Iran, Iraq, and the Changing Face of Defense Cooperation in the Gulf

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The Ongoing Changes in the Balance

• Loss of Iraq as a Counterbalance to Iran; Risk of “Shi’ite Crescent”
• Fragile structure of energy transport, and critical facility targets.
• GCC lead in military spending and arms imports.
• Impact of access to US technology; US as key partner.
• Potential GCC lead in conventional forces.
• Need to adapt to threat from Iranian asymmetric warfare capabilities.
• Emerging Iranian missile, chemical and potential nuclear threat.
• Steadily more sophisticated threat from extremists and terrorism.
• Instability in Yemen, the Horn, and Red Sea area.
• Rise of piracy.
Iran, Iraq, and the Uncertain Power Vacuum to the Northwest

• Loss of Iraq as Counterbalance to Iran; cannot be corrected before 2007-2010.


• “Shi’ite crescent:” Future ties between Iran, Iraq, Syria, and Lebanon.

• Impact on Jordan and Israel; “spillover” from Arab-Israeli conflict into the Gulf.
Iran vs. Iraq: 2003 vs. 2010

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Iran</td>
<td>1,565</td>
<td>1,613</td>
<td>283</td>
<td>312</td>
</tr>
<tr>
<td>Iraq</td>
<td>2,200</td>
<td>149</td>
<td>316</td>
<td>0</td>
</tr>
</tbody>
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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Active Manpower</td>
<td>424,000</td>
<td>513,000</td>
<td>8:10</td>
<td>191,957</td>
<td>523,000</td>
<td>2:5</td>
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<tr>
<td>Reserve Manpower</td>
<td>650,000</td>
<td>350,000</td>
<td>19:10</td>
<td>0</td>
<td>350,000</td>
<td>NA</td>
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<tr>
<td>Main Battle Tanks</td>
<td>2,200</td>
<td>1,565</td>
<td>7:5</td>
<td>149</td>
<td>1,613</td>
<td>1:10</td>
</tr>
<tr>
<td>OAFVs</td>
<td>1,300</td>
<td>815</td>
<td>8:5</td>
<td>505</td>
<td>725</td>
<td>7:10</td>
</tr>
<tr>
<td>APCs</td>
<td>2,400</td>
<td>590</td>
<td>4:1</td>
<td>1,479</td>
<td>650</td>
<td>23:10</td>
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<tr>
<td>Towed Artillery</td>
<td>1,900</td>
<td>2,085</td>
<td>9:10</td>
<td>0</td>
<td>2,010</td>
<td>NA</td>
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<tr>
<td>SP Artillery</td>
<td>150</td>
<td>310</td>
<td>1:2</td>
<td>0</td>
<td>310</td>
<td>NA</td>
</tr>
<tr>
<td>MRLs</td>
<td>200</td>
<td>889</td>
<td>1:5</td>
<td>0</td>
<td>876</td>
<td>NA</td>
</tr>
<tr>
<td>Combat Aircraft</td>
<td>316</td>
<td>283</td>
<td>11:10</td>
<td>0</td>
<td>312</td>
<td>NA</td>
</tr>
<tr>
<td>Attack Helicopters</td>
<td>100</td>
<td>85</td>
<td>6:5</td>
<td>0</td>
<td>50</td>
<td>NA</td>
</tr>
<tr>
<td>Major SAM Launchers</td>
<td>225</td>
<td>205</td>
<td>11:10</td>
<td>0</td>
<td>234</td>
<td>NA</td>
</tr>
</tbody>
</table>

The Problem of Vulnerability

• Vulnerability extends throughout Gulf, into Gulf of Oman, and in nearby waters of Indian Ocean, Gulf of Aden, Horn, and Red Sea

• Increasing range of anti-ship missiles, and use of UAVs/UCAVs, smart mines, light guided weapons, fast small craft all changing the threat.

• Key on and offshore oil and other facilities highly exposed, vulnerable and involve very long-lead repairs.

• Same is true of critical coast petroleum facilities, and desalination plants -- perhaps the most critical infrastructure facilities extent.

• Many key facilities have no grids, networks, or substitutes.

• Security often basic, poorly trained, and not realistically tested. Need active “red team” testing, and attention to sabotage as well as attack.

• Need passive defense plans, and repair and recovery plans and capability.

• Quick reaction forces to deal with infiltration, offshore, coastal attack critical.
Hormuz: Breaking the Bottle at the Neck

- 280 km long, 50 km wide at narrowest point.
- Traffic lane 9.6 km wide, including two 3.2 km wide traffic lanes, one inbound and one outbound, separated by a 3.2 km wide separation median.
- Antiship missiles now have ranges up to 150 km.
- Smart mines, guided/smart torpedoes.
- Floating mines, small boat raids, harassment.
- Covert as well as overt sensors.

Source: http://www.lib.utexas.edu/maps/middle_east_and_asia/hormuz_80.jpg
Vulnerability of Gulf Oil Fields

Primary Oil and Gas Deposits in the Middle East and the Shia Majority Areas.

- A Major Oil field
- A Super-Giant Oil field
- A Major Gas field

Islam:
- Shiism (to include Alevis/Alawis)
- Sunnism (Hanafi, Shafii, Maliki)

- Hunbli

- Ibadism

- Christianity

- Judaism

- Other

- Mixed population areas
- Sparsely populated areas
- Uninhabited areas

Ras Tanura

Source: Google maps
Desalination Plant

Source: Google maps
Exploiting the Southern Gulf Edge in Defense Resources

• Southern Gulf (GCC) states have massive lead in military spending:
  • 8:1 over 1997-2009, and Saudi Arabia alone more than 4 times Iran.
  • Sharp increase in lead since 2004, as react to Iranian threat.

