Iran: Conventional Military Capabilities

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Author: Claire Taylor
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This note examines the conventional military capabilities that Iran possesses, on the basis of publicly available information. It focuses specifically on Iran's ballistic missile programme which has received increasing attention in light of Iran's perceived nuclear ambitions and the recent changes to the US' missile defence proposals in Europe.

It is not intended as a comprehensive assessment but a brief introduction to Iran's military capabilities. It also does not examine Iran's nuclear programme which is outlined in Library Standard Note SN/IA/4262, *Iran's Nuclear Programme: An Overview.*

Contents

1 Brief Assessment of Military Capability

Prior to 1979 the US was the main exporter of military equipment to Iran. During this period Iran was subsequently able to purchase some of the most sophisticated conventional weaponry available at the time. Since 1979, however, and the breakdown of Iran's relations with the West, Iran has had to rely on the import of military equipment from other suppliers, primarily the Soviet Union (now Russia) and China. More recently the Ukraine has also been added to that list of significant suppliers; while India has also been seeking to strengthen its ties with the country.[1] Over the last few years officials from Russia and Iran have met on several occasions in order to discuss ways in which defence co-operation between the two countries could be strengthened further. These historical ties are reflected in the nature of Iran's conventional equipment inventory, which is set out in detail below.

A constant feature in any assessment of Iran's conventional capabilities is the sheer quantity of military force that it possesses and in particular its manpower strength which is currently estimated at 523,000 active personnel, nearly a quarter of which is Islamic Revolutionary Guard Corps personnel. The reserve strength of the armed forces is an additional 350,000; while the Basij paramilitary resistance force has been estimated in excess of 1 million

[1] This position was reiterated during an official state visit to Iran by the Indian Foreign Secretary in December 2007.

personnel when mobilised. As such, Iran has the largest potential military manpower capability in the Middle East region.

What is less certain, and the subject of much debate, is the combat effectiveness of those forces. While many commentators consider Iran's military to be capable of regional power projection and deterring or defending against conventional threats from some of Iran's weaker neighbours in the region, its ability to project power beyond its immediate sphere of influence, against more militarily capable countries, and indeed defend its own borders and territory from superior military forces, has been regarded as questionable. As Anthony Cordesman of the Center for Strategic and International studies has suggested:

> Iran is not a weakling, but neither is it capable of major aggression or becoming a regional "hegemon" if it meets effective resistance from its neighbors and the US.[2]

For the size of Iran's armed forces, the requisite defence budget is small. In addition a significant percentage of Iran's armed forces are conscripts who traditionally receive little military training and therefore possess marginal military effectiveness. A large part of Iran's conventional arsenal is also Western, and particularly US-sourced. Consequently the ability to procure spare parts, in-service support, upgrades and training for that equipment has been minimal in the last few decades. Consequently much of Iran's equipment inventory has degraded rapidly and is becoming increasingly obsolete.

In a report on Iran's military capabilities in 2006 Anthony Cordesman outlined:

> Iran has been more conservative in modernizing its conventional military forces. Iran has never rebuilt the level of conventional forces it had before its defeat in its war with Iraq in the 1988. Iran's conventional military readiness, effectiveness, and capabilities have declined since the end of the Iran-Iraq War, and Iran has not been able to find a meaningful way to restore its conventional edge in the region […] Iran has only been able to order $2.3 billion worth of new arms agreements during 1997- 2004. Saudi Arabia ordered $10.5 billion, Kuwait $3.1 billion, and the UAE ordered $12.0 billion. Even a small nation like Oman spent $2.5 billion. This inability to modernize its conventional forces is seen by many experts as one of the reasons for Iran's "nuclear ambitions" and its focus on building its asymmetric capabilities.[3]

On the other hand, a number of analysts have suggested that the sophistication of certain Iranian capabilities and assets and the support it has received for its ballistic missile programme from North Korea, China and Russia has allowed Iran to compensate for weaknesses elsewhere in its conventional forces, in particular in its air power. The Islamic Revolutionary Guard Corps' Naval Force has been highlighted as one such capability. Utilising that force, Iran has the short term ability to asymmetrically affect Coalition operations in the Gulf region, and specifically in the strategically important Strait of Hormuz which links the Persian Gulf and the Gulf of Oman and through which 40% of the world's crude oil supply passes.[4] Indeed it is the only arm of the IRGC (as outlined below) that has its own military assets. In the CENTCOM 2006 Posture Review, former CENTCOM commander General John Abizaid stated:

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2 Anthony Cordesman*, Iran: hegemon or weakling*, 28 February 2007

3 Anthony Cordesman, *The Gulf Military Forces in an Era of Asymmetric Warfare*, June 2006

4 The only other outlet from the Gulf is the Saudi Arabia pipeline to Yanbu on the red Sea, although this pipeline can only handle approximately five million barrels per day. Closure of the Strait would therefore create serious problems for the oil market. However, it is acknowledged that any disruption would be short term and unlikely to have a lasting impact on global oil supplies or the overall military balance due to the overwhelming military superiority of the US in the region.

> [Iran's] power projection capabilities stem primarily from its navy and ballistic missiles […]
>
> The Iranian navies continue their rapid growth. The IRGC Navy has been developed primarily for the Strait of Hormuz scenario in which Iran would attempt to "internationalize" a conflict by choking off oil exports through the Strait. To disperse large quantities of recently purchased small boats, high speed missile boats, torpedo fast attack craft, and midget submarines, Iran has embarked upon an expansion project for naval bases throughout its littoral. Asymmetric military strategies and naval force modernization, a key national priority, enhance Iran's capability for power projection in the region.
>
> The IRGC Air Force maintains control over most of Iran's ballistic missiles and rockets. The accuracy and reliability of its rocket systems vary, but Iran is capable of targeting all Gulf States, the Arabian Peninsula, Israel, and U.S. and Coalition forces in the region with little warning.[5]

An article in *Jane's Defence Weekly* on 13 September 2006 commented:

> Iran's inventory of ballistic missiles, and its assessed pursuit of a longer-range potential, are its primary means of delivering weapons of mass destruction to an array of potential targets in the region. Mindful of its inferiority in terms of strategic air assets, Iran's pursuit of a powerful indigenously produced strategic missile inventory is perceived in Tehran as critical to its regional security and as a deterrent to potential foreign aggression […]
>
> Tehran's ballistic missile assets should be seen not only as a deterrent but also, in terms of their capability to project power, as extended strike force-multiplying systems - primarily armed with conventional warheads, but with options for the delivery of biological, chemical and perhaps eventually even nuclear payloads with longer-range systems.[6]

In order to demonstrate the capability and effectiveness of its naval forces, since April 2006 Iran has conducted a series of major military exercises in the Persian Gulf and Strait of Hormuz intended to demonstrate the territorial defence capabilities of the Iranian Armed Forces and the ability to attack shipping and oil facilities in the Gulf. More recently those exercises have also focused on demonstrating Iran's missile capabilities and the testing of new missile variants and the TOR-M1 air defence missile system recently procured from Russia (see below). In June 2009 the Iranian air force also conducted a large scale exercise over its regional waters with the intention of enhancing its air capabilities but to also demonstrate its ability to safeguard its naval vessels from the air.

