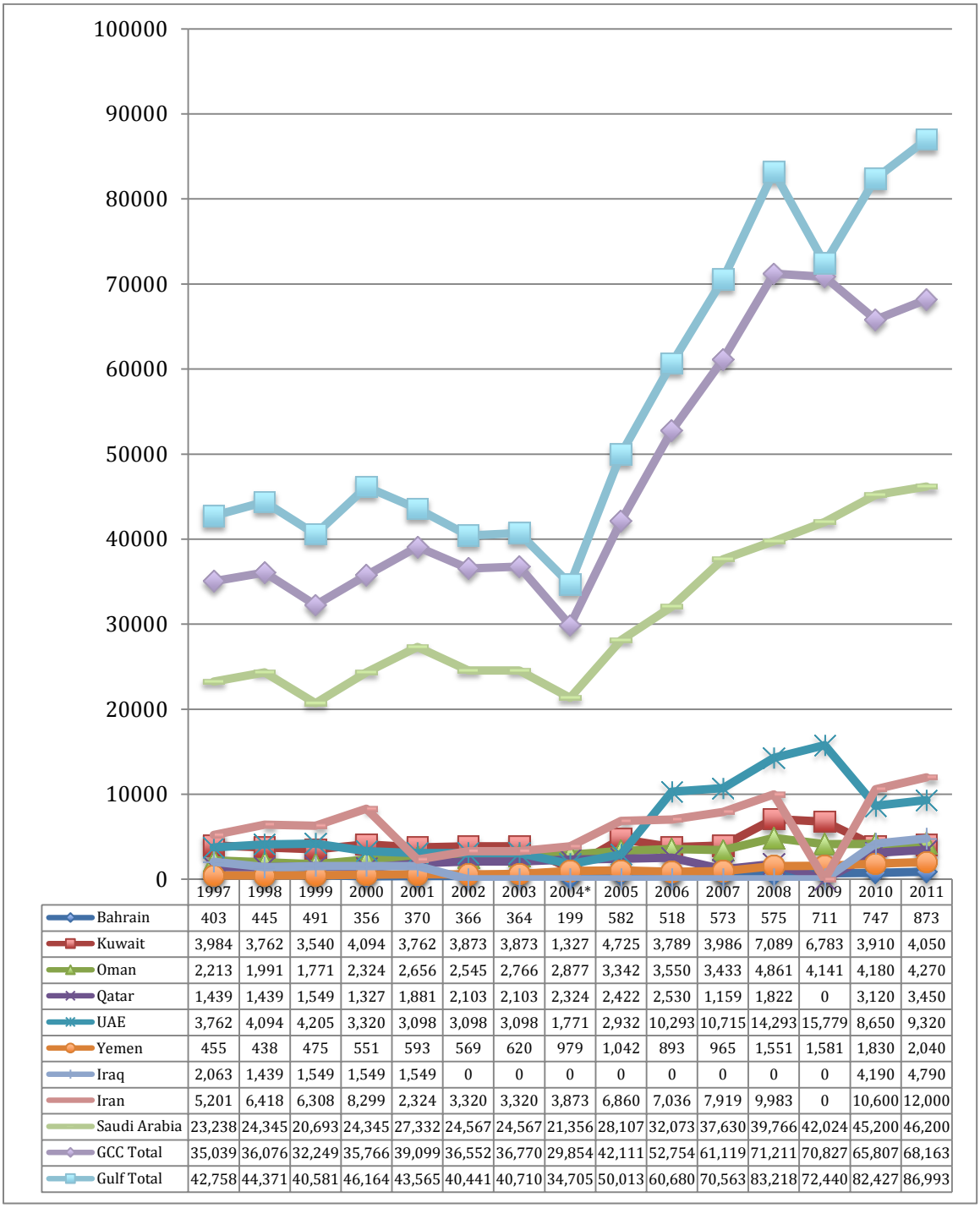
- **Figure VI.6** shows the major arms sales the US has made to each Gulf country, that each country has requested. It reflects major build-up in recent years as Southern Gulf states improve their capability to deter and counter Iran.
- **Figure VI.7** shows arms sales to several Gulf countries from both the US and other suppliers.

The practical problem for the Southern Gulf states is that they have not transformed either their spending or their arms imports into forces whose effectiveness is proportionate to their cost. The potential desirability of regional cooperation, standardization and interoperability, and training and organization for joint operations on a GCC-wide level is obvious.

In practice, each of the southern Gulf States still pursues its own path in creating military forces, often emphasizing the purchase of modern major weapons systems that were perceived to provide prestige and a "glitter factor" in terms of regional status. Rivalries and past tensions between the Southern Gulf states have prevented serious efforts at developing joint capabilities and interoperability. The end result is that the Southern Gulf states largely prefer de facto dependence on US and British power projection forces over effective regional and national military efforts.

Figure VI.1: Southern Gulf Military Expenditures by Country: 1997-2012

(in millions of US dollars)

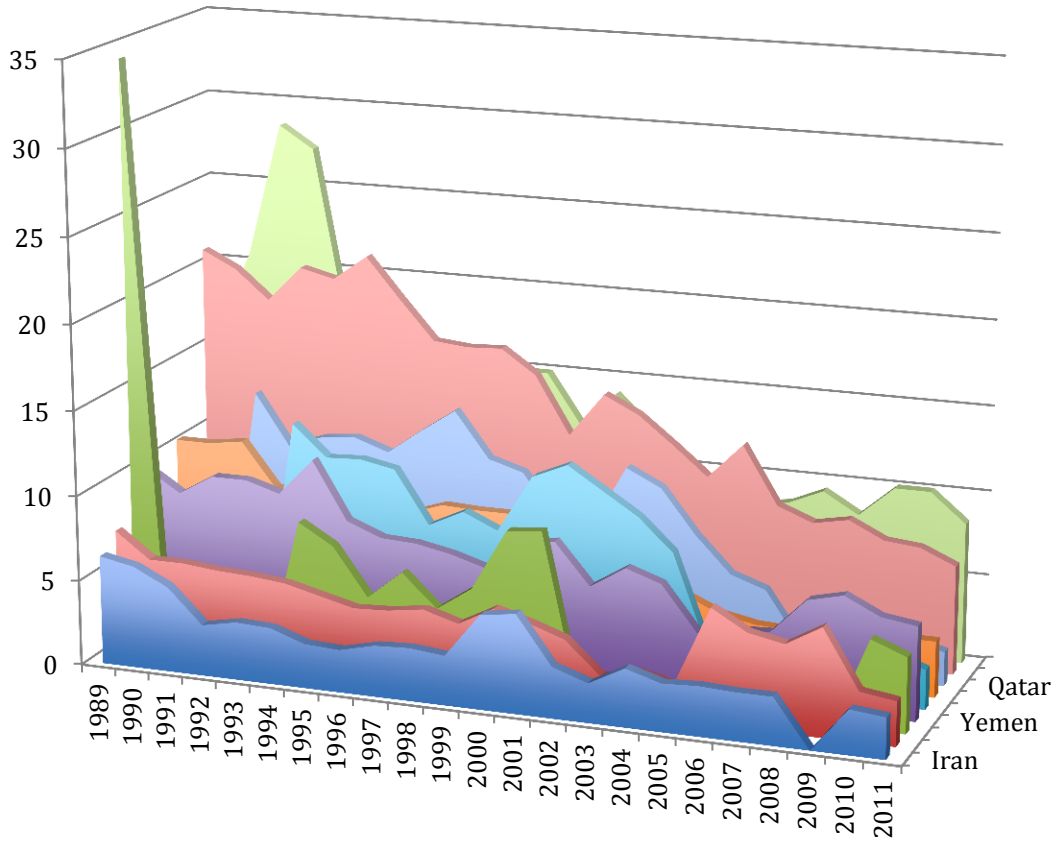


	1997	1998	1999	2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009	2010	2011
Bahrain	403	445	491	356	370	366	364	199	582	518	573	575	711	747	873
Kuwait	3,984	3,762	3,540	4,094	3,762	3,873	3,873	1,327	4,725	3,789	3,986	7,089	6,783	3,910	4,050
Oman	2,213	1,991	1,771	2,324	2,656	2,545	2,766	2,877	3,342	3,550	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

* The IISS did not report military expenditures for 2004. The number for 2004 represents the military budget, which does not include procurement costs.

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 VI.2: Comparative Military Expenditures of the Gulf Powers as a Percent of GDP 1989-2011

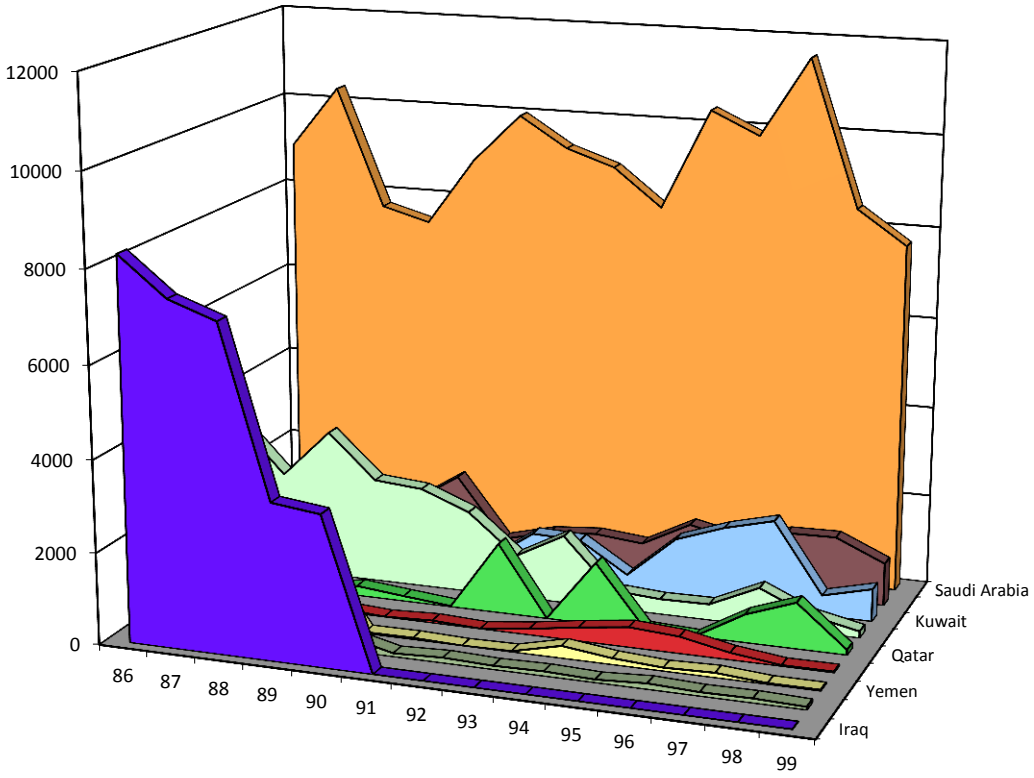


	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Iran	6.4	6	5	3	3.4	3.3	2.6	2.5	3	3.1	2.9	5.5	5.8	3	2.3	3.4	2.8	2.9	2.8	2.8	0	2.6	2.4
UAE	7.3	5.8	5.8	5.6	5.5	5.3	4.8	4.3	4.4	4.7	4.1	5.2	4.6	3.9	2	2.5	2	6.7	5.5	5.1	6.3	2.9	2.6
Iraq	34.3	0	0	0	0	8.3	7.1	4.3	6	4.1	5.5	9.1	9.3	0	0	0	0	0	0	0	0	5.2	4.4
Yemen	9.9	8.6	9.8	9.8	9.2	11.4	8	7.2	7.1	6.7	6.1	7.8	8.1	5.7	7	6.3	3.7	4.1	4.2	6.3	6.8	5.8	5.5
Kuwait	6.1	0	0	0	12.8	11	11.1	10.7	7.6	8.6	7.7	11.1	12	10.7	9.4	7.5	2	3.4	3.3	4.4	5.4	3	2.3
Bahrain	10.5	10.5	10.8	8.2	7.9	7.5	7.7	7.5	8.2	8.1	8.1	4.7	4.8	4	5.6	4.4	3.5	3.1	3	2.76	3.4	3.3	3.3
Qatar	0	0	13.2	10.2	10.9	11.1	10.4	11.9	13.3	10.6	10	7.3	7.2	10.9	9.9	7.3	5.2	4.5	1.5	1.75	0	2.5	2
Oman	21.1	20.1	18.4	20.5	20	21.5	19.1	16.8	16.6	16.7	15.3	11.9	14.5	13.5	11.9	10.2	12.3	8.9	8.1	8.5	7.5	7.3	6.4
Saudi Arabia	15.9	20.6	28.5	27.2	16.4	14.1	13.2	14.9	14.9	14.9	14.9	11.9	14	12	8.9	8.36	8.2	8.5	9.4	8.2	10	10	8.3

Source: Adapted from the IISS, Military Balance, various editions, ACDA, World Military Expenditures and Arms Transfers, 1995, ACDA/GPO, Washington, 1996 and US State Department, World Military Expenditures and Arms Transfers, 1999-2000, Bureau of Arms Control, Washington, 2001.

Figure VI.3: Cumulative Arms Imports of the Other Gulf states - 1984-1999

(Value of Deliveries in Constant $US Millions)

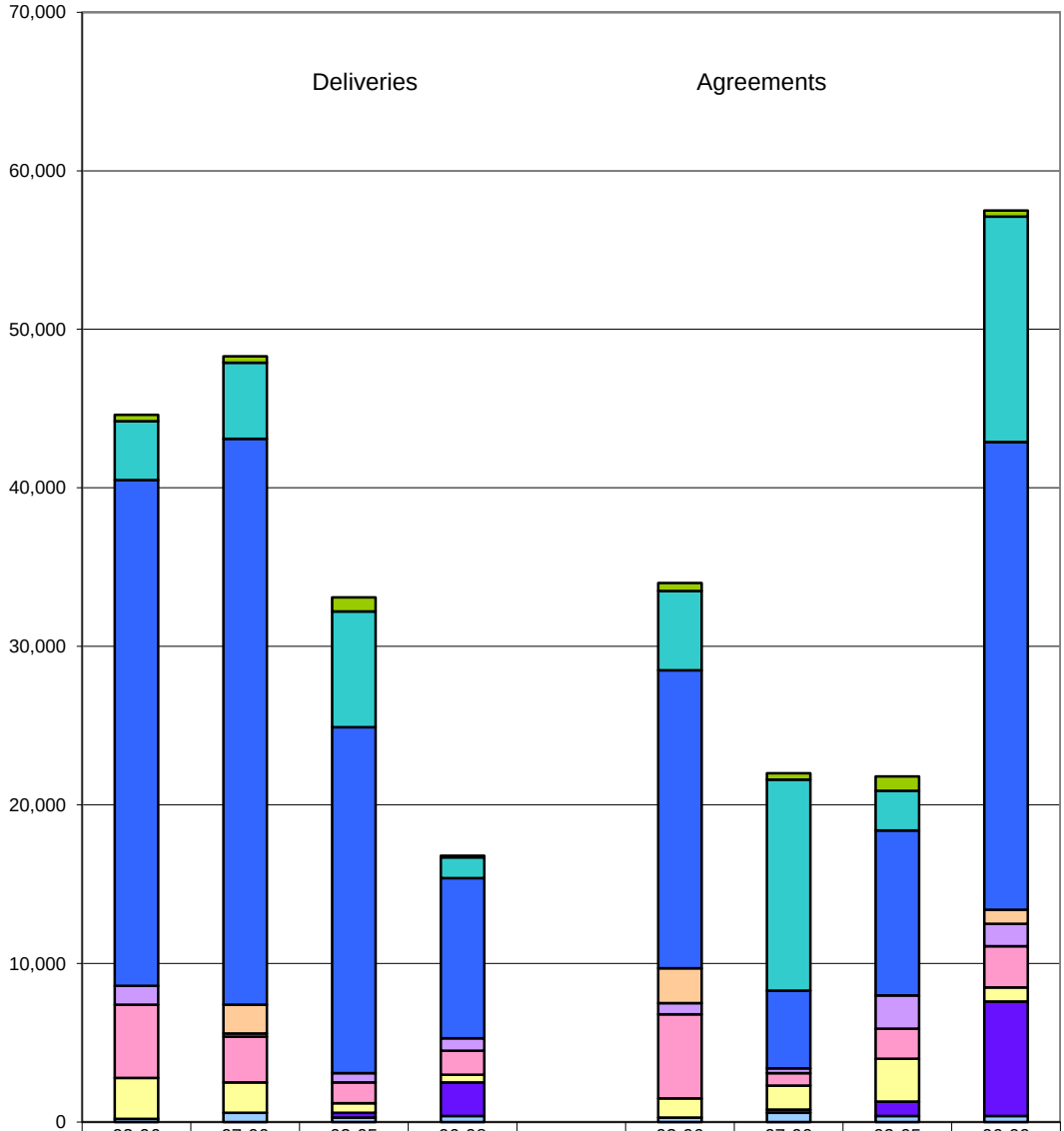


	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Iraq	8288	7448	7078	3407	3279	0	0	0	0	0	0	0	0	5
Bahrain	91	418	126	97	328	79	122	86	106	72	132	90	101	70
Yemen	564	1045	1523	1554	35	41	6	22	275	145	81	110	30	30
Oman	178	157	38	73	12	57	11	140	307	445	376	160	30	30
Qatar	7	12	38	219	117	23	1552	11	1375	52	5	625	1015	120
Iran	3305	2221	3286	2312	2225	1812	942	1512	412	342	356	850	376	150
Kuwait	271	248	152	316	316	374	1109	1080	412	1346	1728	2000	457	725
UAE	247	261	404	1187	1874	532	804	891	793	1346	1118	1400	1421	950
Saudi Arabia	8978	10320	7710	7423	8900	9968	9312	8962	8143	10350	9862	11600	8424	7700

Source: Adapted from State Department, World Military Expenditures and Arms Transfers, GPO, Washington, various editions.

