Security Challenges and Threats in the Gulf: A Net Assessment

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The next President and Congress will have to deal with all of the security issues that affect the Gulf, not just the Iraq War and Iranian proliferation. The attached briefing provides a summary overview of the issues that the US and its allies need to address, with supporting graphics and maps. Both Gulf and US policymakers need to reassess their priorities in dealing with the threats to the Gulf. Regardless of the outcome of the war in Iraq, the US, the Gulf Cooperation Council (GCC) states, and other US allies with interests in the Gulf will need to adapt their forces to deal with the real-world threats in the region, and to make more effective efforts at cooperation, creating forces that are focused on real-world needs for deterrence and defense, and that deal with the full range of threats and not the most obvious military and security issues.

The Evolving Range of Threats
The Gulf does not face abstract threats or abstract potential enemies. At this point in time, it faces seven very real security challenges:

- Conventional Military Threats and the Lack of Unity and Mission Focus in the GCC
- Asymmetric warfare and “Wars of Intimidation”
- Iranian Missiles and Proliferation
- Iraqi Instability
- Energy and Critical Infrastructure
- Terrorism
  - Region-wide impact of Neo-Salafi Islamist extremism. Franchising of Al Qa’ida, Sunni vs. Shi’ite tension, and its impact inside and outside the region
  - War in Afghanistan, potential destabilization of a nuclear Pakistan, and impact on proliferation and Islamist extremism in the Middle East
- Demographics, Foreign Labor, and Social Change
Conventional Military Threats and the Lack of Unity and Mission Focus in the GCC

The present lack of internal unity and effective leadership more of a threat to the GCC states than Iran or any outside power. Their key problem is not the risk they will face a dominant foreign enemy, but rather that they will continue to bicker and fail to develop a proper degree of integration, interoperability, and effectiveness in performing key military missions. The main threat that the GCC states now face is not Iran, Yemen, or terrorism, but their own leaders and their failure to look beyond petty feuding, fears of their own military and security forces, an obsession with buying different and better “glitter factor” weapons than their neighbors, and an unwillingness to come to grips with the details of creating effective joint forces.

This is not the fault of the GCC military, but rather of heads of state. Ever since the founding of the GCC, Gulf military officers have raised the need to look beyond national boundaries and create effective deterrence and defense throughout the Gulf, and done so with active US encouragement. No nation can really defend itself unless its neighbors have equally effective capabilities. Maritime traffic, offshore facilities, borders, ports, and coastal facilities are all too vulnerable. Flight times from Iran and Yemen are a matter of minutes, and missile flight times are even shorter. National defense in depth is far too limited to be effective without integrated defense in breadth along the entire coastal area of the Gulf.

The problem is that Gulf heads of state have failed to properly react to these realities ever since the founding of the GCC, and have either ignored military advice or penalized those officers who speak out to call for more realistic military and national security policies. This has been coupled to a de facto acceptance of dependence on the US, rather than efforts to create an effective partnership based on creating effective local deterrent and defense capabilities mixed with reinforcement and support by US forces.

At the same time, it is almost absurd to describe Iran as a potential hegemon, or Yemen as a major threat, if the GCC states develop integrated battle management and command and control, intelligence, surveillance, and reconnaissance (IS&R), and mission-oriented interoperable or joint standing forces in critical areas like maritime security, mine warfare, and air and missile defense.

Yemen’s forces are now relatively small, poorly equipped with increasingly obsolescent equipment, lacking in readiness and sustainability, and are not trained or organized for power projection. Iran has a military advantage in only one largely meaningless area: total manpower. Iran cannot effectively use this advantage. It cannot hope to deploy large ground forces across the Gulf unless the GCC states and their allies remain passive. Unless the GCC states fail to act to keep Iraq unified and under a national government, Iraq will act as a major buffer to any Iranian move to the West. Similarly, Kuwait will present the problem that any Iranian force concentration would have to cross a major water barrier. Therefore, any meaningful Iranian preparations for such action would be highly visible, provide extensive strategic warning, and be extremely vulnerable to air and missile attack.
The GCC states have a lead in every other aspect of force building and conventional warfare capability. They have an almost incredible lead in military resources, and one that has steadily accelerated over time. During the last decade, the GCC states have spent an average of more than seven times as much on national security as Iran. They have signed new arms import orders that are some 16 times larger since the end of the Gulf War ($89 billion for the GCC versus $5.6 billion for Iran).

In terms of ground forces, Iran not only faces major barriers in using its ground forces, it is sharply inferior in modern tank strength even if one uses a very generous definition of what is “modern” for Iran. The GCC has an even larger lead in overall armored vehicle strength (p. 21), and its inferiority in total artillery strength is offset by the fact that most of Iran’s inventory is towed artillery purchased for relatively static warfare in the Iran-Iraq War, and the GCC states have parity in self-propelled, maneuver weapons.

The GCC states have a striking advantage in combat capable fixed wing and rotary wing aircraft, and air force modernization (Again, even if a very generous definition is used of “high quality aircraft” for Iran. The GCC states also have an advantage in modern air control and warning aircraft, IS&R aircraft, other special purpose aircraft and enablers. This advantage is compounded by the fact that most Gulf states have much more modern and capable surface-to-air missiles – some with limited ballistic missile defense capabilities – and national sensor and battle management systems. If they choose to do so, the GCC states have the resources to create fully integrated air and missile defense systems that will remain far more sophisticated than those Iran can afford, and to develop an interoperable and integrated mix of air capabilities that will preserve a decisive edge over Iran in air-to-air, AirLand warfare, and sea-air warfare and surveillance.

The GCC states lead in naval capabilities is less striking in ship numbers, as the GCC states have often wasted large amounts on over designed surface warfare vessels, while ignoring the need to deal with mine warfare and the defense of offshore and coastal facilities. The fact remains, however, that much of the Iranian navy is obsolete, its submarines are vulnerable to US and British Navy attack, and its shore facilities are vulnerable to air and cruise missile attack. This is an area where the GCC states need to maintain an effective partnership with the US, British, and French navies to deal with worst-case naval threats, but have ample resources to deal with the more probable lower level and asymmetric threats discussed in the next section.

Moreover, all of the previous comparisons do not count US, British, or French forces in the balance, or talk about the rate of technology transfer open to the GCC states. As the brief shows, the US is committed to maintaining a decisive edge in military weapons and technology that will both enhance its own forces – particularly in areas like littoral warfare, IS&R, and the ability to penetrate any future air defenses Iran may acquire – and give the GCC states the ability to buy superior weapons and technology for their own use. Europe offers a wide range of additional weapons and technology, some in areas where the US does not have systems as well suited to GCC needs, and the GCC can buy from Russia and China. The US is making major improvements in its ability to project ground forces into areas like the Gulf. Regardless of the outcome of the Iraq War, this will improve a key area of US capabilities to support the GCC states.
In short, the highest single priority for Gulf security is for the US, the GCC states, and other US allies to work together in ways that make the leaders of the GCC states focus on the following priorities:

- Leaders must take deterrence, conflict prevention, and defense as seriously as their militaries.
- End pointless intra-state feuding; create a real GCC
- Interoperability and standardization versus glitter factor and prestige buys. Coordinated requirements and procurement planning.
- Focus on key mission needs.
- Integrated battle management and IS&R.
- Standardized, demanding, real-world CPX and FTX training, contingency plans and doctrine.
- Joint warfare planning, end stove piping, and prepare for real time defense in breadth and width.
- Establish partnership with US, UK, and France; not just accept de facto dependence.

**Asymmetric Warfare and “Wars of Intimidation”**

The fact that the GCC states now pose the main security threat to their own interests does not mean that Iran does not pose real and tangible threats, or that the Southern Gulf states can ignore the risk that other neighboring states, or non-state actors pose in the form of asymmetric warfare.

The most likely real-world threats do not come from formal conflicts, but rather from a wide range of low level conflicts, threats or “wars of intimidation,” and unofficial wars of attrition. Many of these potential conflicts have already taken place in a previous form.

The US, the GCC states, and other US allies cannot afford to ignore the particular threat posed by Iran’s Islamic Revolutionary Guards, particularly its naval branch and Al Quds force. These latter forces are particularly important because a number of their exercises – although nominally defensive – practice tactics and actions that lend themselves to the use of threats and asymmetric warfare against Southern Gulf states. While such threats are not most severe to the Strait of Hormuz, they affect the entire Gulf. There is no need to break a bottle at the neck.

The US, the GCC states, and other US allies states also need to pay careful attention to the worst-case scenario for such Iranian action: major efforts to limit maritime traffic through or into the Gulf. As is the case with less severe scenarios, the problem is not that Iran has any clear intentions to initiate such conflicts today. It is rather that these are the most likely forms of Iranian attack in some unforeseen crisis, represent the most severe challenges to forces organized to meet more conventional threats, and are the highest priority in terms of maintaining a high level of deterrence and rapid response capability.
Iranian Missiles and Proliferation

US intelligence estimates, and IAEA reports, indicate that there will probably be several more years in which to attempt diplomatic solutions to Iran’s efforts to acquire nuclear weapons, although Iran is already actively acquiring long-range missiles and may be developing chemical and biological weapons for them.

While Iran has denied that it has a nuclear program, and has described its missile programs largely as threats to Israel and the US, it is clear that most of its current forces have ranges suited to strike targets in the Gulf, and that its efforts to strengthen such forces are largely directed toward enhancing its security presence in the Gulf region and toward giving it more deterrent capability and leverage against the US and GCC states.

Accordingly, the US, the GCC states, and other US allies need to start now to address these threats and to examine their options for doing so. They also need to understand that the US NIE in no way said that this threat is less real because Iran seems to have abandoned a formal nuclear weapons program in 2003. Substantial new evidence has emerged since the NIE was issued. Moreover, the US Director of National Intelligence has provided important clarifications to the NIE that make it clear that this remains a key security problem. There are also key features of Iran’s enrichment activities that raise a strong probability that they were designed for military purposes.

As for Iran’s missile programs, it is clear that this is one of Iran’s highest military priorities. What is not clear is what missile forces Iran will create, or what their capabilities will be with or without a nuclear warhead. One key issue is how precise they will become in the future, and whether they will become accurate enough to hit critical targets in the Gulf with a conventional or non-nuclear warhead.

In short, the US and its allies need to begin military contingency planning, and to examine several major options:

- Prevention/preemption,
- Active and passive defense,
- Acquiring own nuclear weapons, and/or
- US extended deterrence.

The US and GCC states can wait for diplomacy to determine whether there is a nuclear threat for time being, but its need to start considering the following alternatives now:

- Ballistic and cruise missile defenses may be cost-effective simply to deal with conventional threat.
- A number of systems offer both improved air and missile defense.
- Need quiet talks with US on containment options; extended deterrence.
Open support for IAEA and diplomatic options key passive approach.

Iraqi Instability

Regardless of what the GCC states think of the US invasion of Iraq, they will face a massive increase in their future threat level if Iraq does not remain unified, if the US fails to help Iraq achieve security and stability, and if Iraq does not move forward in political accommodation and development.

There has been major military progress in Iraq during the last year, although it is uncertain and could be reversed. Sectarian and ethnic divisions remain a major threat, one that could create a power vacuum for Iran to exploit and/or lead to much broader sectarian tension between Sunni and Shi’ite outside Iraq.

Helping Iraq build up its own forces, actively supporting efforts at political accommodation from within Iraq, and foreign aid are all key steps the GCC states could take to enhance their security and help the Iraqi people.

Energy and Critical Infrastructure

Energy is the key source of revenue to the Gulf states, and the driving force behind US and other strategic interests in the region. The GCC states face special security problems because of the location and nature of their critical infrastructure. This increases their vulnerability to Iranian threats and use of asymmetric warfare, but also to terrorists and states using non-state actors as proxies. It is also critical that GCC states recognize that if they do not create effective deterrent and defense capabilities, then outside states will come under extreme pressure to intervene to protect their energy supplies. For all the reasons discussed earlier, GCC energy facilities and exports will also grow steadily more vulnerable with time, as will ships carrying Gulf cargoes, and Gulf crude, product, and LNG exports.

Energy is also only part of the problem. The GCC states already have an extraordinary vulnerability because of their dependence on desalination and electric power facilities located on or near the Gulf coast. This vulnerability will increase readily, growing by some 60% by 2020.

As a result, the US, the GCC states, and other US allies need to give the active and passive defense of critical infrastructure and suitable response capability higher priority in the future, and examine ways to cooperate to reduce the vulnerability of any one set of facilities or GCC state.

Terrorism

The threat of terrorism remains a major problem, and one that requires steady improvements in cooperation, on a bilateral basis between the US and each friendly Gulf state, within the GCC, and with other outside states. It also requires a steady improvement in “jointness” between military, paramilitary, law enforcement, and intelligence forces.
Region-wide impact of Neo-Salafi Islamist extremism. Franchising of Al Qa’ida, Sunni vs. Shi’ite tension, and its impact inside and outside the region

While counterterrorism capabilities in the GCC states have improved strikingly since 2001, there are still a wide range of hostile organizations in the region. Al Qa’ida in the Peninsula also remains a serious problem, particularly in Saudi Arabia. Further major action is needed to:

- 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 Yemen and poorer regional states.

War in Afghanistan, potential destabilization of a nuclear Pakistan, and impact on proliferation and Islamist extremism in the Middle East

US intelligence estimates indicates that the center of Al Qa’ida activity remains in Afghanistan and Pakistan, and that the fighting in Iraq is now almost peripheral to the broader threat that Al Qa’ida poses to the region. The situation in Afghanistan and Pakistan is also deteriorating in spite of NATO/ISAF and US tactical victories in Afghanistan.

The Gulf states cannot intervene in this situation in a military sense, but they do have several options that can reduce this threat from outside the region:

- Help Afghanistan and Pakistan directly engage in ideological struggle for the future of Islam and religious legitimacy.
- Development aid to Afghanistan and Pakistan.
- Continued support for US and NATO/ISAF deployments.
- Act to prevent transfers of funds, “volunteers,” and suspect personal movements.
Demographics, Foreign Labor, and Social Change

Finally, the US, the GCC states, and other US allies should not see security solely in terms of military threats or terrorism. Gulf security depends at least as much on successful development, job creation and productive employment, and equitable income distribution. Much depends on meeting two key challenges: finding jobs for a wave of native young men and women that will steadily increase the size of the labor force through 2050. The second is to ensure that foreign labor is given proper wages and protection.

The Gulf states face a steady near term population growth. Their population rose by 5 million during 2000 and 2005 and will rise by 6.6 million more between 2005 and 2010. At the same time, the Gulf states already have the lowest native participation in the labor force in the world, and a nearly 40% overall dependence on foreign labor, There are also gross differences in per capita income even from state to state and these are even more acute within given states.