• Far greater lead in arms imports, led by Saudi Arabia and UAE. GCC states clearly reacting to Iranian build-up.

• Far better access to advanced weapons and technology from US, Europe, Russia, and China. Massive advantage in “bang for buck.”

• Critical problem is integration and interoperability.

• Advances in training technology, IS&R, and command and control allow far quicker and more integrated action.

• But, Southern Gulf states cripple their military through lack of integration and interoperability, bickering and rivalry.
Comparative Military Spending: 1997-2009: GGC Leads Consistently by More than 8:1

Derived from IISS, Military Balance, various editions
Gulf Arms Orders: “The Iraq Down, Iran Up Effect:”
2002-2005 vs. 2006-2009

0 = Data less than $50 million or nil. All data rounded to the nearest $100 million.
Source: Adapted from Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations, Congressional Research Service, various editions.
### New Arms Orders by Supplier: 2005-2009

**GCC leads Iran by 54:1**

**GCC & Iraq lead Iran by 62:1**

<table>
<thead>
<tr>
<th>Supplier</th>
<th>GCC</th>
<th>Bahrain</th>
<th>Kuwait</th>
<th>Oman</th>
<th>Qatar</th>
<th>Saudi Arabia</th>
<th>UAE</th>
<th>Iraq</th>
<th>Yemen</th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>*900</td>
<td>46,000</td>
<td>*400</td>
<td>2,600</td>
<td>*1,400</td>
<td>*29,500</td>
<td>*14,200</td>
<td>*7,200</td>
<td>*400</td>
</tr>
<tr>
<td><strong>All Others</strong></td>
<td>100</td>
<td>200</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td>0</td>
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<tr>
<td><strong>All Other European</strong></td>
<td>300</td>
<td>1,200</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,100</td>
<td>100</td>
<td>0</td>
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<tr>
<td><strong>Major West European</strong></td>
<td>0</td>
<td>19,200</td>
<td>0</td>
<td>0</td>
<td>1,300</td>
<td>500</td>
<td>14,600</td>
<td>2,800</td>
<td>600</td>
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<tr>
<td><strong>China</strong></td>
<td>100</td>
<td>1,100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>900</td>
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<td>0</td>
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<tr>
<td><strong>Russia</strong></td>
<td>400</td>
<td>300</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>300</td>
<td>200</td>
<td>200</td>
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<tr>
<td><strong>US</strong></td>
<td>0</td>
<td>27,000</td>
<td>400</td>
<td>2,600</td>
<td>100</td>
<td>200</td>
<td>13,100</td>
<td>10,600</td>
<td>5,100</td>
</tr>
</tbody>
</table>

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

The GCC Threat to the GCC

- Vast lead in military spending and arms imports
- Support from US, Britain, France
- *But,*
- Poor Mission Focus with Limited Coordination
- Lack of Integration, Standardization
- Problems in Large-Scale Exercises and Training; Military Realism
- Problems in Jointness – including security services, police, and intelligence – and combined arms.
- Lack of Balanced Force Development: Manpower Quality and Sustainability
Ties to US Provide a Decisive Advantage in Deterrence and Defense

- US must reshape strategic posture in leaving Iraq, but bases in Kuwait, Bahrain, and Qatar. Contingency facilities in UAE and Oman. Rapid reinforcement capability for Saudi Arabia and Iraq

- US technical edge will grow steadily relative to Iran, as will effectiveness of arms imports from US.

- US Army still in process of making forces far more expeditionary and capable of rapid deployment.

- Britain and France retain important power projection capabilities.

- “Soft” US assets in terms of intelligence, surveillance, reconnaissance, counterterrorism analysis, and missile warning offer further advantage.

- High degree of interoperability and common exercise training which could be rapidly increased by better cooperation within GCC states and between them and a suitable Iraqi government.

- US missile defense systems and assets, and “extended regional deterrence,” offer critical new options for the future.
Keeping a Decisive US Qualitative Edge in US Forces and Arms Transfers to the Gulf
($10.5B in FY087 & FY09)

<table>
<thead>
<tr>
<th>Joint Ground Capabilities</th>
<th>Joint Maritime Capabilities</th>
<th>Joint Air Capabilities</th>
<th>Space-based Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future Combat Systems:</td>
<td>CVN 21 Carrier Replacement</td>
<td>16 F-35 Joint Strike Fighters</td>
<td></td>
</tr>
<tr>
<td>* Ground and air systems</td>
<td>1 Virginia Class Submarine</td>
<td>20 F-22A Raptors</td>
<td></td>
</tr>
<tr>
<td>119 Stryker Vehicles</td>
<td>1 DDG-1000 Destroyer</td>
<td>36 V-22 Ospreys</td>
<td></td>
</tr>
<tr>
<td>5,249 High Mobility Multi-purpose Wheeled Vehicles</td>
<td>2 Littoral Combat Ships</td>
<td>23 F/A-18 Hornets</td>
<td></td>
</tr>
<tr>
<td>1,061 Heavy Tactical Vehicles</td>
<td>2 T-AKE Auxiliary Dry Cargo Ships</td>
<td>22 E/A-18G Growlers</td>
<td></td>
</tr>
<tr>
<td>3,187 Medium Tactical Vehicles</td>
<td>CVN Refueling Complex Overhaul</td>
<td>16 CH-47 Chinooks</td>
<td></td>
</tr>
<tr>
<td>29 M1A1 Abrams Tank Upgrades</td>
<td>2 Joint High Speed Vessels</td>
<td>VH-71 Helicopter</td>
<td></td>
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<tr>
<td>Chemical Weapons Demilitarization</td>
<td></td>
<td>KC-X Aerial Refueling Tanker</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>59 Predators, Reapers and Warriors</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td>Basic Research</td>
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<tr>
<td>+$0.3B in FY 2009 (+$1.4B FY09-FY13)</td>
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</table>
Major Possible US Arms Sales to Gulf States: 2002-2010