Figure VI.4: Gulf Arms Agreements and Deliveries by Country: 1993-2008

(in $US Current Millions)



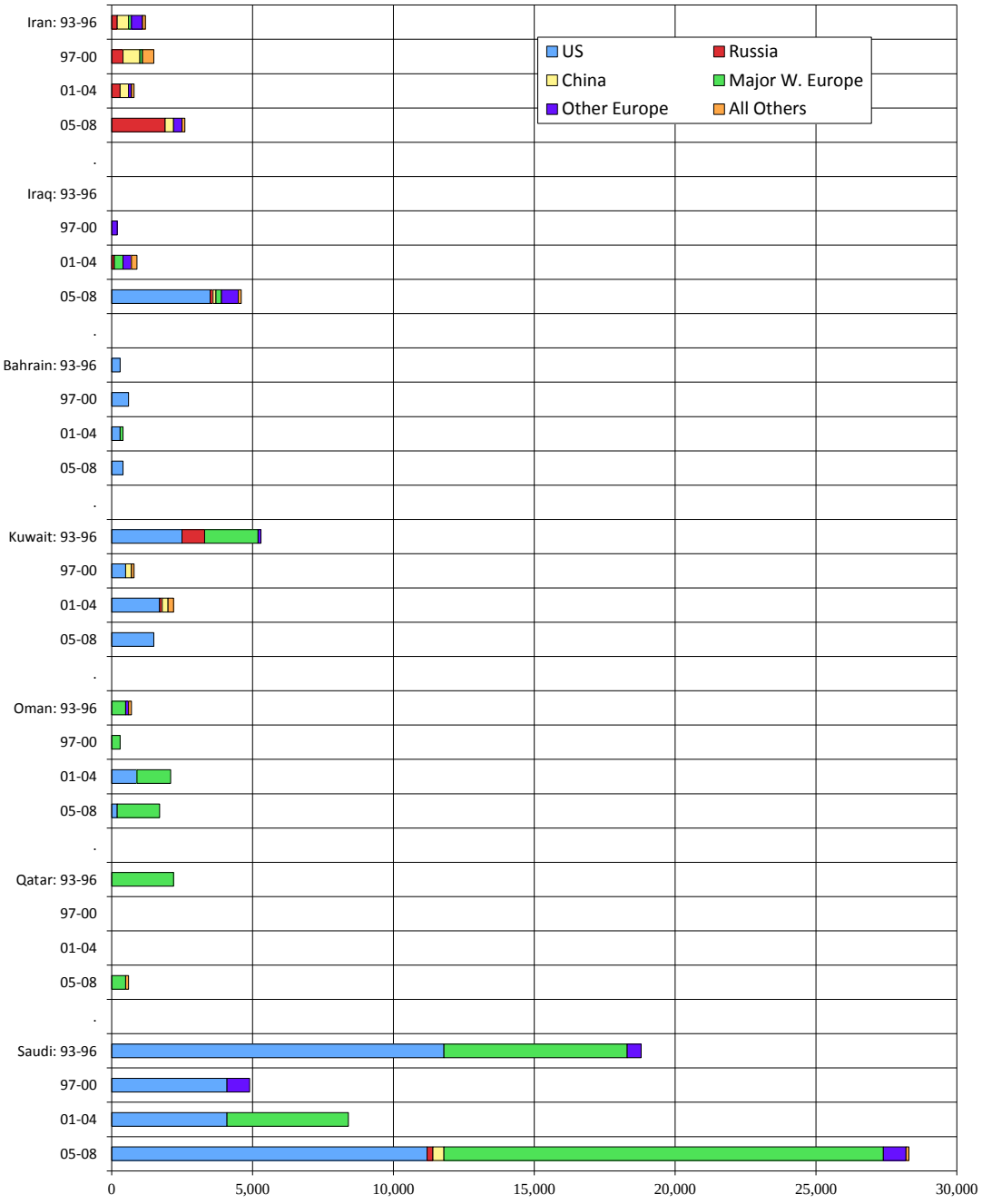
	93-96	97-00	02-05	06-08		93-96	97-00	02-05	06-09
Yemen	400	400	900	100		500	400	900	400
UAE	3,700	4,800	7,300	1300		5,000	13,300	2,500	14200
Saudi Arabia	31,900	35,700	21,800	10100		18,800	4,900	10,400	29500
Qatar	0	1,800	0	0		2,200	0	0	900
Oman	1,200	200	600	800		700	300	2,100	1400
Kuwait	4,600	2,900	1,300	1500		5,300	800	1,900	2600
Iran	2,600	1,900	600	500		1,200	1,500	2,700	900
Iraq	0	0	300	2100		0	200	900	7200
Bahrain	200	600	300	400		300	600	400	400

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

Source: Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations 2009, Congressional Research Service, various editions.

Figure VI.5: Southern Gulf New Arms Orders by Supplier Country: 1993-2008

(Arms Agreements in $US Current Millions)



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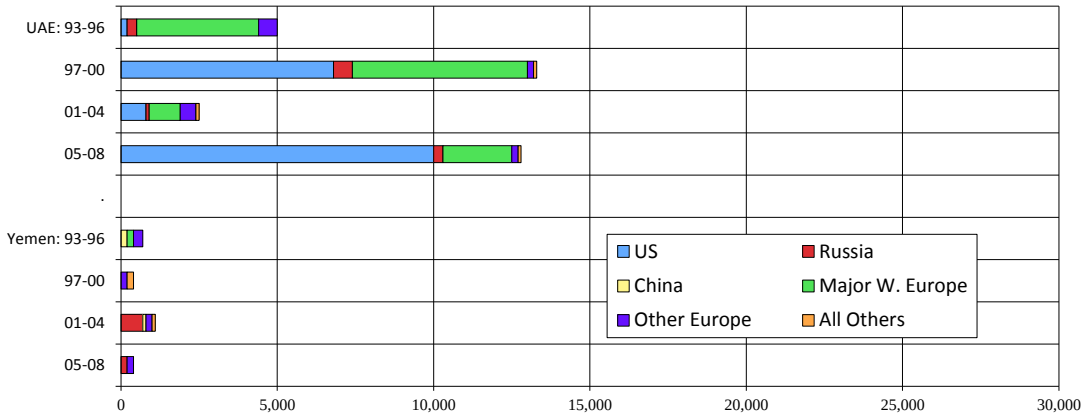


0 = less than $50 million or nil, and all data rounded to the nearest $100 million.

Source: Adapted from Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations, Congressional Research Service, various editions.

Figure VI.6: US Arms Sales to the GCC states and Iraq: 2002-2012

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.

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
  1 BS-1 Enhanced Terminal Voice Switch
  1 Fixed-Base Precision Approach Radar
  1 Digital Airport Surveillance Radar
  1 DoD Advanced Automation Service
  1 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
  1 BS-1 Enhanced Terminal Voice Switch
  1 Fixed-Base Precision Approach Radar
  1 Digital Airport Surveillance Radar
  1 DoD Advanced Automation Service
  1 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
  3 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.

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.

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.

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.

Source: Defense Security Cooperation Agency (DSCA), http://www.dsca.mil/

Figure VI.6: 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.**

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.**

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.**

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**

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	**Tpt**	**6**	**US$10.5m**	**US**	**Hawker**	**2008**	**2010**	**-**

King Air	**ac**				**Beechcraft**			
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**

VII. Iran's Capabilities for Asymmetric Warfare

Iran's conventional weakness also needs to be kept in careful perspective. Iran has spent nearly two decades building up capabilities for asymmetric, irregular, and revolutionary warfare. These are largely capabilities the US can counter in any outright conflict, but which give Iran a powerful capability to intimidate its neighbors, and which would be far harder for the US to defeat in a limited war of attrition where the US might not be able to act decisively in striking Iranian forces and targets.

The last three major wars in the Gulf – the Iran-Iraq War in 1980-1988, the invasion and liberation of Kuwait in 1990-1991, and the US-led invasion of Iraq in 2003 have been conventional wars. The insurgency in Iraq from 2004 to the present, however, has already shown that irregular warfare can have a major impact, and each of the "conventional" wars just cited had important irregular elements.

Iran, however, is the only Gulf state that has made asymmetric warfare a key element of its force development. Moreover, it is increasingly possible that the next conflict in the Gulf could be an asymmetric conflict triggered by Iran's response to sanctions and the perceived threat from the US and the Southern Gulf states. Accordingly, Iran's capabilities for asymmetric warfare have become a key part of the Gulf military balance, and one that is forcing the US and southern Gulf states to reshape their conventional forces to meet the Iranian threat.

Iranian's Doctrinal Emphasis on Asymmetric Warfare

Iran's military doctrine places heavy emphasis on asymmetric warfare:

- 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 seek 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 Muslim world).

The Role of the Islamic Revolutionary Guards Corps (IRGC)

The core of Iran's capabilities lies in Iran's Islamic Revolutionary Guards Corps (IRGC), and its commander symbolizes this activity:

- On September 1, 2007, Khamenei promoted Mohammad Ali Jafari, then coordinator of the IRGC Research and Command Center, to the rank of major general and the post of commander in chief of the IRGC.

- Throughout his military career Jafari has emphasized asymmetrical warfare and developing Iran's ballistic missile capabilities throughout his military career
- In 1992, he was appointed commander of the ground forces. One of the tasks he carried out in this capacity was "to study and assess the strengths and weaknesses of America [as reflected] in its attacks on Afghanistan and Iraq."
- Jafari has outlined the strategy he means to promote as IRGC commander, reiterating his commitment to developing Iran's ballistic missile capabilities and the asymmetrical warfare capacities of the IRGC:
  - 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 Hizbullah 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."
- Jafari has made other importance statements regarding asymmetric strategy:
  - Jafari has said that in the case of a confrontation with the West, Iran will be willing to employ the organizations under its influence. In a January 2005 speech to intelligence commanders from the Basij and IRGC, Jafari - then commander of the ground forces - stated: "In addition to its own capabilities, Iran also has excellent deterrence capabilities outside its [own borders], and if necessary it will utilize them."
  - "The Revolutionary Guards [Corps] will invest efforts in strengthening its asymmetrical warfare capabilities, with the aim of successfully confronting the enemies."
  - "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]."

Examples of Iran's Use of Asymmetric Warfare

There are many tangible examples of how Iran and other regional states have already used asymmetric warfare to achieve these goals:

- Iranian tanker war with Iraq
- Oil spills and floating mines in Gulf
- Use of Quds force in Iraq
- Iranian use of UAVs in Iraq
- "Incidents" in pilgrimage 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
- Flow of illegals, terrorists, infiltrators, and arms smuggling across Yemeni border

The Interaction Between Iran's Asymmetric Forces and Its Missile and Nuclear Programs

Iran's asymmetric capabilities also interact with its nuclear weapons development efforts to compensate for many aspects of the limits to its conventional forces. "Going nuclear" provides a level of intimidation that Iran can use as both as 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.
- The development of long-range missiles add to credibility, and pressure.
- Crossing the nuclear threshold in terms of the 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 reactor, underground test, actual production, arm missiles, breakout arming of missiles.
- Declared forces, undeclared forces, lever Israeli/US/Arab fears.

Iran's Asymmetric as Compensation for Weak Conventional Forces

At the same time, "going asymmetric" 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 the ability to deter and intimidate/lever.
- Iran can exploit fragility of Gulf, world dependence on oil exports, GCC dependence on income and imports.
- Threats to Israel again legitimize the capability to tacitly threaten Arab states.

Measuring Iran's Asymmetric Capabilities

Iran's asymmetric capabilities can be summarized as follows:

- **Figure VII.1** shows how Iran's military exercises illustrate its emphasis on irregular and asymmetric warfare. It describes a steadily growing Iranian capacity to both threaten its Gulf neighbors and counter US military operations against Iran.
- **Figure VII.2** shows the evolving 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 VII.3** describes the key military capabilities of the IRGC. They are tailored to both offensive and defensive irregular and asymmetric warfare.
- **Figure VII.4** 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 VII.5** 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 very mixed success – particularly in creating integrated command centers and sensor suites.

- **Figure VII.6** 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 VII.7** s shows Iran's strength in amphibious lift relative to that of other Gulf navies. Iran has considerable lift to move to a friendly port, but has little exercise experience in simulating meaningful forms of forced entry and over the beach operations.
- **Figure VII.8** provides information regarding Iran's steadily growing force of UAVs and UCAVs. In recent years, these assets have come to play a growing role in Iran's asymmetric military strategy and tactics.
- **Figure VII.9** 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 VII.10** reflects the force structure and capabilities of Iran's Al Quds Force, which is equivalent to the size of one Special Forces division, plus additional smaller units.
- **Figure VII.11** summarizes Iran's ties to the Hezbollah and its role in Lebanon in cooperation with Syria. The Hezbollah are now considerably better armed than in 2006, and have far better defense in depth.
- **Figure VII.1**2 summarizes Iran's role in Gaza. Iran is not a key player, but even limited arms shipments allow it to play a spoiler.

Figure VII.1: Iran's Exercises Illustrate Its Focus on Asymmetric Warfare

- **January 27, 2006:** Iran completes major military exercise that testes Teheran's ability to attack Gulf shipping and Arab oil facilities. Sources said the exercise was designed to test capabilities to strike US and Arab targets throughout the area of the Gulf. According to a diplomatic source, the exercise was meant to show the West that Iran could stop all oil shipments in the Gulf and destroy numerous oil facilities in Gulf Arab countries," and included a range of fighter-jets and helicopters from the Iranian Air Force, with the Iranian navy contributed surface vessels and submarines.

- **August 19, 2006:** Iran launches a series of large-scale military exercises aimed at introducing the country's new defensive doctrine, state-run television reported. The television report said the military exercise would occur in 14 of the country's 30 provinces and could last as long as five weeks The first stage of the maneuvers began with air strikes in the southeastern province of Sistan va Baluchistan. The military exercise, is said to involve 12 infantry regiments, and is called "The Blow of Zolfaghar," in reference to a sword that belonged to Imam Ali, one of the most revered figures for Shi'ite Muslims.

- **November 3, 2006:** Iran's Revolutionary Guards began another series exercises on days after a United States-led naval exercise began in the Gulf. Iran began the 10 days of maneuvers in the Gulf by test firing dozens of missiles, including the long-range Shahab-3 (estimated range: 2000 km or 1,240 miles), and the Shahab-2, which Iran says can carry a cluster warhead that can deliver 1,400 bomblets at once. Major General Yahya Rahim Safavi, leader of the Revolutionary Guards, says on television that Iran's military exercises were not meant to threaten neighboring countries. "We want to show our deterrent and defensive power to trans-regional enemies, and we hope they will understand the message of the maneuvers," he said. "The first and main goal is to demonstrate the power and national determination to defend the country against possible threat." General Safavi said the exercises would last 10 days and would take place in the Gulf, the Gulf of Oman and several Iranian provinces.

- **March 23-30 2007:** Iran's regular Navy launches week-long wargames on its southern shores. The military exercises are carried out in the Gulf by Iran's regular Navy, the report states, adding that they would continue until March 30.

- **January 7, 2008:** US ships harassed by Iran. Iranian boats approach three US Navy ships in the strategic Strait of Hormuz, threatening to explode the American vessels. US forces are reported to be on the verge of firing on the Iranian boats, when the boats - believed to be from the Iranian Revolutionary Guard's navy - turn and move away. A Pentagon official says, "it is the most serious provocation of this sort that we've seen yet." He says the incident occurs at about 5 a.m. local time Sunday as Navy cruiser USS Port Royal, destroyer USS Hopper and frigate USS Ingraham were on their way into the Gulf and passing through the strait - a major oil shipping route. There were no injuries but the official said there could have been, because the Iranian boats turned away "literally at the very moment that US forces were preparing to open fire" in self-defense.

