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Iranian Mining of the Strait of Hormuz – Plausibility and Key Considerations

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Introduction

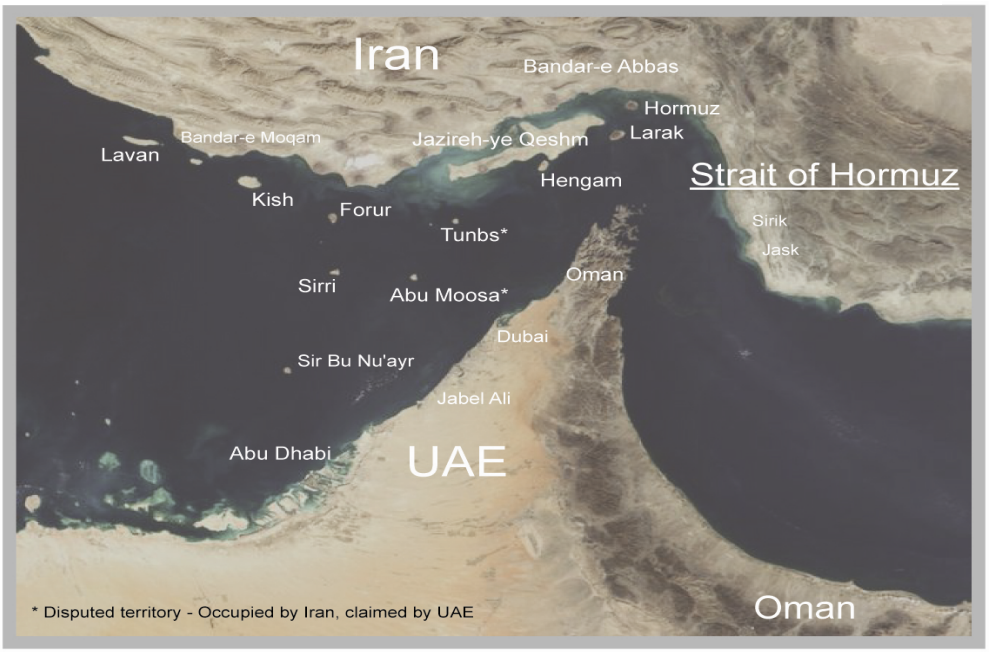
The Strait of Hormuz is a strategic chokepoint in the Arabian Gulf through which ninety percent of all Gulf exports pass –the equivalent of around forty percent of all daily traded oil, globally. The Strait consists of an inbound and outbound corridor for transiting traffic, each 2 miles (3.2km) wide and separated by a buffer zone of the same width. Connecting the Sea of Oman to the Arabian Gulf the Strait, with the long Iranian coastline above and Omani and Emirati territory lining its southern periphery, is some 280km long in its entirety and just 45km wide at its narrowest point. Closing the Strait of Hormuz would demonstrate the extent of Iranian power, denying the U.S. and allies access to critical nodes in the Arabian Gulf and send the price of oil shooting through the roof. In the process, Iran will be able to draw international attention to its wider conflict with the West and possibly strengthen its bargaining power. Success in closing the Strait of Hormuz could arguably be a greater strategic victory for the Iranians than the acquisition of even the nuclear bomb.

Most analysts agree that closing the Strait of Hormuz would be attempted as an absolutely final resort for Iran, where perhaps only preemptive strikes designed around regime-change or attempts to neutralize critical national capabilities would lead Iran to this course of action. In this sense, it is difficult to see an attempt by Iran to close the Strait in isolation to other actions it may take against 'aggressor' forces – and any such attempt would probably occur in the midst of a rapidly escalating confrontation unlimited to any one front. Moreover, some eighty seven percent of Iranian imports and about ninety nine percent of its exports are by sea, and so closure to the Strait will probably impact Iran more severely than any other single nation. However, Iranian threats to 'close' the Strait of Hormuz must be taken seriously for it will remain a vital dimension of its grand strategy for some time more. This report does not in any way suggest the imminence or likelihood of Iran closing the Strait or indicate the imminence of pre-emptive strikes against Iran or support for them, but seeks only to explore the aspects of an important topical theme in the emerging security environment in the Gulf region.