**CY 2010**

October 20, 2010
Saudi Arabia - F-15SA aircraft
Saudi Arabia - AH-64D Longbow Helicopters
Saudi Arabia - AH-64D Longbow Helicopters
Saudi Arabia - various helicopters

September 27, 2010
Iraq - contractor technical support - the Iraqi Defense Network
Iraq - contractor logistics support for Mobile Communications Centers
Kuwait - Boeing C-17 GLOBEMASTER III aircraft

September 15, 2010
Iraq - refurbishment - M113A2 Armored Personnel Carriers
Iraq - 18 F-16IQ Aircraft

August 10, 2010
Kuwait - MIM-104E PATRIOT Missiles

August 5, 2010
Iraq - technical support service

August 3, 2010
Oman - F-16 Block 50/52 aircraft

July 2, 2010
Oman - logistics support and training for C-130J-30 aircraft

May 26, 2010
United Arab Emirates (UAE) - logistics support and training for C-17 Globemaster III aircraft

March 9, 2010
Iraq - various communication equipment

**CY 2009**

Dec. 28, 2009
United Arab Emirates - logistics support, training and related systems for C-130J-30 aircraft being procured through a Direct Commercial Sale
United Arab Emirates - enhanced guided bomb unit

December 18, 2009
United Arab Emirates - logistics support for C-17 Globemaster Aircraft
Kuwait - Facilities and Infrastructure Construction Support Services

December 17, 2009
Saudi Arabia - SANG Modernization Program

December 3, 2009
United Arab Emirates - Chinook helicopters

November 23, 2009
Kuwait - design and construction - facilities and infrastructure for Al Mubarak Air Base

November 19, 2009
Iraq - Light and Medium Utility Helicopters

November 16, 2009
Kuwait - PATRIOT sustainment and repair/return programs

August 6, 2009
Saudi Arabia - Communication Navigation and Surveillance/Air Traffic Management upgrades

August 5, 2009
Saudi Arabia - Tactical Airborne Surveillance System (TASS) aircraft upgrades
Major Possible US Arms Sales to Gulf States:
2002-2010

**CY 2009 Continued**
August 4, 2009
United Arab Emirates - HELLFIRE missiles and aircraft survivability Equipment

July 28, 2009
Bahrain - 25 AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM)

July 20, 2009
Kuwait - eight KC-130J Multi-mission Cargo Refueling Aircraft

July 14, 2009
Kuwait - logistics support, contractor maintenance and technical services in support - the F/A-18 aircraft
Kuwait - Browning machine guns, Swiftship Nautilus Class Diver Support Vessels and other related services and equipment

July 10, 2009
Kuwait - upgrade the Desert Warrior Fire Control System with Gunner Integrated TOW System (GITS II)

July 7, 2009
Kuwait - continuing logistics support, contractor maintenance, and technical services in support - F/A-18 aircraft

**CY 2008**
December 10, 2008
Iraq - Deployable Rapid Assembly Shelters (DRASH) and Communication Equipment
Iraq - M16A4 Rifles, M4 Carribnes, and M203 Grenade Launchers
Iraq - Helicopters and Related Munitions
Iraq - M1A1 and Upgrade to M1A1M Abrams Tanks
Iraq - 30-35 Meter Coastal Patrol Boats and 55-60 Meter offshore Support Vessels
Iraq - T-6A Texan Aircraft
Iraq - Light Armored Vehicles
Iraq - AT-6B Texan II Aircraft

September 26, 2008
Saudi Arabia - AIM-9X SIDEWINDER missiles
Saudi Arabia - AN/FPS-117 Long Range Radar Upgrade
Saudi Arabia - Multifunctional Information Distribution System/Low Volume Terminals

September 9, 2008
United Arab Emirates - UH-60M BLACK HAWK Helicopters
United Arab Emirates - Surfaced Launched Advanced Medium Range Air-to-Air Missile (SL-AMRAAM)
United Arab Emirates - Terminal High Altitude Air Defense (THAAD) Fire Units
United Arab Emirates - PATRIOT Advanced Capability-3 Missile Systems
United Arab Emirates - AVENGER and VMSLP Fire Units
Kuwait - AIM-120C-7 AMRAAM Missiles
Saudi Arabia - AH-64D APACHE Longbow Helicopters

July 31, 2008
Iraq - M1A1 and Upgrade to M1A1M Abrams Tanks
Major Possible US Arms Sales to Gulf States: 2002-2010

CY 2008 Continued

July 30, 2008
Iraq - Helicopters and related munitions
Iraq - technical assistance for construction - facilities and infrastructure
Iraq - Light Armored Vehicles

July 28, 2008
Iraq - Armored Security Vehicles
July 25, 2008
Iraq - C-130J-30 Aircraft

July 18, 2008
Saudi Arabia - continued assistance in the modernization - the Saudi Arabian National Guard

July 11, 2008
Qatar - logistics support and training for two C-17 Globemaster III aircraft

May 7, 2008
Iraq - technical assistance for construction - facilities and infrastructure