- **July 7, 2008:** Iran's elite Islamic Revolutionary Guards Corps launch large-scale, five-day wargames, dubbed "Exercise Stake Net", in the Straits of Hormuz and the Sea of Oman, where an assortment of new weapons were brought into play. The Iranian military maneuvers take place on the same day the United States announces it too will hold naval exercises in the Gulf.

  Iranian state media say that the military maneuvers by the IRGC's Navy and Air Force missiles unit are aimed at improving the force's military abilities. Separately, Brigadier General Mahmoud Chaharbaghi, commander of the IRGC Ground Forces artillery and missiles unit, announces that 50 of his unit's brigades are being armed with smart weapons and cluster bombs. Iran later test-fires nine missiles including what is claims is an upgraded version of Shahab-3 ballistic missile with a one-ton warhead capable of destroying targets within a 2,000-kilometer (1,245-mile) range.

- **September 7, 2008:** Iran's armed forces test the country's new weapons systems and defense plans in a three-day military maneuver. Iran's naval forces claim to have made a breakthrough in

building various types of "radar evading" submarines to guard its territorial waters. The IRGC says it successfully test-fired advanced shore-to-sea, surface-to-surface and sea-to-air missiles. The Islamic Revolution Guards Corp (IRGC) and the Army take part in drills involving anti-aircraft defense systems. The main purpose of the maneuvers is to maintain and promote the combat readiness of relevant units and to test new weapons and defense plans. Iran's Chief Navy Commander, Rear Admiral Habibollah Sayyari, said Iran is upgrading its naval fleet with a new generation of domestically-built submarines.

- **September 15, 2008:** The Islamic Republic Air Force tests Iran's domestic-made warfare in a joint military exercise with the IRGC, the Defense Ministry says. The joint aerial maneuver is aimed at boosting Iran's defensive capabilities and operational tactics, Iran's Defense Minister Brigadier General Mostafa Mohammad-Najjar said. The military exercise, which involves The Islamic Republic of Iran Air Force (IRIAF) and the Islamic Revolution Guards Corps (IRGC), comes in the wake of escalating US and Israeli threats to strike the country's nuclear facilities.

- **October 10, 2008**: Islamist militiamen affiliated with Iran's Islamic Revolutionary Guards Corps (IRGC) stage military exercises in the suburbs of Tehran on Friday to defend the Iranian capital against "natural disasters" and "enemy assaults." Members of the paramilitary Basij take part in military drills under the command of the Tharallah Garrison in Tehran. Similar war games are held in Karaj, Islamshahr, Shahre Rey, Rabat Karim, and Varamin, said the acting deputy commandant of the IRGC, Brigadier General Mohammad Hejazi, who also commands the Tharallah Garrison. The maneuvers last for 48 hours. Meanwhile, another senior Basij leader announces that the paramilitary force is giving "specialized training" to its units across Iran. "These units are receiving specialized air, sea and ground training to be prepared for defending the country, the ruling establishment, and the revolution", said Brigadier General Ahmad Zolqadr on the sidelines of a military parade in Zanjan, north-west Iran. Zolqadr is the operational commander of the Basij.

- **November 12, 2008:** Iran launches a "new" type of long-range ballistic missile dubbed "Sajjil," but its general layout was indistinguishable from the description of the "Ashura," which was flight-tested about one year ago**.**

- **December 2-7, 2008:** Iran announces recent upgrades to the Naval Base in Asalouyeh and the now online base facilities in the port of Jask. Iranian officers state that long-range tactical missile silos and shore based anti-ship missiles have long been key aspects of planning of potential military operations in the event of an open conflict. Top Iranian Army commander Major General Ayatollah Saleh is quoted in *PressTV* on as stating that "the heavy weight of the enemy warships provides the Iranian side with an ideal opportunity for launching successful counter-attacks." Iran announces that it is in the final stages of planning an extensive naval and military exercise 'Unity 87' due to commence in December 2008. Iran says it will seek to accomplish objectives that include defense against a Israeli and US threat, closing the Strait of Hormuz to local and international shipping, and the testing new and improved military equipment and tactics.

  Admiral Qasem Rostamabadi tells state-run radio that "the aim of this maneuver is to increase the level of readiness of Iran's naval forces and also to test and to use domestically-made naval weaponry." He states that the naval maneuvers cover an area of 50,000 square miles, including the Sea of Oman off Iran's southern coast. "In this six-day long maneuver there will be more than 60 combat vessel units," Kayhan quotes Admiral Habibollah Sayyari, commander of the navy, who also states that it will include destroyers, missile-equipped battleships, submarines, special-operations teams, helicopters, and fighter planes. Iran has previously claimed it could close the Strait of Hormuz to shipping, through which about 40 percent of the world's globally traded oil passes. The US has pledged to protect shipping routes. An Iranian naval commander says a week earlier that the country's navy could strike an enemy well beyond its shores and as far away as Bab al-Mandab, the southern entrance to the Red Sea that leads to the Suez Canal. Iran test-fires a new surface-to-surface missile from a warship in a strategic shipping route, as part of the war games in the Sea of Oman and the Gulf region: State radio reports, "The surface-to-surface Nasr-2 missile was tested in the Sea of Oman operational region." IRNA reports that, "The Nasr-2 was fired from

a warship and hit its target at a distance of 30 km (19 miles) and destroyed it," adding it was the first test of the new, medium-range missile.

- **June 1, 2009:** The Iranian air force has launched a large military exercise dubbed "Thunder 88" over its regional waters, official media indicated. Iranian TV said the Air Force carried out maneuvers using various types of combat aircraft, a move that coincided with the Defense Ministry's launching of three new Ghadr-class submarines for its naval fleet (bringing the total number of the sonar-evading vessels to seven) and 18 speedboats at the port of Bandar Abbas near the Straits of Hormuz, the Kuwait news agency KUNA reported. Officials said the exercises are meant to enhance the Iranian Air Force's capabilities and to train them to safeguard navy ships. Iran's Mehr news agency said the Bandar Abbas ceremony was attended by Army Commander Ataollah Salehi and Defense Minister Mostafa-Mohammad Najjar, KUNA reported.

  The Ghadr class is a smaller vessel with a displacement of around 120 tons. The semiofficial Fars News Agency in 2007 said the Ghadr class was equipped with stealth technology. The news comes amid a flurry of Iranian defense activity. Iran in May inaugurated a production line for a military hovercraft, dubbed the Younes 6. Meanwhile, Iran announced the military production of some 20 other military devices, including laser systems and electronic warfare devices. Production also began on a 40mm anti-cruise cannon dubbed Fath, which is capable of reaching targets as far as 7 miles away with a firing rate of 300 rounds per minute. The Sejjil-2 surface-to-surface solid-fuel missile, meanwhile, was launched in May with a range capable of reaching Israel.

- **June 6, 2009:** Iran has started production of a new surface-to-air missile system, Iranian media, amid persistent speculation that Israel might attack the Islamic Republic's nuclear facilities. "The range of this defense system (missile) is more than 40 km and it is able to pursue and hit the enemy's airplanes and helicopters on a smart basis and at supersonic speed," Defence Minister Mostafa Mohammad Najjar states, without specifying how the missile compared to previous such weapons.

- **June 22, 2009:** Iran begins three days of air force exercises on in the Gulf and the Sea of Oman to raise operational and support capability, Iranian media states. "Long-distance flights of around 3,600 km (2,237 miles) along with aerial refueling from tanker to fighter jet and from fighter jet to fighter jet will be part of this exercise," state broadcaster IRIB's website reports. "Low altitude flights over the waters of the ... Gulf and the Sea of Oman by Iranian fighter jets over distances of 700 km will also be tested." it says. IRIB reports that the exercises are also aimed at raising the force's ability to use intelligence aircraft "to send signals and analyze threats".

- **September 28, 2009:** Iran launches a long-range missile claiming that it was capable of hitting Israel along with firing multiple short range missiles during its wargame code named 'Fatemeh Zahra (SA). Iranian media reported that "all the fired missiles hit the pre-determined objectives…Tens of ground-to-ground missiles were also fired during the military exercise which was conducted in line with the carrying out of preventive programs of the Islamic Republic of Iran's Armed Forces" IRGC General Hossein Salami had reported that among the various kinds of missiles launched are the medium range Shahab-1 and -2 missiles as well as the long range Shahab-3 missile. Other short-range missiles such as the Fateh, Tondar and Zelzal are successfully test fired as reported by the Iranian media. Further media reporting states, "tens of ground-to-ground missiles were also fired during the military exercise which was conducted in line with the carrying out of preventive programs of the Islamic Republic of Iran's Armed Forces."

- **November 22, 2009:** Iranian media reporting shows, air forces of the IRGC launches the first phase of a nationwide aerial wargame code named "Defenders of Velayat 2." Brigadier General Ahmad Mighani states that "the aim of the war game is to [increase] coordination and enhance combat readiness of the Iranian Air Force, IRGC and the Basij (volunteer) forces." It is conducted throughout Iran in cities such as Bushehr, Fars, Yazd, Isfahan, Markazi and Gazvin provinces as well as in the northern and western parts of the country. The general also states that "the maneuver has three phases including preparation of military units, reconnaissance flights and dog

fights…will be held in an area about 600,000 square kilometers during which some of the most sophisticated defense systems will be examined."

- **April 22, 2010:** Iranian reporting states that the IRGC engaged in a four-day wargame named "Holy Prophet 5" in the Persian Gulf and the Strait of Hormuz. During the exercise, the IRGC demonstrates successful tests of 5 advanced shore-to-shore missiles and sea-to-sea missiles. The missiles specifically tested were Nasr (victory), Saeqeh (lightning), and Noor (light). In addition, according to further Iranian reporting, the IRGC tested "laser smart weapons" and "hit their targets with 100% accuracy". The IRGC claimed this "drill carried message of peace and security…and also served as a warning to the US and Zionist Regime."

- **May 7-12, 2010:** The IRGC conducted a five-day war game dubbed "Velayat 89" in the Gulf, the Sea of Oman, and the Northern Indian Ocean – covering an area of 250,000 square km. According to Iranian reporting, "an Iranian spokesperson said that the Velayat 89 wargame has been conducted mainly to showcase Islamic Iran's strength in controlling general passing ways hundreds of kilometers far away Hormuz Strait and facilitate connection of ships coming from Hormuz Strait to Persian Gulf." Rear Admiral Qassem Rostambadi tells the IRNA that "the chemical invasion of the hypothetical enemy was successfully countered with the use of domestically-made warfare during this military exercise. The war games use combat, support, logistic, radar and electronic units as well as surface-to-surface, under water and air missiles using the fighter aircraft of the air force." Further Iranian media reporting stated that the "IRA's Navy successfully launched electronic and anti-electronic warfare, using distracters and alarm signalers, information collectors operating through radar system, and audio and non-audio instruments in the Oman Sea onshore and offshores." Iran's newly deployed warship 'Jamaran' is also reportedly used in the naval exercise. The sea vessel has a displacement of around 1,400 tons and is equipped with modern radars and electronic warfare, as per the media report.

  Operations Deputy for Iranian Army's Ground Forces, Brigadier General Ali Arasteh tells reporters on that during the fifth day of the war games, numerous sectors of the ground forces including infantry, armored vehicles, artillery, and telecommunications units started their tactical operations in southern parts of the province which is located in southeast of the country. The IRNA reported various types of surface-to-surface, air-to-surface, and surface-to-sea missiles were fired at the fourth phase. During the fifth phase, Iranian waters were characterized by firing solid propellant Farg-5 cruise missiles towards the hypothetical targets. The mid-range smart missile is designed to trace and completely destroy its targets according to Iranian media. Further reporting shows that it was fired from shore to open seas in the northern Indian Ocean, flying up to a 50 to 60-km distance. The radar-evading missile is reportedly more advanced than its foreign counterparts, and can be installed on vessels such as warships and hovercraft.

- **November 16- 21, 2010:** The Iranian military carried out a massive 5-day long air defense drill termed "Defenders of the Sky of Velayat III" (Modafean-e Aseman-e Velayat 3) near its nuclear facilities in a simulation which the IRGC stated as being "exactly like real combat." According to Iranian reporting, Iranian military officials stated that the drills were intended to "convey a message of peace and friendship to neighboring countries and a fierce warning against enemies." In a statement released by the Iranian army, the drills were conducted "with the aim of enhancing response capabilities in countering threats against the county's populated, vital, strategic and nuclear landmarks."

  The following systems were among those tested: IRIAF F-14A, IRIAF F-4E, S-200 SAM, MIM-23 HAWK SAM, Rapier SAM, Misagh MANPAD, Shahab Tagheb/FM-80 (HQ-7) short-range air defense missile system, Oerlikon 35 mm twin cannon, Samavat 35 mm autocannon, High Power Illuminator Radar (HPIR), Tall King 2- Dimensional VHF Band Surveillance Radar, K66 Back Trap based 3D radar, TPS-43 based 3D radar, Pulse Acquisition Radar (PAR).

- **April 2012:** 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 2012:** 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 2010:** Iran successfully tests a new version of the Fateh-110, a short-range ballistic missile with a 155-mile range.
- **November 2010:** 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.
- **February 2011:** 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.
- **July 2011:** 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.
- **October 2011:** US officials reveal an alleged Iranian plot to assassinate Adel Al-Jubeir, Saudi Arabia's ambassador to the US. Iran denies all involvement.
- **January 2012:** Iran conducts the Velayat-90 naval exercises, during which the IRGC tested a number of missiles, mines, and torpedoes.

Figure VII.2: The Evolving Capabilities of the IRGC

- **Iran's Deputy Army Commander Brigadier General Abdolrahim Moussavi has announced that Iran is commitment 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.**
- **In February 2011 the IRGC announced that the *Khalij Fars*, a supposed anti-ship ballistic missile, was operation and had the ability to hit moving ships in the Gulf.**

Figure VII.3: Key Elements of the IRGC

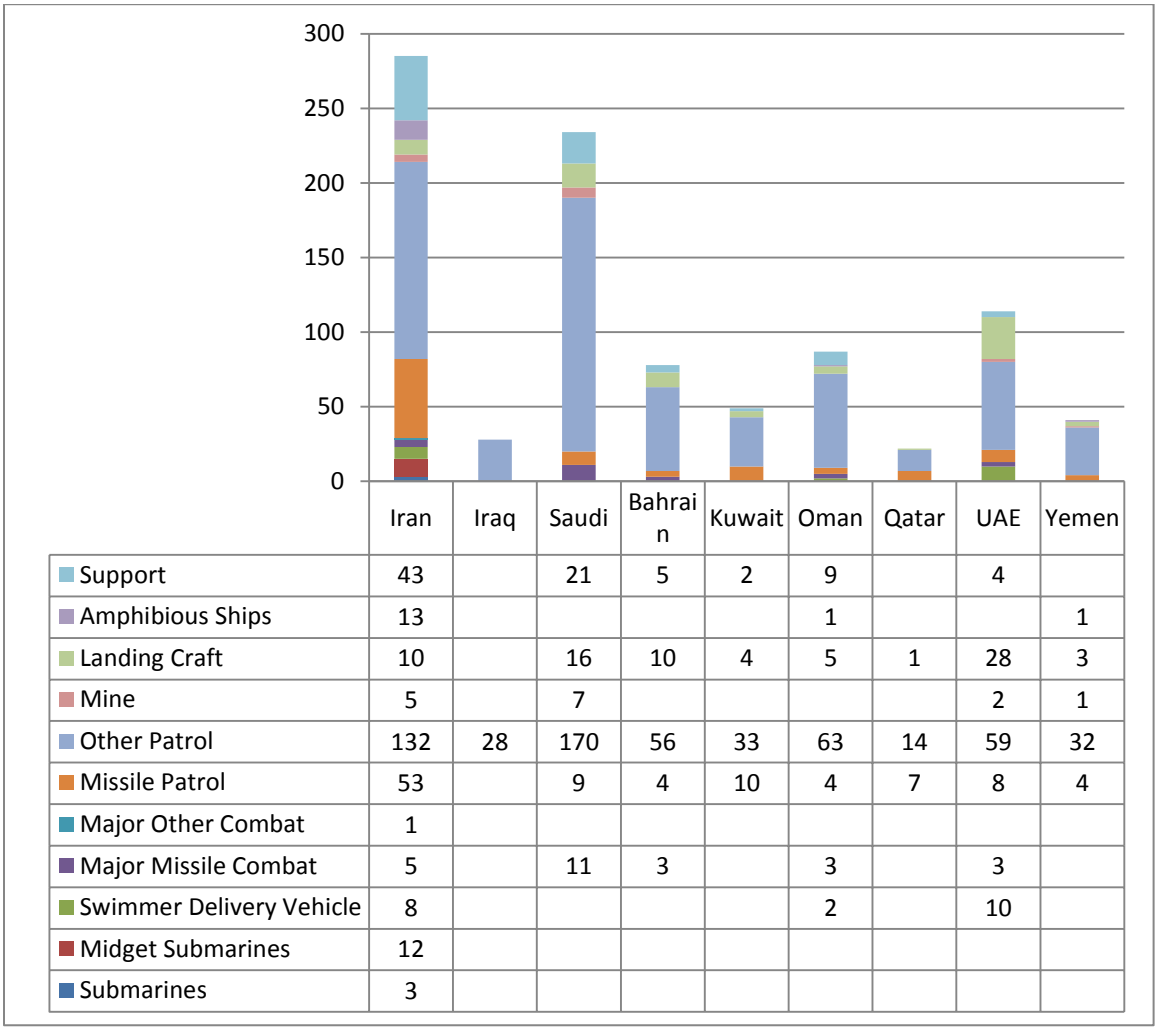
- **115,000+ men, capable of drawing upon drawing on 1,000,000 Basij.**
- **Key is 20,000 Naval Guards, including 5,000 marines.**
- **Armed with HY-3 CSS-C-3 Seersucker (6-12 launchers, 100 missiles, 95-100 km), and 10 Houdong missile patrol boats with C-802s (120 km), and 40+ Boghammers with ATGMs, recoilless rifles, 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 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 VII.4: 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, Bandar-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.**