On occasion exercises have also coincided with US exercises in the region and in February 2007 with the arrival in the Persian Gulf of a second US aircraft carrier group intended to conduct maritime security operations in the region and provide support to US troops on the ground in Iraq and Afghanistan. However, the decision to deploy a second carrier group was interpreted by many commentators as a thinly veiled warning to Iran.[7]

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5 *2006 Posture of the US Central Command*, March 2006. A statement by General John Abizaid to the Senate Armed Services Committee

6 "Iran's ballistic missile developments", *Jane's Defence Weekly, 13 September 2006*

7 "Iran stages war games as US carrier arrives in Gulf", *Defense News,* 20 February 2007

2 Iranian Defence Expenditure

According to Stockholm International Peace Research Institute (SIPRI) the data on military expenditure in most Middle Eastern countries is uncertain.[8] Iran in particular does not include spending on the Islamic Revolutionary Guards Corps in its official defence budget. This is despite the fact that, with ground, air and naval forces as well as a missile unit, it accounts for a major share of Iran's military capacity (see below).

The following table shows Iranian defence expenditure in each year since 1989 in local currency and constant US$ as well as the military burden, defined as spending as a proportion of GDP.

According to the International Institute for Strategic Studies (IISS)[9] in 2007 Iran's defence expenditure was one of the lowest in the Middle East as measured by defence expenditure per head of population. The per capita figure of US$114 was lower in only Syria (US$76), Egypt (US$56) and Yemen (US$41). The highest levels of defence expenditure per capita within the region were in UAE (US$3,815), Israel (US$1,806) and Kuwait (US$1,500).

Military expenditure of Iran

	In local currency (bn rials)	Constant (2005) US$m	% of GDP
1989	621	1,238	2.4
1990	724	1,341	2.0
1991	824	1,304	1.7
1992	923	1,160	1.4
1993	1,517	1,574	1.5
1994	3,083	2,434	2.4
1995	3,324	1,753	1.8
1996	4,762	1,948	1.9
1997	6,227	2,171	2.1
1998	7,744	2,290	2.4
1999	12,992	3,200	3.0
2000	21,984	4,731	3.8
2001	26,996	5,220	4.0
2002	23,211	3,926	2.5
2003	31,633	4,594	2.9
2004	45,960	5,816	3.3
2005	64,655	7,213	3.8
2006	78,378	7,811	3.8
2007	76,283	6,486	2.9
2008	86,502	6,089	n/a

Note:

The figures do not include spending on the Islamic Revolutionary Guards Corps.

Source:

SIPRI Military Expenditure Database

http://www.sipri.org/databases/milex

[8] Chp 5, VIII, SIPRI Yearbook 2009

[9] The Military Balance 2009, IISS

3 Regular Armed Forces[10]

3.1 Army

The Iranian Army consists of 350,000 personnel, 220,000 of which are conscripts. There are five regional Corps HQ in the regular army structure consisting of four armoured divisions, six infantry divisions, one special forces brigade, two commando brigades, one airborne brigade, six artillery groups and a number of aviation groups. Although Iran's ground forces are deployed throughout the country, the majority are concentrated along the Iran-Iraq border.

Army capabilities include:

- In excess of 1693 tanks, including 1613 main battle tanks (T-72, chieftain, M-47, M-48, M-60 and T-62) and 80 Scorpion light tanks.
- Reconnaissance vehicles (35) armoured infantry fighting vehicles (610) and armoured personnel carriers (640).
- In excess of 8,196 artillery pieces, including multiple rocket launchers, mortars, self-propelled and towed.
- 17 transport aircraft, including Cessna 185s and F-27s.
- 50 Cobra attack helicopters, 45 support helicopters (Chinook CH-47C and Mi-8) and 128 utility helicopters (Bell 205 and 206).
- Tactical unmanned aerial vehicles (Mohajer II/III and IV).
- Surface-to-air missiles, including the SA-14, SA-16, SA-7 (Russian), QW-1 and HQ-7 (Chinese).
- Tactical surface-to-surface missiles, including an estimated 175 CSS-8 (Chinese), some Nazeat missiles (also referred to as the Mushak 120), and some Oghab missiles.
- Approximately 18 Scud B and Scud C missile launchers, and in excess of 300 missiles.
- A number of Shaheen 1 and Shaheen 2 medium-range ballistic missiles acquired from Pakistan.[11]

Despite the extent and relative sophistication of some of the assets retained by the Army the serviceability of some equipment has been questioned by a number of analysts. As outlined above this could feasibly be attributed to the fact that several of these capabilities, particularly the US sourced equipment, have been in service with the Iranian army for a number of years, some dating back to the 1970s; while others including some of the T-72 tanks and the infantry fighting vehicles have only been delivered since 2000.[12]

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[10] Information has been taken from a variety of sources including the *Military Balance 2009,* the SIPRI Yearbook 2008, the Center for Strategic and International Studies, *Jane's Defence Weekly* and the US Congressional Research Service.

[11] International Institute for Strategic Studies, *Military Balance 2006*

[12] *SIPRI Yearbook 2006*

3.2 Air Force

It is estimated that 52,000 personnel (including 12,000 air defence personnel) are serving in the Iranian air force at present, equipped with approximately 319 combat capable aircraft. A significant number of those aircraft are former Iraqi Air Force aircraft obtained by Iran during the Iran-Iraq war in the 1980s. Iran's aircraft capability is as follows:

- Five squadrons of 118 fighter aircraft including 25 F-14 Tomcat aircraft, 25 MiG-29A aircraft, 20 F-5B aircraft, 24 F-7M/J-7 aircraft, and 24 Mirage aircraft (formerly of the Iraqi air force).
- Nine squadrons of 168 ground attack fighter aircraft including 13 Su-25K (formerly Iraqi aircraft), 30 Su-24MK (some of which are former Iraqi aircraft) and 65 F-4D/F4-E Phantom II and 60 F5-E/F Tiger II aircraft.
- One squadron equipped with six RF-4 reconnaissance aircraft.
- One squadron equipped with five P-3 Orion maritime patrol aircraft.
- Six squadrons of 104 tanker/transport aircraft, including 17 C-130 Hercules aircraft.
- 112 fast jet training aircraft.
- 2 CH-47 Chinook support helicopters and 32 utility helicopters.
- 16 air defence battalions equipped with in excess of 2,500 air defence surface-to-air missiles including Rapier, Tigercat, FM-80 and SA-2 missiles; man-portable air defence missiles including Stingers and SA-7 missiles; and Static SA-5 missiles.
- Aircraft are equipped with air-to-surface missiles including Maverick, AS-10, AS-11 and AS-14; air-to-air missiles including the AA-10, AA-11, AA-8, AIM-54 Phoenix, AIM-7 Sparrow, AIM-9 Sidewinder and PL-2 and PL-7 missiles.

According to the *Military Balance 2009* the serviceability of those aircraft has been estimated at 60% for the older US aircraft types and 80% for the more recent Russian and Chinese sourced aircraft.

In October 2007 Iran inaugurated a new airbase in the east of the country, approximately 100km from the Afghan border. The establishment of the base has been regarded as a significant strategic move and an indication of a potential change in Iran's threat perceptions, given that, thus far, the majority of Iran's 13 air bases have been located in the west of the country and close to the Iraqi border.

3.3 Navy and Marines

It is estimated that 20,600 personnel are currently serving as part of Iran's naval and marine forces (18,000 and 2,600 respectively).