March 21, 2008
Iraq - various vehicles, small arms and ammunition, communication equipment, medical equipment, and clothing and individual equipment

January 14, 2008
Saudi Arabia - Joint Direct Attack Munitions

January 3, 2008
Kuwait - TOW-2A/B Radio Frequency Missiles

CY 2007

January 3, 2008
United Arab Emirates - various munitions and weapon systems

December 7, 2007
Saudi Arabia - AN/AAQ-33 SNIPER Targeting Pods
Saudi Arabia - mission equipment for AWACS aircraft

December 4, 2007
Kuwait - PAC-3 missiles, PAC-2 missile upgrades to GEM-T, and PATRIOT ground support equipment upgrades
United Arab Emirates - the PATRIOT Advanced Capability-3 Missile System
United Arab Emirates - upgrades and refurbishments - E-2C aircraft

November 9, 2007
Kuwait - technical/logistics support for F/A-18 aircraft

October 4, 2007
Saudi Arabia - Light Armored Vehicles and High Mobility Multi-Purpose Wheeled Vehicles
United Arab Emirates - Blast Fragmentation Warhead and HELLFIRE II Longbow Missiles
Kuwait to upgrade three L-100-30 aircraft

September 25, 2007
Iraq - various vehicles, small arms ammunition, explosives, and communications equipment

September 21, 2007
Iraq - logistics support for three C-130E aircraft

August 17, 2007
Iraq - UH-I HUEY repair parts
Major Possible US Arms Sales to Gulf States: 2002-2010

**CY 2007 Continued**

August 3, 2007
Bahrain - Bell 412 Air Search and Recovery Helicopters

June 18, 2007
United Arab Emirates (UAE) - a Pilot Training Program

May 24, 2007
Iraq - medical supplies, equipment, and training

May 18, 2007
Iraq - Technical Assistance for Construction - Facilities and Infrastructure

May 4, 2007
Iraq - various small arms ammunition, explosives, and other consumables

**CY 2006**

December 07, 2006
Iraq - provide funds for Trucks, Vehicles, Trailers

November 13, 2006
Saudi Arabia - 155 General Electric (GE) F110-GE129 engines or 20 Pratt & Whitney F100-PW229 engines in support - F-15S aircraft

September 27, 2006
Iraq - King Air 350ER and potentially other aircraft
Saudi Arabia - continued effort to modernize the Saudi Arabian National Guard (SANG)
Iraq - one AN/FPS-117 or TPS-77 Long Range Air Traffic Control Radar

September 21, 2006
United Arab Emirates - High Mobility Artillery Rocket Systems

**CY 2006**

September 19, 2006
Iraq - helicopters, vehicles, weapons and support
Iraq - logistics support for Helicopters, Vehicles and Weapons

July 28, 2006
United Arab Emirates - UH-60M BLACK HAWK Helicopters
Bahrain - UH-60M BLACK HAWK Helicopters
Saudi Arabia - remanufacture and upgrade - AH-64A to AH-64D APACHE Helicopters
Oman - JAVELIN Anti-tank Missile Systems
Saudi Arabia - M1A1 and Upgrade - M1A2 to M1A2S Abrams Tanks

July 21, 2006
Bahrain - JAVELIN missiles
Saudi Arabia - provide funds for blanket order requisitions, under a Cooperative Logistics Supply Support Agreement (CLSSA)

July 20, 2006
Saudi Arabia - continue modernization - the Saudi Arabian National Guard (SANG)
Saudi Arabia - UH-60L Utility/Assault Black Hawk helicopters
Major Possible US Arms Sales to Gulf States: 2002-2010

**CY 2005**

October 3, 2005
Saudi Arabia - Contractor, Technical Services, and Logistics Support
Saudi Arabia - Continued Assistance in the Modernization - the SANG
Saudi Arabia - Multifunctional Information Distribution System/ Low Volume Terminals

September 27, 2005
Saudi Arabia - Upgrade Services - C-130E/H Aircraft

August 22, 2005
Kuwait - Technical/Logistics Support for F/A-18 Aircraft

August 4, 2005
Kuwait - TOW-2A/B Anti-armor Guided Missiles

July 21, 2005
Bahrain - Continuation - Logistics Support Services and Equipment
Iraq - T-56A-7 Engines and Logistics Support for C-130 Aircraft

**CY 2004**

United Arab Emirates - JAVELIN Anti-tank Missile Systems

**CY 2003**

Saudi Arabia - Continued Modernization - the Saudi Arabian National Guard
Saudi Arabia - AN/AAQ-24(V) NEMESIS Directional Infrared Countermeasures Systems
Qatar - AN/AAQ-24(V) NEMESIS Directional Infrared Countermeasures System
Bahrain - AN/AAQ-24(V) NEMESIS Directional Infrared Countermeasures System

**CY 2002**

Kuwait -- Aerostat System
United Arab Emirates - Refurbished/upgraded E-2C Aircraft to the E2C HAWKEYE 2000
Oman -- Reconnaissance Systems
UAE -- Upgrade to Apache Helicopters
Bahrain -- 3D Land Based Radar
Oman -- F-16 Aircraft Munitions
Kuwait -- AMRAAM Air-to-Air Missiles
United Arab Emirates -- Sea Sparrow Ship to Air Missiles
Kuwait -- Apache Helicopters
Egypt - Support Package for Fast Missile Craft