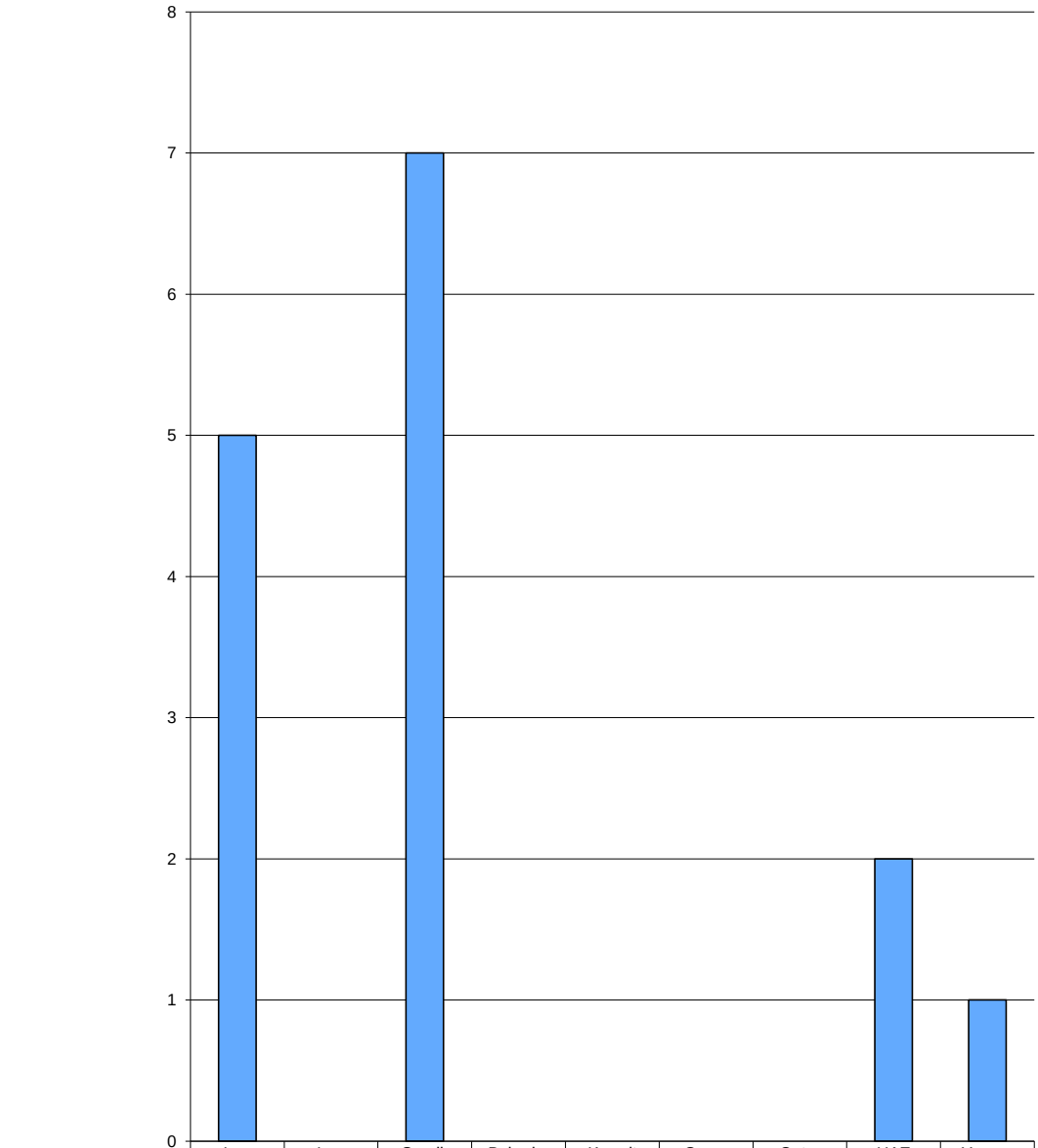
Figure VII.5: Iranian Naval Capabilities for Asymmetric Warfare



	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

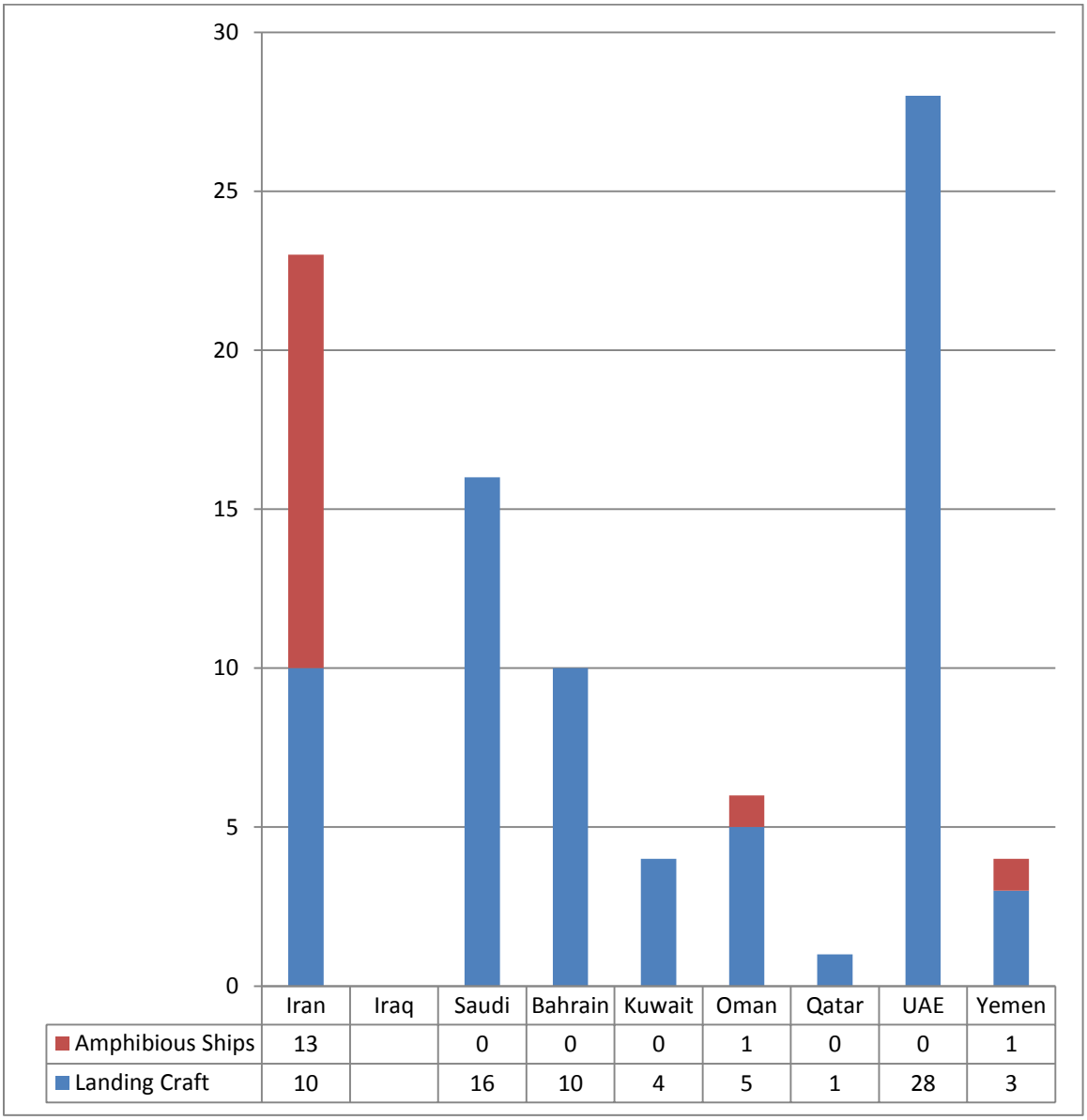
Figure VII.6: Iranian Capabilities for Mine Warfare



	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 VII.7: 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

Figure VII.8: 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 VII.9: 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**
		Lebanon
Al Quds Force	**Syria**	
		Israel
Arms transfers	**Hezbollah**	
		West Bank/Gaza
Military and security Advisors	**Hamas**	**Yemen?**
Clerics, pilgrims, shrines	**Mahdi Army, Promised Day Brigades**	**Egypt**
Commercial training	**Special Groups**	**Kuwait**
Finance/investment	**Yemeni "Shi'ites"?**	**Bahrain**
Investment/training companies	**Bahrani Shi'ites?**	**Afghanistan**
	Afghan Hazara?	**Venezuela**
Education: scholarships, teachers	**Saudi "Shi'ites"**	
Cultural exchanges		
Athletic visits		

Figure VII.10: The Iranian Al Quds 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 Quds Force, Iran provides aid to Palestinian terrorist groups such as Hamas, Lebanese Hizballah, 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 Quds Force.**
- **Quds Force continue 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 Quds 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.**
- **In October 2011, the Al Quds Force was implicated in a plot to assassinate Adel al-Jubeir, the Saudi ambassador to the United States.**

Figure VII.11: Iran and 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 *Mirsad*, 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 VII.12: 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**

VIII. Saudi and Iranian Ballistic Missile Forces

At present, only two Gulf states have long-range missile forces: Saudi Arabia and Iran. The Saudi forces consist of a small number of liquid fueled, conventionally armed Chinese-supplied missiles. Saudi Arabia is studying the possible acquisition of more advanced systems, and acquiring nuclear weapons if Iran should do so, but has not made missile forces a key part of its force. Iran is making missile forces a substitute for air power and seems to be seeking nuclear warheads for its longer-range missiles.

Saudi Missile Forces and Programs

Saudi Arabia bought Chinese ballistic missiles as a result of Iranian-Iraqi missile firings against urban targets during the Iraq-Iran War in the mid and late 1980s that came to be known as the "war of the cities." It initially bought such systems to deter Iran, and then kept them as a deterrent to both Iraq and Iran.

Saudi Arabia claimed that it bought the CSS-2 to "propagate peace," but it actually bought them for a number of other reasons. Its efforts to buy arms from the United States had reached a low point when the purchase was made, and Saudi Arabia felt the purchase would be a major demonstration of its independence. Equally, Saudi Arabia felt threatened by the fact that Iran and Iraq had long-range surface-to-surface missiles, Yemen then had the SS-21, and Saudi Arabia did not. Saudi Arabia was particularly interested in acquiring systems that could hit Tehran, while being deployed outside the range of Iranian surface-to-surface missiles.[10]

The Saudi CSS-2 Force

The CSS-2 missiles are large 70-ton, liquid-fueled, systems, and the Saudi versions have a special, large conventional warhead. Despite their weight, they are semi mobile, and one third are supposed to be kept armed and near-launch-ready on transporters, one third are kept half fueled, and one third are normally empty and being serviced. Saudi sources indicate that actual readiness rates are normally far lower.

The missiles are reported to be deployed in two battalions. One is located at the As-Sulayyil Oasis, roughly 475 kilometers south to southwest of Riyadh. As-Sulayyil will also be the site of one of Saudi Arabia's new air bases for its Tornado fighter-bombers. A second battalion is located at Al-Juaifer near the Al-Kharj Air Base south of Riyadh. A further training facility that may have a launch capability seems to exist in southwestern Saudi Arabia at al-Liddam.[11]

Commercial satellite photos of the site at As-Sulayyil show a very large headquarters and transportation complex with 60 buildings or tents, a transportation center, a command and control complex with roughly 40 buildings and tents, a secure area, a construction area, a bunker that may be a fixed launcher site, other launch areas with bunkers for missile storage, an additional launch area, and three 150-meter-long white buildings that may be missile assembly facilities.[12] Saudi Arabia has only a limited technological base to support such programs, although it has begun to experiment with short-range artillery systems.

It is unclear whether the Saudi Air Defense Force can maintain or fire its CSS-2 missiles without Chinese technical support, and Chinese technicians are operating the missiles under Saudi supervision. Ballast Nedam, a subsidiary of British Aerospace, has recently extended the runway at the As-Sulayyil Air Base to 3,000 m. There are uncertain reports that Saudi Arabia has deployed surface-to-air missiles to defend the facility.[13]

Uncertain Effectiveness

While an improved version of the CSS-2 was deployed in China, any version of the CSS-2 is now an obsolete system. Most experts still estimate that the missile has a circular error probable (CEP) of nearly two to four kilometers; poor reliability and target capability would further degrade its operational accuracy. It thus lacks the real-world accuracy to hit anything other than large area targets such as cities or industrial facilities. It also requires large amounts of technical support and ground equipment and takes hours to make ready for firing.[14]

There are good reasons to question the military value of such missiles, as long as they are equipped only with conventional warheads.[15] The CSS-2s deployed in the PRC were all nuclear-armed missiles. Each could carry one to three megaton warheads. They had a maximum range of about 2,200 mi (3,500 km), an inertial guidance system, and a single-stage, refrigerated liquid fuel rocket motor.

The version of the CSS-2 that the PRC has sold to Saudi Arabia is very different. It is heavily modified and has a special large conventional warhead, which weighs up to 3,500 to 4,000 lbs. This added warhead weight cuts the maximum range of the missile to anywhere from 1,550 nm (2,400 km) to 1,950 nm (3,100 km).

A conventional warhead of this size is more effective than the warhead on a Scud, but is hardly a weapon of mass destruction, or even an effective conventional weapon. Assuming an optimal ratio of high explosive to total weight, *and perfect accuracy and a perfect height of burst before cratering into the ground*, the warhead of the CSS-2 could destroy buildings out to a radius of 200–250 ft, seriously damage buildings out to a radius of 300–350 ft, and kill or injure people with projectiles to distances of up to 1,000 ft.[16] This is the damage equivalent of three to four 2,000-lb bombs, or about the same destructive power as a single sortie by a modern strike fighter.

It is also far from clear that the CSS-2 missile is kept truly operational. Saudi Arabia has never conducted a meaningful operational test of the CSS-8 and is incapable of conducting the tests necessary to refine the missile's targeting using the derived aim point method.[17]

CSS-2 Replacement

The Kingdom has to make hard choices about the future of its CSS-2 missiles, and whether it will buy a replacement. CSS-2 missiles are not a meaningful response to the Iranian CBRN and missiles threat, and they have only token warfighting capability.

The CSS-2 has limitations that led Saudi Arabia to examine possible replacements beginning in the mid-1990s. It is an obsolete missile that was first designed in 1971 and has aged to the point where it needed to be replaced by the late 1990s. Saudi Arabia has

not, however, found good options for acquiring its own missile capabilities. It has no capability to produce its own long-range ballistic missiles or weapons of mass destruction. The most it has done is develop an unguided rocket. In July 1997, Saudi Arabia test-fired its first domestically produced surface-to-surface artillery rocket or missile at the Al-Kharj complex. Defense Minister Prince Sultan stated that the missile had a range of between 35 and 62 km.[18]

Pakistan has suitable missile programs, as does North Korea. As a result, the Kingdom has several major choices in dealing with the CSS-2. The best choices would be to buy new missiles from China. These options include (1) establishing a program with China to extend the life of the CSS-2 (a dubious option) and (2) getting a new medium-range ballistic missile, preferably a solid-fuel system such as the CSS-5. This would eliminate complex support and reaction-time problems inherent in using liquid-fueled missiles, and the need for Chinese operators.

The CSS-5 (DF-21 or DF-21A) has a 600 kg payload, and a minimum range of 500 km (311 miles) and a maximum range of 1,770 to 2,150 km, depending on the version. China deploys it with a nuclear warhead that can be equipped with a 100, 200–250, or 500 kt yield nuclear device. It has a nominal CEP of 250–350 m, and some reports indicate that variants are equipped with conventional high explosives, submunitions, and chemical agents. According to various reports, it has an inertial guidance system that is capable of striking with an accuracy of 700 m CEP. It has a two-stage solid propellant motor and has quick targeting and launch times. It is truck mobile and has its own transporter-erector-launcher (TEL) vehicle launch system.[19] It should be noted, however, that its limited payload requires a sophisticated nuclear warhead design.