Iran may attempt to close the Strait in pre-emption to a strike against it which it may sense is imminent, or retaliate to economic sanctions of they prove particularly effective and contribute to spiraling internal unrest. The Strait could potentially be closed in a number of different ways however doing so through the use of naval mines is probably the most effective method Iran would employ. According to some American intelligence experts, Iran may be able to close the Strait with as few as three hundred naval mines – it possesses ten times that number. Many experts agree that closing the Strait largely rests on the ability of Iranian forces to rapidly lay a web of naval mines in its narrow passages without early interception. The size and sophistication of the Iranian mine arsenal, the capacity and availability of its mine-laying platforms, its overall military strategy whilst undertaking such operations, and key variables such as the circumstantial political and military contexts in which action is initiated will determine the ability of Iran successfully carry out its mission objectives. This report seeks to explore these factors and ascertain the credibility of Iranian threats to close the Strait by the

employment of naval mines.

Figure 1: A satellite image of the Strait of Hormuz illustrated with key sites *(Source: Visible Earth – NASA)*



The Weapon

Naval mines represent a highly desirable, highly cost-effective low-technology weapon that can inflict considerable loss to adversarial forces. At the end of the Tanker War in 1988, an Iranian mine costing US$1,500 was able to inflict damage amounting to US$96 million to the USS Samuel B. Roberts in the Arabian Gulf (see Figure 3). Naval mines are essentially a defensive weapon employed for access denial where their operator is seeking to manipulate the movement of enemy forces by restricting access to critical spaces. Naval mines are force multipliers and compel the expeditionary force to dedicate resources to mine clearing. This in turn creates demands for a greater force level and thereby theoretically leaving larger parts of its wider force exposed to other forms of attack.

Effective mining can also slow-down a planned offensive by enemy forces: For example, during the Korean War (when North Korea eventually damaged eleven U.S. warships with naval mines) the initial landing of 50,000 American soldiers was delayed for a week, disrupting logistics and other operating considerations. All the while, the threat of casualty from the deployed mines remained in place, giving the mine-laying force a psychological advantage and a first line of defense. In the post-WWII era, naval mines have accounted for an overwhelming seventy seven percent of total U.S. ship casualties and as such naval mines are arguably the most effective modern naval weapon invented.

Costing as little as US$1000 in their simplest configurations, naval mines are cheap to manufacture, have relatively uncomplicated maintenance requirements, possess longevity, and can be deployed from various conventional and adapted low-cost platforms. Iran is one of nearly two dozen nations that manufacture mines. Naval mines allow weaker forces to challenge more conventionally superior forces, and coastal states often seek to exploit their application to deter more powerful naval forces. The geodynamics of the Strait – which is only 55 kilometers

wide at its narrowest point and probably no more than 50 meters at its deepest, makes it a relatively easy area to mine –and its significance as critical energy supply route within the context of Iranian military doctrine makes it even more appealing.

Naval mines can be adapted for use against specific target sets. The different types of naval mine are defined according to their actuation triggers (if they are simple contact mines or if they are influence mines fitted with more sensitive triggers), and the position in water they are designed to be laid (on its surface, in the water column, or on the seabed). Banned by international law, drifting mines are the oldest and simplest type of naval mines – they float on the surface of the water and move with the water current. Because drifting mines can be dropped from the air or deployed from small boats, they are the easiest of all mines to deploy (also however the easiest to counter). It is conceivable that drifting mines deployed in the Strait of Hormuz may be carried further inward into the Arabian Gulf by water currents – if they are carried by the water current they will highly likely end up in Iran's own waters, could easily end up in Emirati waters and may over enough time potentially end up in or near Iraqi, Saudi, Kuwaiti and even Qatari waters and offshore facilities. Moored mines are a more sophisticated type of mine because they float in the underwater column well beneath the surface of the water at pre-programmable depths. To enable their buoyancy moored mines must carry smaller charges – however the difficulty in detecting modern variants makes them particularly lethal.