There are seven naval bases along the coast of Iran at Bandar-e Abbas, Bushehr, Kharg Island, Bandar-e Anzelli, Bandar-e Khomeini, Bandar-e Mahshahr and Chah Bahar. The naval Headquarters is located at Bandar-e Abbas. In October 2008 Iran inaugurated a new naval base at Jask, located at the strategically important southern mouth of the Strait of Hormuz. The Iranian navy also announced its intention to establish a series of bases along

its southern coast on the Sea of Oman and up to the Strait of Hormuz in order to create an "impenetrable line of defence".[13]

In September 2008 the IRGC's naval forces (see below) assumed responsibility for defending Iran's interests in the Persian Gulf, while the Iranian Navy has been tasked with defending Iran's interests and boosting its presence in the Gulf of Oman and the Caspian Sea.

In May 2009 Iran deployed two naval vessels, a frigate and a logistics vessel, to aid in the anti-piracy effort off the coast of Somalia. The deployment is expected to last five months and primarily provide protection to Iranian shipping in the region. While a number of analysts have highlighted the deployment as an opportunity for maritime co-operation with a number of countries, including the US, which Iran has not had diplomatic relations with for nearly three decades; others have viewed it as an attempt to demonstrate Iranian naval power beyond its immediate sphere of influence.

According to the *Military Balance 2009* naval forces are equipped with:

- Three tactical Kilo-class patrol submarines with anti-submarine warfare capabilities (Russian). A modernisation programme is currently way which some analysts have suggested could possibly include equipping the subs with new 3M-54E tube-launched anti-ship missiles and 3M-14E submarine-launched land-attack missiles. However, disagreements between Iran and Russia over where the submarine refits will take place has meant that the first submarine in the class (currently undergoing a refit programme) will not be equipped with the new weapons systems.[14]

- Three new coastal Yono-class midget submarines (Ghadir) fitted with the facility to operate a swimmer delivery vehicle. The Yono-class is Iran's first indigenous submarine capability and construction of a further two submarines of that class is believed to be underway. Measuring just 29m and displacing 123 tonnes, this submarine is considered well suited to operations in the Gulf and Strait of Hormuz as it is small in size and difficult to detect.

- Three Alvand frigates, each equipped with CSS-N-4 tactical surface-to-surface missiles, one rocket launcher and deck mounted guns and one modified Alvand-class frigate (Jamaran) which is currently undergoing sea trials. Iranian Defence Minister, Mostafa Mohammed-Najjar, has also suggested that Iran is in the process of building an unspecified number of missile-launching frigates, including requisite weapons systems.[15]

- Two corvettes each with two 76mm guns.

- In excess of 146 patrol and coastal combatant vessels, 11 of which are fast patrol craft equipped with CSS-N-4 tactical surface-to-surface missiles. Iran's fast attack patrol craft capability has been the focus of modernisation efforts and in November

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13 "A new line of defence", *Jane's Defence Weekly,* 28 January 2009

14 See "Russia gives refit timescale for Iran's project 877E KM submarine", *Jane's Defence Weekly,* 23 January 2008

15 "Iran launches new submarine and frigate", *Jane's Defence Weekly,* 12 December 2007

2008 the Chief of the Iranian Navy announced the launch of two new, indigenously manufactured, fast attack craft of the Combattante II class.[16]

- Five Mine warfare/ mine countermeasures vessels.
- 13 amphibious landing ships.
- 26 logistics and support vessels, including auxiliary tankers.

Naval aviation assets include:

- Three P-3F Orion maritime patrol aircraft.
- Three electronic warfare aircraft.
- 13 transport aircraft.
- 30 helicopters, including anti-submarine warfare and utility helicopters.

However, in an assessment of Iran's increasing naval power an article in *Jane's Defence Weekly* in January 2009 argued that:

> Following the establishment of the IRGC's navy and the evolution of Iran's military doctrine during the Iran-Iraq War and afterwards, which led to full adoption of the asymmetric naval warfare doctrine, the IRIM's [Islamic Republic of Iran Military] navy has been mainly ignored and its conventional capabilities gradually eroded […]
>
> In terms of weapons and electronics, the operational readiness of the Alvand-class frigates, commissioned more than 33 years ago, is almost non-existent, although they have been armed with Chinese C-802 missiles.
>
> The two US-built Baynador-class corvettes, which came into service more than 38 years ago, do not have sophisticated weapons, although *Naghdi* underwent modification in 2007, with the most recent reports saying that it will also be armed with C-802 missiles […]
>
> Two of the three 'Kilo' class submarines, based in Bandar Abbas, are operational at any given time and are sparingly deployed in the eastern approaches of the Strait of Hormuz. These submarines […] are vulnerable, especially when returning to their base to re-arm or refuel and their chance of survival in a confrontation with the US Navy is slim […]
>
> As things stand, the IRIM's navy is not a bluewater navy, nor is it going to acquire such capabilities in the near future.[17]

On the issue of the newly inaugurated base at Jask, that assessment went on to comment:

> Jask is in a better position strategically than Bandar Abbas and has better access to the Gulf of Oman and deep water.
>
> However, it has no port capacity; it only has a small quay for fishing boats and the small harbour that Iran's MOD intends to build to the east of this fishing village is in its infancy. Apart from two breakwaters, there are no adequate facilities or infrastructure

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[16] The Combattante II class are based on an earlier French craft that was bought by Iran in the late 1970s/early 1980s.

[17] "A new line of defence", *Jane's Defence Weekly,* 28 January 2009

> to support ships and submarines. Moreover, Iran simply does not have the means – such as operational warships – to equip Jask and project its power in the Gulf of Oman.
>
> On the other hand, Jask is already the site of anti-ship missile batteries backed by some units of marines and it has a small military airport. As things stand, this constitutes no advance in Iran's ability to close the Strait of Hormuz.
>
> However, this fishing port may gain some economic significance when the government's plan to lay an oil pipeline from Neka (on the Caspian Sea coast) to Jask is implemented. When completed, Jask will be the destination for the export of one million barrels of Central Asian crud oil per day.[18]

4 Islamic Revolutionary Guard Corps

The Islamic Revolutionary Guard Corps (IRGC) is a separate organisation from the Regular Armed Forces, although its activities run in parallel and are co-ordinated by the Armed Forces General Staff. The IRGC is considered, on the whole, to be well trained, well armed, highly motivated and politically influential, thereby giving it a privileged position in terms of funding and resources. In total the IRGC consists of 125,000 personnel, divided into ground forces, naval forces, marines and air forces and represents nearly a quarter of Iran's total regular military forces (24%). The Al Quds force is also thought to be comprised of elite IRGC personnel. Those forces have access to the capabilities and assets retained by the regular forces which are outlined above; while the only arm of the IRGC which has its own capabilities is the naval force.

However, its presence within Iranian society is also vast and in recent years the IRGC has attained considerable economic influence; a position some have argued advocates viewing the IRGC less as a traditional military entity and more as a domestic actor. A study by the RAND organisation in February 2009 described the IRGC thus:

> Founded by a decree from Ayatollah Khomeini shortly after the victory of the 1978-1979 Islamic Revolution, Iran's Islamic Revolutionary Guard Corps (IRGC) has evolved well beyond its original foundations as an ideological guard for the nascent revolutionary regime. Today, the IRGC functions as an expansive socio-political-economic conglomerate whose influence extends into virtually every corner of Iranian political life and society […]
>
> The IRGC's presence is particularly powerful in Iran's highly factionalized political system, in which the president, much of the cabinet, many members of parliament and a range of other provincial and local administrators hail from the ranks of the IRGC. Outside the political realm, the IRGC oversees a robust apparatus of media resources, training activities and education programs designed to bolster loyalty to the regime, prepare the citizenry for homeland defense and burnish its own institutional credibility vis-à-vis other factional actors. It is in the economic sphere, however, that the IRGC has seen the greatest growth and diversification – strategic industries and commercial services ranging from dam and pipeline construction to automobile manufacturing and laser eye surgery have fallen under its sway, along with a number of illicit smuggling and black market enterprises.