More broadly, population growth will continue to be a major problem through 2050, and a youth bulge will present major problems for job creation through at least 2030.
The Evolving Range of Threats

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Conventional Military Threats and Lack of Unity and Mission Focus in the GCC
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
Comparative Military Manpower Trends
Derived from IISS, Military Balance, 2008

- Bahrain
- Kuwait
- Qatar
- Oman
- UAE
- Saudi
- ...
Comparative Military Manpower in 2008

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## Comparative Iran vs GCC Spending: 1997-2007

Derived from IISS, Military Balance, 2008

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### Comparative Military Spending: 1988-2007

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Derived from IISS, Military Balance, 2008
Comparative New Arms Orders: 1988-2007
(in $US Current Millions)

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


Derived from IISS, Military Balance, 2008
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 Total Armor Strength By Category

Derived from IISS, Military Balance, 2008
Comparative Total Gulf Tank Strength versus High Quality Tanks

Derived from IISS, Military Balance, 2008
### Comparative Gulf High Quality Tank Strength By Type

#### Derived from IISS, Military Balance, 2008

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<td></td>
<td></td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>M-1A1/A2</td>
<td></td>
<td></td>
<td></td>
<td>315</td>
<td>218</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Le Clerc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>390</td>
</tr>
<tr>
<td>OF-40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>
Comparative Artillery Strength By Category

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
<th>Towed</th>
<th>SP</th>
<th>MRL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iran</td>
<td>3196</td>
<td>2010</td>
<td>310</td>
<td>876</td>
</tr>
<tr>
<td>Iraq</td>
<td>468</td>
<td>238</td>
<td>170</td>
<td>60</td>
</tr>
<tr>
<td>Saudi</td>
<td>48</td>
<td>26</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>Bahrain</td>
<td>140</td>
<td>113</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>Kuwait</td>
<td>132</td>
<td>108</td>
<td>28</td>
<td>0</td>
</tr>
<tr>
<td>Oman</td>
<td>44</td>
<td>12</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Qatar</td>
<td>346</td>
<td>93</td>
<td>181</td>
<td>72</td>
</tr>
<tr>
<td>UAE</td>
<td>629</td>
<td>310</td>
<td>25</td>
<td>294</td>
</tr>
<tr>
<td>Yemen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comparative Self-Propelled Rapid Maneuver Artillery Strength By Category

Derived from IISS, Military Balance, 2008
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>2 Space Based Infrared Systems</td>
</tr>
<tr>
<td>- Ground and air systems</td>
<td>1 Virginia Class Submarine</td>
<td>20 F-22A Raptors</td>
<td>4 Expendable Launch Vehicles</td>
</tr>
<tr>
<td>- 119 Stryker Vehicles</td>
<td>1 DDG-1000 Destroyer</td>
<td>36 V-22 Ospreys</td>
<td>GPS Satellite</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>1 Mobile User Objective System</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>Transformational Satellite</td>
</tr>
<tr>
<td>- 3,187 Medium Tactical Vehicles</td>
<td>CVN Refueling Complex Overhaul</td>
<td>16 CH-47 Chinooks</td>
<td>- Advanced Extremely High Frequency Satellite</td>
</tr>
<tr>
<td>- 29 M1A1 Abrams Tank Upgrades</td>
<td>2 Joint High Speed Vessels</td>
<td>VH-71 Helicopter</td>
<td>- Wideband Global SATCOM</td>
</tr>
<tr>
<td>- Chemical Weapons Demilitarization</td>
<td></td>
<td>KC-X Aerial Refueling Tanker</td>
<td>- Ballistic Missile Defense</td>
</tr>
</tbody>
</table>

Basic Research +$0.3B in FY 2009 (+$1.4B FY09-FY13)
### Increase Ground Capabilities

**Army**
- Active: 42 Brigade Combat Teams (482.8K Soldiers)
  - Months Home Station / Months Deployed: 12/12
- Active: 48 Brigade Combat Teams (547.4K Soldiers)
  - Months Home Station / Months Deployed: 24/12

**Marine Corps**
- Active: 2.5 Marine Expeditionary Forces (175K Marines)
  - Months Home Station / Months Deployed: 7/7
- Active: 3 Marine Expeditionary Forces (202K Marines)
  - Months Home Station / Months Deployed: 14/7

**FY 2007**
- Active Army: +40K
- Active Marine Corps: +11K
- Previous Additions: +2K
- Ahead of Schedule Growth: +4K

**FY 2008**
- Active Army: +3K
- Active Marine Corps: +3K

**FY 2009**
- Active Army: +7K
- Active Marine Corps: +5K

**FY 2010**
- Active Army: +7K
- Active Marine Corps: +5K

**FY 2011**
- Active Army: +7K
- Active Marine Corps: +3K

**FY 2012**
- Active Army: +1K
- Active Marine Corps: +65K Soldiers
- Previous Additions: +27K Marines

---

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

Numbers may not add due to rounding
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 Gulf Total & High Quality Combat Air Strength By Type

<table>
<thead>
<tr>
<th></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>
<th>Yemen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>286</td>
<td>279</td>
<td>33</td>
<td>50</td>
<td>64</td>
<td>18</td>
<td>184</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td><strong>High Quality</strong></td>
<td>55</td>
<td>254</td>
<td>21</td>
<td>39</td>
<td>12</td>
<td>12</td>
<td>149</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

40-60% of Iran’s Total holdings are not Operational

Derived from IISS, Military Balance, 2008
Comparative High Quality Combat Air Strength By Type

Derived from IISS, Military Balance, 2008
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 Major Naval Combat Ships

Derived from IISS, Military Balance, 2008
Ending the GCC Threat to the GCC

- Leaders must take deterrence, conflict prevention, and defense as seriously as their militaries.
- End pointless intra-state feuding; create a real GCC
- Interoperability and standardization versus glitter factor and prestige buys. Coordinated requirements and procurement planning.
- Focus on key mission needs.
- Integrated battle management and IS&R.
- Standardized, demanding, real-world CPX and FTX training, contingency plans and doctrine.
- Joint warfare planning, end stove piping, prepare for real time defense in breadth and width.
- Establish partnership with US, UK, and France; not just de facto dependence.
Asymmetric Warfare and “Wars of Intimidation”
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.
Some Tangible Examples

- Iranian tanker war with Iraq
- Oil spills and floating mines in Gulf.
- Libyan “stealth” mining of Red Sea.
- Use of Quds force in Iraq.
- “Incidents” in pilgrimage in Makkah.
- Support of Shi’ite groups in Bahrain.
- Missile and space tests (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 and smuggling across Yemeni border.
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 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.
“Closing the Gulf”

- 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?
- IRGC raids on key export facility(ties).
The Entire Gulf: Breaking the Bottle at Any Point

Source: EIA, Country Briefs, World Oil Transit Chokepoints, January 2008
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
Planning for 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.

  . 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 work effectively with US, UK, France.

• Strike at critical node or infrastructure.
Iranian Nuclear Programs
Nuclear Uncertainty

- Must plan to deal with possible Iranian force with unknown weapons characteristics, delivery systems, basing, and timelines.
  - Technology base now exists, enrichment to fissile levels is only limiting factor.
- Already a key factor in Iranian capability to conduct “wars of intimidation.”
- Clear Iran proceeding with extensive ballistic missile program regardless of whether it pursues the nuclear option.
- Cannot predict timeframe for nuclear threat. Worst case is 2009, but could well be 2015.
- Chemical and biological options as well.
Technology Base

- Declared chemical weapons state; probable biological weapons program.
- Centrifuge (U-235) and Plutonium (Pu-239) enrichment, reactor, and processing.
- Uranium machining
- Polonium (neutron initiator) research.
- Work with high explosive lenses and imports of triggering devices/technology.
- Possible acquisition of advanced nuclear fissile weapons design data from AQ Khan and Swiss sources.
Confusion Over the US NIE

- NIE did not say Iran was not moving towards nuclear weapon.
  - Did say evidence that Iran had halted formal efforts at weapons development in 2003. (When US “victories” in Iraq and Afghanistan seemed most threatening to Iran)
  - Made it clear that Iran was pursuing enrichment technology that was the sole remaining barrier to Iran acquiring nuclear weapons.

- Since NIE was issued, new evidence has surfaced of weapons development efforts beyond initial “laptop” and “Green Salt” disclosures.

- Iran has also been discovered to have completed development of a new, far more advanced centrifuge.

- Iran has announced two new long-range missiles, and a “space” program that can be adapted to missile development.
DNI’s March 2008 Summary - I

Over the past year we have gained important new insights into Tehran’s activities related to nuclear weapons and the Community recently published a National Intelligence Estimate on Iranian intent and capabilities in this area. I want to be very clear in addressing the Iranian nuclear capability. First, there are three parts to an effective nuclear weapons capability:

1. Production of fissile material
2. Effective means for weapons delivery
3. Design and weaponization of the warhead itself

We assess in our recent NIE on this subject that warhead design and weaponization were halted, along with covert military uranium conversion- and enrichment-related activities. Declared uranium enrichment efforts, which will enable the production of fissile material, continue. This is the most difficult challenge in nuclear production. Iran’s efforts to perfect ballistic missiles that can reach North Africa and Europe also continue.

We remain concerned about Iran’s intentions and assess with moderate-to-high confidence that Tehran at a minimum is keeping open the option to develop nuclear weapons. We have high confidence that Iranian military entities were working under government direction to develop nuclear weapons until fall 2003. Also, Iranian entities are continuing to develop a range of technical capabilities that could be applied to producing nuclear weapons. Iran continues its efforts to develop uranium enrichment technology, which can be used both for power reactor fuel and to produce nuclear weapons. And, as noted, Iran continues to deploy ballistic missiles inherently capable of delivering nuclear weapons, and to develop longer-range missiles. We also assess with high confidence that even after fall 2003 Iran has conducted research and development projects with commercial and conventional military applications—some of which would also be of limited use for nuclear weapons.

We judge with high confidence that in fall 2003, Tehran halted its nuclear weapons design and weaponization activities, as well as its covert military uranium conversion and enrichment-related activities, for at least several years. Because of intelligence gaps, DOE and the NIC assess with only moderate confidence that all such activities were halted. We assess with moderate confidence that Tehran had not restarted these activities as of mid-2007, but since they comprised an unannounced secret effort that Iran attempted to hide, we do not know if these activities have been restarted.

We judge with high confidence that the halt was directed primarily in response to increasing international scrutiny and pressure resulting from exposure of Iran’s previously undeclared nuclear work. This indicates that Iran may be more susceptible to influence on the issue than we judged previously.
DNI’s March 2008 Summary - II

We do not have sufficient intelligence information to judge confidently whether Tehran is willing to maintain the halt of its nuclear weapons design and weaponization activities indefinitely while it weighs its options, or whether it will or already has specified deadlines or criteria that will prompt it to restart those activities. We assess with high confidence that Iran has the scientific, technical and industrial capacity eventually to produce nuclear weapons. In our judgment, only an Iranian political decision to abandon a nuclear weapons objective would plausibly keep Iran from eventually producing nuclear weapons—and such a decision is inherently reversible. I note again that two activities relevant to a nuclear weapons capability continue: uranium enrichment that will enable the production of fissile material and development of long-range ballistic missile systems.

We assess with moderate confidence that convincing the Iranian leadership to forgo the eventual development of nuclear weapons will be difficult given the linkage many within the leadership see between nuclear weapons development and Iran’s key national security and foreign policy objectives, and given Iran’s considerable effort from at least the late 1980s to 2003 to develop such weapons.

We continue to assess with moderate-to-high confidence that Iran does not currently have a nuclear weapon. We continue to assess with low confidence that Iran probably has imported at least some weaponsusable fissile material, but still judge with moderate-to-high confidence it has not obtained enough for a nuclear weapon. We cannot rule out that Iran has acquired from abroad—or will acquire in the future—a nuclear weapon or enough fissile material for a weapon. Barring such acquisitions, if Iran wants to have nuclear weapons it would need to produce sufficient amounts of fissile material indigenously—which we judge with high confidence it has not yet done.

Iran resumed its declared centrifuge enrichment activities in January 2006, despite the 2003 halt in its nuclear weapons design and weaponization activities. Iran made significant progress in 2007 installing centrifuges at Natanz, but we judge with moderate confidence it still faces significant technical problems operating them.

- We judge with moderate confidence that the earliest possible date Iran would be technically capable of producing enough highly enriched uranium (HEU) for a weapon is late 2009, but that is very unlikely.

- We judge with moderate confidence Iran probably would be technically capable of producing enough HEU for a weapon sometime during the 2010-2015 time frame. INR judges Iran is unlikely to achieve this capability before 2013 because of foreseeable technical and programmatic problems. All agencies recognize the possibility that this capability may not be attained until after 2015.
We know that Tehran had a chemical warfare program prior to 1997, when it declared elements of its program. We assess that Tehran maintains dual-use facilities intended to produce CW agent in times of need and conducts research that may have offensive applications. We assess Iran maintains a capability to weaponize CW agents in a variety of delivery systems.

We assess that Iran has previously conducted offensive BW agent research and development. Iran continues to seek dual use technologies that could be used for biological warfare.

Extract from J. Michael McConnell, Director of National Intelligence, “Annual Threat Assessment of the Intelligence Community for the Senate Armed Services Committee,” 27 February 2008
Arab Public Opinion on Whether Iran Has A Nuclear Program

Do you believe that:

- Iran is trying to develop nuclear weapons
  - W/Egypt, 39%
  - W/O Egypt, 46%

- Iran is merely conducting research for peaceful purposes
  - W/Egypt, 38%
  - W/O Egypt, 52%

Source: Shibley Telhami, 2008 Annual Arab Public Opinion Poll Survey of the Survey of the Anwar Anwar Sadat Chair for Peace and Sadat Chair for Peace and Development at the University of Maryland Development at the University of Maryland (with Zogby International) International) Conducted March 2008 in Egypt, Jordan, Survey conducted March 2008 in Egypt, Jordan, Lebanon, Morocco, Saudi Arabia (KSA) and the Lebanon, Morocco, Saudi Arabia (KSA) and the UAE UAE
Arab Public Opinion on Impact of Iran’s Nuclear Program

If Iran acquires nuclear weapons, which of the following is closest to your view:

- **It will use them against Arab states**
  - W/Egypt, 8%
  - W/O Egypt, 11%

- **It will use them against Israel**
  - W/Egypt, 31%
  - W/O Egypt, 32%

- **It will not use them, but they will help Iran increase its influence regionally and globally**
  - W/Egypt, 45%
  - W/O Egypt, 44%

Source: Shibley Telhami, 2008 Annual Arab Public Opinion Poll Survey of the Survey of the Anwar Sadat Chair for Peace and Development at the University of Maryland (with Zogby International) Conducted March 2008 in Egypt, Jordan, Lebanon, Morocco, Saudi Arabia (KSA) and the UAE.
Sites circled in red unknown pre-mid 2002
Bushehr Reactor Complex

http://www.russiablog.org/bushehr_satellite-600x450.jpg
Vehicle Entrance Ramp (before burial)

Admin/engineering office area

Bunkered underground production halls

DigitalGlobe Quickbird commercial satellite image
Effective Concealment

- Buried Centrifuge Cascade Halls
- Dummy Bldg Located Over Vehicle Entrance Ramp
Dispersed Target Base - Centrifuges: Carbon Rotors - NE Tehran

Source: David Albright, Paul Brannan, and Jacqueline Shire, *Can military strikes destroy Iran’s gas centrifuge program? Probably not*, Institute for...
Dispersed Target Base - Centrifuge Assembly - Kalaye, Tehran

Image Credit: DigitalGlobe-ISIS
Image Date: January 30, 2005

Farsi writing that says “Chemi Daroo” (text is upside-down in this image)

Centrifuge research and development facility

Source: David Albright, Paul Brannan, and Jacqueline Shire, Can military strikes destroy Iran’s gas centrifuge program? Probably not, Institute for
Dispersed Target Base - Centrifuge Cutting Tools - Mashad

Source: David Albright, Paul Brannan, and Jacqueline Shire, *Can military strikes destroy Iran's gas centrifuge program? Probably not*, Institute for
Dispersed Target Base - Centrifuge & Missile Parts - Isfahan

Source: David Albright, Paul Brannan, and Jacqueline Shire, *Can military strikes destroy Iran's gas centrifuge program? Probably not*, Institute for
Dispersed Target Base - Uranium: Conversion - Isfahan

Source: David Albright, Paul Brannan, and Jacqueline Shire, Can military strikes destroy Iran’s gas centrifuge program? Probably not, Institute for
Spread of Nuclear Weapons Technology

• In 2004, Swiss investigators seized computer files and documents from the Swiss nationals Friedrich, Marco, and Urs Tinner.