Figure 2: The USS Tripoli suffered extensive damage from an Iraqi naval mine in February 1991 during the first Gulf War. Today, the naval mines possessed by Iran are ten times as powerful as the type which caused this damage. (*Source: Defense Visual Information Center -US DoD)*

Figure 3: The USS Roberts being towed after it almost sank because of hull damage. It was hit by a Iranian-laid basic contact mine as it participated in Operation Earnest Will in April 1988. As a response, US forces initiated Operation Praying Mantis against Iran, sinking two vessels – effectively ending further Iranian hostilities by raising the costs of conflict to an unacceptable level for Iran.(*Source: As above)*

Bottom mines rest on the seabed itself, which makes them harder to detect and to sweep – especially if they are made using non-magnetic materials and are fitted with influence sensors. This is despite the fact that they have the largest sizes of all mines, and carry the largest explosive charge (1.5 tons at the high end). Bottom mines are less effective in deeper waters because their explosive energy must be powerful enough to damage the target ship after detonating some distance below. However, the Strait's relative shallowness probably makes water depth a limiting rather than altogether deterring factor. Rising mines are designed to fire a projectile towards the vessel upon target acquisition and normally represent the most advanced type of mine. Typically, rising mines carry smaller explosive charges because the payload itself is rocket-propelled. However, rising mines are able to inflict great damage

because they direct their destructive energy on the basis of physical proximity to the target.

The Threat

Overall, the technology employed by naval mines is in itself not very complex and thus not particularly difficult to access even for developing military powers like Iran. Moreover, recent advances in detonation technologies are rendering traditional minesweeping techniques increasingly ineffective. For example, influence mines fitted with sophisticated target detection devices (TTDs) are able to leverage multiple sensor signals and will detonate only when the fed criteria are met. For instance, mines can be programmed to respond to specific magnetic, acoustic, or pressure signatures that can be emitted only by certain types of vessels (i.e., large vessels). Mines can today also be controlled remotely allowing operators the ability to override pre-set criterions. Taken together, recent advances in mine technology can have the effect of neutralizing minesweeping technology currently fielded by most expeditionary naval forces. Such new technologies are also being used to adapt older contact mines and thereby helping operators like Iran maintain large numbers of more capable mine stocks.

American intelligence estimates the mine arsenal of Iran to number around two thousand mines, although other sources speculate the number could be as high as five thousand mines. Iran is one of nearly two dozen nations that can manufacture mines domestically although its more advanced inventory of naval mines is largely comprised of purchases from Russia, China, and North Korea. Iranian produced mines are often replicas of Chinese-designed mines fitted with upgrades and modernizations (the Chinese were involved in the development of Iranian mine manufacturing facilities), and may be able to produce its own rising mines – it discussed such transfer of technology with Beijing as far back as the early 1990s. Iran is also able to retro-fit older contact mines with new technologies such as smarter actuation fuzes, and it claims to be able to domestically produce mines using non-magnetic materials – a stealth measure which makes them much less susceptible to detection by high frequency sonar. Iran is believed to possess an arsenal numbering in the hundreds of bottom laid influence mines.

The ability of Iranian forces to rapidly deploy mines depends on variables related to its mine-laying platforms – factors perhaps more important than even the qualitative exactitudes of its mine arsenal. For the types of mines Iran possesses, submarines represent the best mine-laying platforms for rising, bottom, and moored mines. For such endeavors, Iran's most capable assets are its fleet of three stealthy Kilo-class submarines which come with six torpedo tubes that can lay twenty-four mines per sortie. Although the operational readiness of these submarines is not judged to be extremely high (one or possibly two may not be fit for operations), they represent the jewels of Iranian naval power and are basically attack vessels so mine-laying will probably be a secondary role for them – probably limited to the earliest stages of its mine-laying efforts.

In addition to its Kilo-class boats, Iran is now believed to operate seven Ghadir-class and one Nahang-class midget submarines, all of which are indigenously built. Few details exist on the precise weapons fitted on the Ghadir-class submarines although they are known to have two torpedo tubes and by that calculation can probably lay eight to sixteen mines per sortie. The Nahang-class submarine is wider and has a greater tonnage than the Ghadir-class leading to speculation that the vessel carries a greater number of mines or larger mines (rising bottom or simpler bottom mines) or is possibly a mother-ship for swimmer delivery vehicles. The Nahang-class also has two torpedo tubes.