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[18] ibid

> Taken in sum, these attributes argue for a re-examination of the IRGC less as a traditional military entity wielding a navy, ground forces, air force and a clandestine paramilitary wing (the Qods Force) and more as a domestic actor […] arguably this internal role overshadows its significance as a purely military force.[19]

In 2007 the IRGC, along with several Iranian banks were sanctioned under US Executive Order 13382. The effect of that order was to freeze the US-based assets of those organisations and prevent US transactions with those named entities. Simultaneously the Al Quds Force was named as a terrorist supporting entity under Executive Order 13224. Both Orders stopped short, however, of designating the IRGC as a foreign terrorist organisation which had previously been called for by Congress.

4.1 IRGC Ground Forces

There are approximately 100,000 ground forces divided into 15 divisions whose primary role is internal security. However, the ground forces are also capable of being mobilised in conjunction with the regular armed forces for external defence purposes.

The IRGC ground forces also control the Basij paramilitary resistance force when it is mobilised. The Basij has been reported to consist of 1 million combat-capable personnel, including women and children and is used primarily to enforce adherence to Islamic customs. According to a number of reports the Basij was the main instrument through which repression of the post-election protests in Iran has been conducted.[20]

4.2 Naval and Marine Forces

Approximately 20,000 personnel (including one brigade of 5,000 marines) serve in the IRGC naval forces.

The main role of the force is coastal defence, with bases located at Bandar-e Abbas, Khorramshahr, Larak, Abu Musa, Al Farsiyah, Halul (which is an oil platform) and Sirri. In September 2008 the IRGC formally assumed responsibility for defending Iran's Gulf coast and Iranian interests in the Persian Gulf.

While the force projection capabilities of the forces are minimal, they do have a wide variety of assets at their disposal to threaten shipping lanes in the Gulf and the Caspian Sea, potentially "close off" the Strait of Hormuz, raid or attack key offshore and critical onshore infrastructure facilities, carry out regular amphibious exercises with ground forces and threaten coalition assets in the region. In January 2008, for example, a group of Iranian IRGC naval vessels confronted three US naval vessels as they entered the Strait of Hormuz, an act which the Pentagon defined as a "significant act of aggression".[21] IRGC naval personnel were also responsible for the capture of 15 Royal Navy personnel in the Persian Gulf in March 2007.

The forces are equipped with HY-2 Seerseeker tactical surface-to-surface missiles (Chinese) and 50 patrol and coastal combatant vessels, 10 of which are patrol boats equipped with C802 (CSS-N-8) tactical surface-to-surface missiles (Chinese). Modernisation of the IRGC naval branch has focused in recent years on its small fast attack craft capability, midget submarines, swimmer delivery vehicles and the development of anti-ship missile systems, a

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19 *The Rise of the Pasdaran,* RAND, February 2009: http://www.rand.org/pubs/monographs/MG821/

20 Kenneth Katzman, "Iran: US Concerns and Policy Responses", *US Congressional Research Service,* 6 August 2009

21 "US tells Iran to back down after Gulf skirmish", *The Daily Telegraph,* 8 January 2008

trend which is likely to continue since the assumption of sole responsibility for defending Iran's interests in the Persian Gulf. However, the force could potentially operate further afield in the future if provided with suitable sealift or facilities.

The *Jane's Defence Weekly* assessment in January 2009 concluded:

> Although claims about its weapons and capabilities are arguably exaggerated, designed primarily to deter US military actions, the IRGC's navy in its current form is highly motivated. Among other things, its has the capability to conduct hit-and-run operations; lay a variety of mines, target ships with shore-based missiles from an approximate range of 90km; raid offshore facilities and direct many of its speedboats at civilian and naval targets primarily in the Hormuz choke point, using swarming tactics […]
>
> The IRGC relies on strength in numbers and surprise. The vessels of this navy can rapidly disperse and shelter in small inlets, small fishing ports and hardened sites.
>
> Overall, the IRGC's navy has adopted an asymmetric operational doctrine with special emphasis on elements of unconventional warfare to counter the overwhelming naval superiority of the United States.[22]

4.3 Air Forces

The air forces of the IRGC (approximately 5,000 personnel) are responsible for controlling Iran's strategic missile force. According to the *Military Balance* those forces consist of one brigade equipped with 12-18 launchers for the Shahab 1 and Shahab 2 missile;[23] and one battalion with six launchers, each equipped with four Shahab 3 medium-range ballistic missiles. The Shahab 3 has an estimated range of 1,200 to 1,300 km[24] and therefore capable of striking targets in Israel, Turkey, most of Saudi Arabia and US and other Coalition forces in the region. The Shahab 3 is also widely believed to be capable of carrying a non-conventional warhead.[25]

Iran is also believed to be focusing on the development of Shahab 4 and 5 missile variants which are reported to have ranges of between 2,000 and 6,000 km (this is examined below).

4.4 Al Quds Force

The Al Quds force is thought to comprise anywhere between 5,000 and 15,000 elite members of the IRGC and is responsible for extra-territorial operations, in particular the alleged training, equipping and financing of foreign groups and organisations such as Iraqi-based militants, Hamas, Hezbollah and Taliban fighters in Afghanistan. It is also reported to operate a worldwide intelligence network that has assisted in the past in procuring WMD-related technology for Iran.[26] The Quds force is reportedly provided with special priority in terms of equipment and training and is viewed as central to Iran's ability to conduct asymmetric warfare, largely within its regional sphere of influence.

However, the independence of the force has been questioned. While some analysts have suggested that the force is tightly controlled by the IRGC, which in turn is controlled at the

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22 "A new line of defence", *Jane's Defence Weekly,* 28 January 2009

23 The Shahab 1 and 2 are reverse engineered copies of the Scud B and Scud C.

24 Although the Iranian military has stated that the missile has a range of 2,000km.

25 CRS report for Congress, *Iran's Ballistic Missile Capabilities,* 23 August 2004

26 Kenneth Katzman, "Iran: US Concerns and Policy Responses", *US Congressional Research Service,* 6 August 2009

highest political level in Iran;[27] others have argued that the force reports directly to the Supreme Leader of Iran, thereby bypassing the IRGC and command structure of the regular armed forces.[28]

5 Paramilitary Forces

Iran also retains a paramilitary force of approximately 40,000 personnel. They are mainly law enforcement personnel whose main role is border and internal security. However, they are considered part of the regular Armed Forces during periods of conflict, in which an estimated additional 450,000 personnel are capable of being mobilised, including conscripts.

Paramilitary forces are equipped with 130 patrol and coastal combatant vessels, a number of small transport aircraft and 24 utility helicopters.

6 Procurement Priorities

Iran's focus thus far has been on its conventional naval and ballistic missile capabilities as a means of projecting power on a regional scale. Consequently the country's procurement priorities over the last few years have concentrated in this area.