• The computer files, containing over 1,000 megabytes of information, were encrypted and difficult to decipher. Nonetheless, Swiss investigators found the designs of smaller, more sophisticated nuclear weapons than the design found in Libya.

• Why did these smugglers associated with the notorious Pakistani nuclear engineer Abdul Qadeer Khan have these designs, unless they had sold or intended to sell them for Khan?

• Moreover, these computers were unlikely to be the only place where the Tinners stored the designs. A senior IAEA official doubted that the Tinners were the only ones who had the designs found on their computers…Others were bound to have received the digitized designs, he added.

• But who has them and what have they already done with them? How can authorities recover these designs if they are not sure who has them, this official lamented?

• How will authorities learn if Iran, North Korea, or even terrorists bought these designs? What will the Tinners do with any files they stored elsewhere?

• Between December 12, 2007 and May 6, 2008, Iran introduced 2,300 kg of uranium hexafluoride (UF6) into the operating cascades at the Fuel Enrichment Plant. This compares to a total of 1,670 kg of UF6 introduced during the entire period from February to December 2007.

• At Iran’s stated rates of feeding uranium hexafluoride into P-1 centrifuges, and assuming continuous operation, the centrifuges are running at about 50 percent of their capacity, a significant increase over previous rates.

• In addition to the 18 cascades containing some 3,000 P-1 centrifuges, Iran is beginning to install a second module of 3,000 centrifuges, of which three cascades are either enriching or under vacuum. Installation of an additional 15 cascades is continuing, although a schedule of completion is unknown. Iran does not appear to be rushing to install the second module of centrifuges at this time.

• Iran is now testing advanced centrifuges at the Natanz pilot fuel enrichment plant. It has installed two or three types of next-generation centrifuges: the IR-2 … and possibly a longer centrifuge. According to senior officials close to the IAEA, these centrifuge designs are modifications of the P-2 centrifuge obtained from A.Q. Khan in the 1990s.

• After testing, Iran is expected to decide which design to mass produce for deployment in the underground halls of the Natanz fuel enrichment plant. These centrifuges are expected to have greater enrichment output and perform better in operation.
• Iran has installed IR-2 centrifuges both as single machines and in a ten-machine cascade. It has installed a few single IR-3 centrifuges. There may be cooled and much larger variants.

• IAEA states that Iran’s alleged studies on the green salt project, high explosives testing and the missile re-entry vehicle project remain a matter of serious concern. Despite Iran’s recent agreement with the IAEA to address these issues, Iranian officials continue to insist that the documents are forged and the allegations are baseless.

• Where Iran acknowledges the factual basis of some of the information, it insists that the work had nothing to do with the development of nuclear weapons.

• The report annotated listing of 18 documents that the IAEA has shown to Iran, outlining its alleged work on green salt, high explosives testing and a missile re-entry vehicle…Among these, according to senior officials close to the IAEA, high explosives studies and the re-entry vehicle work are the areas most in need of clarification and cooperation from Iran.

# How Much is Enough?

**Amount of Fissile Material Need to Build a Basic Fission (Non-Boosted) Weapon**

<table>
<thead>
<tr>
<th>Highly Enriched Uranium (HEU) (90% U-235)</th>
<th>Simple gun-type weapon</th>
<th>90-110 lbs/40-50 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Simple implosion weapon</td>
<td>33 lbs/15 kg.</td>
</tr>
<tr>
<td></td>
<td>Sophisticated implosion weapon</td>
<td>20-26 lbs/9-12 kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weapons Grade Plutonium</th>
<th>Simple implosion weapon</th>
<th>14 lbs/6 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sophisticated implosion weapon</td>
<td>4.5-9 lbs/2-4 kg</td>
</tr>
</tbody>
</table>

Extract from the unclassified estimates in Union of Concerned Scientists, `Preventing Nuclear Terrorism Fact Sheet`, April 2004, and work by Abdullah Toucan
 Iranian Air and Missile Defense Programs
Iran’s Current Air/Missile Defenses

- US never delivered integrated system before fall of Shah.
- Only modern short-range point defense system is TOR-M.
- Other short-range systems mix of older Russian systems, SHORADs, and aging – possible inactive British and French systems.
- Medium to long–range systems are low capability or obsolescent.
- Hawks and I Hawks do not have capable ECM. Date back to 1960s and 1970s.
- Various versions of SA-2 obsolete.
- Radar sensor and battle management/C4I systems have major limitations.
- Less than 30 export versions of MiG-29, some not operational.
- F-14s have not have ability to use primary air defense missile since 1979-1980.
Russia has delivered an undetermined number -- possibly 29 -- Tor-M1 systems (originally built for Greece) to the Islamic Republic of Iran, along with service contracts with an approximate value of $700,000,000.

The Tor is low- to medium-altitude, short-range surface-to-air missile system designed for engaging airplanes, helicopters, cruise missiles, precision guided munitions, unmanned aerial vehicles and ballistic targets. NATO reporting names are SA-15 Gauntlet and SA-N-9 Gauntlet. It is designed to protect targets from attack day or night in any weather, not only by shooting down attacking aircraft but also by destroying any munitions before they reach their target.

From the start the Tor system was designed to provide air defence against modern and future threats equipped with precision guided weapons like the AGM-86 ALCM.

Tor missile system was accepted into service on the 19th March 1986. The Tor-M1 air has an additional fire control channel allowing two targets to be engaged at once, an improved optical channel, computer, ECM protection and warhead. The Tor-M1 or Tor-M1V has improved network connectivity and ECM functions. The latest variant -- the Tor-M2E — has improved fire control radar coverage and four guidance channels allowing four missiles to be guided at any one time, plus a new wheeled chassis as well as a new digital computer system and a new all weather optical tracking system.

Each 9K331 vehicle is a completely autonomous transporter, launcher, and radar unit TLAR that carries a modern phased array radar and 8 missiles stored vertically, ready to fire.

Target tracking range is 24 km (15 miles), engagement range is up to 12 km (1-7.5 miles) with minimum range varying between 100-2000 m (328-5,621 feet), depending upon version.

Effective altitude is 10-6000 m (33-20,000 ft).

The digital computers allow for a high degree of automation, similar to the US Patriot missile system. Target threat classification is automatic. The system can be operated with little operator input, if desired. It is equipped with NBC (nuclear, biological and chemical) protection.

The missiles utilize command guidance and their detonation is via a radar proximity fuze. The missiles can maneuver at up to 30Gs and can engage targets flying at up to Mach 2.

Source: Adapted from material in Wikipedia, FAS, and Global Security web reporting.
S-300 (SA-10), S-400 (SA-12)

- Two advanced Russian air and TMD defense systems. Can combine with recent TOR-M1 point defense systems delivered to Iran in 2006-2007.
- **S-300 “Grumble”** developed by Russian Almaz Central Design Bureau since 1980. Now roughly comparable in performance to the U.S. MIM-104 Patriot PAC-1 system. PMU2 model has limited ballistic missile defence capability. Has CLAM SHELL 3D continuous wave pulse Doppler target acquisition radar, the FLAP LID A I-band multi-function phased-array trailer-mounted engagement radar with digital beam steering. Guidance radar capable of engaging up to six targets simultaneously, with two missiles assigned per target to ensure a high kill probability.
- **S-300PMU2 Favorit missile** has larger warhead and better guidance with a range of 200 km, versus the 150 km of previous versions. Uses new 96L6E autonomous mobile radar, which works in conjunction with the 83M6E2 control post and S-300MPU2 launchers. The new 48N6E2 missile accelerates up to 1,900 m/s in 12 sec time, and then approaches the target from above. The 48N6E2 differs from the older 48N6E in having a new warhead specially designed for destroying ballistic missiles, with a warhead weight of 145 kg versus 70-100 kg. The S-300PMU2 Favorit can engage targets flying from 10 m to 27 km above the surface at a speed of up to 10,000 km/h. It is claimed that it has a kill ratio ranging from 0.8 to 0.93 against aircraft and from 0.8 to 0.98 against Tomahawk-class cruise missiles.
- **S-400 “Triumf” is developmental ballistic missile defense system. Current status unclear.** Some Russian sources claim it can hit modern and future attack aircraft at a distance of 400 km: tactical and strategic aviation jets, cruises of the Tomahawk type and other missiles", and counter use of "stealth" technology at all altitudes of their combat operation and at maximum distances. In the opinion of general designer Vladimir Svetlov, Triumf is the world's first system which can selectively work with the use of several types of missiles. "The long-range missile has no analogues. It eclipses the American Patriot 3 system by around 100 percent, as does the French Aster.

Iranian Missile Programs
The Range of Delivery Options

- Ballistic missiles are only one approach.

- Iran has acquired some Soviet cruise missiles that were nuclear armed by FSU.

- In near-term, air strikes present major penetration problems but are more accurate and reliable and solve serious warhead design and weight problems.

- US and other countries build force postures on de facto one-way missions.

- Covert delivery will always be an option: Container, GPS, off-shore “rain out”.
### Stages of Development of Iran’s Missiles

<table>
<thead>
<tr>
<th>Designation</th>
<th>Stages</th>
<th>Progenitor Missiles</th>
<th>Propellant</th>
<th>Range (Km)</th>
<th>Payload (Kg)</th>
<th>IOC (Year)</th>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mushak-120</td>
<td>1</td>
<td>CSS-8, SA-2</td>
<td>Solid</td>
<td>130</td>
<td>500</td>
<td>2001</td>
<td>?</td>
</tr>
<tr>
<td>Mushak-160</td>
<td>1</td>
<td>CSS-8, SA-2</td>
<td>Liquid</td>
<td>160</td>
<td>500</td>
<td>2002</td>
<td>?</td>
</tr>
<tr>
<td>Mushak-200</td>
<td>1</td>
<td>SA-2</td>
<td>Liquid</td>
<td>200</td>
<td>500</td>
<td>NA</td>
<td>0</td>
</tr>
<tr>
<td>Shahab-1</td>
<td>1</td>
<td>Soviet SSN-4, N Korean SCUD B</td>
<td>Liquid</td>
<td>300</td>
<td>987-1,000</td>
<td>1995</td>
<td>250-300</td>
</tr>
<tr>
<td>Shahab-2</td>
<td>1</td>
<td>Soviet SSN-4, N Korean SCUD C</td>
<td>Liquid</td>
<td>500</td>
<td>750-989</td>
<td>?</td>
<td>200-450 (these are very high estimates)</td>
</tr>
<tr>
<td>Shahab-3</td>
<td>1</td>
<td>N Korea Nodong-1</td>
<td>Liquid</td>
<td>1,300</td>
<td>760-1,158</td>
<td>2002</td>
<td>25-100</td>
</tr>
<tr>
<td>Shahab-4</td>
<td>2</td>
<td>N Korea Taep’o-dong-1</td>
<td>Liquid</td>
<td>3,000</td>
<td>1,040-1,500</td>
<td>NA</td>
<td>0</td>
</tr>
<tr>
<td>Ghadr 101</td>
<td>multi</td>
<td>Pakistan Shaheen-1</td>
<td>Solid</td>
<td>2,500</td>
<td>NA</td>
<td>NA</td>
<td>0</td>
</tr>
<tr>
<td>Ghadr 110</td>
<td>multi</td>
<td>Pakistan Shaheen-2</td>
<td>Solid</td>
<td>3,000</td>
<td>NA</td>
<td>NA</td>
<td>0</td>
</tr>
<tr>
<td>IRIS</td>
<td>1</td>
<td>China M-18</td>
<td>Solid</td>
<td>3,000</td>
<td>760-1,158</td>
<td>2005</td>
<td>NA</td>
</tr>
<tr>
<td>Kh-55</td>
<td>1</td>
<td>Soviet AS-15 Kent, Ukraine</td>
<td>jet engine</td>
<td>2,900-3,000</td>
<td>200kgt nuclear</td>
<td>2001</td>
<td>12</td>
</tr>
<tr>
<td>Shahab-5</td>
<td>3</td>
<td>N Korea Taep’o-dong-2</td>
<td>Liquid</td>
<td>5,500</td>
<td>390-1,000</td>
<td>NA</td>
<td>0</td>
</tr>
<tr>
<td>Shahab-6</td>
<td>3</td>
<td>N Korea Taep’o-dong-2</td>
<td>Liquid</td>
<td>10,000</td>
<td>270-1,220</td>
<td>NA</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Adapted from [Iran Special Weapons Guide](http://www.global security.org/wmd/world/Iran/missile.htm), Global Security.org, available at: http://www.global security.org/wmd/world/Iran/missile.htm
Recent Iranian Missile Developments

• Iran working on extended-range variant of the Shahab-3 and a new 2,000 km medium-range ballistic missile (the “Ashura”)

• In February 2008, Iran declared it had successfully launched an “exploratory” space rocket – analysis shows resemblance to Shahab-3 ballistic missile

• In November 2006 and July 2008, Iran orchestrated the launches of several short- and medium-range ballistic missiles capable of striking Israel and U.S. bases in the Middle East

• Status of July 2008 launch unclear. Iran claims new version of Shahab. Most experts disagree. Ranges reported of 1,090, 1,250, and 2,000 miles.

• Report 25-100 missiles in service. Claims Shahab A and Shahab B will be withdrawn from service and replaced with solid fueled missiles.