Iranian forces will also utilize unconventional mine-laying platforms such as converted small boats (some of the fastest in the world), open-decked ships (particularly appealing with the larger staging areas they provide), and even disguised merchant vessels. According to unconfirmed reports, Iranian naval forces may possess up to three thousand small boats now, although American estimates of currently manned boats number are around three hundred – this number could however be doubled at short notice. Undoubtedly, small boats have inherent limitations: Their limited operating ranges means they are unable to operate far from shore, light armoring means they offer little crew protection, because of their size they carry limited weapons loads, and they have difficulty in engaging targets not in close proximity – accurate targeting is challenging from unstable platforms, especially at high speeds.

Figure 4: The commissioning of an Iranian Ghadir-class midget submarine. (*Source: Iranian Student's News Agency -ISNA)*

On the other hand, small boats are agile, difficult to detect, and inexpensive for conducting operations. Moreover, their ability to deploy around between two and six mines per sortie (depending on size) means they will be at the heart of any mass mine-laying effort by Iran. While Iran could also use air assets to drop mines, it is unlikely to depend on aerial platforms in a significant way. Mine-laying operations will be staged from its numerous coastline bases as well as forward deployed bases on islands and offshore oil platforms in the Gulf (primary links in the Iranian surveillance network), which may already house upwards of five thousand forces.

In the face of a wider military confrontation, Iran is also likely to use it vast fleet of small craft outfitted with guns, anti-ship missiles and short-range rockets to disrupt U.S. and allied nation operations. Iranian objectives to disrupt operations by harassment and low-intensity attack from multiple directions simultaneously will be carried out mainly by its fleets of at least ten Chinese-made Houdong missile boats equipped with four Noor (with a range of 150km) anti-ship missiles each, five Chinese-made catamaran missile boats equipped with two Iranian- manufactured Kosar anti-ship missiles each, and upwards of twenty five possibly modified North Korean-made Peykaap II–class missile boats, which can be outfitted with either homing torpedoes or surface-to-surface missiles. These missile boats would be augmented by at least forty light patrol boats equipped with rocket launchers and heavy machine guns, and

Figure 5: A barge caught by US-led coalition forces in March 2003 concealing eighty six naval mines hidden by Iraqi forces under large drums. *(Source: US Navy Website).*

batteries of anti-ship and man-portable surface-to-air missiles as well as anti-aircraft guns positioned on coastal and island bases housed at sites such as Assalouyeh, Al Farsiyah, Halul, Sirri, Abu Musa, Bandar-e-Abbas, Khorramshahr, Larak, and Jask.

Table 1: Iranian Mine-Laying Platform Capacities

Platform Type	Class	Numbers	Mining Capacity (per sortie)
Submarine	Kilo	3	24
Submarine	Ghadir	7	8-16
Submarine	Nahang	1	8-16**
Swimmer Delivery Vehicle	N/A	8	1-2
Patrol Craft	Various	8	
Fast Boats	Various	300-3000**	2-6
Dhows	N/A	Undeterminable	8-40
Commercial Vessels	N/A	Undeterminable	Undeterminable

*The capacity of each platform logically depends on the type of the mines being laid, which vary in size. Some platforms have limited capacities – for example, the Kilo-class submarine lays mines through six 533mm diameter tubes and thus cannot lay particularly large mine variants. Alternatively, platforms such as dhows come in various sizes and have holding capacities according to these. The laying capacities provided are approximate and intended as a guide. The indicated numbers of platforms are estimates and do not consider factors of operational readiness.
** There is speculation the Nahang-class submarine may be a mother-ship for swimmer delivery vehicles and thus may not primarily function as a mine-layer, in which case the indicated capacity here would need revision.
*** The number 3000 is the high end of reports. At least 300 are currently operationally ready however reportedly up to 3000 other boats in the possession of Iranian forces are convertible quickly and cheaply to carry out mine-laying missions.