As outlined above Iran has conducted a number of military exercises over the last few years with the intention of demonstrating Iran's missile capabilities but also using them as a forum to test new missile variants. In December 2008 the Iranian Navy test-fired a new surface-to-surface missile, the *Nasr-2*; in March 2009 Iranian officials reported successfully testing a new air-to-sea missile with a range of 110km; while in June 2009 the Iranian media also reported that Iran had begun production of a new surface-to-air missile system, the *Shahin*, capable of tracing and targeting enemy aircraft and helicopters at supersonic speed and within a range of 40km.[29] The missile is similar to the Raytheon MIM-23 HAWK surface-to-air missile which was supplied to Iran by the US in the 1970s. However, what is not clear is whether the missile has been reverse engineered by the Iranians and manufactured entirely using indigenous components or whether it is a refurbished version of a missile already in service.[30] Iran's ballistic missile programme is considered below.

While this approach is considered likely to continue, there have been indications that Iran is also seeking to modernise other aspects of its conventional capabilities, in particular those, largely western-sourced, assets which are becoming increasingly obsolete. Iran's relationship with Ukraine,[31] but more particularly Russia and China has been proven crucial in this regard.

In December 2005 Russia announced that it had entered into an agreement with Tehran for the upgrade of a number of attack aircraft, air defence missile systems, patrol boats and T-72

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27 See for example Mahan Abedin, Director of Research at the Centre for the Study of Terrorism: http://www.rferl.org/content/article/1074751.html

28 See for example Kenneth Katzman, "Iran: US Concerns and Policy Responses", *US Congressional Research Service,* 6 August 2009

29 Center for Strategic and International Studies, *Iran Status Report,* 11 August 2009: http://csis.org/files/publication/090812_iranbrief.pdf

30 See "Iran claims indigenous SAM production has begun", *Jane's Defence Weekly*, 17 June 2009

tanks, a deal which drew considerable international criticism in light of ongoing discussions over Tehran's ballistic missile capabilities and wider nuclear programme. Following the delivery of the new Russian TOR-M1 anti-aircraft missile system to Iran in January 2007, the Russian Defence Minister, Sergei Ivanov, also confirmed that his country would consider further requests by Tehran for the procurement of defensive weapons, as Russia considered that such equipment was not covered by UN sanctions restricting Iran's trade in sensitive nuclear materials and technology. In an article reported by *Reuters,* Mr Ivanov commented:

> We have supplied the modern short-range anti-aircraft systems TOR-M1 in accordance with our contracts. Iran is not under sanctions and if it wants to buy defensive equipment for its armed forces then why not?[32]

During the course of 2007 negotiations between Russia and Iran for the procurement of the S-300 surface-to-air missile system were also believed to be underway, in order to complement the TOR-M1 system. Russia had initially denied the conclusion of any such deal, although the Iranian Defence Minister announced in December 2007 that an agreement had indeed been concluded, although refused to provide details on the timescale for delivery or the number of missiles being procured.[33] It was not until 18 March 2009 that the Russian government formally confirmed, for the first time since 2007, that a contract for the S-300 system had indeed been signed. As part of that announcement it was suggested that the contract "was being fulfilled gradually", although Russian officials later refuted that any S-300 missiles had been delivered thus far.[34] On 26 March 2009 the Head of the Russian State Duma's Foreign Affairs Committee, Konstantin Kosachev, went so far as to suggest that Russia had no intention of ever supplying Iran with the S-300.[35] An article in *Jane's Islamic Affairs Analyst* in early September 2009 suggested that:

> Moscow seems set to indefinitely defer fulfilling its contract to sell S-300 long-range air defence missiles to Iran as delivering the systems may pressure the United States and Israel to take military action against Tehran. But formally cancelling the USD1 billion contract would infuriate the Iranians, who are already threatening to purchase a Chinese system that 'borrows' heavily from the design of the S-300.[36]

In the event that the contract does go ahead in the future or Iran purchases a similar capability from China, deployment at Iran's nuclear facilities at Natanz and Bushehr has been considered likely to be a priority.

More recently Iran is also reported to have expressed an interest in developing a longer-range strike capability, possibly as an alternative means of delivering a nuclear pay-load other than via its ground-launched ballistic missile programme (see below).[37] However, the ability of Iran to develop this capability to a credible degree has been questioned. An article in *Jane's Defence Weekly* in February 2007 commented:

> Whether Iran can develop a long-range strike capability to the degree that it presents a credible and potent strategic threat to those regional actors likely to be the recipient of such an attack is a moot point. Moreover, the question remains how committed Iran is

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31 In September 2006 Ukraine agreed to sell Iran the Kolchuga radar system that would significantly enhance Iran's ability to detect combat aircraft.

32 "Russian missiles delivered for Iran", *Defense News,* 16 January 2007

33 "Iran may have lined up SAM systems", *Jane's Missiles and Rockets*, 1 February 2008

34 http://www.mosnews.com/military/2009/03/18/s300/

35 http://www.presstv.ir/detail.aspx?id=89640&sectionid=351020101

36 "Iran and Russia face times of trouble", *Jane's Islamic Affairs Analyst*, 10 September 2009

37 "Iran eyes long-range air strike capability", *Jane's Defence Weekly,* 7 February 2007

> to the development of such a capability or if it is just another tactic designed to deter potential aggression and reinforce its image as the growing regional power […]
>
> The need to create the false impression of increased capabilities stems from Iran's desire to generate deterrence in the Persian Gulf against both regional and Western countries and prevent an attack on its nuclear facilities.[38]

Toward the end of 2007 reports indicated that Iran, China and Russia had reached an agreement on the supply of the J-10 advanced combat aircraft to Iran. The J-10 is considered to be the first Chinese-developed fighter aircraft to meet the performance and capabilities benchmark provided by Western fighter aircraft, albeit currently incorporating a Russian turbofan power plant.[39] The J-10 is considered likely to primarily serve in an air-defence role. According to reports Iran is expected to take delivery of 24 J-10 aircraft between 2008 and 2010 which could replace the ageing F-7/J-7 which were also previously acquired from China. An article in *Jane's Defence Weekly* suggested that an initial buy of 24 aircraft might provide a base from which the Iranian defence industry, which is limited with respect to advanced aviation capabilities, could begin local assembly or the manufacture of components for the J-10 under a licensed production agreement.[40]

In addition to the purchase of the J-10, there have also been reports that Iran is seeking to acquire an unspecified number of Su-30MK aircraft from Russia, although the latter has denied any involvement in such a deal.[41] Unlike the J-10, the Su-30MK could meet the requirement for a longer-range offensive strike capability.