China's growing demand for oil, the visit by King Abdullah to China in January 2006, and the visit by Chinese Premier Hu Jintao three months later in April 2006 all led to the speculation about Saudi Arabia's relations with China and the possibility of forging an "oil for missiles" deal with China.[20] Some high-level visits did take place by Saudi leaders to Pakistan and China in 1999 and 2000, and the Chinese Premier, Jiang Zemin, visited the Kingdom in 2000.

Some have speculated that the Chinese approached the Kingdom with offers to modernize their CSS-2s that were purchased in 1988.[21] China, however, cannot make new sales of long-range missiles without openly violating its agreements relating to the Missile Technology Control Regime (MTCR), and Russia and the other former Soviet Union states are bound by both the MTCR and the limits of the Intermediate Range Ballistic Missile Treaty.

It seems doubtful that Saudi Arabia would deal with North Korea, which has been a major supplier of missiles and missile technology to Iran. Pakistan is a different matter. The US Department of State published a report in August 2002 that stated that Saudi Arabia held "discussions" with Pakistan regarding nuclear cooperation.[22] Pakistan also has a range of nuclear-armed missiles that would meet Saudi needs.[23]

The Hatf-6 (Shaheen II) is a road mobile, solid propellant, two-stage ballistic missile. It is launched from a TEL and uses inertial guidance, with possible a global positioning satellite terminal guidance. It is known to have been tested at ranges over 2,000 km. Most

reports put its maximum range at 2,500 km, although at least one claims 3,500 km. It has been under test since March 2000 and may now be in initial deployment. [24]

The Hatf-6 is variously reported to have a nominal CEP of 190–350 m. Its operational accuracy is unknown, but it should be good enough to attack strategic area targets such as airports, manufacturing complexes, military bases, and civilian facilities (power plants, water purification centers, etc.) with fission weapons with yields as low as 10 kt and incapacitate or destroy the target. It would be able to hit any Iranian population center. Pakistan is reported to arm the Hatf-6 warhead for a nuclear yield of either a 15- or a 35-kt nuclear warhead. According to some reports, it may have a warhead capable of stable reentry and atmospheric flight similar to the North Korean No-Dong I and the Iranian Shahab-3, and it might be accurate and reliable enough able to hit large building-sized targets with a high explosive warhead, but this seems doubtful unless Pakistan has made unanticipated progress in warhead design and terminal guidance. [25]

Pakistan also has the Ghauri II (Hatf V), with a range of 1,350–1,500 km and a warhead capacity of 760–1,200 kg; and the Shaheen-I with a range of 750 km.[26] It is reported to be developing the Ghauri III, with a range of 3,500–4,000 km. [27] Once again, there are conflicting reports regarding the payload and accuracy of these systems, and whether they would be accurate enough to hit anything other than a large area target with a conventional warhead.

The Need for Replacement

Saudi holdings of the CSS-2 thus raise serious issues on several grounds:

- A costly weapons system is deployed in small numbers with relatively low lethality.
- As now configured, the missile system may do more to provoke attack or escalation than to deter attack or provide retaliatory capability. This point became clear to the Saudis during the Gulf War. King Fahd rejected advice to retaliate against Iraqi strikes because he felt that strikes that simply killed civilians would have a provocative, rather than a deterrent effect.
- On the other hand, Saudi acquisition of chemical or nuclear warheads would radically improve the value of the system as a deterrent or retaliatory weapon.

At best, the CSS-2 now acts as a low-level deterrent and a symbol of Saudi Arabia's willingness to retaliate against Iranian strikes. At worst, the missiles are a potential excuse for Iranian missile strikes, and their use could trigger a process of retaliation against which Saudi Arabia would have little real defense capability. Israel, which initially showed concern about the system, no longer seems to perceive it as a direct threat. Israel has the capability to launch air strikes against the Saudi missile sites, but is unlikely to consider preemptive strikes unless radical changes take place in Saudi Arabia's political posture or regime.

An Uncertain Future

At some point, Saudi Arabia has to make hard choices as to whether it should invest in a symbolic and ineffective deterrent, buy new missiles armed with weapons of mass destruction, trust in extended deterrence by the United States, and/or invest in areas such as theater missile defense, civil defense, and counterterrorism. Those choices may still be as long as half a decade in the future, but the obsolescence of the CSS-2 tends to force the

pace of Saudi decision making, and Saudi Arabia understands that there are long lead times in any effort to deploy new missile defense systems, new missiles, and acquiring nuclear weapons.

A few Saudi analysts outside the government do advocate buying modern missiles and arming them with chemical, biological, or nuclear weapons. They believe that buying long-range missiles without such weapons has little purpose. It is unclear, however, that such thinkers as yet have any broad support, or that Saudi Arabia really does have better options to acquire weapons of mass destruction than it does to buy missiles. It does not have the industrial base to produce biological and nuclear weapons or to compete in producing chemical weapons. It is very difficult to purchase "turnkey" production capabilities and/or finished weapons abroad, and such purchases might well cut off Saudi Arabia from US and other Western supplies of conventional arms.

As has been noted earlier, any missile purchase or development of weapons of mass destruction would certainly seriously jeopardize US-Saudi security arrangements and could make Saudi Arabia a target for Israel. Even if Saudi Arabia could find ways to join Iran and Israel in proliferating, it is not clear whether it would reduce its vulnerability or simply raise the threshold of any attack on the Kingdom.

The mere possession of weapons of mass destruction may be adequate for the purposes of prestige in peacetime, but they must be carefully structured to avoid encouraging preemption and escalation in wartime and accelerating the efforts of neighboring states to acquire even more chemical, biological, and nuclear arms. Moreover, Saudi Arabia lacks the technology and industrial base to develop its own bombs or warheads and adapt them to a given aircraft or missile body.

It would almost certainly have to seek nuclear weapons from a supplier that either designed them for its own missiles or could carry out the difficult and expensive task of adapting a nuclear weapon to a different country's missiles. Similar problems would occur in developing advanced chemical and biological bombs and warheads, although there are no indications that Saudi Arabia has ever considered such options. The end result would mean Saudi dependence on the supplier nation for the warhead, weapon, and missile, and for all support for the system.

It would mean placing an extraordinary trust in the supplier state, and doing so at a time Saudi Arabia would almost certainly find itself joining an Iranian-Israeli nuclear arms race where both powers might well then target Saudi Arabia to either deter any use of its forces, to preempt, or to retaliate. Even if the Kingdom could buy a bomb, possession is not military capability, and it only begins the process of becoming a meaningful and secure nuclear power.

Nevertheless, Saudi Arabia can scarcely ignore Iran's efforts and such a major shift in the balance of power in the Gulf in its strategic planning. It also cannot ignore the fact that Iran's programs have already triggered changes in Israel's nuclear programs and missile programs. These changes may lead to new Israeli basing of land-based missile systems and the use of longer-range booster for Israel's "Jericho" force—if these have not already been deployed. They also may well lead Israel to equip its aircraft with longer-range nuclear-armed cruise missiles and/or its submarine forces with similar systems. Iran's

programs are not simply a challenge in the Gulf. They threaten to put Saudi Arabia in the middle of an Iranian-Israeli nuclear arms race.

Saudi Arabia may conclude that measures such as buying improved theater missile defense, civil defense, and counterterrorism forces will not be enough to deal with the creeping proliferation in Iran. If so, its only options may be a US agreement to provide extended deterrence or seeking its own nuclear forces. The United States has never taken any public position indicating that it might develop a US theater nuclear deterrent to cover Saudi Arabia and its southern Gulf allies. It could, however, rapidly field such a deterrent, which could be sea and air based and be deployed outside the Gulf. The United States will also be able to deploy steadily improving air and/or missile defenses.

Iranian Missile Forces and Programs

Iran has made long-range ballistic missiles a key part of its strategy and force posture. Unfortunately, many of the data on Iran's missile programs are speculative. While some systems like the Scud B are well known, many aspects of Iran's more advanced and developmental programs are not. Iran has not conducted the kind of extensive, realistic missile tests at operational ranges and carried through to strikes on target with the same configuration of its modified or Iranian-produced missiles to make reliable estimates of their war fighting capability or give "derived aim point" credibility to the data on accuracy and reliability.

Most estimates use a nominal payload that may bear no relation to the actual payload, and this casts serious doubt on both the range-payload data and any estimate of warhead lethality. Moreover, Iran keeps changing key aspects of its longer-range systems while moving towards warhead configurations large enough to either hold a nuclear weapon or more sophisticated conventional or CBW warhead. While Iran's Scud B and extended range Scud variants approach the status of a mature force, even the unclassified data on the extended range Scuds consists largely of estimates, and its Shahab program seems to undergo constant evolution in spite of the fact a force is deployed.

There is, however, no question about Iran's ability to field long-range missiles and execute strikes, and while the following data are nominal, they do illustrate real world capabilities:

- **Figure VIII.1** shows the ranges of Iran's ballistic missiles. While Iran does not yet possess missiles with a range of 4,000 km, the possibility exists that Iran may soon produce missiles with such a capability given scale of its R&D into its ballistic missile program.
- **Figure VIII.2** provides a more conservative estimate for the range of Iran's current missile forces. According to the BPC's estimate, Iranian missiles could potentially strike Athens, Bucharest, and Moscow.
- **Figure VIII.3** reflects key developments in Iran's ballistic missile program in the last several years. Key points include the possibility that Iran could produce and intercontinental ballistic missile by 2015, and indicators that Iran is developing a nuclear warhead for its Shahab-3 intermediate range ballistic missile.
- **Figure VIII.4** provides a table that indicates the names, fuel types, estimated ranges, and likely payloads of the missiles in Iran's arsenal.

As **Figure VIII.4** shows, Iran possesses diverse arsenal of ballistic missiles. Of particular note are Iran's medium-range ballistic missiles (MRBMs), which include the Shahab-3 and its longer- range variants. Based on the North Korean Nodong-1, the Shahab-3 has a range of 1,000 to 1,500 km, and can potentially reach targets throughout the Middle East.[28] Other Iranian MRBMs include variants of the Shahab-3, such as the Shahab-3A, Shahab-3B, Shahab-4 (Ghadr-1), Sajjil, and the BM-25. These missiles have ranges of 1,500 to 2,500 km, and are thought to be able to strike at targets throughout the Middle East, Turkey, and southeast Europe.[29] Although Iran's missiles do not possess the precision accuracy necessary for conventionally armed missiles to be effective against point or high value targets, even conventionally armed missiles can be used as tool of terror and intimidation and to strike at targets throughout the region with little, if any, warning.

Reports that Iran may develop an ICBM seem to reflect the fact it is developing rocket motor technology that could serve this purpose. These systems can be used for satellite purposes, however, and there is no hard evidence that Iran has a meaningful ICBM program at present.

In February 2012, Israel's Finance Minister, Yuval Steinitz, stated that Iran could develop an ICBM that could reach the East Coast of the US within the next two to three years,[30]

> "They (the Iranians) are working now and investing a lot of billions of dollars in order to develop intercontinental ballistic missiles… And we estimate that in two to three years they will have the first intercontinental ballistic missiles that can reach the East Coast of America. So their aim is to put a direct nuclear ballistic threat ... to Europe and to the United States of America."

Given what is known about Iran's ballistic missile technology, these claims are not likely to be accurate; Iran, in all likelihood, has not reached the level of guidance or re-entry technology necessary to effectively strike at the East Coast of the US or anywhere else of similar range with an ICBM. A more probable estimate is 5-10 years.[31] While a great deal of reporting focuses on Iran's advances and tests concerning rocket motor and booster technology, guidance and reentry technology – far more difficult technologies to master – will remain, in all probability, beyond Iran's capabilities for the next several years.

What Iran's Actions and Statements Say About Its View of Competition: Ballistic Missiles

Iran continues to deny it is seeking nuclear weapons but it is much more forthright about its missile programs, and it has made missile test firings a major part of its televised military exercises:

- *"Our missiles have tactically offensive and strategically deterrent and defensive features… Our fingers are still kept on the trigger, but the number of these triggers has increased."* – Brigadier General Hossein Salami, Lieutenant Commander of the IRGC, June 28, 2011.
- *"We feel to be threatened by no county but the US and the Zionist regime and the ranges of our missile have been designed based on the distances between us and the US bases in the region and the Zionist regime."* – Brigadier General Amir Ali Hajizadeh, commander of the IRGC's Aerospace Division, June 28, 2011.

- *"The mass production of the Qiyam missile, the first without stabilizer fins, shows the Islamic Republic of Iran's self-sufficiency in producing various types of missiles."* – Iranian Defense Minister Ahmad Vahidi, May 22, 2011.
- *"As the enemy's threats will likely come from the sea, air, and by missiles, the Revolutionary Guard has been equipped to neutralize the enemy's advanced technology."* – Mohammed Ali Jafari, commander of the IRGC on a new anti-ship ballistic missile that Iran has allegedly developed, February 7, 2011.
- *"Iran is mass producing a smart ballistic missile for sea targets with a speed three times more than the speed of sound."* – Major General Mohammed Ali Jafari, commander of the IRGC, February 7, 2011.
- *"The operational capabilities of the missile unit of the IRGC Aerospace Force will be remarkably enhanced."* – Iranian Minister of Defense Ahmad Vahidi regarding the new indigenously produced Fateh-110 ballistic missile, September 21, 2010.
- *"Those who are hostile to the Islamic Republic of Iran definitely have the right to be concerned about the drills, but we didn't hear any feeling of concern from the side of the regional countries since our moves and actions have always been in pursuit of defensive goals.*

  We are entitled to the right to growingly strengthen ourselves to protect the Islamic Iran and we naturally increase our power on a daily basis until we acquire full (power of) deterrence." – General Amir Ali Hajizadeh, commander of the IRGC's Aerospace Division in reference to Iran's most recent missile tests, July 9, 2011.[32]

As these statements show, Iran views its ballistic missiles as a critical component of its national defense. In addition to an effective means for delivering a nuclear warhead, Iran's military establishment firmly believes that an effective ballistic missile program provides the country with increased strategic and asymmetric capabilities.

Missiles as a Form of Deterrence

Iranian officials regularly make references to their missile forces as an effective deterrent to attack, and the Iranian leadership is not shy about its country's advancements concerning ballistic missile technology. High-ranking officials in Iran's political and military establishments regularly boast of their country's progress in this field.

During the Great Prophet 6 war games in late June 2011, the commander of the IRGC's Aerospace Division, Brigadier General Amir Ali Hajizadeh, stated that,

> "We feel to be threatened by no county [sic] but the US and the Zionist regime and the ranges of our missile [sic] have been designed based on the distances between us and the US bases in the region and the Zionist regime."[33]

Later, on July 9, 2011, General Hajizadeh stated the following about the war games:

> "Those who are hostile to the Islamic Republic of Iran definitely have the right to be concerned about the drills, but we didn't hear any feeling of concern from the side of regional countries since our moves and actions have always been in pursuit of defensive goals.
>
> We are entitled to the right to growingly strengthen ourselves to protect the Islamic Iran and we naturally increase our power on a daily basis until we acquire full (power of) deterrence."[34]

On June 28, 2011, Lieutenant Commander of the IRGC, Brigadier General Hossein Salami, also made reference to the deterrent that Iran perceives in its missile forces:

> "Our missiles have tactically offensive and strategically deterrent and defensive features… Our fingers are still kept on the trigger, but the number of these triggers has increased."[35]

Remarks made by such a high-ranking figure are revealing. They are a direct indication of the Iranian regime's continued willingness to improve its ballistic missile arsenal as a component of its asymmetric warfare capabilities and the deterrent it generates against the US and regional US allies. Given Iran's foreign policy objectives, conventional shortcomings, and ever-expanding missile program, it is clear that Iran sees its missile program as an effective tool to improve its strategic standing and assert itself in the region.

Missiles as a Form of Warfighting

It is far less clear that Iran has the ability to translate its current missile force into anything more than a limited "terror" weapon. While its rockets and medium range missiles are relatively accurate, they remain area weapons systems that can hit a broad area but not a key point target – and then only if they are pro-per targeted and fired, and function reliably.

Iran's longer-range systems sometimes have reasonably accurate engineering CEPs or circular error of probability. This means that if the system is perfectly aimed, functions perfectly, and the design functions as exactly as it should, half the rockets and missiles will fall with a given distance from the target determined by the technology of the guidance platform. In practice, however, Iran has not conducted enough realistic tests of its systems to provide enough data to calculate accuracy and reliability, particularly under realistic field conditions. It is also true in general, that missiles rarely achieve their stated CEP in practice. As a result, many of Iran's longer-range systems will be lucky to hit within a 1-2 kilometer distance of their target even if they function perfectly.