The Impact

Unless it was militarily prevented from doing so, the extensive inventory of mines possessed by Iran and its ability to utilize conventional and improvised mine-laying platforms means that it possesses a credible capability to rapidly mine the Strait of Hormuz and enforce a blockade in one of the world's most critical maritime traffic passage with relative ease. Massively critical questions such as whether Iran begins its mine-laying operations in pre-emption to a U.S. (or Israeli) attack or in retaliation to an attack (when its capability to do so would have been weakened), how early it is detected, and if an open conflict between Iran and the U.S. ensues or not, and if it would be limited in nature or not will all determine the likelihood of success in Iran being able to close the Strait. The first three hours of any Iranian mine-laying operations will be the most critical – if it is unable to accomplish key mission objectives within this time-period then it is likely to be intercepted and prevented from achieving strategic objectives beyond this timeframe.

Figure 6: The Kuwaiti tanker Al Rekkah was re-flagged Bridgeton under the US as part of Operation Earnest Will where US naval convoys provided protection to ships transiting the Gulf. The tanker was hit by an Iranian mine and suffered considerable damage. *(Source: Missouri University of Science and Technology)*

The psychological impact of Iranian claims to have mined the Strait will however suffice in disrupting global energy

supplies. Approximately fifteen supertankers transit the Strait on a daily basis. Commercial shipment firms would be generally unlikely to take the risk of transiting through hostile spaces: Even if (as some experts suggest) the likelihood of large tankers being sunk by naval mines was low (apparently because of their ability to absorb the energy), it is unlikely that many companies in the short-term would be willing to risk potentially millions of dollars in damage to their vessels – which would still be exposed to attack from Iranian anti-ship missile ranges. During the Tanker War, both Iraqi and Iranian forces targeted merchant vessels and damaged, by one estimate, a total of 546 vessels. Today, Iranian mines are ten times as powerful as those it deployed during the Tanker War and its anti-ship missiles are much more lethal. In most cases, the potential costs of transiting through the Strait would vastly outweigh the potential benefits. The price of oil will shoot up exponentially simply because of the way in which commodity trade markets today react to impending geopolitical uncertainties and conflict scenarios. The economic impact will be felt not just with Arab Gulf states – some ninety percent of their hydrocarbon and other oil-derived products exports cross the Strait – but around the world from Venezuela to Japan. Iran will stand at the center of international public attention.

Commercial activity may lay suspended even if the U.S. and allied nations offered military escort to tankers because any such convoy may be the prime target of Iranian hostility, depending on the political and military circumstances at the time – if the U.S. had mobilized assets in preparation for a war this would almost certainly be the case. However, because under international law an attack on a flagged ship can be treated as an attack on the flag nation, it is unclear what Iran would do if a Turkish, Chinese, Indian or Emirati flagged ship attempted to transit the Strait. Would Iran be happy to come to 'arrangements' with nations opposed to military action on Iran, and would this be possible? The answer is: Probably. It however remains unclear if nations would interpret it as a declaration of war if their flagged vessels were hit by Iranian mines.

Any mine-clearing process is slow, tedious, and costly: Clearing mines can take two hundred times as long as the time it took to lay the mines. Once mined, the Strait will probably take months to clear in its entirety but could be made partially accessible for essential non-military maritime traffic within weeks depending on circumstantial subtleties. If traditional minesweeping techniques prove ineffective because of the level of sophistication of Iranian mines, mine clearing efforts will have to revert to more time-consuming strategies and depend heavily on unmanned underwater vehicles (UUVs) as well as human divers. Iran could thus inflict casualties even some time after an official end to tensions or hostilities, as happened towards the end of the First Gulf War when two U.S. warships were damaged by Iraqi mines.

The generally low availability of mine countermeasure resources (which are expensive assets but vulnerable targets) in the region compounds the difficulty in any rapid mine clearing efforts, especially if mines were laid en mass. The U.S. has between four to five mine countermeasure vessels ported in Bahrain at any given time, and although reinforcements could be summoned this would take weeks. The French Navy, British Royal Navy, Royal Saudi Navy, and UAE Navy also possess a mixture of mine countermeasure vessels but they are generally limited and their employment presumably depends on the political stances of the respective leaderships at the time as well as the timing of clearing operations (such as if it is during a conflict or after an end of hostilities).