Source: Lt Gen Trey Obering, USAF, Director, Missile Defense Agency, Missile Defense Program Overview, Pentagon News Briefing, 15 JUL 08
Iranian Missile Developments

- Iranian missile capability likely to accelerate due to technology transfer and foreign assistance

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“Iran continues to develop and acquire ballistic missiles that can hit Israel and central Europe” – General Maples, Director of U.S. Defense Intelligence Agency
“If you would like to have good relations with the Iranian nation ... bow down before the greatness of the Iranian nation and surrender. If you don’t accept [to do this], the Iranian nation will later force you to surrender and bow down.” – Mahoud Ahmadinejad, President of Iran, 1 OCT 06
Ballistic Missile Defense:

US Progress and Future Options
Options for Missile Defense

- Sensors:
  - Defense Support Program
  - Space Tracking and Surveillance System
  - Sea-Based Radars
  - Forward-Based Radar With Adjunct Sensor
  - Midcourse X-Band Radar
  - Early Warning Radar

- Boost Defense Segment:
  - Airborne Laser
  - Kinetic Energy Interceptor

- Midcourse Defense Segment:
  - Aegis Ballistic Missile Defense / Standard Missile-3
  - Multiple Kill Vehicle
  - Ground-Based Midcourse Defense

- Terminal Defense Segment:
  - Terminal High Altitude Area Defense
  - Patriot Advanced Capability-3

- Command, Control, Battle Management & Communications

Designated Lead Service: Army, Navy, Air Force, TBD
Build-up of US Missile Defense: July-December 2008

None Of This BMD Capability Existed In June 2004
Proposed NATO System

(2012)

Schedule
- Construction Start 3QFY10
- Integration Start 4QFY11
- Operational Capability 3QFY12

(2013)

Schedule
- Construction Start 4QFY09
- Integration Start 2QFY12
- Operational Capability 3QFY12 (FCD 2QFY13)

Why Poland and Czech Republic
- Azimuthal range
- Range from Iran

(TBD)
### US Test Developments - I

#### 35 Of 43 Terminal And Midcourse Hit-To-Kill Intercepts In The Atmosphere And Space Since 2001

<table>
<thead>
<tr>
<th>Hit-To-Kill Since 2001</th>
<th>Since September 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Terminal High Altitude Area Defense</strong> (5 of 5)</td>
<td>July 12, 2006</td>
</tr>
<tr>
<td></td>
<td>January 26, 2007</td>
</tr>
<tr>
<td></td>
<td>April 5, 2007</td>
</tr>
<tr>
<td></td>
<td>October 27, 2007</td>
</tr>
<tr>
<td></td>
<td>June 25, 2008</td>
</tr>
<tr>
<td><strong>Aegis Ballistic Missile Defense</strong> (13 of 15)</td>
<td>November 11, 2005</td>
</tr>
<tr>
<td></td>
<td>December 7, 2006</td>
</tr>
<tr>
<td></td>
<td>June 22, 2006</td>
</tr>
<tr>
<td></td>
<td>April 26, 2007</td>
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<tr>
<td></td>
<td>June 22, 2007</td>
</tr>
<tr>
<td></td>
<td>August 31, 2007</td>
</tr>
<tr>
<td></td>
<td>November 6, 2007</td>
</tr>
<tr>
<td></td>
<td>December 17, 2007</td>
</tr>
<tr>
<td><strong>Ground-based Midcourse Defense</strong> (6 of 9)</td>
<td>September 1, 2006</td>
</tr>
<tr>
<td></td>
<td>September 28, 2007</td>
</tr>
<tr>
<td><strong>Note: Patriot PAC-3 (11 of 14)</strong></td>
<td>May 24, 2006</td>
</tr>
<tr>
<td></td>
<td>June 5, 2008</td>
</tr>
<tr>
<td><strong>Blast Fragmentation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Aegis Sea-Based Terminal</strong> (2 of 2)</td>
<td></td>
</tr>
</tbody>
</table>

- VM313
- VM339C
- VM348C
- VM377
US Test Developments - II

- 11 of 11 successful hit-to-kill intercepts in 2007 and 2008 to date against medium- and short-range missiles using land- and sea-based defenses, including:
  - Ground-based midcourse defense intercept of long-range target in operationally realistic conditions
  - First intercept of separating warhead – THAAD
  - First simultaneous destruction of two short-range ballistic missiles at sea
  - First sea-based intercept by an ally

June 22, 2007
September 28, 2007
December 17, 2007
June 25, 2008
Aegis BMD meets all DOT&E criteria, *except* testing against complex countermeasures (dynamic target and penetration aids)

- Operational interceptor, sensor, and fire control software
- Threat representative target and unannounced target launch
- Operationally realistic warfighter tactics, techniques and procedures
- Warfighter participation
- End-to-end test

Ground-based Midcourse Defense meets all DOT&E criteria, *except* testing against complex countermeasures and *unannounced target launch*

- Operational interceptor, sensor, and fire control software
- Threat representative target
- Operationally realistic warfighter tactics, techniques and procedures
- Warfighter participation
- End-to-end test for a single engagement group using a single sensor – modeling and simulation runs have demonstrated other engagement sequences
US Test Goals

Intercept against target with countermeasures: EKV verification with dual sensors integrated

FTG-04
July 2008

Simulated intercept using sensors offline

Simulated intercept against target with complex countermeasures using multiple integrated sensors

FTX-03
July 2008

Live intercept against target with complex countermeasures using multiple integrated sensors

FTG-05
1QFY09

AN/TPY-2
Beale
GFC
Fire Control
GBI

Approved by
Director
Office of Public Relations
09-MDA-3707 (15 JUL 08)

AN/TPY-2
Aegis
SBX

AN/TPY-2
Aegis
SBX

AN/TPY-2
Aegis
SBX

GFC
Beale
Fire Control
Simulated Intercept

GFC
Beale
Fire Control
Simulated Intercept

GFC
Beale
Fire Control
Simulated Intercept

GBI
CBRN and Non-State Actors/Proxies
CBRN Prompt (48-hour) Killing Effect in an Urban Environment

The Relative Killing Effect of Chemical vs. Biological vs. Nuclear Weapons

### Chart

- **Sarin**
- **Anthrax**
- **12.5 KT**

#### Low
- **Sarin**: 60
- **Anthrax**: 30000
- **12.5 KT**: 23000

#### High
- **Sarin**: 200
- **Anthrax**: 100000
- **12.5 KT**: 80000

Q_{50} for Some Types of BW - Open-Air Deployment

- Plague (liquid): 3.5-4.5 liter/sq.km
- Tularemia (dry): 3.0-4.0 kg/sq.km
- Anthrax (dry, old version): 15-20 kg/sq.km
- Anthrax (dry, new version): 4.5-5.0 kg/sq.km
- Anthrax (liquid): 5.0-5.5 liter/sq.km
- Brucellosis (dry): 3.5-4.5 kg/sq.km
- Glanders/Melioidosis (liquid): 4.5-5.5 liter/sq.km
- Smallpox (liquid): 3.5-4.0 liter/sq.km
- Marburg (dry): less than 1.0 kg/sq.km
New Types of Biological Weapons

- **Binary biological weapons** that use two safe to handle elements that can be assembled before use. This could be a virus and helper virus like Hepatitis D or a bacterial virulence plasmid like E. coli, plague, Anthrax, and dysentery.

- **Designer genes and life forms**, which could include synthetic genes and gene networks, synthetic viruses, and synthetic organisms. These weapons include DNA shuffling, synthetic forms of the flu – which killed more people in 1918 than died in all of World War I and which still kills about 30,000 Americans a year – and synthetic microorganisms.

- "**Gene therapy**" weapons that use transforming viruses or similar DNA vectors carrying Trojan horse genes (retrovirus, adenovirus, poxvirus, HSV-1). Such weapons can produce single individual (somatic cell) or inheritable (germline) changes. It can also remove immunities and wound healing capabilities.

- **Stealth viruses** can be transforming or conditionally inducible. They exploit the fact that humans normally carry a substantial viral load, and examples are the herpes virus, cytomegalovirus, Epstein-Barr, and SV40 contamination which are normally dormant or limited in infect but can be transformed into far more lethal diseases. They can be introduced over years and then used to blackmail a population.

- **Host-swapping diseases**: Viral parasites normally have narrow host ranges and develop an evolutionary equilibrium with their hosts. Disruption of this equilibrium normally produces no results, but it can be extremely lethal. Natural examples include AIDS, Hantavirus, Marburg, and Ebola. Tailoring the disruption for attack purposes can produce weapons that are extremely lethal and for which there is no treatment. A tailored disease like AIDS could combine serious initial lethality with crippling long-term effects lasting decades.

- **Designer diseases** involve using molecular biology to create the disease first and then constructing a pathogen to produce it. It could eliminate immunity, target normally dormant genes, or instruct cells to commit suicide. Apoptosis is programmed cell death, and specific apoptosis can be used to kill any mix of cells.
Non-State Actor CBR(N?)

- Independent, Proxy, False Flag, or Trigger Force?
- Access likely to be more critical in determining capability than ability to create own weapons, but highly lethal BW and genetic weapons may be becoming “off the shelf” option.
- Many of same twists as covert State Actor attacks:
  - Bypasses defenses.
  - Plausible deniability?
  - Exploits special vulnerability of “one bomb” states.
  - Psychological and political impacts as important as direct killing effects.
  - False flag and proxy options clear.
  - Buying time may limit risk of retaliation.
  - Allows to exploit “slow kill” nature of biological strikes. Achieve “line source” effects
  - Covert forces in place can restrike or escalate.
- Unclear Non-State Actors are deterrable by any form of retaliation.

Source: Ken Alibeck
State Actor Covert Bioterrorism, Suitcase Nuclear

- Bypasses defenses.
- Plausible deniability?
- Exploits special vulnerability of “one bomb” states.
- Psychological and political impacts as important as direct killing effects.
- False flag and proxy options clear.
- Buying time may limit risk of retaliation.
- Allows to exploit “slow kill” nature of biological strikes. Achieve “line source” effects
- Covert forces in place can restrike or escalate.
- Target potentially faces major weakening of conventional capabilities without ability to counter-escalate.
Possible Terrorist/Covert/Irregular Deployment of Biological Weapons

- Use of infected vectors (mosquitoes, fleas, lice, etc.)
- Contamination of food and water supplies
- Contamination of various articles (letters, books, surfaces, etc.)
- Use of different aerosolizing devices and approaches to contaminate inner spaces of various buildings (line and point sources)
- Use of different aerosolizing devices and approaches for open-air dissemination (line and point sources)
- Inner- and outer-space explosive dissemination including suicide bombers
- Terrorist/Sabotage methods of infecting crops and livestock

Source: Ken Alibeck
WME: “Weapons of Mass Effectiveness”

- Theoretical possibility, give precision long-range strike capability.
- Target mix varies with attacker’s motives.
- Broad possible target base in MENA area, varying sharply by country.
  - Desalination
  - Major power plants, nuclear power plants.
  - Water purification and distribution.
  - Refinery
  - High value, long-lead time oil, gas, and petrochemical facilities.
  - Ethnic and sectarian high value targets.
  - Leadership elite: Royal family, president, etc.
Dealing with Nuclear Uncertainty

- Decide proper mix of five basic military options:
  - Prevention/preemption,
  - Active and passive defense,
  - Containment,
  - Acquiring own nuclear weapons, and/or
  - US extended deterrence.

- Can wait for diplomacy for time being, but need to start considering future options.
  - Ballistic and cruise missile defenses maybe cost-effective simply to deal with conventional threat.
  - A number of systems offer both improved air and missile defense.
  - Need quiet talks with US on containment options; extended deterrence.
  - Open support for IAEA and diplomatic options key passive approach.
Dealing with Nuclear Uncertainty

- Decide proper mix of four basic military options:
  - Prevention/preemption,
  - Active and passive defense,
  - Acquiring own nuclear weapons, and/or
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- Can wait for diplomacy for time being, but need to start considering future options.
  - Ballistic and cruise missile defenses maybe cost-effective simply to deal with conventional threat.
  - A number of systems offer both improved air and missile defense.
  - Need quiet talks with US on containment options; extended deterrence.
  - Open support for IAEA and diplomatic options key passive approach.
The “Military Option” for Dealing with Iran

Prevention, Preemption, Continuing Strikes, Containment, Deterrence, and Defense
Wide Range of Options

• Pursue diplomacy to point where key allies are convinced there is no real option; Iran too close to edge.

• Wait till Iran is committed to very high value targets.

• US guarantee of extended deterrence – nuclear or conventional (?)

• Active and passive defense such as TMD, civil defense.

• Israeli second strike “existential” option.

• Political and economic sanctions.

• Bloc arms and military technology transfer.

• Build up Gulf allies, Turkey as form of containment.

• Saudi option.
Possible “Wars”

- Israeli prevention, preemption of Iran.
- US prevention, preemption of Iran.
- Arms Race; War of Intimidation.
- Crisis “management.”
- Iranian-Israeli Exchange.
- Syrian “Wild Card”
- Iran nuclear, US conventional.
- Iran nuclear, US nuclear.
- State actor covert bioterrorism, suitcase nuclear.
- Non-State Actor CBR(N?).
- Weapons of Mass Effectiveness
Strike on Iran?

- Timelines: Acquisition? Deployment? Modernization?
- Targeting intelligence?
- Dispersal, hardening, concealment?
- Hardening vs. Attack Lethality
- SEAD: Penetration? Suppression? Kill?
- Range-payload, refuel, recovery
- Restrike? Penetration corridor enforcement?
- LOW? LUA? Covert?
Israeli Prevention, Preemption of Iran

- Uncertain “Window of Opportunity.”
- Prevention option vanishes once mature, dispersed Iranian force exists, but
  - Prevention may stimulate massive covert, dispersed effort.
  - One shot, limited target base, and not want waste option on low value targets.
  - No “green lights” from US or Arab neighbors (?)
- Preemption becomes radically different once Iran has nuclear armed force.
  - Time urgent, and must deny capability for single retaliatory strike.
  - Once Iran has launch on warning. Launch under attack may be impossible.
  - Special nature of Israeli target base can push to preempt.
  - Much of “ride out” capability may rest on Arrow, PAC-3, confidence in intelligence and warning. Israel’s own LOW/LUA capabilities.
- Deterrence/Prevention is Different Kind of Option
  - Take Israeli force “out of the closest.”
  - Existential counterforce targeting against Iran: Maximum of 10 Iranian cities of Tabriz, Qazvin, Tehran, Esfahan, Shiraz, Yazd, Kerman. Qom, Ahwaz, Kermanshah versus greater Tel Aviv, Haifa,
US Prevention, Preemption of Iran

- Uncertain “Window of Opportunity.”
- Prevention option vanishes once mature, dispersed Iranian force exists, but
  - Prevention may stimulate massive covert, dispersed effort.
  - Can range from nuclear only to broader nuclear, SSM, C4I, SAMs. Can be “suppression” rather than “pinpoint.” Less need for nukes against hard targets.
  - Restrikes and follow-ons much easier than for Israel.
  - No “green lights” Arab neighbors (?)
- Preemption becomes radically different once Iran has nuclear armed force.
  - Time urgent, and must deny capability for single retaliatory strike.
  - May be impossible once Iran has launch on warning, launch under attack capability.
  - Vulnerability of oil, Gulf cities, Israeli target base can push to preempt.
  - Much of “ride out” capability may rest on TMD in both Arab states and Israel, PAC-3, confidence in intelligence and warning.
- Deterrence/Prevention is Different Kind of Option
  - Adopt same “Extended Deterrence” Option once used for NATO.
  - Existential counterforce targeting against Iran: Maximum of 10 Iranian cities of Tabriz, Qazvin, Tehran, Esfahan, Shiraz, Yazd, Kerman. Qom, Ahwaz, Kermanshah versus greater Tel Aviv, Haifa,
US Options for Nuclear Uncertainty

- Decide proper mix of five basic military options:
  - Prevention/preemption,
  - Active and passive defense,
  - Containment,
  - Acquiring own nuclear weapons, and/or
  - US extended deterrence.