A high explosive warhead on a long-range missile also presents design problems. Unless it is almost perfectly fused and designed – or uses cluster munitions that are explosively disseminated at exactly the right altitude – the damage effect tends to be limited by the fact the explosion is deflected upwards at the warhead hits the earth. As a result, the damage effect is significantly less than that caused by a bomb or artillery shell of the same general size. Iran may has cluster munitions on some of its systems, but the presence, character, and effectiveness of such warheads is not clear from unclassified data and it is not clear that Iran could have conducted enough suitable tests of its longer range systems for even Iran to have reliable data.

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

These psychological effects, however, wore off relatively quickly. There were not enough missile firings to sustain a high degree of popular fears, and people were soon reported to be going to their roofs at night to "watch the show." There is simply too munch empty

area in a given urban complex or large military base for largely random strikes to either produce critical damage or kill enough people to shock or intimidate the population.

These conditions obviously do not apply if a missile warhead has reliable and accurate terminal homing of the kind the US deployed on the Pershing II, the level of accuracy of US cruise missiles, or have truly reliable and effective cluster weapons. Even then, however, the probably lethality will at best be that of a single bomb of the same size, and it is far from clear that the terminal guidance of a ballistic missile will really achieve the same accuracy as a cruise missile or precision guided bomb, The problems impose by range, far great levels of acceleration and reentry buffeting are simply too great.

These conditions also do not apply if a missile is armed with a nuclear warhead or a truly effective chemical or biological weapon. Once again, however, even nuclear weapons need to be part of a warhead with a reliable height of burst to reach maximum, predictable effectiveness. The conditions are far more challenging for chemical and biological weapons (CBW). The closing velocities of missile warheads are so great, and getting a broad dissemination of chemical agents at the right height is a major engineering challenge. This is equally true of biological agents, some of which are also extremely sensitive to sunlight. CBW warheads are much easier to design in the computer than make work in the field.

The Warfighting Capabilities of Iran's Current Missile Force

Given this background, the net effect of Iran's ballistic missiles and US efforts at missile defense on both countries' capabilities is uncertain. Although Iran boasts a large arsenal of conventionally-armed missiles of varying ranges and payloads shown in **Figure VIII.3**, Iran's lack of terminal guidance, and highly lethal warheads sharply reduces their military effectiveness. As long as Iran's missiles remain conventionally armed and lack precision guidance, they will not have a significant impact on the conventional military balance in the Middle East.

It is important to note, however, that Iran appears to be making headway in solid fuel rocket technology – the Sejjil and Zelzale line of rockets are reported to use solid fuels. Moreover, the vehicle for Iran's Omid ("Hope") communications satellite, the Safir SLV, purportedly uses a two-stage solid fuel motor.[3637] It is important to note that Iran's ability to successfully launch a solid fuel, multistage rocket represents an advance that could one day allow it to test and produce ICBMs at some point in the future.

Iran can use its missiles can be used politically and strategically, and not simply to damage targets. Selective firings and "volleys" of conventionally armed, unguided long-range missiles and rockets can and might well be used as political symbols or terror weapons. Iran might use its missiles to strike at Israel after an Israeli preventive strike, or to strike at Israel in some other contingency where it felt the political symbolism inside Iran and the Arab and Islam worlds were worth the cost. It might take the same approach in an asymmetric war with the US and Arab Gulf states, or after a US preventive strike on Iran. Even a few missile strikes might be seen as a demonstration of Iran's willingness to escalate even further, or growing future ability to strike with far more effectiveness. Moreover, even token strikes can be used for internal political propaganda purposes

The Escalating Impact of Iranian Missile Capabilities

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

If Iran were to arm its missiles with effective warheads with extremely accurate and reliable terminal guidance – or develop long-range cruise missiles with such capability – this would significantly change such war fighting calculations. Key export, power, desalination facility, and military targets would then become targets or hostages. Similarly, even the credible threat – much less use of – CBRN warheads might dramatically upset the regional balance. Such capabilities would provide Iran with both a much more solid deterrent, and a greater capability to exercise a bolder and more aggressive regional foreign policy

The situation would also be very different if these missiles are armed with weapons of mass destruction. With chemical, biological, radiological, or nuclear (CBRN) warheads, Iran's ballistic missiles would provide a much more effective deterrent to attack and provide Tehran with the ability to strike at major population centers. Given such payloads, even a small number of missiles armed with CBRN warheads that bypassed US and Arab Gulf defenses and countermeasures could potentially cause massive casualties, and do considerable damage to the militaries, economies, and critical infrastructure of regional countries. These capabilities, in combination with the deterrent and the psychological impact they would produce, would have a profound impact on the strategic balance between Iran and the US and its Arab Gulf allies.

The Impact of Missile Defenses

Iran already must deal with the fact that the US and Southern Gulf states are steadily improving their missile defenses. The US has long agreed to provide the Gulf states and Israel with data that warns them of missile launches and provides data on the missile's target. Most Gulf states have greatly improve versions of the Patriot that can defend against Iran's Scuds and Scud variant and have some capability against high speed closures from larger missiles like the Shahab.

US missile defense cruisers can defend against any of Iran's missiles over a relatively wide area, and are acquiring steadily more capable anti-missile missiles. The UAE is considering buying and deploying the THAAD wide area defense system, and all of the Southern Gulf states are being briefed on possible buys of the SM-2 series or THAAD. The US cooperates closely with Israel in missile defense, and Israel is steadily upgrading its Arrow missile defense system.

No system is likely to be leak proof – and it m ay be argued that any exchange would be one between missiles and anti-missile with unproven and unpredictable performance – but Iran's missile threat grows steadily less credible as these missile defenses improve. Moreover, it is one thing to be threatened by the risk one nuclear-armed missile gets through to a key target area, and quite another to face the risk a few far less lethal missile get through. Conventional or even CB-armed missiles become steadily less credible as "terror" or psychological weapons as missile defenses improve.

The Impact of Retaliatory Threats and Retaliation

Iran's also cannot strike in an environment where there will be no response. Saudi Arabia already has long-range, conventionally armed Chinese missiles that can strike area targets in Iran. There are questions about the status, reliability, readiness, and accuracy of the Saudi missiles, but these same questions apply to Iran's forces. This raises the specter of any missile "war of the cities" of the kind Iran and Iraq.

Iran also faces the risk of retaliation by the air forces of Gulf states like Saudi Arabia and the UAE as they acquire steadily better strike fighters with sophisticated stand-off air-to-surface weapons. Iran is becoming more vulnerable to Southern Gulf air forces as they acquire missile defenses and become less vulnerable to Iranian missiles.

Any Iranian use of long-range missiles against another Gulf state presents a broader escalatory problem for Iran. Even one such missile firing would effectively escalate to a level where the US would have no clear limits on its use of air and cruise missile power to strike at strategic targets in Iran. Iran's major cities are also as vulnerable in terms of power, water, and fuel supplies as the cities of the southern Gulf, and Iran's refineries and certain ley links in its ports and transport systems are highly vulnerable as well. Iran cannot possibly win a contest in escalation with its current conventional forces and conventionally armed missiles.

These calculations again change if Iran gets weapons of mass destruction, and the US Director of National Intelligence, James RT. Clapper, focused on this risk in his Worldwide Threat Assessment for 2012 statement:[38]

> We judge Iran would likely choose missile delivery as its preferred method of delivering a nuclear weapon. Iran already has the largest inventory of ballistic missiles in the Middle East, and it is expanding the scale, reach, and sophistication of its ballistic missile forces, many of which are inherently capable of carrying a nuclear payload.
>
> We judge Iran's nuclear decision making is guided by a cost-benefit approach, which offers the international community opportunities to influence Tehran. Iranian leaders undoubtedly consider Iran's security, prestige, and influence, as well as the international political and security environment, when making decisions about its nuclear program.
>
> Iran's growing inventory of ballistic missiles and its acquisition and indigenous production of anti-ship cruise missiles (ASCM) provide capabilities to enhance its power projection. Tehran views its conventionally armed missiles as an integral part of its strategy to deter—and if necessary retaliate against—forces in the region, including US forces. Its ballistic missiles are inherently capable of delivering WMD, and, if so armed, would fit into this strategy.

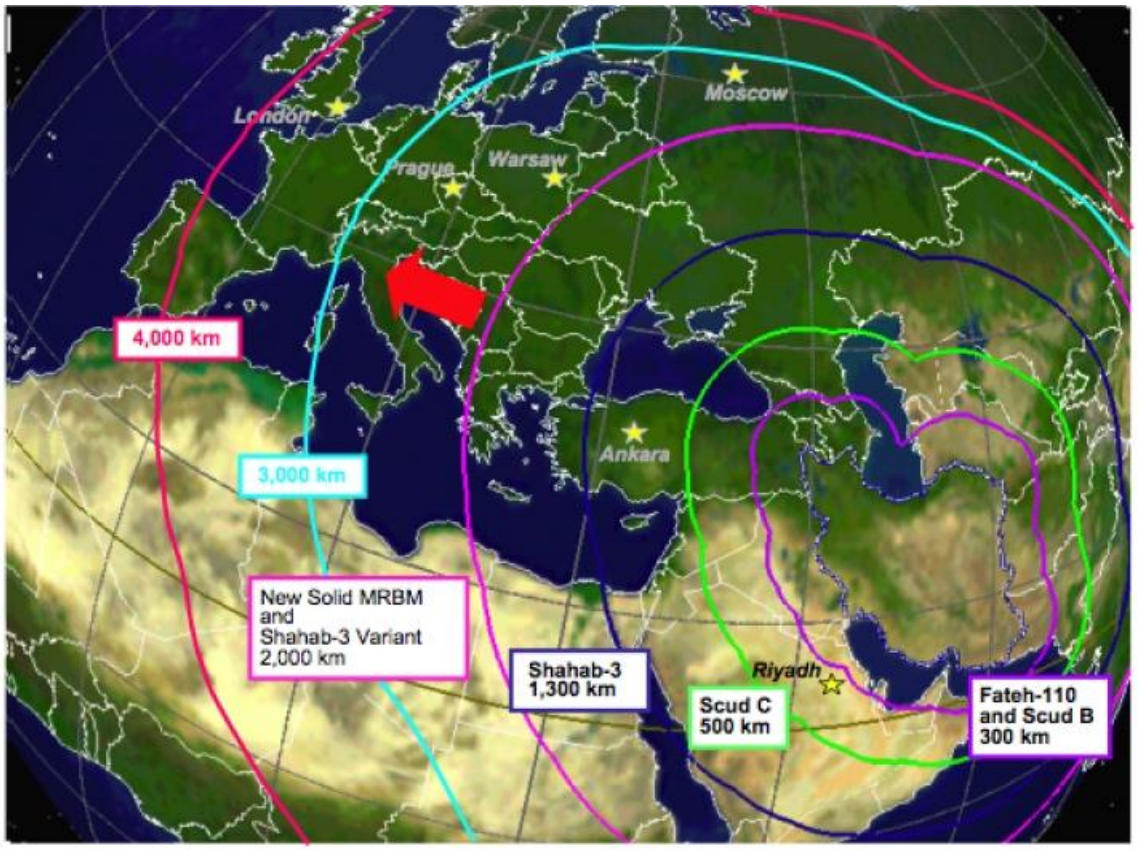
Clapper was also reported to have said during his testimony that Iran might get a nuclear device in a time period as short as a year under worst case conditions and armed a missile in as little as two more years.

This, however, is not a process Iran can win. Iran's actions have almost certainly already provoked Israel into developing the capability to target thermonuclear warheads on every major Iranian city, creating an "existential" threat to Iran long before Iran will pose one to Israel. Saudi Arabia and the GCC states may well have the option of turning to Pakistan for nuclear-armed missiles, and senior Saudi officials have said Saudi Arabia has examined nuclear options. The US has also officially offered its regional friends and allies "extended deterrence" of the kind it once provide to Europe during the Cold War – essentially confronting Iran with an open-ended threat of US retaliation.

The US is already reacting by deploying four guided missile defense destroyers to the Mediterranean, working with Turkey to improve missile warning coverage, working with the Arab Gulf states to develop missile defenses in the Gulf, and creating new targeting and strike capabilities to attack the Iranian missile threat. While it has received less attention than the US statements about its priorities for Asia, the new US strategy announced in January 2012 also made it clear than the US saw the Middle East and Gulf as one of two areas that had the highest priority in the future, and that the threat from Iran was seen as a critical issue.

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

Figure VIII.1: Estimated Range of Iranian Long-range Missile Forces



Source: NASIC, B&CM Threat 2006, Jacoby Testimony March 2005

Figure VIII.2: Estimated Range of Iranian Long-range Missile Forces -2

Source: Bipartisan Policy Center. "Meeting the Challenge: Stopping the Clock." February 2012. http://www.bipartisanpolicy.org/sites/default/files/BPC%20Iran%20Report.pdf

Figure VIII.3: Iran's Ballistic Missile Arsenal

Shahab-3 ("Meteor")	800-mile range. The Defense Department report of April 2010, cited earlier, has the missiles as "deployed." Still, several of its tests (July 1998, July 2000, and September 2000) reportedly were unsuccessful or partially successful, and US experts say the missile is not completely reliable. Iran tested several of the missiles on September 28, 2009, in advance of the October 1 meeting with the P5+1.
Shahab-3 "Variant"/Sajjil	1,200-1,500-mile range. The April 2010 Defense Department report has the liquid fueled Shahab-3 "variant" as "possibly deployed." The solid fuel version, called the Sajjil, is considered "not" deployed by the Defense Department. The Sajjil is alternatively called the "Ashoura." These missiles potentially put large portions of the Near East and Southeastern Europe in range, including US bases in Turkey.
BM-25	1,500-mile range. On April 27, 2006, Israel's military intelligence chief said that Iran had received a shipment of North Korean-supplied BM-25 missiles. Missile said to be capable of carrying nuclear warheads. The *Washington Times* appeared to corroborate this reporting in a July 6, 2006 story, which asserted that the North Korean-supplied missile is based on a Soviet-era "SS-N-6" missile. Press accounts in December 2010 indicate that Iran may have received components but not the entire BM-25 missile from North Korea.
ICBM	US officials believe Iran might be capable of developing an intercontinental ballistic missile (3,000 mile range) by 2015, a time frame reiterated by the April 2010 DOD report.
Other Missiles	On September 6, 2002, Iran said it successfully tested a 200 mile range "Fateh-110" missile (solid propellant), and Iran said in late September 2002 that it had begun production. Iran also possesses a few hundred short-range ballistic missiles, including the *Shahab-1* (Scud-B), the *Shahab-2* (Scud-C), and the *Tondar-69* (CSS-8). In January 2009, Iran claimed to have tested a new air-to-air missile. On March 7, 2010, Iran claimed it was now producing short-range cruise missiles that it claimed are highly accurate and can destroy heavy targets. At a February 8, 2011 press conference, IRGC chief Mohammed Ali Jafari announced that Iran had developed the Khalij Fars ("Persian Gulf"), a "smart" anti-ship ballistic missile based on the Fateh-110 that is allegedly able to hit high-value targets throughout the Gulf.
Space Vehicle	In February 2008, Iran claimed to have launched a probe into space, suggesting its missile technology might be improving to the point where an Iranian ICBM is realistic. Following an August 2008 failure, in early February 2009, Iran successfully launched a small, low-earth satellite on a Safir-2 rocket (range about 155 miles). The Pentagon said the launch was "clearly a concern of ours" because "there are dual-use capabilities here which could be applied toward the development of long-range missiles." Additionally, Iran has embarked on an ambitious satellite launch program since early-mid 2011.
Warheads	A *Wall Street Journal* report of September 14, 2005, said that US intelligence believes Iran is working to adapt the Shahab-3 to deliver a nuclear warhead. Subsequent press reports say that US intelligence captured an Iranian computer in mid-2004 showing plans to construct a nuclear warhead for the Shahab. The IAEA is seeking additional information from Iran.

Sources: US Congressional Research Service. "Iran: US Concerns and Policy Responses." RL32048, 14 Feb. '11, Kenneth Katzman, Iranian Reporting

Figure VIII.4: Iranian Rockets and Missiles

Missile	Translation	Fuel Type	Estimated Range	Payload
Fajr-3	*Dawn-3*	Solid	45 km	45 kg
Fajr-5	*Dawn-5*	Solid	75 km	90 kg
Fateh-110	*Victorious*	Solid	20 km	500 kg
Ghadr-1	*Powerful-1*	Liquid	1600 km	750 kg
Iran-130/Nazeat	*Removal*	Solid	90-120 km	150 kg
Kh-55		Liquid	2500-3000 km	400-450 kg
Nazeat-6	*Removal-6*	Solid	100 km	150 kg
Nazeat-10	*Removal-10*	Solid	140-150 km	250 kg
Oghab	*Eagle*	Solid	40 km	70 kg
Sajjil-2	*Baked Clay-2*	Solid	2200-2400 km	750 kg
Shahab-1	*Meteor-1*	Liquid	300 km	1000 kg
Shahab-2	*Meteor-2*	Liquid	500 km	730 kg
Shahab-3	*Meteor-3*	Liquid	800-1000 km	760-1100 kg
Shahin-1	*Hawk-1*	Solid	13 km	
Shahin-2	*Hawk-2*	Solid	20 km	
Zelzal-1	*Earthquake-1*	Solid	125 km	600 kg
Zelzal-2	*Earthquake-2*	Solid	200 km	600 kg

Source: 2010 IISS Iran’s Ballistic Missile Capabilities: A Net Assessment

IX. Looking Beyond Today's Balance: Enhancing the Military Planning, Command, and Training Capacity of the GCC

It has been clear since the GCC was formed that it could benefit from creating truly interoperable forces that were tailored to the key missions necessary to meet the security needs of all the GCC states. The new momentum provided by the Riyadh Declaration in late 2011 creates the opportunity to move forward in many areas, particularly if the GCC buildings on the experience of alliances like NATO where "unity" serves common interests while preserving individual national forces and sovereignty.