Key Considerations

Iranian doctrine has developed over time with its forces having drawn lessons not only from their own combat experience from the Iran-Iraq War and the limited confrontations with U.S. forces (such as Operation Praying Mantis, where Iran lost two vessels) but also by studying recent conduct of war in Iraq and Afghanistan by U.S. and coalition forces. Realizing its vulnerability to air strikes, Iran has already introduced changes to its command and control structure by decentralizing units. Mission-specific orders to smaller operating units will reduce and possibly eliminate their need to remain in contact with the chain of command, allowing Iranian forces to continue operations even in the face of serious damage to their command and control network. The same vulnerability has in part driven Iranian procurements of large numbers of small boats, which are much less susceptible to rocket attack.

The mobility provided by small boats is highly beneficial in a heavily mined environment: Iranian forces may benefit from information superiority in the battlespace for a period of time because U.S. and allied forces will in the vast number of cases not immediately be able to tell real mines from decoys and simple contact mines from influence or rising mines on the one hand, or be able to keep track of hundreds of moving Iranian targets in the area of operations on the other. Given the exposure of U.S. and allied forces to Iranian missile ranges, mobility will be crucial not only to achieving situational awareness but also consolidating passive defense. Larger vessels will depend on freedom of movement to exploit the relatively limited intelligence- gathering and sharing capabilities of Iranian forces, a requirement that will depend on assets such as UAVs, high frequency sonar, and UUVs to detect threats early. Forward deployed smaller craft outfitted with guns and rockets may be employed to create a mobile forward line of defense that allows U.S. and allied forces to engage Iranian units early on, restricting their movement, ability to gather intelligence on enemy positions, and opportunities to launch attacks.

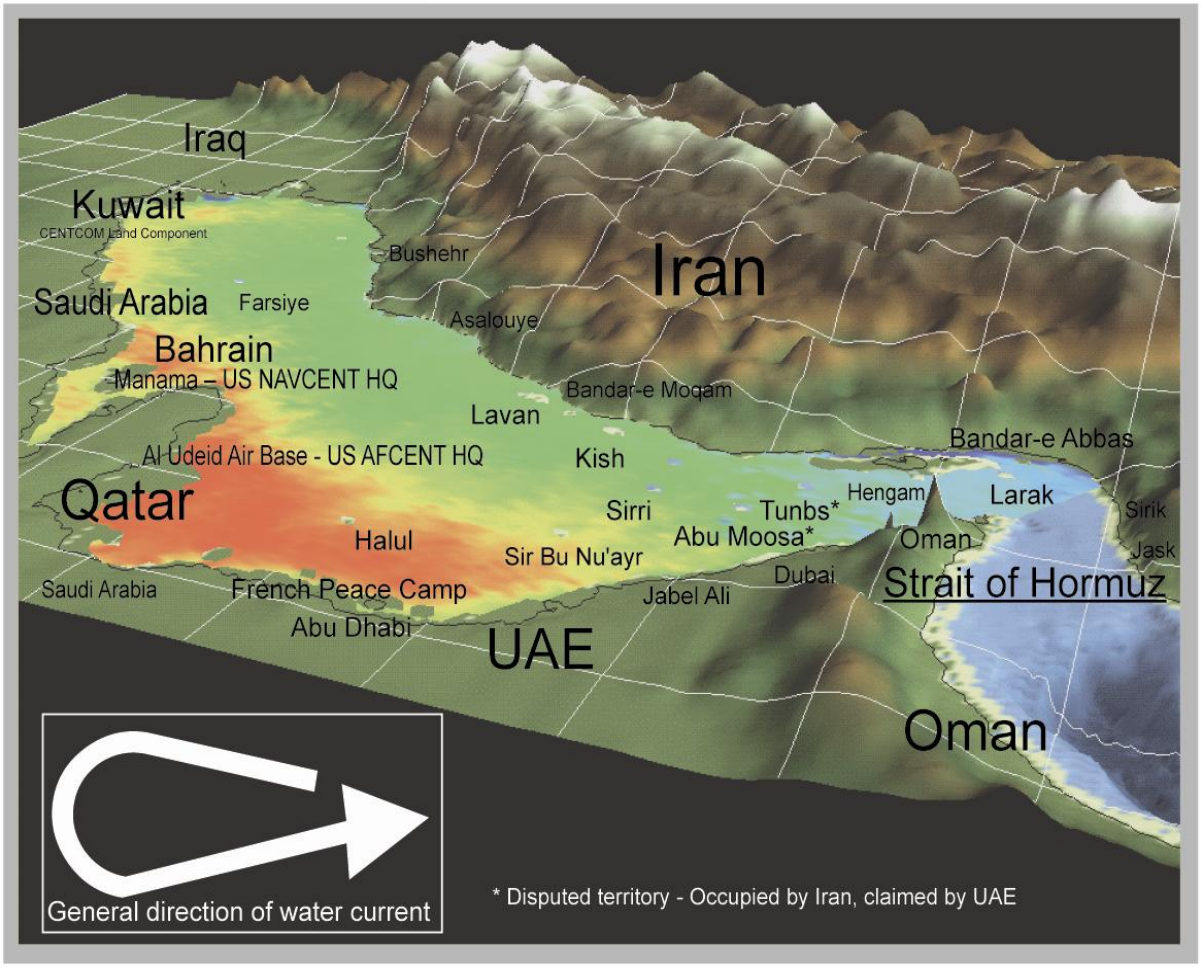
Table 2: Iranian Missiles (Anti-Ship and Anti-Ship Derivatives)