**CY 2001**

United Arab Emirates -- Sale - Harpoon Missiles and Related Equipment and Support
Oman -- Sale - F-16 C/D Aircraft and Related Equipment and Support
Kuwait -- Sale - Technical and Logistical Support for F/A-18 Aircraft and Related Equipment and Support
Saudi Arabia -- C3 System Development for RSNF
United Arab Emirates - Joint Direct Attack Munitions and Wind Corrected Munitions Dispense Tail Kits (04/26/01)
Increase Ground Capabilities

Army
- Active: 42 Brigade Combat Teams (482.4K Soldiers)
- Months Home Station / Months Deployed: 12/12

Marine Corps
- Active: 2.5 Marine Expeditionary Forces (175K Marines)
- Months Home Station / Months Deployed: 7/7

Comparing:
- Increased from 42 to 48 Brigade Combat Teams (547.4K Soldiers)
- Increased from 12/12 to 24/12 Months Home Station / Months Deployed
- Increased from 2.5 to 3 Marine Expeditionary Forces (202K Marines)
- Increased from 7/7 to 14/7 Months Home Station / Months Deployed

Source: FY 2009 DoD Budget Request; FY 2008 Budget; FY 2007 Supplemental

Numbers may not add due to rounding
The Southern Gulf Leads in the Conventional Military Balance

• Iran is anything but the Hegemon of the Gulf.
  • Many key systems date back to the time of Shah, or are Russian and Chinese designed/built systems of limited quality and often dating back to Vietnam era.

• Southern Gulf states lead in land and air quantity in every area except total manpower and towed artillery.
  • Iran cannot exploit this lead except in Iraq and Kuwait without major restructuring of sustainment, mobility, and power projection training.

• Southern Gulf states have major lead in land, air, surface to air missile, and naval force quality.

• Iran leads in major surface vessels, but cannot exploit in the face of US opposition.

• Iran’s industrial base may eventually improve its competitiveness, but so far is more claims and hype than real.
Comparative Military Manpower: 2010

Derived from IISS, Military Balance, 2010
Land Force Threats

- Iranian Threat to Kuwait and Iraq
- Iranian permissive amphibious/ferry operation.
- Iranian dominance of Iraq; Invited In to Replace US?
- Spillover of Iraqi Sunni-Shi’ite power struggles.
- Yemeni incursion into Saudi Arabia or Oman

**But:**

- Low near-term probability.
- High risk of US and allied intervention.
- Limited threat power projection and sustainability.
- Unclear strategic goal.
Comparative Armored Vehicle Strength in 2010

Source: Estimated by Anthony H. Cordesman using data from various editions of the IISS *The Military Balance* and Jane’s *Sentinel*. 
Comparative Modern Tank Strength, 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Zulfiqar</th>
<th>OF-40</th>
<th>T-72</th>
<th>M-84</th>
<th>Leclerc</th>
<th>Challenger 2</th>
<th>M-60A3</th>
<th>M-60A1</th>
<th>M-1A2</th>
</tr>
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<tbody>
<tr>
<td>Iran</td>
<td>100</td>
<td></td>
<td></td>
<td>159</td>
<td></td>
<td>390</td>
<td>450</td>
<td>6</td>
<td>315</td>
</tr>
<tr>
<td>Iraq</td>
<td></td>
<td>36</td>
<td>60</td>
<td></td>
<td></td>
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<td>Saudi</td>
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<td>77</td>
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<td>180</td>
<td></td>
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</table>

Air/Missile Threats

- Precision air strikes on critical facilities: Raid or mass attack.
- Terror missile strikes on area targets; some chance of smart, more accurate kills.
- Variation on 1987-1988 “Tanker War”
- Raids on offshore and critical shore facilities.
- Strikes again tankers or naval targets.
- Attacks on US-allied facilities

But:

- Low near-term probability.
- High risk of US and allied intervention.
- Limited threat power projection and sustainability.
- Unclear strategic goal.
Comparative High Quality Fighter/Attack Aircraft in 2010

<table>
<thead>
<tr>
<th>Aircraft</th>
<th>Number</th>
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<tr>
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<td>Tornado ADV</td>
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<td>Mirage 2000</td>
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<td>MiG-25</td>
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<td>Su-25</td>
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<td>Su-20/22</td>
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<td>F-15S</td>
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<tr>
<td>F-15C/D</td>
<td>65</td>
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<tr>
<td>F-4D/E</td>
<td>3</td>
</tr>
<tr>
<td>Saegheh</td>
<td>3</td>
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</table>

Source: Adapted by Anthony H. Cordesman from various sources and IISS, The Military Balance, various editions and Saudi experts.
Comparative Gulf AC&W, ELINT, and Reconnaissance Aircraft, 2010

### Comparative Gulf Armed Helicopters: 2010

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<thead>
<tr>
<th></th>
<th>Iran</th>
<th>Iraq</th>
<th>Saudi</th>
<th>Bahrain</th>
<th>Kuwait</th>
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<th>Qatar</th>
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### Gulf Land-Based Air Defenses In 2010