Such steps fit three general categories: steps that could improve the planning, command, and training capacity of GCC forces.

Planning and Interoperability

GCC military forces now have a very diverse mix of equipment, command and control systems, munitions, support facilities, and power projection capabilities. They cannot be easily and quickly made fully interoperable, and countries will preserve sovereign decision making authority.

One way to make steady improvements in interoperability is to set up planning staffs within the GCC that address the key tasks necessary to change this situation, and to report regularly to a committee of Ministers of Defense or their delegates. NATO has used somewhat similar methods. While the GCC has different needs, it could build on its existing efforts and adapt NATO methods as follows to produce a higher degree of unity and common effort:

Create a GCC Force Planning Exercise

Create a Defense Planning Committee that would meet regularly to review the force plans of each nation to find ways to better coordinate them and create steadily more interoperable forces. NATO has developed a Defense Planning Questionnaire where every member submits a standard regular update report on its current forces, manpower, major weapons, munitions, and five-year plans – plus a longer-term supplement on procurement. This would allow the civilian and military experts to develop better-integrated plans and make tangible suggestions as to ways to both create more effective force mixes over time, and make forces more interoperable.

Create a Standardization and Interoperability Committee and Staff

Create a similar Committee that would meet regularly to focus on ways to develop immediate interoperability, provide common support and sustainability for power projection and redeployment capability, and set common standards for stockpiling and sharing munitions and key supplies. This could be supported by a staff at GCC headquarters and designating centers of excellence in the defense colleges and centers in member states.

Create a Technology and Procurement Committee and Staff

Create a Committee to meet regularly to find ways to analyze military technology and procurement needs with a focus on technical issues, test and evaluation methods, and the

other aspects of military procurement that would help develop common approaches to acquiring weapons systems and technology. This could be supported by a staff at GCC headquarters and designating centers of excellence in the defense colleges and centers in member states.

Command, Control, Communications, Intelligence (C3I), Sensor, and Battle Management (BM Systems

The GCC has the shell of a common or integrated C3I and BM system in some areas like air defense. What it needs, however, are truly integrated C3I/BM systems in several key areas, tied to common efforts to develop intelligence, surveillance, and reconnaissance (IS&R) systems.

The highest priorities for such efforts include measures that play a critical role in defending against and deterring Iran:

Create a truly integrated air and surface-to-air missile control and warning system

Such a system would integrate sensors like the Saudi E-3A AWACs, ground based radars, and fighter and major surface-to-air missile systems into a Gulf wide, secure mix of C3I, BM, IS&R capabilities. This could be based on expanding the existing Saudi facility in Riyadh and linking to the US facility in Qatar.

The sovereignty and national security issue could be solved by using the models that mix national control of all national assets with the ability to operate on an alliance-wide basis of the type integrated developed for the NATO NADGE system. The technical side could be supported by creating a separate technical staff on a contract level controlled by the GCC and military officers.

A truly integrated maritime surveillance system

A similar system could integrate command and control data for naval operations, related air operations, and coastal defense activity using ships, maritime patrol aircraft, and coastal facilities along the Gulf Coast and in Oman at Goat Island and along the Oman coast. It could have optional links to the US fleet command in Bahrain, British forces in Oman, and the French facility in the UAE as well as standardized links to US, British, and French ships.

Such a system would need to be tailored to the special conditions of asymmetric warfare created by Iran's submarines, navy, and naval guards, and by Iran's growing air and anti-ship missile capabilities. Ideally, it would have some capability to integrate mine warfare operations as well. Coverage could begin in the Gulf, Strait of Hormuz, and Gulf of Oman, but the model could be expanded to cover the Indian Ocean and Red Sea over time.

Create a joint intelligence center

Sharing intelligence at the military, counterterrorism, and popular unrest levels is one of the most difficult aspects of alliance operations. Creating an expanded GCC joint intelligence center to handle military tasks and then expand into counterterrorism and

sources of popular unrest could be a way of slowly building up both added GCC capabilities and building trust and common joint collection and analysis capability. Creating a GCC-wide annual threat assessment would be one way to begin and tie intelligence cooperation to policy in a way that reinforced unity.

Building common training capacity

The GCC states already have some exceptional training facilities at the national level, but there are gaps, they do relatively little large-scale training that simulates real combat, and they still have limited cross and common training. There also is a need for joint training that cuts across service lines.

There are several measures that should be examined as ways of achieving the kind of unity King Abdullah referred to in his speech to the GCC:

Survey training facilities to determine how to make best use on GCC-wide basis

The GCC could create a commission of senior military officers to survey training facilities and methods by service and mission focus to determine where creating a common specialized facility is necessary, how to improve joint and common training, ways to increase cross training of officers and other ranks from other countries, and options for large-scale air and land combat training. Such a commission could report annually to Ministers on proposals and progress.

Focus on key contingencies

Expand field and command post training at the GCC level with a focus on key missions and contingencies like operations to secure the borders with Yemen, deal with efforts to "close the Strait," and deploy joint forces to deal with a contingency directed against Kuwait and secure the Iraqi-Saudi border.

Preparing for Missile and WMD Threats

No single area presents a more serious military threat to the GCC than Iran's acquisition of long-range missiles, and movement towards acquiring nuclear weapons. The GCC needs to improve cooperation in several key areas by:

- Developing a common policy towards sanctions, and incentive/disincentives in persuading Iran to halt such policies.
- Developing a common and integrated approach toward missile defense in cooperation with the US – the only real world provider and integrator of such a system. This is critical both in ensuring the creation of any effective system that is truly interoperable, has the proper wide area coverage, can be reinforced by US ships with SM-2 missile defenses, and linked is effectively to US satellite systems. It also potentially represents the most expensive GCC investment in new types of military capability over the next decade.
- Creating a GCC estimate of the Iranian-Israeli nuclear and missile balance and the risks the rising arms race and potential use of such forces presents to the GCC states.
- Working collectively with the US to explore Secretary Clinton's offer of "extended deterrence" to counter Iran if it does more forward to deploying nuclear weapons.
- Evaluating GCC options for acquiring a GCC deterrent.
- Evaluating the cost-benefits of supporting preventive military action.

These are sensitive areas, and require planning that is classified and closely controlled in several areas. At the same time, a lack of GCC coordination and unity will encourage Iran, waste a vast amount of money on less effective defenses, and steadily increase military risks over time.

Focusing on Other Key Mission Areas

As has been touched upon earlier, security cooperation is most effective when it focuses on key mission priorities rather than formal generic training or training by military services and branch of the internal security services.

The need for integrated air and integrated sea and coastal defense tailored to both Iranian conventional and asymmetric threats has already been described. So has the need to focus on the Iranian missile and nuclear threat. Internal security issues, and infrastructure protection are addressed in following sections.

Other critical mission areas where joint planning efforts – and coordinated improvements in forces, C3I, and training – are necessary, and include the following:

Iraq, the Iraqi border and Kuwaiti "Hinge"

The current political crisis in Iraq and the lack of effective formal arrangements for US and Iraqi military cooperation highlight the fact that the primary land threat to the GCC comes through the Iraqi border and the strategic "hinge" in the upper Gulf along the border with Kuwait. This threat is compounded by the risk of both some form of Iranian-led axis involving Iraq, Syria, and Lebanon; and a new round of major sectarian fighting between Iraqi Arab Sunnis and Shi'ites.

No one can estimate the future level of Iraqi unity, its political system, or level of its ties to Iran. Even under the best conditions, Iraq will not acquire significant conventional forces to counter or deter Iran before 2016 and this may well take until 2020 and beyond.

The GCC needs to develop common polices towards Iraq that encourage national unity, an Arab identity distant from Iran, and Sunni and Shi'ite unity. At present, it lacks such unity and is not competing effectively with Iran. It needs to use aid and strategic communications to do so.

Moreover, the GCC needs a common approach to contingency planning to defend Kuwait and the entire Saudi-Iraqi border; to support Kuwait's development of ports, to guard against Iranian military probes, and consider a border "fence" to cover Kuwait, Saudi Arabia, and possible Jordan with a cost-effective surveillance effort. These needs further reinforce the priority for bring Jordan in to the GCC- a step the GCC already has underway.

Yemen Border Security and Threat

Unrest in Yemen, the resurgence of Houthi opposition and AQAP, and the major problems created by illegal immigration and smuggling across Yemen's borders are now primarily a threat to Saudi Arabia and Oman, but also involve the other GCC states as Yemeni, Somali, and Ethiopian migrants cross their borders. Saudi Arabia will have to

play the lead role, but dealing with Yemen should be a GCC problem, and one that will inevitably involve cooperation with the US, Britain and France.

As is the case with the Kuwait hinge and Saudi-Iraqi border, the GCC needs a common approach to contingency planning to deal with Yemen and the secure entire Saudi-Omani-Yemeni border; and consider a border "fence" to cover Yemen with a cost-effective surveillance effort. It also needs to consider how best to develop a collective aid effort to help restore Yemeni stability and offer its people some form of economic hope.

Mine and Anti-Submarine (ASW) Warfare

It is unclear just how far Iran has gotten in acquiring or building smart mines. Even older "dumb" mines, however, present a critical threat. This became all too clear the Iran-Iraq War during 1987-1988. Today, however, the GCC only has four aging minesweepers in the Saudi Navy, and the US, British, and French navies have limited capability. The GCC badly needs to reassess requirements for mine warfare capability.

In contrast, the cost of effective anti-submarine warfare against a limited Iranian threat, and establishing an effective and well-trained GCC force, is probably a waste of resources *if* the US takes responsibility for the mission in inside and outside the Gulf. Resolving the relative role of the US (and British and French) navy and GCC navies is a critical common security issue.

Strait/Gulf of Oman/Indian Ocean/Red Sea/Horn

The current command and mission structure of GCC naval and air units divide up the Gulf by country. It puts the burden of covering the Strait largely on Oman and the UAE. It largely ignores the security Gulf of Oman and the Indian Ocean, and leaves the Red Sea to the Saudi Red Sea fleet.

The combined threat from Iran, Yemen instability, Somali piracy, and political instability in the rest of the Red Sea area – including Egypt – now require the GCC to start rethinking this naval posture, how best to cooperate with the US and European navies, and how to develop an integrated and more regional approach to tanker and shipping security.

Improving Internal Security Efforts

Several earlier suggestions have focused on the need for integrated intelligence efforts. It is also clear that cooperation in internal security is extremely sensitive on a national basis. Nevertheless, there are important options for improving GCC "unity."

GCC Identity Cards, Passport Data

Require GCC-wide identity cards for both nationals and foreign labor and business residents – with matching passport data for nationals – that contain digital photo, fingerprint, and eye scan data, and track each major use of the card. Tying the use of the card to remittances, and banking/Hawala use, would provide further security information.

Such data could be encrypted so only governments can read it, and national programs could be set up to track major "events" or actions that fit a pattern of terrorism human

trafficking, improper financial transfers, etc. Setting up a GCC wide pattern analysis where given uses of the card or card data were flagged as warnings, could further assist in security operations. This could include flagging movements to sensitive countries like Iran.

A GCC-wide Intelligence Effort for Both Counterterrorism and Dealing with Popular Unrest

Expand current cooperation to create the GCC equivalent of Interpol to create a common intelligence and data center that focused on tracking both political extremists and terrorists and providing near real time warning of the kind provided by the US National Counterterrorism Center. This effort could be tailored to reflect national standards for report to a degree that ensured such a body did not did not infringe on national sensitivities and prerogatives.

Common Counterterrorism Training

Create common training facilities for counterterrorism options, and developing programs to ensure cross training from one country to another. This could include related intelligence, SOF, special branch, and regular police training. It is also an area where Jordan has excellent SOF training facilities, and where joint training might occur with US, British, and French SOF forces.

A GCC-wide Rapid Reaction Forces for Counterterrorism

Create a GCC-wide capability by identifying national force elements trained, equipped, and mobile enough to come to the aid of other GCC countries, or the creation of a common force. The latter would be cheaper, identify neighboring forces in close proximity, and take best advantage of existing helicopter lift and mobility and specialized vehicles, weapons and equipment, and intelligence/communications gear.

The GCC should, however, seek to avoid the use of forces from other GCC countries in dealing with popular protests and unrest limited to given member states. Outside intervention should be a last resort option that discredits the government asking for aid and requires outside forces to deal proportionately with protests they do not fully understand and cannot easily characterize.

As events in Bahrain show, however, there may be a need for carefully trained and equipped reinforcement by outside forces to deal with violent demonstrations, crowd control and popular unrest. Ensure a capability to operate effectively across borders and reinforce in dealing with popular unrest in ways that minimize the need to use force and political complications.

Common Police and Crowd Control Standards and Training

Dealing with domestic protests, unrest, and riots is an extremely sensitive issue. It is also one where the last year has shown that GCC countries need to set the highest possible standards to minimize abuses and escalating problems that could be quickly controlled by effective and moderate action.

Developing common methods and capabilities in terms of procedures, equipment, use of force, toleration of legitimate popular protest and dissent, use of arrests and detention, and immediate expert negotiation would both aid individual countries and serve a common interest.

Create large-scale police and internal security facility that could simulate crown control, peaceful negotiation and treatment of demonstrators, and teach the use of non-lethal and non-provocative use of force. This could help could prepare all GCC states for future contingencies and raise their internal security and police forces to a high level of proficiency.

Such efforts could be given the kind of visibility to show GCC citizens and the world that GCC states are making a common effort to minimize the use of force and protect their citizens. Similarly, showing all GCC countries are acting in ways that define and allow legitimate opposition – and limit the use of force, trials and detention to truly necessary cases – is a key way of building public trust.

Encouraging Stability Through Economic, Educational, and Social Measures

The last year has made it clear that the combination of high population growth, issues in educating and employing native youth, housing, infrastructure pressures, medical services, and other material issues plays a critical role in the security of each GCC state. These issues are compounded by sectarian differences, tribal pressures, foreign labor issues, and popular perceptions of corruption, responsiveness and integrity of government services, and divisions by region and income group over the quality of government services.

Most GCC states are now attempting to deal with these issues on a national basis, and national sensitivities preclude "unity" in addressing the problems of each state in a GCC-wide environment. There also are sufficient national differences so one size scarcely fit all.

At the same time, the need to encourage stability and security through economic, educational, and social measures is at least as great security issue as any foreign threat or terrorism. The also are important areas for cooperation in spite of national differences.

Education

The creation of GCC-wide scholarship and exchange programs, and GCC-wide educational standards, would help develop a common effort to improve readiness for employment, a consciousness of the importance of GCC as well as national values. Such efforts could also potentially serve to speed education reform by moving the debate away from purely national issues to a broad regional standard that could focus on educating young men and women for practical careers.

GCC Domestic and Foreign Labor Policies

It is easy to talk about "Omanization" and "Saudisation," and other policies for dealing with foreign labor, but it is even easier to continue exploiting low-cost foreign labor and

relying on outside technical expertise. Creating common labor policies that give priority to hiring local nationals from within the GCC, and common apprentice and training programs that support such efforts could be used to show the concern of governments and set broad standards for reducing dependence on foreign labor. These policies could be expanded to include Jordan and other critical Arab states.

The same common policies could be used to create a GCC wide approach to foreign labor. This could include visas, protection and rights, salary and remittance policies, and limits of foreign vs. Gulf labor.

It is important to note that setting higher standards for foreign labor, and raising real world labor costs, is a key way to encourage employment of GCC nationals. Such efforts can also be joined to the use of GCC-wide identity cards to help ensure the stability of foreign workers by protecting them, managing visas, and tracking every entry, departure, and change in job status.

Setting Common Social and Economic Standards/Goals

The last year has shown that education, housing, medical services, utilities and water, equity of income distribution, perceptions of corruption, quality of governance/rule of law, human rights, and levels and quality of employment *all* act as critical factors shaping domestic stability and unrest.

Gulf states differ sharply today in the levels of such services. They are, however, improving in each state. Setting up a Commission or body in the GCC to examine the level of performance in each country, set common goals and standards, and show the people of each country that they and their children will benefit over time offers a potential way to increase stability.