Name	Raad	Noor	Kosar
Indigenously Produced	Yes	Yes	Yes
Launch	Ground	Ground & Surface	Ground & Surface
Payload Type	High Explosive	High Explosive	High Explosive
Payload Weight (kg)	~ 500	~ 165	~ 30
Overall Weight (kg)	2998	715	100
Length (m)	7.48	6.39	2.51
Speed (m/s)	Mach 0.8	Mach 0.9	Mach 0.8
Range (km)	360	150	20

Key factors that will determine the ability of Iran to successfully mine the Strait include the denial of air space to U.S. air forces, the availability and condition of operationally worthy mine-laying platforms, the safety of supply depots and missile launch sites, the qualitative and quantitative nature of Iranian mine stocks, the level of training Iranian officers have received and their ability to conduct high-intensity operations covertly, the extent to which mine-laying platforms can evade detection and defend against underwater and airborne attacks, and the ability of Iranian forces to cause target overload and harass U.S. and allied nation forces. The ability of Iranian forces to swarm and inflict serious or symbolic damage on U.S. and allied nation military ships will be vital to the morale of its fighting forces as well as driving public perceptions of balances of power at home and away

Alternatively, key factors that will determine the ability of U.S. and allied forces preventing Iran from mining the Strait include early interception of Iranian intentions, neutralizing the Iranian air defense network to dominate the airspace, destroying Iranian supply depots and missile launch sites at the early stages, inflicting maximum damage on Iranian underwater assets, and detecting and destroying small boats to remove the sense of invulnerability their operators currently feel. These factors rest on achieving dominant situational awareness – detecting, tracking and targeting large numbers of low-signature emitting threats over vast areas may however challenge existing surveillance and reconnaissance systems. Unmanned aerial vehicles with high endurance and advanced optical sensing capabilities will be indispensible in countering small, highly mobile units of Iranian forces around the clock. Real-time intelligence sharing capabilities will be vital for maintaining a comprehensive maritime picture to support time-critical decision-making against an evasive and highly mobile enemy whose doctrine stresses the avoidance of frontal confrontations.

Figure 7: A virtual snapshot of the Arabian Gulf illustrated with key coastal sites. *(Source: Geosystems Research Institute (map only – author's own illustrations))*



What is unclear is if the conflict escalates or not and if it does then to what extent (if its remains limited to the Strait of Hormuz or spreads to 'other' fronts) when Iranian ports, supply depots, and military bases housing missile launch sites are attacked – because they would necessarily need to be neutralized if pre-emptive or preventative military action was taken. Under these circumstances, would Iranian nuclear facilities also be attacked? If this was done, Iranian ballistic missile storage and launch sites would also have to be destroyed in order to neutralize

the retaliatory capability of Iran. Under such circumstances, the conflict would probably escalate to total war and the U.S. and its allies will encounter Iranian-linked groups in Lebanon, Palestine, Iraq, and Afghanistan unleashing a wave of attacks against U.S., Israeli and Western targets and destabilizing the wider region stretching from Egypt to Pakistan. Gauging possible Iranian reaction to having its core military and critical national interest sites attacked can only be hypothetical, but it is vitally important in weighing up the emerging regional security environment and forecasting the balances of power that will exist within it. While the nature and complexities of the possibility a total war between the United States and Iran are too complex to summarize here, they are too important to not mention as a passing note.