- Can wait for diplomacy for time being, but need to start considering future options.
  - Ballistic and cruise missile defenses maybe cost-effective simply to deal with conventional threat.
  - A number of systems offer both improved air and missile defense.
  - Need quiet talks with US on containment options; extended deterrence.
  - Open support for IAEA and diplomatic options key passive approach.
The Restrike Issue

• Nuclear target base in initial strike: Just nuclear, known vs. suspected nuclear, collateral damage limits?
• 100 sorties in one shot strike versus much large package? 1,200-2,000+ sorties and cruise missiles over time?
• Other targets: Ballistic missiles, military industries, air defenses, C4I/BM/IS&R?
• Accuracy of prestrike calculations of targeting, lethality, vulnerability, and /recovery-alternative capability
• Damage assessment takes days to months to never.
• Restrikes probably necessary to get major effects but present major political problems.
• May need years of sustained restrike coverage.
• US strike and restrike calculations or forced aftermath to Israeli strikes.
• Impact on NNPT/IAEA.
• Reaction of Russia and China, Gulf allies, other states.
Iranian Post-Strike/ Parallel Iranian Options

- IR-2, IR-3, IR-3 “cooled,” IR-4
- Folded centrifuge
- Concealed heavy water reactor
- LWR cannibalization
- LWR download
- Dirty weapons
- Basic biological
- Genetic engineered weapons
Key Mid-Term Force Posture Decisions - I

- US and/or Israel
  - **Prevent, preempt, contain, deter, retaliate, mutual assured destruction.**
- Iran: Potential/ambiguity, Break Out, Test, Bomb in Basement, Credible Force
- Iran and Israel:
  - In reserve (secure storage), launch on warning (LOW), launch under attack (LOA), ride out and retaliate
  - Continuous alert, dispersal
  - Point, wide area defense goals
  - Basing mode: sea basing, sheltered missiles.
  - Limited strike, existential national, multinational survivable.
- US:
  - Level of defensive aid.
  - Ambiguous response
  - Clear deployment of nuclear response capability.
  - Extended deterrence. Assured retaliation.
Key Mid-Term Force Posture Decisions - II

• Gulf:
  • Passive (wait out), defensive, or go nuclear.
  • Ballistic, cruise missile, air defense.
  • Seek extended deterrence from US

• Syria:
  • Link or decouple from Iran.
  • Passive (tacit threat) or active (clear, combat ready deployment).

• Non-State Actor:
  • Tacit or covert capability.
  • Proven capability.
  • Deployment mode: Hidden, dispersed, pre-emplaced
Arms Race; “War of Intimidation”

- Open ended race that can last for decades
- Iranian “War of Intimidation”
  - Effectiveness is as much political and perceptual as military
  - Search for excessive leverage or influence is major risk.
  - Can range from “bomb in the basement” to well structured existential threats to Israel and neighboring states.
  - Probably need 20-60 nuclear armed missiles for true existential threat.
  - Impact grows with asymmetric threats, proxy war capability, regional influence over states like Iraq, Syria, and Lebanon, credibility of proxy or covert attack.
- Much depends on regional and US response.
  - Israel and US capability to preempt is factor, but main issue may be Israel ability to clearly develop mutual assured destruction; US capability to deploy credible level of extended deterrence.
  - Defensive options like TMD, anticruise missile, and air defense could be critical.
  - Vulnerability of oil, Gulf cities, Israeli target base can push to preempt.
  - Much of “ride out” capability may rest on TMD in both Arab states and Israel, PAC-3, confidence in intelligence and warning.
  - Deterrence and lack of vulnerability depend on overall mix of military capabilities, not just response to Iranian proliferation
- Blocs more dangerous than nations
  - Iran-Iraq-Syrian linkage ?.
  - Problem of non-state actors, covert operations.
Iraqi Security Progress
The Iraq Challenge

- Success is an option, but half a decade of tasks remain:
  - Doubtful that can get rapid progress in conciliation, but slow conciliation better than division or civil war, and far easier to talk about abandoning Iraq than to do it if trigger a humanitarian disaster.
  - Consolidate progress in Iraq forces: Independent for internal security by 2012; create ability to defend against foreign threats by 2018.
  - Restructure police and criminal justice efforts, make local security real.
  - Build effective governance and services at national, provincial, and local level.
  - New focus on economic and aid dimensions; longer-term programs for petroleum, development, and aid.
  - Solve “federalism” and ethno-sectarian issues.
  - Contain or limit Iran, resolve Iraqi-Kurdish-Turkish issue, and reassure Sunni allies have not abandoned Iraqi Sunnis.

- If military succeeds, and conciliation happens, need to phase out US forces at rate that best achieves Iraqi and regional stability.
- If efforts fail, need phased cuts tied to clear political efforts, aid, and at least option of seeking to bloc civil war turning into military bloodbath. Extreme caution in intervening, but need to develop a Plan B flexible enough to react to events in Iraq.
- Need to talk to key allies and powers in region now. Reassure that will not leave Gulf, will aid them in dealing with Iran, and seeking some form of stability in Iraq. Need clear basing plans to handle exist and forces keep.
Major Threats to Iraq

- AQI
- AQI/Insurgent & Shi’a Militias
- Anti-AQI Tribal Success
- Intra-Shi’a Violence
- Shi’a Infighting Over Power/Resources
- Foreign Fighter Flow
- Lethal Aid, Training, Funding
Key Surge Operations

Source: MNF-I, January 17, 2008
Overall Weekly Security Incident Trends

- Attacks Against Iraqi Infrastructure and Government Organizations
- Bombs (IEDs and Mines), Both Found and Detonated
- Sniper, Ambush, Grenade, and Other Small Arms Attacks
- Mortar, Rocket, and Surface-to-Air Attacks

Key Events:
- Baghdad Security Plan, 15 February 2007
- Ramadan
  - 16 OCT - 14 NOV 04
  - 05 OCT - 04 NOV 05
  - 24 SEP - 23 OCT 06
  - 13 SEP - 13 OCT 07
- Parliamentary elections, 15 December 2005
- Samarra mosque bombing, 22 February 2006
- Iraqi elections, 30 January 2005
- Constitutional referendum, 15 October 2005
- Iraqi-led Basrah operations begin, 25 March 2008

Source: MNF-I SIGACTS III Database (Coalition Reports only) as of June 1, 2008. Chart includes executed attacks and potential (found and cleared) attacks.
High Profile Attacks (Explosions)
May 2006 – May 2008

Source: MNF-I SPA Assessments. SIGACTS III Database (Coalition Reports only) as of June 1, 2008. Does not include found and cleared.

Iraq Body Count: Iraqi Civilians Killed During the “Surge” and Afterwards by Month of Combat

ISF and U.S. Military Deaths in Iraq
January 2006 – May 2008

Source: MNF-I SPA Assessments SIGACTS III Database (Coalition Reports only), DoD News Releases and CIDNE as of June 1, 2008. Includes deaths within Iraq only. U.S. deaths under investigation are classified as battle deaths.
Weapons Caches Found by Coalition and Iraqi Forces

Source: MNF-I SPA Assessments. SIGACTS III Database (Coalition Reports only) as of June 1, 2008. Chart includes caches and explosive remnants of war.
Ethno-Sectarian Deaths
January 2006 – May 2008

Source: MNF-I SPA Assessments CIOC Trends Database (Coalition and Iraqi Reports) as of June 1, 2008.

Ethno-Sectarian Violence

Density plots depict incidents of ethno-sectarian deaths.

Ethno-Sectarian Deaths

Baghdad

Baghdad

Baghdad

Baghdad

MAR 08

Neighborhood Sect Legend
- 75% Shi'a
- 75% Sunni
- 51% Shi'a / 25% Sunni
- 51% Sunni / 25% Shi'a
- Unknown
- Mixed - No majority
Baghdad: Total Major Casualties 2007-2008

<table>
<thead>
<tr>
<th></th>
<th>Wounded Civilians</th>
<th>Dead Civilians</th>
<th>ISF Wounded</th>
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Source: Iraqi Official
Baghdad: Major Incidents of Violence in 2007-2008
(Trend in Total Incidents per Month by Type)

Source: Iraqi Official

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Source: Iraqi Official
Baghdad: Major Iraqi Casualties in 2007-2008

(Trend in Total Casualties per Month by Type)

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<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
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</table>

Source: Iraqi Official
GAO, Securing, Stabilizing, and Rebuilding Iraq, GAO-08-837June 23, 2008, p. 20
Average Number of Daily Attacks in Iraq for Selected Provinces, August 2005 through Early May 2008

Note: Each data point represents the average number of daily attacks for the specified period of time, as reported in DOD’s quarterly reports to Congress.


GAO analysis of DOD’s quarterly reports to Congress, Measuring Stability and Security in Iraq, January 2006 through February 2008; and data provided by MNF-I for March 2008 through May 2008
Average Daily Attacks by Province
July 2007 – November 2007

These four provinces have approximately 42% of the population but account for 80% of attacks.

Attacks in Baghdad Province have decreased approximately 53% since last reporting period.

Source: SIGACTS III Database (Coalition Reports only) as of Nov 30 2007.
Data reflects enemy attacks targeted against Coalition, ISF, civilians, infrastructure, Iraqi government organizations and reconstruction operations centers.
Average Daily Executed Attacks by Province

These four provinces have approximately 42% of the population but account for 87% of executed attacks.

Source: MNF-I SPA Assessments. SIGACTS III Database (Coalition Reports only) as of June 1, 2008. Data reflects executed enemy attacks targeted against coalition, ISF, civilians, Iraqi infrastructure and government organizations. Does not include IEDs and mines found and cleared.

I feel safe and secure in my neighborhood

I feel safe traveling outside my neighborhood

Nationwide average = 73%

Nationwide average = 37%

Source: April 2008 Nationwide Poll

Transferring Provincial Control

FEB 07

MAR 08

Transitioned

Projected within 6 Months

Partially Ready

Not Ready

Projected Transfer Date

<table>
<thead>
<tr>
<th>Date</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>JUN 08</td>
<td>Anbar</td>
</tr>
<tr>
<td>JUL 08</td>
<td>Qadisiyah</td>
</tr>
<tr>
<td>NOV 08</td>
<td>Wasit</td>
</tr>
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<td>NOV 08</td>
<td>Babil</td>
</tr>
<tr>
<td>DEC 08</td>
<td>Diyala</td>
</tr>
<tr>
<td>DEC 08</td>
<td>Baghdad</td>
</tr>
<tr>
<td>JAN 09</td>
<td>Salah Ad Din</td>
</tr>
<tr>
<td>JAN 09</td>
<td>Ninewa</td>
</tr>
<tr>
<td>TBD</td>
<td>Ta’imim</td>
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</table>

Source: Petraeus Briefing Slides, April 9, 2008
Current Timeline for Transfer of Security Responsibilities to Provincial Iraqi Control

Iraqi Stability & Ethnic and Sectarian Issues
Iraq: The Challenge of Strategic Patience

- Consolidate gains against Al Qa’ida in Mesopotamia
- Move towards stable accommodation: Change deBaathification law, provincial powers act and elections, oil law, etc.
- Keep Shi’ite militias (Sadr forces) under control, and prevent more sectarian and ethnic cleansing in greater Baghdad area.
- Consolidate creation of tribal militias, ensure they get proper central government support, and that central government recognizes importance of Sunni Sheiks.
- Stabilize provinces that still have serious conflict - Ninewah, Salahideen, Diyala -- and prevent Al Qa’ida in Mesopotamia forces from moving north.
- Avoid major intra-Shi’ite power struggles and conflicts in south.
- Limit Kurd, Arab minority fighting in North.
- Resolve the “federalism” issue through peaceful referendums.
- Develop truly capable Iraqi Army and regular forces to phase US role down to overwatch.
- Find solution to failure to develop effective approach to police force, and to dealing with local security forces, militias, and Facilities Protection Force.
- Establish effective local criminal justice system and local, provincial and national government presence.
Irakische Sektoriale & Ethnische Divisionen
Real World Ethno-Sectarian Population Parameters?

Three sources:
- CIA World Factbook, unsourced;
- Average ABC News polls ‘07-‘08, N=6,652 via 1,386 points.

<table>
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<tr>
<th></th>
<th>CIA WFB</th>
<th>LoC</th>
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<tr>
<td>Shiites</td>
<td>60-65%</td>
<td>60-65%</td>
<td>49%</td>
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<tr>
<td>Sunni Arabs</td>
<td>12-22*</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>Kurds</td>
<td>15-20</td>
<td>NA</td>
<td>15</td>
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<tr>
<td>Non Muslims</td>
<td>3</td>
<td>NA</td>
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*Extrapolated

Living Apart
ABC News/BBC/ARD/NHK poll

- 54% live in Shiite-only or Sunni-only areas
- 31% live in mostly-Shiite or mostly-Sunni areas
- 15% live in mixed areas

Views on PKK Activities
ABC News/BBC/ARD/NHK poll

- Turkish incursions vs. PKK justified:
  - Sunnis: 66%
  - Shiites: 22%
  - Kurds: 37%

- Iraqi gov't not doing enough to control PKK:
  - Sunnis: 80%
  - Shiites: 58%
  - Kurds: 34%

March 2008
Movement of Iraqi Refugees

- Some 2.7 million displaced within Iraq
- 1.2 million before February 2007
- 1.5 million since
- 300,000 in first three months of 2008

Progress in Political Accommodation

- **Provincial Elections**: The CoR is currently reviewing the law, which will set the legal basis and structure of provincial elections.

- **Hydrocarbons Package**: The level of control allocated to the central government in the July 2007 draft version of the Framework Law (currently in CoR Committee) is the key point of disagreement; there may be more progress on the Revenue Management Law, currently with the Shura Council, in the coming months.

- **Amnesty Law PASSED**: CoR approved the law on February 13; the law was signed by the Presidency Council February 26 and was implemented March 2.

- **Pensions Amendment PASSED**: Published in the Official Gazette December 2007.

- **De-Ba’athification PASSED**: Approved by default by the Presidency Council February 2008. Reform Published in the Official Gazette in mid-February.

- **Provincial Powers PASSED**: CoR approved the law on February 13; the law was vetoed by the Presidency Council February 26. The veto was rescinded on March 19.

US State Department, Iraq: Weekly Status Report, April 9, 2008
a: The provincial powers law set an October 1, 2008, deadline for holding provincial elections.