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<th>Country</th>
<th>Major SAM</th>
<th>Light SAM</th>
<th>AA Guns</th>
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<tr>
<td>Bahrain</td>
<td>81 Hawk MIM-23B</td>
<td>60 RBS-70</td>
<td>27 guns</td>
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<tr>
<td></td>
<td></td>
<td>18 FIM-92A Stinger</td>
<td>15 Oerlikon 35 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 Crotale</td>
<td>12 L/70 40 mm</td>
</tr>
<tr>
<td>Iran</td>
<td>16/150 I Hawk</td>
<td>SA-7/14/16, HQ-7</td>
<td>1,700 Guns</td>
</tr>
<tr>
<td></td>
<td>3/16 SA-5</td>
<td>29 SA-15</td>
<td>ZSU-23-4 23 mm</td>
</tr>
<tr>
<td></td>
<td>45 SA-2 Guideline</td>
<td>Some QW-1 Miss</td>
<td>ZPU-2/4 2.3 mm</td>
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<tr>
<td></td>
<td></td>
<td>29 TOR-M1</td>
<td>ZU-23 23 mm</td>
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<td></td>
<td></td>
<td>Some HN-5</td>
<td>M-1939 77mm</td>
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<tr>
<td></td>
<td></td>
<td>5/30 Rapier (SA-22)</td>
<td>S-60 57mm</td>
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<tr>
<td></td>
<td></td>
<td>Some FM-80 (Ch Crotale)</td>
<td>ZSU-57-2</td>
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<td></td>
<td></td>
<td>15 Tiger cat</td>
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<td></td>
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<td>Some FIM-92A Stinger</td>
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<tr>
<td>Iraq</td>
<td></td>
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<tr>
<td>Kuwait</td>
<td>5/24 I Hawk Phase II</td>
<td>12 Aspide</td>
<td>12 Oerlikon 35 mm</td>
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<tr>
<td></td>
<td>5/40 Patriot PAC-2</td>
<td>12 Starburst Aspide</td>
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<td></td>
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<td>Stinger</td>
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<tr>
<td>Oman</td>
<td>None</td>
<td>Blowpipe</td>
<td>26 guns</td>
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<tr>
<td></td>
<td></td>
<td>8 Mistral 2 S P</td>
<td>4 ZU-23-2 23 mm</td>
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<td>12 Pantrsy 91 E</td>
<td>10G DF-005 Skyguard 35</td>
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<td>34 SA-7</td>
<td>12 L-60 40 mm</td>
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<td></td>
<td></td>
<td>6 Blindfire 57 13 Martello</td>
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<td></td>
<td></td>
<td>20 Javelin</td>
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<td>40 Rapier</td>
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<td>Qatar</td>
<td>None</td>
<td>10 Blowpipe</td>
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<td>12 FIM-92A Stinger</td>
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<tr>
<td></td>
<td></td>
<td>9 Roland II</td>
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<td></td>
<td></td>
<td>24 Mistral</td>
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<tr>
<td></td>
<td></td>
<td>20 SA-7</td>
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<td>Saudi Arabia</td>
<td>16/128 I Hawk</td>
<td>40 Crotales</td>
<td>1,220 guns</td>
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<tr>
<td>(NG)</td>
<td>4-16/16-24 Patriot 2</td>
<td>500 Stinger (AR MY)</td>
<td>92 M-163 Vulcan 20 mm</td>
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<td>17/73 Shahine Mobile</td>
<td>500 Mistral (AD F)</td>
<td>30 M-167 Vulcan 20 mm</td>
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<td>16/96 PAC-2 launchers</td>
<td>500 FIM-43 Redeye</td>
<td>850 AMX-305 A 30 mm</td>
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<td>500 Redeye (AD F)</td>
<td>128 G DF Oerlikon 35mm</td>
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<td>73/68 Crotales/Shahine</td>
<td>73-141 Shahine static</td>
<td>150 L-70 40 mm (in store)</td>
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<td>130 M-2 90 mm (NG)</td>
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<td>UAE</td>
<td>2/6/36 I Hawk</td>
<td>20+ Blowpipe</td>
<td>62 guns</td>
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<td>42 M-3/DA 20 mm SP</td>
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<td>Some Rapier</td>
<td>20 G CF-BM2 30 mm</td>
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<td>Some Crotales</td>
<td>Some Javelin</td>
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<td>Some RB-70</td>
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<td>Some 800 SA-7</td>
<td>530 guns</td>
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<td>Some SA-6 SP</td>
<td>Some SA-9 SP</td>
<td>20 M-163 Vulcan SP 20mm</td>
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<td>Some SA-13 SP</td>
<td>50 ZSU-23-4 SP 23mm</td>
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<td>Some SA-14</td>
<td>100 ZSU-23-2 23 mm</td>
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<td></td>
<td>Some 900 SA-7</td>
<td>150 M-1939 37 mm</td>
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<td></td>
<td>Some SA-9 SP</td>
<td>50 M-167 20mm</td>
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<td>Some SA-13 SP</td>
<td>120 S-60 57 mm</td>
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<tr>
<td></td>
<td></td>
<td>Some SA-14</td>
<td>40 M-1939 KS-12 85 mm</td>
</tr>
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</table>

Naval Threats

- Iranian effort to “close the Gulf.”
- Iranian permissive amphibious/ferry operation.
- Variation on 1987-1988 “Tanker War”
- Raids on offshore and critical shore facilities.
- “Deep strike” with air or submarines in Gulf of Oman or Indian Ocean.
- Attacks on US facilities

But:

- Low near-term probability.
- High risk of US and allied intervention.
- Limited threat power projection and sustainability.
- Unclear strategic goal.
Comparative Naval Combat Ships in 2010

Major Combat Warships in 2010

Iran Has Major Lead in Asymmetric Warfare Capabilities

• Iran compensates for its conventional weakness with asymmetric forces, ties to non-state actors and other regional countries, missiles, chemical weapons and its nuclear program.

• Has built up a major capability in its IRGC, Basij, and Al Quds force.

• Combination of naval, IRGC naval branch, air and missile capabilities are critical threat:
  • Submarines, smart mines, land-based anti-ship missiles.
  • “Swarming” and selective attrition warfare capability in IRGC naval branch and coastal/offshore raiding forces.
  • Training/support of Shi’ite dissidents.