In May 2009 Iran also unveiled a number of newly developed Shahed 285 military helicopters which will enter service with the IRGC. A new variant of the Shahed helicopter, it is the first military helicopter to be built by Iran in any quantity; and as an article in *Jane's Defence Weekly* in June 2009 noted:

> In what may point to a significant future capability, one Shahed 285 prototype has flown carrying a dummy Kosar-3 anti-ship missile. This grey painted 'Navy' helicopter appears to be fitted with a small search radar instead of a gun turret. The radar guided Kosar-3 is Iran's version of the Chinese developed C-701R missile […]
>
> If the Shahed 285 has the ability to carry and properly target a weapon like the C-701, it is much more than a curiosity.[42]

6.1 Ballistic Missile Programme

Over the last few years Iran has made several pronouncements regarding its ballistic missile (BM) programme, and in particular its twin-track approach to developing longer range versions of the Shahab 3 medium-range ballistic missile and the development of solid, as opposed to liquid-fuelled, missile variants which are capable of being launched immediately, are more durable and have greater range and accuracy. A solid-fuelled missile could, in theory, reach a greater distance over Europe than currently achievable by the Shahab. The indigenous development of solid-fuelled missiles is therefore generally regarded as a major technological advancement. Reports in the *Wall Street Journal* in September 2005 also suggested that US intelligence officials believe Iran is working to adapt the Shahab-3 to

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38 ibid

39 Future Chinese variants of the J-10 are expected to incorporate a Chinese Turbofan engine, the WS-10, which is currently under development.

40 "Possible J-10 sale to Tehran raises red flags", *Jane's Defence Weekly,* 31 October 2007

41 See "Riddle of Russia's reported arms sales to Syria/Iran", *Jane's Defence Weekly,* 18 July 2007

42 "Iran unveils Shahed 285 armed helicopter", *Jane's Defence Weekly,* 3 June 2009

deliver a nuclear warhead. As an article in *Jane's Defence Weekly* noted in February 2009 "no country has ever developed medium-range ballistic missiles without the intention of fitting these with nuclear warheads and it seems unlikely that Iran will be the exception".[43]

However, comprehensive assessments of Iran's missile programme have proven difficult without access to reliable information and as such analysts have generally held mixed views on the extent and capability of Iran's missile inventory. As a February 2009 Congressional Research Service report noted:

> There has been considerable public disagreement over precisely what kinds of ballistic missile systems Iran has or is developing itself or in cooperation with others. This is because there is little transparency in Iran's ballistic missile programs, which has led to some degree of a lack of confidence in Iran's public assertions of its activities. Finally, details about Iranian ballistic missile programs remain classified in the United States. Because of the secrecy inherent in the development of weapon systems, especially in less open societies, open-source analyses reflect a wide range of technical views and assessments.[44]

The tendency of Iran to re-name its missiles without any obvious advancement in their capability has also introduced a degree of uncertainty and confusion into any observations of the Iranian BM programme. An article in *Jane's Defence Weekly* has observed:

> The Shahab 3 improvements have continued and this is where the Iranian device of changing missile names has caused confusion. The confusion is increased by the problems associated with translating from Farsi to English.[45]

The motivation for doing so, as Duncan Lennox of *Jane's* has explained is to "create the impression that its [Iran's] missile programmes are more numerous and more capable than they really are, and to act as a deterrent against any attack".[46]

What is widely acknowledged, however, is that with the assistance of North Korea, China and Russia Iran is becoming increasingly self-sufficient in the production of ballistic missiles; and as such has warranted increasing attention in light of Iran's perceived nuclear ambitions. The recent debate over US proposals to base elements of its missile defence architecture in Eastern Europe as a counterweight to that capability has also kept Iran's ballistic missile programme high on the political agenda.

A history of Iran's ballistic missile programme is outlined in "Iran's Ballistic Missile Developments: Long Range Ambitions", *Jane's Defence Weekly,* 13 September 2006 and in the International Institute for Strategic Studies dossier, *Iran's Strategic Weapons Programmes,* 2005.[47] The following information therefore examines recent developments in that BM programme.

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43 "Iran could still extend an 'unclenched fist', *Jane's Defence Weekly,* 11 February 2009

44 US Congressional Research Service, *Iran's Ballistic Missile Programs: An Overview,* 4 February 2009

45 "Iran could still extend an 'unclenched fist', *Jane's Defence Weekly,* 11 February 2009

46 "Range of opinions fuel Iranian missile debate", *Jane's Defence Weekly,* 7 August 2008

47 Both of these documents are available from the International Affairs and Defence Section of the House of Commons Library.

The mainstay of the Iranian ballistic missile inventory is the Shahab family of liquid-propelled missiles; with the medium-range Shahab-3 (based on the North Korean Nodong-1 missile) the latest variant to have entered service (outlined above).[48]

In October 2004 the Iranian government announced that it had successfully extended the range of the Shahab-3 to 2,000- 3,000km, with the two-stage Shahab-4, and that it was also capable of mass production of this particular variant, which analysts believe is based upon the North Korean Taepodong missile. In January 2006, various media reports also suggested that the Shahab-4 had been successfully tested.[49] Two missile variants with an even greater range in excess of 4,000km (Shahab-5 and Shahab-6) have also been reported to be in development.[50] With a potential range of 6000km the Shahab-6 would provide Iran with its first intercontinental ballistic missile capability. Since 1999 US intelligence officials have consistently asserted that Iran *could* develop an ICBM by 2015. However, as the CRS has outlined, opinions within that intelligence community have varied significantly:

> These assessments do not mean, however, that there is universal agreement within the US intelligence community on the issue of an Iranian ICBM. According to these unclassified statements, some argue that an Iranian ICBM test is likely before 2010, and very likely before 2015. Other US officials believe, however, that there is "less than an even chance" for such a test before 2015. Furthermore, US assessments are also conditional in that an Iranian ICBM capability would have to rely on access to foreign technology from, for example, North Korea or Russia.[51]

The ability of Iran to potentially develop an ICBM capability from its satellite space-launch programme has however been regarded as one means of accelerating the development programme given the similarities between the two technologies. Indeed in early February 2008, and again in August 2008 Iran declared that it had successfully launched a satellite launch vehicle, although those claims were subsequently refuted by experts.[52] However, in February 2009 Iran did successfully launch a satellite on a Safir-2 rocket,[53] which has a range of approximately 155 miles. A statement from the US State Department issued after the launch commented:

> Iran's ongoing efforts to develop its missile delivery capabilities remain a matter of deep concern. Recently, Iran's development of a space launch vehicle (SLV) capable of putting a satellite into orbit establishes the technical base from which Iran could develop long-range ballistic missile systems. Many of the technological building blocks involved in SLVs are the same as those required to develop long-range ballistic missiles.[54]

Eric Chevallier, spokesman for the French Ministry of Foreign Affairs, stated that "the launch of this satellite worries us. We can't help but link this to the very serious concerns about the

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48 Iran also has the Zelzal 1/2/3 missile and the Fateh A-110 missile, which are both short-range ballistic missiles in service.

49 This is reiterated in a report from the Center for Strategic and International Studies entitled *Iran's Nuclear and Missile Programmes: A Strategic Assessment,* 31 August 2006

50 See for example http://www.missilethreat.co/missilesoftheworld and Center for Strategic and International Studies, *Iran Status Report,* 11 August 2009: http://csis.org/files/publication/090812_iranbrief.pdf

51 US Congressional Research Service, *Iran's Ballistic Missile Programs: An Overview,* 4 February 2009

52 "Footage casts doubt on success of Iran SLV launch", *Jane's Defence Weekly,* 20 February 2008 and "Iranian missile launch marks capability leap", *Jane's Defence Weekly,* 19 November 2008

53 Analysts have suggested that the Safir-2 was essentially a Shahab-3 missile (See "Iran's arsenal of missiles", *BBC News,* 20 May 2009*)*

54 US Department of State press release, 3 February 2009

development of military nuclear capability".[55] The development of an SLV capability would suggest that Iran's missile technology is potentially improving to the point where an Iranian ICBM is becoming increasingly realistic.