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<td>Law published in Gazette</td>
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<tr>
<td></td>
<td>Not implemented. Mandatory Commission not established.</td>
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</table>

| Implementation in process. Thousands approved for amnesty. |

| Provincial powers | Takes effect once provincial elections occur. |

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<tr>
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<td>Ministry of Oil Restructuring</td>
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<td>Iraq National Oil Company</td>
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</table>

| Disarmament and demobilization | |
Iraqi Force Development
US KIA and WIA in Iraq War from 2003 to Present

Recommended Force Reductions/Mission Shift

Leading to Partnering to Overwatch (Tactical to Operational to Strategic)

Primary Brigade Mission
- Strategic Overwatch
- Operational Overwatch
- Tactical Overwatch
- Partnering
- Leading
How US Iraqi Security Forces Aid Funds Have Been Spent

Total Obligated $11.23 Billion

Defense Forces $6.71 Billion
- Training and Operations $0.14 (2%)
- Equipment and Transportation $2.87
- Infrastructure $2.27
- Sustainment $1.42

Interior Forces $4.09 Billion
- Training and Operations $1.67
- Equipment and Transportation $0.98
- Infrastructure $0.99
- Sustainment $0.45

Other $0.43 Billion


Note: Numbers are affected by rounding. Allocation detail for ISFF funding is unavailable this quarter; therefore, the percentages in this graphic are calculated using dollars obligated.
Iraqi Security Budget and U.S. Security Assistance

Source: MNF-I, April 9, 2008
Near Term Iraqi Force Goals

Source: OJCS, December 2007
Iraqi Combat Battalion Generation

Infantry, Armor, Special Operations, and National Police Battalions

JAN 2007
- 115 Battalions
- 93 Battalions in the lead
- 27 Battalions

MAR 2008
- 112 Battalions in the lead
- 36 Battalions

DEC 2008 (Projected)
- 171 Battalions
- 44 Battalions

Operational Readiness Assessment = ORA

Source: MNF-I
April 9, 2008
MoD Forces: Operational Readiness
April 2008

- Capable of planning, executing and sustaining COIN operations
- Capable of planning, executing and sustaining COIN operations with Iraqi or Coalition support and enablers
- Partially capable of conducting COIN operations with Coalition units
- Incapable of conducting COIN operations / in unit set fielding
- Unit Forming / In Force Generation

Source: MNF-I as of May 13, 2008 (based on Apr 08 data). Does not include units not yet formed or not reporting

Mol National Police Forces: Operational Readiness
April 2008

- Capable of planning, executing and sustaining COIN operations
- Capable of planning, executing and sustaining COIN operations with Iraqi or Coalition support
- Partially capable of conducting COIN operations with Coalition units
- Incapable of conducting COIN operations
- Units Planned

Source: MNF-I as of May 13, 08 (based on Apr 08 data). Does not include units not yet formed or not reporting

Total Contracted: 91,641
Volunteers: 4,605
Sunni: 78%
Shia: 19%
Other: 3%

Transitioned: 21,128
Anbar: 8,206
Iraqi Security Forces: 8,241
Non-Security Employment: 4,681

Costs:
Average Monthly CERP: $16M
Iraqi Economic & Governance Development

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<td>8.7</td>
<td>2.4</td>
<td>5.3</td>
<td>3.4</td>
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<tr>
<td>Voice and Accountability</td>
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<td>Government Effectiveness</td>
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<td>2.4</td>
<td>4.7</td>
<td>1.9</td>
<td>1.4</td>
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<td>Regulatory Quality</td>
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<td>4.4</td>
<td>5.4</td>
<td>7.3</td>
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<tr>
<td>Rule of Law</td>
<td>3.3</td>
<td>1.4</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Source: SIGIR, Quarterly Report, April 30, 2008, p. 34
Total Reconstruction Funds Now = $113.9 Billion

a. Includes August 11, 2004 transfer of $86 million cash from the Central Bank of Iraq for CERP at the authorization of the Ministry of Finance.
b. In previous Quarterly Reports, SIGIR reported approximately $20 billion in DFI cumulative deposits to fund Iraqi government operations and reconstruction programs. SIGIR has redefined that number to include only reconstruction funding, which is approximately $7 billion, according to GAO Report 05-876 (July 28, 2005, p. 2). 
c. Table 2.1 includes a breakdown of Iraqi capital budget expenditures, CY 2003-2008. 
d. Where Iraq-only appropriations are unavailable, SIGIR assigned 85% for Iraq based on historical trends.

e. May include humanitarian aid or other types of assistance.
f. NEA-I, response to SIGIR data call, January 4, 2008.

Note: This quarter, SIGIR changed methodology for reporting international donor pledges. Beginning with the January 2008 Quarterly and Semiannual Report to Congress, SIGIR will use the official U.S. government source — DoS: NEA-I — as the sources for pledge data. The dollar change from last quarter is due to the revised reporting method.

The 2004 US budgeted amount sums the 2003 IRRF1 and 2004 IRRF2 assistance for civilian reconstruction. Data from Iraqi Ministry of Finance and OMB.

The bulk of U.S. foreign assistance in 2004 was for reconstruction. U.S. assistance to Iraq administered by the State Department since 2006 has been primarily for institutional capacity building.

Source: MNF-I, April 9, 2008
Iraqi Capital Budget Execution Significantly Improving

Iraqi Capital Spending

Note: Iraq’s 2007 capital expenditures reflect November 2007 data.

Source: MNF-I, April 9, 2008
Uncertain Spending & Budget Sharing

- Spend on salaries, central government operating costs, but not on capital development.

- At end 2007, had spent 71% of salary budget, 25% of capital budget.

- Total Capital budget for 2007 was $10.1 billion, or 25% of total vs. 18% in 2006.

- But, $6.4B of $10.1 billion was for central government ministries, $1.6 billion went to Kurdish region, and only $2.1 billion went to other provinces.

- Central government ministries get 76% of total budget, Finance Ministry gets 34%.

## Iraqi Capital Budgets for Reconstruction: 2003-2008


<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Capital Budget (In Dinars)</th>
<th>Conversion Rate (Dinar/USD)</th>
<th>Iraqi Capital Budget ($US)</th>
<th>Document Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>Not Provided in Dinars</td>
<td>NA</td>
<td>$609,500,000</td>
<td>“Republic of Iraq: Budget Revenues and Expenses 2003, July – December”</td>
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<tr>
<td>2004</td>
<td>5,114,323,000,000</td>
<td>1,500</td>
<td>$3,409,548,667</td>
<td>“Presidency of the Iraqi Interim National Assembly: The State General Budget for 2005”</td>
</tr>
<tr>
<td>2005</td>
<td>7,550,000,000,000</td>
<td>1,500</td>
<td>$5,033,333,333</td>
<td>“Presidency of the Iraqi Interim National Assembly: The State General Budget for 2005”</td>
</tr>
<tr>
<td>2006</td>
<td>9,272,000,000,000</td>
<td>1,500</td>
<td>$6,181,333,333</td>
<td>“GOI Budget” (as approved by TNA and written into law December 2005); U.S. Treasury, response to SIGIR data call, 1/4/2008</td>
</tr>
<tr>
<td>2008</td>
<td>15,671,227,000,000</td>
<td>1,200</td>
<td>$13,059,000,000</td>
<td>“Approved Iraqi Federal Budget for 2008”; U.S. Treasury, response to SIGIR data call, 4/3/2008</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$38,355,615,333</strong></td>
<td></td>
</tr>
</tbody>
</table>
Iraqi Capital Budget Expenditure By Province: 2003-2008


<table>
<thead>
<tr>
<th>Province</th>
<th>Total Available</th>
<th>Total Available Compared to Total Expended</th>
<th>Percentage of Expended vs Total Available</th>
<th>Kirkuk/Tameem</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANBAR</td>
<td>$107.1</td>
<td>$107.1 compared to $4.0</td>
<td>3.7%</td>
<td>Total Available $90.5, Total Expended $31.0, 34.2%</td>
</tr>
<tr>
<td>MISSAN</td>
<td>$76.2</td>
<td>$76.2 compared to $39.0</td>
<td>51.3%</td>
<td></td>
</tr>
<tr>
<td>MUTHANNA</td>
<td>$52.4</td>
<td>$52.4 compared to $9.9</td>
<td>18.9%</td>
<td></td>
</tr>
<tr>
<td>BAGHDAD</td>
<td>$559.5</td>
<td>$559.5 compared to $174.4</td>
<td>31.2%</td>
<td></td>
</tr>
<tr>
<td>NAJAF</td>
<td>$88.1</td>
<td>$88.1 compared to $56.4</td>
<td>64.1%</td>
<td></td>
</tr>
<tr>
<td>BASRAH</td>
<td>$195.2</td>
<td>$195.2 compared to $48.8</td>
<td>20.9%</td>
<td></td>
</tr>
<tr>
<td>NINEWA</td>
<td>$226.2</td>
<td>$226.2 compared to $58.5</td>
<td>25.9%</td>
<td></td>
</tr>
<tr>
<td>QADISSIYA</td>
<td>$64.3</td>
<td>$64.3 compared to $24.7</td>
<td>38.5%</td>
<td></td>
</tr>
<tr>
<td>SALAH AL-DIN</td>
<td>$92.9</td>
<td>$92.9 compared to $31.5</td>
<td>33.9%</td>
<td></td>
</tr>
<tr>
<td>DIYALA</td>
<td>$109.5</td>
<td>$109.5 compared to $0.0</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>THI-QAR</td>
<td>$138.1</td>
<td>$138.1 compared to $54.8</td>
<td>39.7%</td>
<td></td>
</tr>
<tr>
<td>KERBALA</td>
<td>$71.4</td>
<td>$71.4 compared to $29.4</td>
<td>41.1%</td>
<td></td>
</tr>
<tr>
<td>WASSIT</td>
<td>$83.3</td>
<td>$83.3 compared to $33.7</td>
<td>40.5%</td>
<td></td>
</tr>
</tbody>
</table>
The Cost of Dividing the Country: Infrastructure and Iraqi Oil Fields

The Case for National Unity

- Single port.
- Integrated road net. Rail net cross ethnic & sectarian areas
- Water & irrigation systems. Agricultural exports.
- Secure oil exports; refinery & product needs.
- Electric and gas generation.
- Air traffic and overflight rights.
- Network of state-owned enterprises.
Iraqi Oil Exports

- 2006 Revenue Estimate: $31.3 Billion
- 2007 Revenue Estimate: $41.0 Billion
- 2008 Revenue Estimate: $31.5 Billion (ytd)

US State Department, Iraq: Weekly Status Report, June 18, 2008. Pg 15
The Iraqi Product Import Crisis

- Diesel: 18.6 ML supply of 24.5 ML target
- Kerosene: 8.3 ML supply of 14.6 ML target
- Gasoline: 12.6 ML supply of 26.8 ML target
- LPG: 3,403 tons supply of 5,100 tons target

Note: This is a daily average for June 9 – June 15
The Iraqi Electricity Crisis

Daily Electricity Supplied and Estimated Demand in Iraq Since January 2004

- Daily electricity demand June 11-17 was 4% above the same period last year. Daily supply from the grid was 9% above the year-earlier period and met 56% of demand, compared with 51% for the year-earlier period.

- For June 10-16 average hours of power from the grid after meeting demand from essential services were Baghdad: 11.0 and national 11.4. Year-ago levels were Baghdad 5.6 and national 10.3.
Arab Public Opinion on Iraq War

Which of the following is your biggest concern about the consequences of the war in Iraq? (Choose two)

- Iran is now a more powerful state
  - 2006: 15%
  - 2008: 8%

- Iraq may be divided
  - 2006: 49%
  - 2008: 40%

- US will continue to dominate Iraq long after the transfer of power to the Iraqis
  - 2006: 42%
  - 2008: 40%

- Continuing trouble in Iraq will divert attention from other issues such as the Palestinian question
  - 2006: 31%
  - 2008: 42%

- Iraq will remain unstable and spread instability in the region
  - 2006: 42%
  - 2008: 59%

Source: Shibley Telhami, 2008 Annual Arab Public Opinion Poll Survey of the Survey of the Anwar Sadat Chair for Peace and Development at the University of Maryland Development at the University of Maryland (with Zogby International) International) Conducted March 2008 in Egypt, Jordan, Lebanon, Morocco, Saudi Arabia (KSA) and the UAE
Arab Public Opinion on the “Surge”

Since the surge of American forces in Iraq, the number of violent incidents has significantly declined in many parts of Iraq. Which of the following is closest to your view?

1. It is an indication that the surge is working and will increase the chance of a stable political settlement in Iraq
   - W/Egypt, 6%
   - W/O Egypt, 9%

2. The reduction of violence has little to do with the American surge, but still believe that the situation in Iraq is headed toward a stable political settlement
   - W/Egypt, 19%
   - W/O Egypt, 29%

3. The reduction of violence has little to do with the American surge, and it is only a matter of time before violence increases again
   - W/Egypt, 31%
   - W/O Egypt, 23%

4. I don't believe the reports of a significant reduction in violence
   - W/Egypt, 36%
   - W/O Egypt, 32%

Source: Shibley Telhami, 2008 Annual Arab Public Opinion Poll Survey of the Survey of the Anwar Sadat Chair for Peace and Development at the University of Maryland (with Zogby International) Conducted March 2008 in Egypt, Jordan, Lebanon, Morocco, Saudi Arabia (KSA) and the UAE
Arab Public Opinion on US Impact on Iraq

What do you believe would happen in Iraq if the US quickly withdrew its forces?

- Civil war will expand rapidly
  - W/Egypt, 15%
  - W/O Egypt, 18%

- The situation will not change
  - W/Egypt, 17%
  - W/O Egypt, 20%

- Iraqis will find a way to bridge their differences
  - W/Egypt, 61%
  - W/O Egypt, 58%

Source: Shibley Telhami, 2008 Annual Arab Public Opinion Poll
Survey of the Anwar Anwar Sadat Chair for Peace and Sadat Chair for Peace and Development at the University of Maryland (with Zogby International)
Conducted March 2008 in Egypt, Jordan, Lebanon, Morocco, Saudi Arabia (KSA) and the UAE
Security Impact on GCC States

- Stable and secure Iraq critical to Gulf security.
- Political accommodation and national unity critical to limiting Iranian influence and spillover of Iraqi Sunni-Shi’ite power struggles.
- Strong Iraq self-defense capability is critical buffer to security of the entire Gulf.
- Support and aid from GCC states is a critical element of Gulf security.
Energy and Critical Infrastructure
Energy Infrastructure is Critical, *But*

- Steadily rising global demand for Gulf crude, product, and gas
- Rising Asian demand (much exported indirectly to the West)
  - Heavy concentrations in facilities designed to economies of scale, not redundancy.
- Poor response planning, and long-lead time replacement for critical key components.
- Day-to-day use often near limits of capacity
- Lack of systems integration and bypass capability at national and GCC level
- Improving lethality and range of precision strike systems.
- Smarter saboteurs and terrorists.
Gulf Energy as Percent of World in 2007

- Crude Oil Reserves: 55
- Natural Gas Reserves: 40
- Oil Production Capacity: 32
- Oil Production: 28
- Excess Oil Production Capacity: 83

Source: IEO 2007
## World Dependence on Gulf Proven Conventional Oil Reserves

### (In Billions of Barrels)

<table>
<thead>
<tr>
<th>Country</th>
<th>% of World</th>
<th>Billions of Barrels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>21.9</td>
<td>264.3</td>
</tr>
<tr>
<td>Iran</td>
<td>11.4</td>
<td>137.5</td>
</tr>
<tr>
<td>Iraq</td>
<td>9.5</td>
<td>115</td>
</tr>
<tr>
<td>Kuwait</td>
<td>8.4</td>
<td>101.5</td>
</tr>
<tr>
<td>UAE</td>
<td>8.1</td>
<td>97.8</td>
</tr>
<tr>
<td>Libya</td>
<td>3.4</td>
<td>41.5</td>
</tr>
<tr>
<td>Qatar</td>
<td>1.3</td>
<td>15.2</td>
</tr>
<tr>
<td>Algeria</td>
<td>1</td>
<td>12.3</td>
</tr>
<tr>
<td>Oman</td>
<td>0.5</td>
<td>5.6</td>
</tr>
<tr>
<td>Egypt</td>
<td>0.3</td>
<td>3.7</td>
</tr>
<tr>
<td>Syria</td>
<td>0.2</td>
<td>3</td>
</tr>
<tr>
<td>Yemen</td>
<td>0.2</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Rising Output From Gulf Oil Producers: 2005-2030
(In MMBD in EIA/DOE reference case in IE0 2007)

Average world oil prices in 2030 are $36, $59, and $100 per barrel in 2030
History of Oil Shocks: Pre-$100 Oil

Overtimes: more incidents, more frequent volatility, higher risk of asymmetric attacks, and more geopolitical uncertainties.