Implications for the GCC

Variables that are undeterminable at the present time will in large part dictate the impact on Arab Gulf states if Iran managed to mine the Strait and enforce some sort of a blockade therein. While the economies of GCC members will be critically dependent on energy exports for at least another decade, the implications of a blockade of the Strait will also vary in seriousness from member to member. A potential blockade of the Strait will have a considerable financial costs for Arab Gulf states, particularly the UAE, Qatar and Kuwait whose borders are situated completely on the inside of the Arabian Gulf enclave and currently lack the energy pipeline infrastructure to sidestep tanker shipments through the Strait. In 2008, the UAE, Kuwait, and Qatar were the third, fifth, and fifteenth largest oil exporters in the world, respectively – and Qatar is now believed to sit on fifteen percent of the world's proven gas reserves. A disruption of energy supplies from these three GCC members will have rippling impact on economic activity and financial markets across the world.

Oman will be least affected because of its location outside the Strait and the fact that all of its oil and gas export outlets are situated outside the Strait. Saudi Arabia may be able to leverage off higher oil prices more easily as it is possible to temporarily bypass the Strait by using land routes to transport oil to eastern ports – although this will be costly, inconvenient and a remedy of limited scope. Saudi Arabia has a large pipeline with a capacity to transport five million barrels per day terminating at Yanbu on the Red Sea. Riyadh may also decide to begin using the Tapline again, which terminates at Zahrani on the Lebanese Mediterranean Sea and can transport around half a million barrels per day (b/d). Iraq has some export capacity that bypasses the Arabian Gulf – through Turkey it can transmit 1.65 million b/d and through Syria/Lebanon around 800,000 b/d. Additionally, the Iraqi Pipeline through Saudi Arabia (IPSA) with a capacity of 1.65 million b/d, terminating at Yanbu on the Red Sea) which was built in the 1980s could be re-activated, although there remain some unresolved issues over Iraq being able to use this pipeline in the near future. Of course, some of these routes crossing Syria and Lebanon remain vulnerable to sabotage from Iranian proxies and sympathizers.

The Gulf's main gas exporters the UAE (around six million tons a year from Abu Dhabi) and Qatar (reaching seventy seven tons per year by the end of 2010 from its current capacity of around fifty million tons) channel their exports through the Strait in liquid form (liquefied natural gas – LNG). Currently, no pipelines exist in the Arabian Gulf to export gas outside the GCC – although the Dolphin Pipeline transports Qatari LNG to the UAE, also connecting across the border into Oman. States like the UAE and Qatar may be planning more seriously now for an

overseas oil and gas terminal and could move forward on using facilities in Oman, look to the close-by Gwadar deep seaport in Pakistan – or both.

Imports too will be seriously affected, pushing raw commodity and consumer goods' prices up and enlarging the financial cost to the economies of GCC states. Planning for such conditions on a GCC and on bilateral levels is important so that issues of sufficient stocks of critical items, cross-border movements of goods in emergency situations. The availability of military assets to ease pressures for cargo transportation over a period of one to three months are already high as GCC states have invested considerably in their strategic airlift capabilities over the past few years.

The biggest challenge for GCC leaderships will however be on the political level: Depending on the circumstances, how they manage dodge frontal militaristic confrontation with Iran whilst firmly opposing its actions, stir domestic public opinion in their favor without pitching themselves too wholly into either the Iranian or U.S.-Israeli camp, and positioning the GCC collectivity as a permanent diplomatic heavyweight on the international level whose independence and influence can help resolve the regional discrepancies pushing the Middle East dangerously into a new phase of volatility.

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