• Wears of intimidation and selective attrition offer options hard to deter and defend against/ More convincing than provocation of any attempt to close the Gulf.
The Islamic Revolutionary Guards Corps

• 125,000+, 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 Farsiya, 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.
IRGC Key Assets and Capabilities

• 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.
IRGC Naval Branch Modernization

• 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 U.S. naval surface warfare elements.
• Means to mitigate the vulnerability of even small naval units to air and missile attack.
IRGC Naval Branch

• 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.
IRGC Naval Branch Facilities

• The IRGC has numerous staging areas in such places and has organized its Basij militia among the local inhabitants to undertake support operations.

• The naval branch has bases and contingency facilities in the Gulf, many near key shipping channels and some near the Strait of Hormuz.
  
  • These include facilities at Al-Farsiyah, Halul (an oil platform), Sirri, Abu Musa, Bandaer-e Abbas, Khorramshahr, and Larak.

• Iran recently started constructing new naval bases along the coasts of the Gulf and the Sea of Oman for an “impenetrable line of defense.”

• On October 27, 2008, Iran opened a new naval base at Jask, located at the southern mouth of the Strait of Hormuz, a strategic chokepoint for Persian Gulf oil.
Most Likely Foreign Threats Are Not Formal Conflicts

- Direct and indirect threats of using force. (I.e. Iranian efforts at proliferation)
- Use of irregular forces and asymmetric attacks.
- Proxy conflicts using terrorist or extremist movements or exploiting internal sectarian, ethnic, tribal, dynastic, regional tensions.
- Arms transfers, training in host country, use of covert elements like Quds force.
- Harassment and attrition through low level attacks, clashes, incidents.
- Limited, demonstrative attacks to increase risk, intimidation.
- Strike at critical node or infrastructure.
Comparative Paramilitary Manpower: 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Basij</th>
<th>Other</th>
<th>Guard</th>
<th>Police</th>
<th>Special Security</th>
<th>Border Guard</th>
<th>Coastguard</th>
<th>Tribal Levies</th>
<th>MOI Forces</th>
<th>Navy</th>
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Derived from IISS, Military Balance, 2010
Steady Build-Up in Coastal and Island Basing and Facilities: Abu Musa

Source: Google maps
### Key Ships for Asymmetric Warfare

A wide range of civilian ships, including small craft and ferries, and aircraft can easily be adapted for, or used as is, for such missions.

<table>
<thead>
<tr>
<th>Category</th>
<th>Iran</th>
<th>Iraq</th>
<th>Saudi</th>
<th>Bahrain</th>
<th>Kuwait</th>
<th>Oman</th>
<th>Qatar</th>
<th>UAE</th>
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<td>Midget Submarines</td>
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Source: Adapted by Anthony H. Cordesman from IISS, *The Military Balance*, various editions; Jane’s Sentinel series; Saudi experts
### Dedicated and Potential Mine Warfare Forces

A wide range of civilian and military ships, including small craft and aircraft can easily be adapted or used as is for mine laying, including the use of free floating mines.

<table>
<thead>
<tr>
<th></th>
<th>Iran</th>
<th>Iraq</th>
<th>Saudi</th>
<th>Bahrain</th>
<th>Kuwait</th>
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Source: Adapted by Anthony H. Cordesman from IISS, *The Military Balance*, various editions; Jane’s Sentinel series; Saudi experts
Amphibious Ships & Landing Craft

Ferries and cargo vessels can provide substantial additional lift if can secure ports

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<th>Country</th>
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<th>Amphibious Ships</th>
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Source: Adapted by Anthony H. Cordesman from IISS, The Military Balance, various editions, Jane’s Sentinel series, and material provided by US and Saudi experts. Estimates differ on Saudi landing craft, because of different ways to count operational status. Some experts put the figure at 6 LCMs and 2 LCUs.
Need for Better Cooperation in Asymmetric Warfare

- Deterrence and conflict prevention as critical as defense.
- Again, need integrated GCC force planning and war planning efforts.
- Must show GCC will act together. Cannot divide or exploit weakest link.
- Tie to cooperation with US, UK, and France: Consider how to cooperate with Iraq.

- Exercise realistic “red-blue” war games to determine common options and requirements.
- Follow-up with realistic CPXs and FTXs.
- Emphasize joint warfare approaches that tie in paramilitary and security forces.
- Demonstrate have exercised a retaliatory capability.
- Show can strike at critical node or infrastructure; Use air and missile power to retaliate.
The Iranian Missile Threat

• Still very much an evolving force, but key counter to Iran’s weakness in air; critical to giving nuclear and chemical weapons

• Evidence shows longer-range systems still evolving, with probable shift to solid fueled systems.

• Technology and testing to date indicate uncertain reliability and limited accuracy.

• Terror weapons even with unitary chemical warheads; conventional warheads will be notably less effective than a conventional bomb of the same size.

• Force goals uncertain in terms of size, basing mode, concept of operations and battle management/C4I.

• Missile defense offers key option, but requires integration and support from US naval/land forces

• Need to think out upgrade of Saudi missile force, what US offer of extended regional deterrence actually means.
Idealized Iranian Missile Threat

- Long-Range Ballistic Missiles
  - New Intermediate Range Ballistic Missile or Space Launch Vehicle (SLV) in development
  - Likely to develop ICBM/SLV ... could have an ICBM capable of reaching the U.S. before 2015

Shehab 3/3A

<table>
<thead>
<tr>
<th>Range (km)</th>
<th>Payload (kg)</th>
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<tr>
<td>1,400</td>
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</table>

(Source: Missile Defense Program Overview for the European Union, Committee on Foreign Affairs, Subcommittee on Security and Defense. Dr. Patricia Sanders. Executive Director. Missile Defense Agency)
A Gulf Missile War
• Iran is a declared chemical weapons state under the CWC. BW possible, a BW program likely.