Note: These prices are averages of several types: Saudi Light, Iranian Light, Libyan Es Sider, Nigerian Bonny Light, Indonesian Minas, Venezuelan Tia Juana light Mexico Maya, and UK Brent blend.
US IEA Estimate of Future Oil Prices

Gulf Net Oil Export Revenues

Actual in CY2007

<table>
<thead>
<tr>
<th>Country</th>
<th>Total (B)</th>
<th>Per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iran</td>
<td>$57B</td>
<td>$873</td>
</tr>
<tr>
<td>Iraq</td>
<td>$38B</td>
<td>$1,361</td>
</tr>
<tr>
<td>Kuwait</td>
<td>$55B</td>
<td>$21,858</td>
</tr>
<tr>
<td>Qatar</td>
<td>$26B</td>
<td>$28,357</td>
</tr>
<tr>
<td>Saudi</td>
<td>$194B</td>
<td>$7,031</td>
</tr>
<tr>
<td>UAE</td>
<td>$63B</td>
<td>$14,150</td>
</tr>
</tbody>
</table>

Source: EIA Short Term Energy Outlook

Prior to 1994 does not include Angola or Ecuador

World Energy Use: 1980-2030

Growth of China and US Energy Demand

Consumption of Energy in Quadrillion BTUs: 2004 vs. 2030

Adapted from DOE/EIA, IEO 2007, Table A1 Reference Case In Quadrillions of Btus.
### Impact of Rising Asian Liquids Consumption in the EIA Reference Case, 1990-2030

**History**

<table>
<thead>
<tr>
<th>Year</th>
<th>Aus/NZ</th>
<th>South Korea</th>
<th>Japan</th>
<th>India</th>
<th>Other</th>
<th>China</th>
<th>Total Asia</th>
<th>World</th>
<th>% Total</th>
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</thead>
<tbody>
<tr>
<td>1990</td>
<td>0.8</td>
<td>1</td>
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<td>1.2</td>
<td>3.1</td>
<td>2.3</td>
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<td>0</td>
<td>0</td>
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<td>2.2</td>
<td>5.5</td>
<td>2.3</td>
<td>5.7</td>
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<td>0</td>
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<td>2004</td>
<td>1</td>
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<td>2.5</td>
<td>6</td>
<td>6.4</td>
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<td>2.2</td>
<td>5.2</td>
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<td>6.7</td>
<td>9.4</td>
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<td>2015</td>
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<td>3.2</td>
<td>7.6</td>
<td>10.5</td>
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<tr>
<td>2020</td>
<td>1.2</td>
<td>2.6</td>
<td>5.2</td>
<td>3.6</td>
<td>8.3</td>
<td>11.9</td>
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<tr>
<td>2025</td>
<td>1.2</td>
<td>2.7</td>
<td>5.2</td>
<td>4</td>
<td>9</td>
<td>13.6</td>
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<tr>
<td>2030</td>
<td>1.3</td>
<td>2.8</td>
<td>5.2</td>
<td>4.4</td>
<td>9.8</td>
<td>15.7</td>
<td>0</td>
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</table>

**Projections**

<table>
<thead>
<tr>
<th>Year</th>
<th>Aus/NZ</th>
<th>South Korea</th>
<th>Japan</th>
<th>India</th>
<th>Other</th>
<th>China</th>
<th>Total Asia</th>
<th>World</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1.1</td>
<td>2.5</td>
<td>5.2</td>
<td>3.2</td>
<td>8.3</td>
<td>11.9</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2020</td>
<td>1.2</td>
<td>2.6</td>
<td>5.2</td>
<td>4</td>
<td>9</td>
<td>13.6</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2025</td>
<td>1.2</td>
<td>2.7</td>
<td>5.2</td>
<td>4.4</td>
<td>9.8</td>
<td>15.7</td>
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<td>2030</td>
<td>1.3</td>
<td>2.8</td>
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<td>4.4</td>
<td>9.8</td>
<td>15.7</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

Source: EIA, IEO2007, Appendix A, p. 88

DOE-IEA, Annual Energy Outlook 2008, p. 80
## Key Gulf-Related Chokepoints - I

<table>
<thead>
<tr>
<th>Name</th>
<th>2006E oil flow (bbl/d)</th>
<th>Width at Narrowest Point</th>
<th>Oil Source Origin</th>
<th>Primary Destination</th>
<th>Past Disturbances</th>
<th>Alternative Routes</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Strait of Hormuz</td>
<td>16.5-17 million</td>
<td>21 miles</td>
<td>Persian Gulf Nations, including Saudi Arabia, Iran, and UAE</td>
<td>Japan, The United States, Western Europe, other Asian countries</td>
<td>Sea mines were installed during the Iran-Iraq War in the 1980s. Terrorists threats post September 11, 2001.</td>
<td>745-mile long East-West Pipeline through Saudi Arabia to the Red Sea</td>
</tr>
<tr>
<td>The Suez Canal/Sumed Pipeline</td>
<td>4.5 million</td>
<td>1,000 feet</td>
<td>Persian Gulf Nations, especially Saudi Arabia, and Asia</td>
<td>Europe and The United States</td>
<td>Suez Canal was closed for eight years after the Six-Day War in 1967. Two large oil tankers ran aground in 2007 suspending traffic.</td>
<td>Reroute around the southern tip of Africa (the Cape of Good Hope), additional 6,000 miles.</td>
</tr>
</tbody>
</table>

Source: EIA, Country Briefs, World Oil Transit Chokepoints, January 2008
Key Gulf-Related Chokepoints - II

<table>
<thead>
<tr>
<th>Name</th>
<th>2006E oil flow (Dbbl/d)</th>
<th>Width at Narrowest Point</th>
<th>Oil Source Origin</th>
<th>Primary Destination</th>
<th>Past Disturbances</th>
<th>Alternative Routes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bab el-Mandab</td>
<td>3.3 million</td>
<td>16 miles</td>
<td>The Persian Gulf</td>
<td>Europe and The United States</td>
<td>USS Cole attack in 2000; French oil tanker in 2002, both attacks off the coast of Aden, Yemen</td>
<td>Northbound traffic can use the East-West oil pipeline through Saudi Arabia; Reroute around the southern tip of Africa (the Cape of Good Hope); additional 6,000 miles.</td>
</tr>
<tr>
<td>The Turkish Straits</td>
<td>2.4 million</td>
<td>0.5 mile</td>
<td>Caspian Sea Region</td>
<td>Western and Southern Europe</td>
<td>Numerous past shipping accidents due to the straits sinuous geography; Some terrorist threats were made after September 11, 2001.</td>
<td>No clear alternative; potential pipelines discussed including a 173-mile pipeline between Russia, Bulgaria, and Greece.</td>
</tr>
</tbody>
</table>

Source: EIA, Country Briefs, World Oil Transit Chokepoints, January 2008
MENA Oil Infrastructure

Source:
http://www.eia.doe.gov/e meu/cabs/Persian_Gulf/i mages/pg_map.pdf
Vulnerability of Gulf Oil Fields

Saudi Arabia

- 267 billion barrels of oil reserves
- 9.7 MMBD production
- Capacity 10.5-11 MMBD growing to 12.5 MMBD.
- Exports 7/9-98.5 MBD, 52% to Asia
- 2.3 MMBD used domestically.
- Refinery throughput capacity of 2.1 MMBD
- 100 major oil and gas fields
- Ras Tanura complex has approximately 6 million bbl/d capacity; and the world's largest offshore oil loading facility. Includes the 2.5-million bbl/d port at Ras Tanura. More than 75 percent of exports are loaded at Ras Tanura Facility.
- 3 to 3.6-million bbl/d Ras al-Ju'aymah facility on the Persian Gulf.
- Yanbu' terminal on the Red Sea, has loading capacity of approximately 4.5 million bbl/d crude and 2 million bbl/d for NGL and products.

Abu Musa, Tumbs, Hormuz - Map

• 16-18 MMBD per day with 25%+ growth over next decade.
• 750 million tons of crude oil in 2006; 20% of world supply.
• Only 50% of traffic is oil. Containers are 20%; bulk cargo is 22%. 8% other.
• 2.5 billion DWT of cargo in 2006.
• Gulf will export 40% of world’s LNG by 2015.

Abu Musa, Tumbs, Hormuz: Factoids

- 34 miles (55 KM) wide at narrowest part.
- Channels consist of 2-mile (3.2 km) navigable channels for inbound and outbound traffic, separated by 2-mile wide buffer zone.
- 40% of all globally traded oil supply.
- 75%-plus of Japan’s oil/
- 13.4 MMBD of crude through Strait in May 2007
- Additional 2 MMBD of products and over 31 million tons of LNG.
- 90% of all Gulf exports go through Strait.
- EIA predicts exports will double to 30-34 MMBD by 2020
- Gulf will export 40% of world’s LNG by 2015.

The Bab El Mandab

• 3.3 MMBD per day with 25%+ growth over next decade.

• 2.1 MMBD flows northbound through Suez Complex.

• 18 miles wide with two 2 mile channels going each way.

• Only major bypass is Saudi East-West pipeline at 4.4 MMBD, but now fully used.

Source: EIA, Country Briefs, World Oil Transit Chokepoints, January 2008
Suez

An estimated 3.9 million bbl/d of oil flows northbound through the Suez Canal to the Mediterranean, while 0.6 million bbl/d travels southbound into the Red Sea.

Over 3,000 oil tankers pass through the Suez Canal annually. With only 1,000 feet at its narrowest point, the Canal is unable to handle large tankers.

Suez Canal Authority (SCA) has discussed widening and deepening to accommodate VLCCs and ULCCs.

200-mile long Sumed Pipeline, or Suez-Mediterranean Pipeline also provides a route by crossing the northern region of Egypt from the Ain Sukhna to the Sidi Kerir Terminal.

The pipeline can transport 3.1 million bbl/d of crude oil. Nearly all of Saudi Arabia’s northbound shipments (approximately 2.3 million bbl/d of crude) are transported through the Sumed pipeline.

Closure would divert tankers around the southern tip of Africa, the Cape of Good Hope, adding 6,000 miles to transit time.
And, Energy Is Only Part of Problem

- Critical dependence on desalination and key water system facilities. 30 major plants with no surplus capacity, and meeting only 60% of projected needs by 2020.
- Electric power critical to both economic and civil needs; grids often compartmented or limited in power transfer.
- Ports and air security critical to food imports.
- Some countries heavily dependent on security of domestic gas systems.
- *Day to day use sometimes near total capacity.*
- *Poor response planning and long-lead time replacement for critical key components.*
- *Lack of systems integration and bypass capability at national and GCC level*
Meeting the Critical Infrastructure Security Challenge

- Effective defense of the nation and Gulf waters/airspace.
- Joint military, paramilitary, law enforcement, and intelligence defense of critical facilities.
- Passive defense in terms of reducing critical vulnerabilities, redundancy, rapid repair and replacement, etc.
- Suitable response planning and planning for long-lead time replacement for critical key components.
- Systems integration and bypass capability at national and GCC level
Terrorism
Arab Public Opinion on the US

Generally speaking, is your attitude towards the United States:

- Very favorable
  - 2006, 4%
  - 2008, 4%

- Somewhat favorable
  - 2006, 8%
  - 2008, 11%

- Somewhat unfavorable
  - 2006, 21%
  - 2008, 19%

- Very unfavorable
  - 2006, 57%
  - 2008, 64%

Source: Shibley Telhami, 2008 Annual Arab Public Opinion Poll Survey of the Survey of the Anwar Sadat Chair for Peace and Sadat Chair for Peace and Development at the University of Maryland Development at the University of Maryland (with Zogby International) International) Conducted March 2008 in Egypt, Jordan, Survey conducted March 2008 in Egypt, Jordan, Lebanon, Morocco, Saudi Arabia (KSA) and the Lebanon, Morocco, Saudi Arabia (KSA) and the UAE UAE.
US Goals in the MENA Region

Which TWO of the following factors do you believe are most important in driving American policy in the Middle East?

- Promoting democracy: 4%
- Spreading human rights: 4%
- Promoting peace and stability: 6%
- Fighting terrorism: 7%
- Preventing the spread of nuclear weapons: 12%
- Preserving regional and global dominance: 30%
- Weakening the Muslim World: 33%
- Protecting Israel: 47%
- Controlling oil: 50%

Source: Shibley Telhami, 2008 Annual Arab Public Opinion Poll Survey of the Survey of the Anwar Sadat Chair for Peace and Development at the University of Maryland (with Zogby International) Conducted March 2008 in Egypt, Jordan, Lebanon, Morocco, Saudi Arabia (KSA) and the UAE.
Steps to Improve View of US

What TWO steps by the US would improve your views of the US most?

1. Providing more economic assistance to the region
   - W/Egypt, 13%
   - W/O Egypt, 15%

2. Pushing even more to spread democracy in the Middle East
   - W/Egypt, 13%
   - W/O Egypt, 13%

3. Stopping economic and military aid to Israel
   - W/Egypt, 28%
   - W/O Egypt, 26%

4. Brokering a Comprehensive Middle East Peace with Israeli withdrawal to the 1967 border and establishing a Palestinian state with Jerusalem as its capitol
   - W/Egypt, 50%
   - W/O Egypt, 56%

5. Withdrawal of US forces from the Arabian Peninsula
   - W/Egypt, 46%
   - W/O Egypt, 41%

6. Withdrawal of US forces from Iraq
   - W/Egypt, 44%
   - W/O Egypt, 43%

Source: Shibley Telhami, 2008 Annual Arab Public Opinion Poll Survey of the Survey of the Anwar Sadat Chair for Peace and Sadat Chair for Peace and Development at the University of Maryland Development at the University of Maryland (with Zogby International) International) Conducted March 2008 in Egypt, Jordan, Lebanon, Morocco, Saudi Arabia (KSA) and the Lebanon, Morocco, Saudi Arabia (KSA) and the UAE UAE
Region-Wide Impact of Neo Salafi Extremism, Franchising of Al Qa’ida, and Impact Inside and Outside Region
Range of Hostile Organizations in Region

Abu Nidal Organization (ANO)
Abu Sayyaf Group (ASG)
A-Al qsa Martyrs Brigade Ansar a-Sunna (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.