In April 2006 Iran also reportedly received a shipment from North Korea for 18 BM-25 medium-range ballistic missiles. An article in *Jane's Defence Weekly* commented:

> The missiles, including the engines and guidance, are shipped disassembled to Tehran. To date, two shipments definitely took place last year and while we cannot be sure of the numbers delivered to Tehran; it is likely that the contract has been implemented," a Western source told *Jane's*.
>
> Unconfirmed reports have suggested that a BM-25 missile was tested by Iran in January, achieving range of over 3,000 km. However, the Western source suggested that, to date, Iran may have made only static tests with the engine and that a flight test is expected "soon" […]
>
> A Western diplomatic source suggests that this was more than merely a contract to supply 18 systems. The agreement likely also included the technological expertise to enable the Iranians to reverse-engineer the engine and missile in order to manufacture the BM-25 indigenously […]
>
> A senior defence source offered Jane's a different explanation: "The current Shahab 3, although capable of reaching Israel, is a vulnerable missile, requiring an hour-long exposure while fuelling before launch.
>
> "The current acquisition could be an attempt to create a more survivable operational capability that will fill the gap until Iran completes its solid-propellant missile project."[56]

That programme to develop a solid-fuelled variant of the Shahab-3 missile has been ongoing for several years, with rumoured foreign assistance.[57] In May 2005 Iran announced that it had tested a part liquid-fuelled, part solid fuel version of the Shahab-3, designated the Shahab-3A or Ghadr-101. A new variant, the Ghadr-110, which is understood to have an increased range of approximately 1,800km (although some estimates have suggested it is nearer to 2,000- 2,500km) and is thought to be a two stage solid-fuelled missile, has reportedly since been developed. It remains unclear whether the missile is operational, however since there have been no conclusive tests of the weapon, although it was publicly displayed at a military parade in April 2008. A number of analysts stated at the time that the missile appeared to "be almost the same as the existing Shahab-3",[58] although others have suggested that the missile has greater manoeuvrability than the Shahab-3 and a set-up time of only 30 minutes, as opposed to several hours, therefore providing sufficient case to consider the Ghadr-110 as a separate missile.[59]

In December 2007 Iran was also reportedly preparing to test-launch its new Ashura medium-range ballistic missile which is solid-fuelled, has a range of 2,000-2,500km and understood to be capable of carrying a nuclear warhead. Reports suggested that the missile is based on entirely indigenous technologies and bore no resemblance to any of the other missiles in its inventory which have largely been based on North Korean designs. If true, the development of a completely indigenous ballistic missile capability would be a major technological

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55 "France and Britain wary about Iranian missile technology", *EU Observer,* 3 February 2009
56 "Iran's ballistic missile developments", *Jane's Defence Weekly,* 13 September 2006
57 See "Iran's missile development", *Strategic Comments,* February 2009
58 "Iran could still extend an 'unclenched fist', *Jane's Defence Weekly,* 11 February 2009
59 http://www.missilethreat.com/missilesoftheworld

breakthrough for the Iranian missile programme. However, the launch was subsequently considered unsuccessful after the missile failed to deploy its second stage.

In November 2008 Iran claimed that it had successfully test-fired a new generation of solid-fuelled surface-to-surface ballistic missile with a range of 2,000km, designated the Sajil. Assessments of the test by Uzi Rubin, former Director of Israel's Ballistic Missile Defence Organisation concluded that "this is a whole new missile. Unlike other Iranian missiles, the Sajil bears no resemblance to any North Korean, Russian, Chinese or Pakistani missile technology".[60] However, given the similarities between the Sajil and the Ashura, a number of intelligence officials have subsequently concluded that the missiles are one and the same and that the Ashura missile was a prototype for the new Sajil.

In May 2009 Iran also test-fired its Sajil-2 variant, which is claimed to have increased range (2,500km) and differs from the Sajil-1 in that it is equipped with a new navigation system and upgraded sensors.[61] Potentially a missile with a range in excess of 2,000km would place large parts of southeastern Europe in range. The success of the test has also raised concerns that Iran is incrementally progressing to more advanced, sophisticated and more importantly indigenously manufactured missile technologies. According to Uzi Rubin:

> In the four years since they announced the development of large solid-propellant motors, they have launched three solid-propellant ballistic missiles and three satellite launch vehicles. Based on those demonstrated achievements, Iran faces no major technical challenge in upscaling the Sajil into a compact, survivable IRBM with a range of 3,900km.[62]

He also suggested in a speech in August 2009 that Iran's missile technology was now more advanced than that of North Korea.[63] However, Theodore Postol of the East-West Institute has argued that "the Sajil technologies could not rapidly evolve into ballistic missiles with ranges that could threaten northern and western Europe, or the continental US".[64] Analysts at the International Institute for Strategic studies have also cautioned:

> With the launch of the Sajil, Iran appears to have established the industrial infrastructure and technological foundation to begin efforts, on its own, to support the eventual development, design and production of much larger, more powerful rocket motors […]
>
> But before being able to deploy the Sajil missile, Iran would first need to establish a production line for solid-fuel rocket motors to strict performance criteria. This would require many static test firings and test launches over the next three to five years.
>
> Among other remaining technical challenges, Tehran still needs to develop and incorporate sophisticated navigation, guidance and control systems for its future missiles. It does not possess the technical skills to produce the necessary navigation components indigenously, but the history of missile proliferation has shown that these can be purchased from Russian, Chinese and other foreign suppliers. In addition, Iran has yet to show it has developed thermal shielding to protect a long-range missile warhead during re-entry into the atmosphere.

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60 "Iranian missile launch marks capability leap", *Jane's Defence Weekly,* 19 November 2008

61 Center for Strategic and International Studies, *Iran Status Report,* 11 August 2009: http://csis.org/files/publication/090812_iranbrief.pdf

62 "Israeli specialist reassesses range of Iranian IRBM", *Jane's Defence Weekly,* 26 August 2009

63 "Iranian missile technology more advanced than North Korea's", *Jane's Missiles and Rockets,* 4 September 2009

64 ibid

> Missile advances will not occur suddenly. Iranian success will rely upon a test and demonstration programme involving multiple flight tests.[65]

Duncan Lennox has also suggested that the "lack of proof of these increased flight ranges makes it difficult to understand Iran's genuine ballistic missile capabilities".[66]

US Missile Defence

Since 1999 North Korea and Iran have been identified by the US National Intelligence Council as presenting the main ballistic missile threat to the United States up to 2015. Since 2007 developments in Iran's ballistic missile programme have been highlighted by the US as specific justification for pursuing its extensive and ambitious missile defence plan. In a Pentagon news briefing in July 2008 the then Head of the US Missile Defense Agency, General Obering, noted these developments:

> We all know that the ballistic missile threat has continued to proliferate around the world. Access to these weapons has increased over the past many years. And, in fact, two countries that we are very much concerned about, specifically North Korea and Iran, and the developments that they are continuing to make in their missile programs.
>
> According to our own Defense Intelligence Agency, Iran is working on an extended-range version of the Shahab 3 and a new 2,000 kilometer medium-range ballistic missile which they term the Ashura.
>
> In addition, in February of this year, Iran claimed that it had successfully launched an exploratory space vehicle […] and then in November, and then just this past week, Iran orchestrated launches of several short-and medium- range ballistic missiles capable of striking Israel and US bases in the Middle East.[67]

It is on these intelligence estimates that the US ballistic missile defence proposals, including the deployment of elements of that BMD architecture in Eastern Europe, have been based.[68]

However, the European plans were met with significant opposition, most prominently from Russia, which viewed the proposals as part of a wider pattern of US expansionism and unconstrained action, warning that it would lead inevitably to a new arms race.[69] In response Russia suspended its participation in the CFE Treaty and announced its intention to deploy the Iskander short-range surface-to-surface missile system to the Russian enclave of Kaliningrad in order to neutralise "if necessary" the BMD system being deployed in Poland and the Czech Republic.