Making key elements of such an effort public is a way of focusing protest and public dissent on real issues and ones government's can actually solve, as well as reassuring Gulf youth. This is particularly true if it shows each government is providing equity across sectarian and regional standards and is actively working to determine current problems and solve them.

Building Dignity, Trust, and Faith in Government Integrity

The political crises in the Middle East and North Africa last year – along with the experiences of Iraq and Afghanistan – has provide a long series of lessons in the fact that calls for democracy do not suddenly produce working representative government and viable political systems. At the same time, these events provide a grim warning of the degree to which regimes can underestimate popular anger, distrust, and feelings that governments are corrupt and do not respect their peoples. They also have revealed a fact that is consistent in the history of governments throughout the world: unless there are reliable ways to measure public opinion, leaders overestimate their support and bureaucracies and those around them tell them what they want to hear.

Steps towards local elections, and empowering a national Majlis, can help deal with such pressures without disrupting the current political system and national stability. At the same time, GCC governments need feedback that is more reliable, and provides better measures of popular discontent.

The use of polling is a key tool towards this end, and polling could be conducted on a GCC-wide basis to both provide broad goals for the GCC in an open form and provide detailed warnings to individual governments – warnings that could be kept confidential by tailoring the release of the data. Such polling would also serve as another way of focusing popular opinion on issues and real-world government actions – particularly if it took the form of individual surveys that focused on key areas, rather than sweeping efforts that would focus on every problem or issue at once.

Once again, the key areas of concern are: education, housing, medical services, utilities and water, equity of income distribution, perceptions of corruption, quality of governance/rule of law, human rights, and levels and quality of employment. These are areas where each GCC government needs to develop better ways to monitor how its citizens actually feel, get advance warning of discontent, and react preemptively to deal with popular discontent. They are also ways of setting better and more realistic priorities for councils, planning groups, Majlis action, etc.

At the same time, surveys and measures of effectiveness need to focus heavily on corruption at lower levels, frustrating bureaucratic and government systems that seem to ignore public needs, apparent favoritism, and corruption and delays in the courts and police system. These aspects of governance, coupled to growing income inequality and high level cronyism and special treatment, have been key factors in leading to popular perceptions that governments fail the people. Outside surveys also act as a warning.

Figure X.1 Transparency International Estimate of Comparative Levels of Middle Eastern Corruption for 2010

World Rank	Regional Rank	Country	CPI 2010 Score	90% Confidence Interval		Surveys Used
				Lower Bound	Upper Bound	
19	1	Qatar	7.7	6.6	8.6	7
28	2	United Arab Emirates	6.3	5.4	7.3	5
30	3	Israel	6.1	5.7	6.6	6
41	4	Oman	5.3	4.1	6.4	5
48	5	Bahrain	4.9	4.1	5.7	5
50	6	Jordan	4.7	4.0	5.5	7
50	6	Saudi Arabia	4.7	3.3	6.0	5
54	8	Kuwait	4.5	3.3	5.9	5
59	9	Tunisia	4.3	3.0	5.6	6
85	10	Morocco	3.4	2.9	3.9	6
91	11	Djibouti	3.2	2.1	4.7	3
98	12	Egypt	3.1	2.9	3.4	6
105	13	Algeria	2.9	2.6	3.2	6
127	14	Lebanon	2.5	2.0	2.9	4
127	14	Syria	2.5	2.1	2.8	5
146	16	Iran	2.2	2.0	2.4	6
146	16	Yemen	2.2	2.0	2.5	4
175	19	Iraq	1.5	1.2	1.9	3

Note: 1.0 = most corrupt; 10 = least corrupt Source: Transparency International, *Corruptions Perceptions Index 2010.*

Improving Energy and Infrastructure Security

GCC states are now highly dependent on central power, desalination, and energy facilities – and several require major increases in capacity to deal with growing populations. GCC states have already taken some measure to create pipeline routes that by pass the Strait, but "unity" in the GCC requires a broader range of actions:

- Collective efforts and standards for the passive and active defense of critical infrastructure and key energy facilities.
- Common stockpiling of critical parts and components to allow rapid repair of sabotage and combat damage without waiting for long-lead items.
- Integrating power and water systems so the GCC can compensate for a breakdown or damage to a critical power or desalination facility.
- Creating a broader range of pipelines that by pass the Straits and go though Oman, to Yanbu, and possibly through Jordan.
- Improving roads and possibly create a rail capability to move bulk cargo broadly through the Gulf from ports in Oman and from Jeddah.
- GCC wide planning to reduce the growth of water and power use through conservation and realistic pricing.
- Applying the same efforts to reduce wasteful use of domestic fuel, gasoline, and natural gas use.

One key test of such security is that no Gulf city should be critically vulnerable to an Iranian attack or some form of sabotage to a major power or desalination facility. Another goal is to disperse energy facilities in ways that share national use and reduce reliance on any one facility.

Creating More Effective Cooperation with Power Projection Forces Outside the GCC

There are serious limits to the GCC options in cooperating with forces outside the Gulf. Only one regional power now seems to be a viable candidate. Including Jordan in the GCC would add an important military force, although one from a country where stability may be an issue. Pakistan is approaching the status of a failed state, no longer is superior to Gulf forces in training and leadership, and presents a far great political risk than Jordan. Russia and China are not acceptable options. Turkey is a rising power, but its forces are not designed for power projection, and any Turkish support still presents political sensitivities in some GCC states.

This leaves the GCC dependent on the Europe and the US, and both have limitations of their own. The GCC faces the reality that British and French power projection capabilities are already severely limited in going beyond the Mediterranean areas and the operating range from major peacetime basing facilities. Current plans and budget pressures make it clear that they are going to be steadily reduced as a result of financial pressure over the next five years.

The situation is more favorable in regard to European arms sales. Cutbacks in European military procurement have limited the range of advance air and surface-or-missile equipment, smart munitions, and systems like UCAVs that Europe can sell and support at a contractor level. However, Europe still can provide excellent land weapons, helicopters, and trainers; and Europe also produces naval vessels that often area better suited to the operating needs and ranges of GCC states than most US naval systems.

Europe still offers GCC states alternative sources of arms, but it should be noted that GCC states need to be careful to ensure that contract supports offer high degrees of interoperability with US or other European forces, and that both the European and US contract teams that support equipment in peacetime will be adequate and willing to support combat operations.

The US remains the leading global military power, and has a large presence in the Gulf. The US is already cooperating in depth in areas like the modernization of GCC air forces, common training, and many other areas. USCENTCOM, the US 5th Fleet, and the US commands in Kuwait and Qatar all provided major support as do US advisory teams.

At the same time, the US does face serious force and military spending cuts, and has not established anything like a stable Strategic Framework Agreement with Iraq. The US is also sending mixed signals. On December 16th, Ben Rhodes, the Deputy National Security Advisor for Strategic Communications, is reported to have said that the US could revert to a pre-1990 posture in the Gulf, and there was no real need to either deal with Iran or change the US strategic and military posture in the region. He is said to have explained that, “the scaling back of the US military presence in the Gulf was part of the administration's strategy to "demilitarize" US foreign policy and shift to an approach that favored counter-terrorism tactics.

Rhodes also said the end of the war in Iraq – and eventually the war in Afghanistan – proved that large military deployments are not necessary to deny terrorists safe haven in foreign countries.”[1]

> "I don't think we're looking to reallocate our military footprint in any significant way from Iraq. They won't be reallocated to other countries in the region in any substantial numbers … The argument several years ago... was that you needed to have a very large US military footprint so that you could fight the terrorists 'over there,' so they wouldn't come here. But we've demonstrated the opposite, that you don't need to have a large US military footprint in these countries, that you can shrink them and focus on al Qaeda in a far more specific way... and still very much accomplish your national security goals….
>
> "That allows us in many respects to demilitarize elements of our foreign policy and establish more normal relationships…That's our posture in the region and its far more in line with where we were before 1990.
>
> …President Obama has kept a core promise of his to the American people. He opposed the war in Iraq as a candidate for Senate in 2002, before it started. He put forward a plan to end the war as a senator and promised to end the war as a candidate. And now we can definitively say he has kept that promise as president…America is safer and stronger because of the way we ended the war in Iraq."

These statements may be more a matter of election year rhetoric that US policy. The Obama Administration does seem to have carried out extensive planning for a new approach to shaping the US force posture in the region in spite of such statements.

The fact remains, however, that the GCC needs to establish a much clearer base for mid and long-term planning for the support US, British, and French power projection forces can actually provide over time. It also needs to linking GCC force planning and procurement to clear plans for interoperability, and develop suitable contingency plans.

- ***This is not a NATO function***. NATO does not control forces, and has no special expertise in power projection. It also includes far too many members that cannot contribute and which can present political complications.
- ***It is, however, in the interest of every GCC state to preserve as much British and French power projection capability and training presence as possible, and to ensure that the US will preserve a major presence in the region over time***. It is equally important to ensure that at some point, the US, British, and French presence evolves in ways that focus more on projection from outside to deal with truly critical contingencies in ways directly linked to the rate of improvement in GCC forces.

One way to help achieve more unity inside and outside the GCC would be to ask that the US and Britain, and France set up military liaison offices to support GCC force planning, procurement, and exercise efforts, and proving military representatives to take on an "observer" status in GCC military meetings. This would effectively recognize efforts that already exist in most GCC countries, but develop a more integrated and effective effort without compromising GCC sovereignty.

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[1] Mohammed Najib and Lauren Gelfand, "Procure and protect: Middle East procurement," *Jane's Defense Weekly*, February 6, 2009, available at http://jdw.janes.com

[2] "Gulf Leaders Agree to discuss Further a Union Proposal." AFP. May 14, 2012.

[3] "Gulf Leaders Agree to discuss Further a Union Proposal." AFP. May 14, 2012.

[4] Knickmeyer, Ellen and Delmar-Morgan, Alex. "Bahrain, Saudis to Clinch Ties." Wall Street Journal, May 14, 2012.

[5] Knickmeyer, Ellen and Delmar-Morgan, Alex. "Bahrain, Saudis to Clinch Ties." Wall Street Journal, May 14, 2012.

[6] The US Department of Defense, "'Eagle Resolve' Focused on Reducing WMD Vulnerabilities," Gulf Exercise, May 23, 2005.

[7] The US Department of Defense, "GCC, US begin Eagle Resolve with CPX," Gulf Exercise, April 26, 2009.

[8] Adapted by Anthony H. Cordesman from IISS, The Military Balance, various editions; Jane's sentinel series

[9] David C. Isby, "Iran Successfully Test-fires Tor-M1," *Jane's Missiles & Rockets*, December 23, 2009, available at http://www.janes.com

10 Associated Press, May 12, 1997, 0251.
11 Associated Press, May 12, 1997, 0251; Jane's Defense Weekly, July 30, 1997, p. 17.
12 Jane's Defense Weekly, October 1, 1988, pp. 744-755, July 30, 1997, p. 17; Associated Press, May 12, 1997, 0251.
13 Jane's Defense Weekly, October 1, 1990, pp. 744-746.
14 US experts have never monitored a test of the conventional version of the missile. CEP stands for circular error probable, and is an indication of a missile's accuracy. The figure represents the radius of a circle in which half the warheads are expected to fall. It should be noted, however, that the theoretical figures apply only to missiles that operate perfectly up to the point which the missile has left the launcher and at least is first booster and guidance system are operating perfectly. Operational CEPs can only be "guesstimated", but will be much lower. Missiles generally do not have fail-safe warheads. A substantial number will have partial failures and deliver their warhead far from their intended targets. Jane's Defense Weekly, October 1, 1990, pp. 744-746; Fred Donovan, "Mideast Missile Flexing", Arms Control Today, May, 1990, p. 31; Shuey, Lenhart, Snyder, Donnelley, Mielke, and Moteff, Missile Proliferation: Survey of Emerging Missile Forces, Washington, DC, Congressional Research Service, Report 88-642F, February 9, 1989.
15 Shuey, Lenhart, Snyder, Donnelley, Mielke, and Moteff, Missile Proliferation: Survey of Emerging Missile Forces, Washington, DC, Congressional Research Service, Report 88-642F, February 9, 1989, pp. 64-65.
16 The warhead could also be enhanced with submunitions, a proximity fuse to detonate before impact to give an optimum burst pattern and widen the area covered by shrapnel, and a time delay fuse to allow the warhead to fully penetrate a building before exploding. Shuey, Lenhart, Snyder, Donnelley, Mielke, and Moteff, Missile Proliferation: Survey of Emerging Missile Forces, Washington, DC, Congressional Research Service, Report 88-642F, February 9, 1989, pp. 23-24.
17 Jane's Defense Weekly, October 1, 1990, pp. 744-746, July 30, 1997, p. 17; Fred Donovan, "Mideast Missile Flexing", Arms Control Today, May, 1990, p. 31; Shuey, Lenhart, Snyder, Donnelley, Mielke, and Moteff, Missile Proliferation: Survey of Emerging Missile Forces, Washington, DC, Congressional Research Service, Report 88-642F, February 9, 1989.
18 Jane's Defense Weekly, July 30, 1997, p.17.
19 Duncan Lennox, Jane's Strategic Weapons Systems 46, Surrey: Jane's Information Group, January 2007, pp. 13-14; Missile Threat.com, "CSS-5," http://www.missilethreat.com/missilesoftheworld/id.54/missile_detail.asp, accesed November 28, 2008; Sinodefense, "CSS-5 (DF21A), http://www.sinodefence.com/space/missile/df21.asp.
20 "President Hu Arrives in Riyadh for a State Visit," Xinhua, April 22, 2006, available at http://www.chinadaily.com.cn/china/2006-04/22/content_574220.htm; and Richard Russell, "Oil for Missiles," Wall Street Journal, January 25, 2006, available at http://www.opinionjournal.com/editorial/feature.html?id=110007866
21 GlobalSecurity.org available at http://www.globalsecurity.org/wmd/world/saudi/

22 Ed Blanche "Gulf-Saudi 'Arabia's nuclear Footprint," Jane's Islamic Affair Analyst, September 1, 2003
23 Duncan Lennox, Jane's Strategic Weapons Systems 46, Surrey: Jane's Information Group, January 2007, pp. 111-112; Missile Threat.com, "Hatf-6," http://www.missilethreat.com/missilesoftheworld/id.54/missile_detail.asp, accesed November 28, 2008.
24 Duncan Lennox, Jane's Strategic Weapons Systems 46, Surrey: Jane's Information Group, January 2007, pp. 111-112; Missile Threat.com, "Hatf-6," http://www.missilethreat.com/missilesoftheworld/id.54/missile_detail.asp, accesed November 28, 2008.
25 Duncan Lennox, Jane's Strategic Weapons Systems 46, Surrey: Jane's Information Group, January 2007, pp. 111-112; Missile Threat.com, "Hatf-6," http://www.missilethreat.com/missilesoftheworld/id.54/missile_detail.asp, accesed November 28, 2008.
26 Usman Ansari, "Pakistan Pushes to Improve Missile Strike Capability," Defense News, November 17, 2008, p. 20. Federation of American Scientists, http://www.fas.org/nuke/guide/pakistan/missile/hatf-5.htm.
27 Usman Ansari, "Pakistan Pushes to Improve Missile Strike Capability," Defense News, November 17, 2008, p. 20.

[28] US Congressional Research Service. "Iran's Ballistic Missile Programs: An Overview." RS22758, 04 Feb. "09, Steven A. Hildreth.

[29] US Congressional Research Service. "Iran's Ballistic Missile Programs: An Overview." RS22758, 04 Feb. "09, Steven A. Hildreth.

[30] "Iran Progressing Toward ICBM Capability, Israeli Finance Minister Says." NTI. February 22, 2012. http://www.nti.org/gsn/article/iran-progressing-toward-icbm-capability-israel-says/

[31] "Experts Question Predictions on Iranian ICBM." NTI. February 24, 2011. http://www.nti.org/gsn/article/experts-question-iranian-icbm-capabilities/

[32] 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.

[33] "All US, Israeli Bases Within Iran's Missile Range." Islamic Republic of Iran Broadcasting. June 28, 2011, http://english.irib.ir/voj/news/top-stories/item/79921-all-us-israeli-bases-within-irans-missile-range

[34] "Iran Reiterates Deterrent Nature of Recent Missile Drills." Fars News. July 9, 2011, http://english.farsnews.com/newstext.php?nn=9004183678

[35] "Commander: IRGC Able to Launch Rapid, Massive Missile Strikes." Fars News, June 28, 2011, http://english.farsnews.ir/newstext.php?nn=9004074141

[36] Missilethreat.com. http://missilethreat.com/missilesoftheworld/id.177/missile_detail.asp

[37] "Iran." NTI. http://www.nti.org/country-profiles/iran/delivery-systems/

[38] James R. Clapper, Director of National Intelligence, 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/