• Have all of the technology necessary for design and manufacture of fission weapons.

• Have some Chinese weapons design data, via North Korea and AQ Khan network.

• Have reached enrichment levels which show can make fissile material within a few years. New heavy water reactor would add plutonium capability.

• At least three more advanced variants of centrifuges in production or development.

• Range of facilities unknown; has shown is actively building facilities does not declare. Some 80+ known facilities could house some aspect of weapons design and production capability

• No picture of timing and force might create. Options range from advancing threshold capability to LOW/LUA to mobile/sheltered-ride out force.

• Has already driven Israel into planning and possible force changes; nuclear arms race in the region is already underway.
Vehicle Entrance Ramp (before burial)

Bunkered underground production halls

Admin/engineering office area

DigitalGlobe Quickbird commercial satellite image
Vehicle Entrance Ramp (after burial)

- Bunkered underground Centrifuge cascade halls
- Dummy building concealing tunnel entrance ramp
- Helicopter pads
- New security wall
- Admin/engineering office area

DigitalGlobe Quickbird commercial satellite image

21 JUL 04
Effective Concealment
The Other Threats: Terrorism, Naval, and Regional Instability

• Yemen and Somalia already in crisis mode; Sudan and Eritrea only marginally better.

• Serious Al Qa’ida and terrorist threat in Yemen, Saudi Arabia. Cadre activity in rest of lower Gulf.

• Shi’ite extremism could become a problem, already an issue in Iraq.

• Piracy in Somalia could become a model for terrorist action as well. Need to boost Saudi Red Sea Fleet.

• Southern Gulf states have made major progress in counterterrorism, particularly Saudi Arabia.

• Good cooperation with US and European states, although can be improved.

• Moderate cooperation within the southern Gulf. Many areas where cooperation could be improved.

• Need to systematically improve IS&R and rapid response capability. Time, and interoperability are critical.

• Need improvements in facility protection, border and port security.
Range of Hostile Organizations in Region

Abu Nidal Organization (ANO)
Abu Sayyaf Group (ASG)
A-Al qsa Martyrs Brigade Ansar a-Si unna (AS)
Armed Islamic Group (GIA)
Asbat al-Ansar
Gama'a a-Ilslamiyya (IG)
Harakat ul-Mujahedin (HUM)
Hizballah Islamic Jihad Union (IJU)
Islamic Movement of Uzbekistan (IMU)
Jaish-e-Mohammed (JEM)
Jemaah Islamiya Organization (JI)
Al-Jihad (AJ)
Kahane Chai (Kach)
Libyan Islamic Fighting Group (LIFG)
Moroccan Islamic Combatant Group (GICM)
Mujahedin-e Khalq Organization (MEK)
Al-Qaida in the Islamic Maghreb (AQIM) [Formerly Salafist Group] for Call and Combat (GSPC]
Al-Qaida (AQ)
Al-Qaida in Iraq (AQI)
Al-Qaida in the Peninsula
The Continuing Threat: Saudi Arabia

• In January 2008, new law states anyone convicted of setting up a website supporting terrorism will be sentenced to 10 years in prison and fined five million riyals (about $1.3 million).

• In a December 2, 2007 press conference at King Saud University, Saudi Interior Minister Prince Naif bin 'Abd Al-'Aziz criticized mosque preachers who call for jihad, saying: "The efforts on the ideological front still leave much to be desired. Security measures in themselves are not sufficient [to stop terrorism] - it is mainly action on the ideological [front] that prevents extremist ideas from infiltrating the minds of the youth."

• In a December 1, 2007 interview with the Saudi daily 'Okaz, published shortly after the terror cells were uncovered and arrested, Prince Naif stressed the important role of the 'ulama and journalists in the ideological struggle against terrorism.

• On December 1, 2007, Saudi government issues announcement prohibiting Saudi youth from waging jihad, called on young Saudis inside the country and abroad who were planning to engage in jihad in areas of conflict to turn themselves in as soon as possible.

• In December 2007, Saudi security forces capture another terrorist cell, which had planned to attack Muslim pilgrims during the Hajj.

• In November 2007, the Saudi Interior Ministry announces that six terrorist cells, with a total of 208 members, were captured. Cells had planned operations including attacks on oil installations and assassinations of security personnel. Had targeted senior clerics who had come out against the terrorist organizations, including Saudi Mufti Sheikh 'Abd Al-'Aziz bin 'Abdallah Aal Al-Sheikh and Senior 'Ulama Council members such as Sheikh Saleh bin Fawzan Al-Fawzan.


Meeting the Challenge of Regional and Internal Terrorism and Instability

- Directly engage in ideological struggle for the future of Islam and religious legitimacy.
- Continue to strengthen counterterrorism forces and capabilities.
- Improve cooperation in GCC in counterterrorism and intelligence.
- Strengthen border, coastal, and port security.
- Reduce sectarian tensions and discrimination.
- Fairer treatment of foreign labor.
- Strengthen bilateral cooperation with U.S. and Europe.
- Strengthen cooperation with Interpol, UN, and other regional counterterrorism centers.
- Aid to Yemen and poorer regional states.