Arab Public Opinion “Positive” Aspects of Al Qa’ida

When you think about Al Qaeda, which aspect of the organization, if any, do you sympathize with most?

- That it seeks to create an Islamic state like that of the Taliban in Afghanistan
  - W/Egypt, 7%
  - W/O Egypt, 9%

- Its methods of operation
  - W/Egypt, 10%
  - W/O Egypt, 14%

- That it stands for Muslim causes such as the Palestinian issue
  - W/Egypt, 18%
  - W/O Egypt, 20%

- I do not sympathize at all with this organization
  - W/Egypt, 21%
  - W/O Egypt, 21%

- That it confronts the US
  - W/Egypt, 30%
  - W/O Egypt, 26%

Source: Shibley Telhami, 2008 Annual Arab Public Opinion Poll Survey of the Survey of the Anwar Anwar Sadat Chair for Peace and Sadat Chair for Peace and Development at the University of Maryland Development at the University of Maryland (with Zogby International) International) Conducted March 2008 in Egypt, Jordan, Survey conducted March 2008 in Egypt, Jordan, Lebanon, Morocco, Saudi Arabia (KSA) and the Lebanon, Morocco, Saudi Arabia (KSA) and the UAE UAE
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.
War in Afghanistan, Potential Destabilization of Pakistan, and Impact on Proliferation and Islamist Extremism in the Middle East
In 2007 the number of attacks in Afghanistan’s Taliban-dominated insurgency exceeded that of the previous year, in part because NATO and Afghan forces undertook many more offensive operations. Efforts to improve governance and extend development were hampered by a lack of security in some areas and a general lack of government capacity and competency. The ability of the Karzai government, NATO, and the United States to defeat the Taliban will determine the continued support of the Afghan people for the government and the international community. Afghan leaders also must deal with endemic corruption and pervasive poppy cultivation and drug trafficking. Ultimately, defeating the insurgency will depend heavily on the government’s ability to improve security, deliver services, and expand development for economic opportunity.

Although international forces and the Afghan National Army continue to score tactical victories over the Taliban, the security situation has deteriorated in some areas in the south, and Taliban forces have expanded their operations into previously peaceful areas of the west and around Kabul. The Taliban-dominated insurgency has expanded in scope despite operational disruption caused by International Security Assistance Force (ISAF) and Operation Enduring Freedom operations. The death or capture of three top Taliban leaders last year—their first high level losses—does not yet appear to have significantly disrupted insurgent operations.

Continued progress has been made in expanding and fielding the Afghan National Army, which as of the end of 2007 reported attaining 70 percent of its authorized 70,000 end strength. While this is an improvement, the shortage of international trainers in the field, high operational tempo, attrition, and absenteeism hamper efforts to make units capable of significant independent action. The Afghan National Police has approximately 90 percent of its authorized 82,000 end-strength. While the National Police may have more forces throughout Afghanistan, corruption, insufficient training and equipment, and absenteeism hamper their effectiveness.

Kabul in 2008 must work closely with the national legislature, as well as provincial and tribal leaders, to establish and extend the capacity of the central government. The country faces a chronic shortage of resources and of qualified and motivated government officials at the national and local level.
Director of National Intelligence Michael McConnell on Developments in Pakistan to House Permanent Select Committee on Intelligence, February 7, 2008

Al-Qaeda and its terrorist affiliates continue to pose significant threats to the United States at home and abroad, and al-Qaeda’s central leadership based in the border area of Pakistan is its most dangerous component...al-Qaeda’s central leadership in the past two years has been able to regenerate the core operational capabilities needed to conduct attacks in the Homeland:

- Al-Qaeda has been able to retain a safehaven in Pakistan’s Federally Administered Tribal Areas (FATA) that provides the organization many of the advantages it once derived from its base across the border in Afghanistan, albeit on a smaller and less secure scale. The FATA serves as a staging area for al-Qaeda’s attacks in support of the Taliban in Afghanistan as well as a location for training new terrorist operatives, for attacks in Pakistan, the Middle East, Africa, Europe and the United States.

- Using the sanctuary in the border area of Pakistan, al-Qaeda has been able to maintain a cadre of skilled lieutenants capable of directing the organization’s operations around the world. It has lost many of its senior operational planners over the years, but the group’s adaptable decisionmaking process and bench of skilled operatives have enabled it to identify effective replacements.

- Al-Qaeda’s top leaders Usama Bin Ladin and Ayman al-Zawahiri continue to be able to maintain al-Qaeda’s unity and its focus on their strategic vision of confronting our allies and us with mass casualty attacks around the globe. Although security concerns preclude them from the day-to-day running of the organization, Bin Ladin and Zawahiri regularly pass inspirational messages and specific operational guidance to their followers through public statements.

- Al-Qaeda is improving the last key aspect of its ability to attack the US: the identification, training, and positioning of operatives for an attack in the Homeland. While increased security measures at home and abroad have caused al-Qaeda to view the West, especially the US, as a harder target, we have seen an influx of new Western recruits into the tribal areas since mid-2006.

- The IC assesses that Pakistan-based Lashkar-e-Tayyiba (LT) and other Kashmir-focused groups will continue attack planning and execution in India. Shia and Hindu religious observances are possible targets, as are transportation networks and government buildings. We judge Kashmir-focused groups will continue to support the attacks in Afghanistan, and operatives trained by the groups will continue to feature in al-Qaeda transnational attack planning.
Enemy Elements By Area of Influence

TB presence or influence =
HiG presence or influence =
AQAM presence or influence =
HQN presence or influence =
High Criminal presence =
Anti-Gov Element presence or influence =
(population centers excluded)
Major Ethnic Divisions
Enemy Activity Snap-shot (Weeks 1 – 52 for 2005 & 2006)
01 January – 31 December (2005 & 2006)

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicide Attacks</td>
<td>27</td>
<td>139</td>
</tr>
<tr>
<td>School Attacks</td>
<td>98</td>
<td>129</td>
</tr>
<tr>
<td>Direct Fire *</td>
<td>1558</td>
<td>4542</td>
</tr>
<tr>
<td>Indirect Fire</td>
<td>599</td>
<td>1511</td>
</tr>
<tr>
<td>IEDs</td>
<td>783</td>
<td>1677</td>
</tr>
</tbody>
</table>

Note: Does not include land mine strikes

* Direct Fire includes SAFIRE events
UNIDSS SECURITY INCIDENTS JAN 2003 TO JUL 2007

2007 year average 525 incidents per month

2006 year average 425 incidents per month

Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
### Trend in Number of Attacks in Peak Month: 2005-2007

![Bar Chart]

<table>
<thead>
<tr>
<th>Year</th>
<th>Attacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>400</td>
</tr>
<tr>
<td>2006</td>
<td>800</td>
</tr>
<tr>
<td>2007</td>
<td>1,000</td>
</tr>
</tbody>
</table>

Adapted from DoD report on Stability and Security in Afghanistan, June 2008,
Attacks Targeting Non-Combatants

<table>
<thead>
<tr>
<th>Year</th>
<th>Terror attacks</th>
<th>Attacks causing at least one death, injury, or kidnapping</th>
<th>People killed, injured, or kidnapped</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>491</td>
<td>366</td>
<td>1540</td>
</tr>
<tr>
<td>2006</td>
<td>969</td>
<td>695</td>
<td>3557</td>
</tr>
<tr>
<td>2007</td>
<td>1127</td>
<td>892</td>
<td>4673</td>
</tr>
</tbody>
</table>

Adapted from US State Department, Country Reports on Terrorism. April 30, 2008, and www.nctc.gov
Trend in Afghan IEDs and Roadside Bombs: 2002-2007

Incidents by Year

![Bar chart showing incidents by year from 2002 to 2007]

Only 10 SAM firings to date, but HN-5s appear in 2007

<table>
<thead>
<tr>
<th>Year</th>
<th>IEDs &amp; Roadside Bombs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>22</td>
</tr>
<tr>
<td>2003</td>
<td>83</td>
</tr>
<tr>
<td>2004</td>
<td>325</td>
</tr>
<tr>
<td>2005</td>
<td>782</td>
</tr>
<tr>
<td>2006</td>
<td>1,931</td>
</tr>
<tr>
<td>2007</td>
<td>2,615</td>
</tr>
</tbody>
</table>

Areas where the accessibility deteriorated between May 2006 and May 2007

Areas where the accessibility improved between May 2006 and May 2007
Total Security Incidents in Afghanistan: 2005-2008

Rise in Afghan Violence: 2007 vs. 2008

Insurgent attacks and civilian casualties in the first quarter of 2008 versus the first quarter of 2007

Adapted from Afghanistan NGO Safety Office, and Jonathan S. Landay, "US Seeking Troops to Send to Afghanistan, Miami Herald, April 16, 2008.
Cross Border Raids from Pakistan to Eastern Afghanistan: First Six Months of 2007 vs. 2008

Overall Attacks Up 40% Over Same Period in 2007

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-Jun 07</td>
<td>269</td>
</tr>
<tr>
<td>Jan-Jun 08</td>
<td>434</td>
</tr>
<tr>
<td>07 vs. 08</td>
<td>60%</td>
</tr>
</tbody>
</table>

Suicide Bombs: 2001 - First Six Months of 2008

Munitions Dropped in Afghanistan versus Iraq:
First Six Months of 2008
(Bombs and Missiles)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iraq</td>
<td>754</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>1,853</td>
</tr>
<tr>
<td>(Afghan: June Only)</td>
<td>646</td>
</tr>
</tbody>
</table>
Civilian Casualties in Afghanistan: First Six Months of 2007 versus 2008 (Killed)

UN Estimate, reported by AP, June 29, 2008
Total US Casualties: Patterns in Total KIA and WIA in Iraq and Afghanistan Wars from 2001 Onwards

Kinetic Activity in Afghanistan by Province
1 Jan 07 - 8 Mar 08

Direct Fire, Indirect Fire, and IED Explosion Events

(14 of the 34 provinces in Afghanistan are not included as they experienced less than 20 attacks during this time period)
Shift in Location of Violence: 2007 vs. 2008
Rise in Percent in the first quarter of 2008 versus the first quarter of 2007

Senlis Estimate of Insurgent Attacks and NATO/Afghan Offensives in January 2008

Legend
- Area with light Taliban presence
- Area with substantial Taliban presence
- Area with permanent Taliban presence
- Insurgent attack
- Insurgent attack resulting in death
- NATO/Afghan offensive
- NATO/Afghan offensive resulting in death

NATO/ISAF/US up from 36,000 troops in January 2007 to 52,000 in June 2008. ANA and ANP also up -- ANA from 20,000 to 58,000 -- but US doctrine would call for force of 400,000.

Still short 2-3 brigade equivalents.

Still only 5,000-20,000 Taliban fighters, plus roughly 1,000 each for Haqqani and Hekmatyar groups.

Fighting very local. 70-71% of incidents in 2007 occur in 10% (40) of 364 regional districts in Afghanistan. Most in 10 districts with 6% of population.

See same distribution from January-May 2008 with 76-77% of incidents in largely the same 40 districts. 11-12% in Helmand where adding Marines has increased incidents by some 50%

Some increase in Farah and Nimruz provinces.

Suicide attacks not rise to extent predicted at start of the year.
• No major increase in violence in 2008 as of early June, 2,015 attacks from January 1 to end May.

• But, loss of Pakistani activity since early 2008 has greatly empowered Taliban and other groups in East. 50% rise in incidents in RC East during January-May. Offsets most of US gains during winter campaign.

• So far, attacks have taken place in only 33 (8.2%) of districts, affecting 4.9% of population. Many (231) concentrated in one district (Garmser) in Helmand.

Source: On the record discussions with General McNeill and farewell press briefing at Pentagon on June 13, 2008
Senlis, “Stumbling into Chaos, Afghanistan on the Brink, November 2007, p. 8.”
Meeting the Challenge of Afghan and Pakistani Terrorism and Instability

- Help Afghanistan and Pakistan directly engage in ideological struggle for the future of Islam and religious legitimacy.
- Development aid to Afghanistan and Pakistan.
- Continued support for US and NATO/ISAF deployments.
- Act to prevent transfers of funds, “volunteers,” and suspect personal movements.
Demographics, Foreign Labor, and Social Change
The Broader Security Challenge

- 70% of native population under 30.
- 30%+ is 14 years or younger; two decade long youth bulge still to come.
- Overreliance on foreign labor in many countries
- High underemployment of native labor and low productivity gain – career prospects.
- More women graduating secondary school and university in key countries; slow and uncertain evolution in role of women.
- Poor to mixed income distribution.
- Face global standards of competition.
- Uncertain evolution of politico-religious-social legitimacy.
But Energy Is Only Part of Problem

GCC population

Growth thru
2010
2.0%

GCC demographic footprint

Gender
males females

Age
15< >60 15-60

Labor participation
not on the job workers

Nationality
nationals expatriate

Source: NBK GCC Economic Outlook, 2008. Pg. 9.
Key Disparities in the GCC States

Increase in oil wealth is matched by major growth in non-oil sector, but major problems remain:

- Income distribution
- Differences in per capita income
- Dependence on foreign labor
Total Population of Gulf States:
2005 vs 2050

(UN Data)

<table>
<thead>
<tr>
<th>Country</th>
<th>Population 2005</th>
<th>Estimated Population 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahrain</td>
<td>724,788</td>
<td>1,173,037</td>
</tr>
<tr>
<td>Iran</td>
<td>69,420,607</td>
<td>100,173,596</td>
</tr>
<tr>
<td>Iraq</td>
<td>27,995,984</td>
<td>61,941,632</td>
</tr>
<tr>
<td>Kuwait</td>
<td>2,700,000</td>
<td>5,240,174</td>
</tr>
<tr>
<td>Oman</td>
<td>2,507,042</td>
<td>4,638,971</td>
</tr>
<tr>
<td>Qatar</td>
<td>796,186</td>
<td>1,333,342</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>23,612,360</td>
<td>45,030,295</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>4,104,291</td>
<td>8,520,789</td>
</tr>
<tr>
<td>Yemen</td>
<td>21,095,679</td>
<td>58,008,932</td>
</tr>
</tbody>
</table>

Note: Estimates for 2030 and 2050 are based on median variant projections

Source: Adapted by Anthony H. Cordesman from the United Nations Population Division’s annual estimates and projections
Population of Gulf States Ages 0-14
Years: 2005 vs 2050

(UN Data)

Note: Estimates for 2030 and 2050 are based on median variant projections

Source: Adapted by Anthony H. Cordesman from the United Nations Population Division’s annual estimates and projections
Meeting the Broader Security Challenge

- There is no lasting hope of security that does not offer Gulf youth meaningful careers and fair distribution of income.
- Economic and social development are critical aspects of security and key aspects of counterterrorism.
- Job creation means reducing dependence on foreign labor, but security means give foreign labor more rights, protection, and fair wages.
- Education and private domestic and foreign investment are twin tools to making native labor globally competitive.
- Must develop the GCC, not leave some states with critical disparities in per capita income.
- No global competitiveness if women excluded.