In early 2009 the new administration of President Barack Obama announced that it would review the US' ballistic missile plans, including the proposals to site elements of the architecture in Eastern Europe. The move was regarded, in part, with the desire of the new US administration to "push the reset button" in its relations with Russia but also to examine the technical feasibility and cost of taking the project forward.

On 17 September 2009 President Obama announced that it would no longer proceed with its plans for missile defence in Poland and the Czech Republic but would adopt a "phased,

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65 "Iran's missile development", *Strategic Comments,* February 2009

66 "Range of opinions fuel Iranian missile debate", *Jane's Defence Weekly,* 7 August 2008

67 US Department of Defense Press Briefing, 15 July 2008

68 Further information is available in Library Standard Note SN/IA/4378, *Ballistic Missile Defence: Recent Developments.*

69 See, for example, the speech and comments by President Vladimir Putin at the Munich Conference on Security Policy, 10 February 2007

adaptive approach" to missile defence in Europe that would build upon capabilities that are cost effective and proven. According to a White House statement that decision had been guided by two principal factors, one of which was an updated intelligence assessment of Iran's ballistic missile programmes which emphasise the threat posed by Iran's short and medium-range missiles capable of reaching Europe. In a statement the President commented:

> Our new approach will, therefore, deploy technologies that are proven and cost-effective and that counter the current threat, and do so sooner than the previous program. Because our approach will be phased and adaptive, we will retain the flexibility to adjust and enhance our defenses as the threat and technology continue to evolve […]
>
> Our clear and consistent focus has been the threat posed by Iran's ballistic missile program, and that continues to be our focus and the basis of the program we are announcing today.[70]

Specifically, the US intelligence community has concluded that:

> The threat from Iran's short and medium-range ballistic missiles is developing more rapidly than previously projected, while the threat of potential Iranian intercontinental ballistic missile (ICBM) capabilities has been slower to develop than previously estimated. In the near term, the greatest missile threats from Iran will be to IS allies and partners, as well as to US deployed personnel – military and civilian – and their accompanying families in the Middle East and in Europe.

Therefore the new US missile defence proposals envisage:

> - Phase One (in the 2011 timeframe) – Deploy current and proven missile defense systems available in the next two years, including the sea-based Aegis Weapon System, the SM-3 interceptor (Block IA), and sensors such as the forward-based Army Navy/Transportable Radar Surveillance system (AN/TPY-2), to address regional ballistic missile threats to Europe and our deployed personnel and their families;
>
> - Phase Two (in the 2015 timeframe) – After appropriate testing, deploy a more capable version of the SM-3 interceptor (Block IB) in both sea- and land-based configurations, and more advanced sensors, to expand the defended area against short- and medium-range missile threats;
>
> - Phase Three (in the 2018 timeframe) – After development and testing are complete, deploy the more advanced SM-3 Block IIA variant currently under development, to counter short-, medium-, and intermediate-range missile threats; and
>
> - Phase Four (in the 2020 timeframe) – After development and testing are complete, deploy the SM-3 Block IIB to help better cope with medium- and intermediate-range missiles and the potential future ICBM threat to the United States.
>
> Throughout all four phases, the United States also will be testing and updating a range of approaches for improving our sensors for missile defense. The new distributed interceptor and sensor architecture also does not require a single, large, fixed European radar that was to be located in the Czech Republic; this approach also uses

[70] Remarks by the President on Strengthening Missile Defense in Europe, 17 September 2009

> different interceptor technology than the previous program, removing the need for a single field of 10 ground-based interceptors in Poland. Therefore, the Secretary of Defense recommended that the United States no longer plan to move forward with that architecture […]
>
> One benefit of the phased, adaptive approach is that there is a high degree of flexibility – in addition to sea-based assets, there are many potential locations for the architecture's land-based elements, some of which will be re-locatable. We plan to deploy elements in northern and southern Europe and will be consulting closely at NATO with Allies on the specific deployment options.[71]

That assessment concluded by stating:

> The purpose is to strengthen defenses against the growing Iranian missile threat. There is no substitute for Iran complying with its international obligations regarding its nuclear program. But ballistic missile defenses will address the threat from Iran's ballistic missile programs, and diminish the coercive influence that Iran hopes to gain by continuing to develop these destabilizing capabilities.[72]

The move has been welcomed by the Russian President Dmitry Medvedev who suggested that the change of policy will aid in the upcoming disarmament talks in Washington and at the NPT review conference in May 2010.

An article in the *Daily Telegraph* suggested, however, that "appeasement is alive and well in the White House" stating that:

> The Russians, who take great pride in the resurgent nationalism that epitomised Vladimir Putin's presidency, will claim a victory in their attempts to halt Washington's encroachment into what they regard as their sphere of influence. If the US is no longer prepared to commit itself to the defence of the Poles and the Czechs, there is even less chance of the Obama White House supporting Ukraine, Georgia and the host of former soviet satellites that naturally look to America and NATO for protection.
>
> Of more concern, though, will be the signal this decision sends to the hardline government of Mahmoud Ahmadinejad.[73]

John Bolton, former US ambassador to the United Nations, was reported in *The Financial Times* as commenting:

> I think this is a near catastrophe for American relations with eastern European countries and many in NATO. It was the kind of unilateral decision that the Bush administration was always criticised for and I think the clear winners are in Russia and Iran.[74]

However, an article in *The Times* argued that the Obama administration "had made a deft compromise on missile defence" and went on to state:

> It has not caved in to Russian pressure. But nor has it abandoned a system that is a logical, effective and necessary response to the threat of attack by rogue states […]

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71 http://www.whitehouse.gov/the_press_office/FACT-SHEET-US-Missile-Defense-Policy-A-Phased-Adaptive-Approach-for-Missile-Defense-in-Europe/

72 ibid

73 "US missile shield: appeasement is alive and well in Barack Obama's White House", *The Daily Telegraph,* 17 September 2009

74 "Obama under fire for u-turn on plans to build missile shield", *The Financial Times*, 18 September 2009

President Obama's announcement yesterday that the US will not go ahead with stationing a defence shield in Eastern Europe is justified. He made clear that the decision was not a surrender to Russian pressure or based on opposition to a system associated with president Reagan's "Star Wars" philosophy. He said he had scrapped the plans because they are neither cost-effective nor militarily now suited to the real threat […]

The fallout is important. Mr Obama said yesterday that there will be no let-up in the pressure on Iran to halt it nuclear activities. He should now use his leverage to insist that Moscow play an active role in supporting fresh sanctions. President Medvedev hinted last week that it may do so. It is the least that Moscow can and must do in response to a sensible decision on the missile shield.[75]

[75] "Forward defence", *The Times,* 18 September 2009