

IDSA Monograph Series
No. 9 December 2012

In Pursuit of a Shield: US, Missile Defence and the Iran Threat

S. Samuel C. Rajiv



IDS A Monograph Series

No. 9 December 2012

**In Pursuit of a Shield:
US, Missile Defence and
the Iran Threat**

S. Samuel C. Rajiv



© Institute for Defence Studies and Analyses, New Delhi.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photo-copying, recording or otherwise, without the prior permission of the Institute for Defence Studies and Analyses (IDSA).

ISBN: 978-93-82169-08-6

Disclaimer: It is certified that views expressed and suggestions made in this Monograph have been made by the author in his personal capacity and do not have any official endorsement.

First Published: December 2012

Price: Rs. 299/-

Published by: Institute for Defence Studies and Analyses
No.1, Development Enclave, Rao Tula Ram Marg,
Delhi Cantt., New Delhi - 110 010
Tel. (91-11) 2671-7983
Fax.(91-11) 2615 4191
E-mail: contactus@idsa.in
Website: <http://www.idsa.in>

Cover &
Layout by: Geeta Kumari

Printed by: Omega Offset
83, DSIDC Complex,
Okhla Industrial Area, Phase I
New Delhi-110 020
Mob. 8826709969, 8802887604
E-mail: omegaoffset@hotmail.com
Website: <http://www.omegaoffset.co.nr>

Contents

<i>Acknowledgement</i>	5
I. INTRODUCTION	7
II. US AND IRAN: THREE DECADES OF CONTENTIOUS RELATIONS.....	10
III. US STRATEGIC ASSESSMENTS AND IRAN.....	16
Missile Threat	
Nuclear Threat	
IV. ASSESSING THE IRAN THREAT.....	26
Ballistic Missiles	
Rationale	
External Sources of Support	
Threat Perceptions	
Capabilities	
The Nuclear Question	
Motives	
Accuracy and WMD Payloads	
IAEA Contentions	
V. THE IRAN THREAT AND US MISSILE DEFENCE PANACEA.....	51
VI. ERECTING THE ARCHITECTURE.....	55
The Bush Administration and Missile Defence	
The Obama Administration and Missile Defence	
VII. STRATEGIC CONSEQUENCES.....	74
VIII. REGIONAL DYNAMICS.....	90
IX. AN ASSESSMENT.....	98

X.	APPENDIX.....	105
	Table 1: Iran's Missile Inventory	
	Table 2: GDP and Defence Expenditures (Saudi Arabia, Iran, Israel)	
	Table 3: GDP and Defence Expenditures (GCC countries other than Saudi Arabia)	
	Table 4: Defence Expenditures as Percentage of GDP (GCC countries other than Saudi Arabia)	
	Map 1: US Missile Defence Assets	
	Map 2: Iran's MRBMs and their Ranges	
XI.	AUTHOR NOTE.....	112

ACKNOWLEDGEMENTS

I would like to thank Professor Satish Kumar, Dr Probal K. Ghosh, Cmdr Abhijit Singh, Cmdr Sarabjeet Singh Parmar, and Kapil Patil for their helpful comments and suggestions during the Fellows Paper presentation. Professor Kumar has especially been a source of guidance and strength to me for which I am always indebted. I would like to express my gratitude to two anonymous reviewers for their critical comments and feedback. These inputs have been extremely helpful in refining the paper. I am however solely responsible for the final content and any shortcomings therein.



I

INTRODUCTION

The much touted missile threat from Iran coupled with concerns generated by its weapons of mass destruction (WMD) programmes, particularly the nuclear programme, have been the major driver for the missile defence measures undertaken by the US in the Middle East/West Asia as well as in Europe. The paper seeks to examine the pertinent aspects of this programme during the George W. Bush and Barack Obama administrations.

The Bush and the Obama administrations have taken measures to erect National Missile Defences (NMD) to better protect the US homeland in the aftermath of the policy directives as contained in the 1999 National Missile Defence Act. The NMDA required the government to take such measures 'as soon as technologically feasible'. The subsequent decision taken by President Bush to withdraw from the Anti-Ballistic Missile (ABM) Treaty in May 2001 was termed by administration officials as 'liberating' since in their view the treaty had constrained US efforts to protect itself from emerging new threats like Iran and Libya (and North Korea) as well as in its efforts to stabilise the US-Russia strategic relationship in the aftermath of the end of the Cold War.

Apart from efforts to erect NMD, the US has taken regional missile defence measures in order to ensure the security of its allies. Specifically, the paper limits itself to an examination of the measures taken to counter/hedge against the Iran threat during the Bush and the Obama administrations. The paper will first examine the strategic context underpinning the US-Iran bilateral contentions. It will then present US assessments of the threat posed by Iran's missile and nuclear programmes.

The paper goes on to make an assessment of Iran's missile programme, including its rationale, external sources of support, threat perceptions

and extant and developing capabilities. The paper then examines the ‘nuclear question’, including possible Iranian motives for developing nuclear weapons; its current inventory of largely inaccurate and vulnerable liquid-fuelled missiles and the capacity of WMD payloads to overcome this deficiency, as well as the key contentions relating to its alleged nuclear weapons programme as flagged in the reports of the International Atomic Energy Agency (IAEA).

The next section deals with US efforts to secure its allies in the North Atlantic Treaty Organisation (NATO) and the Gulf Cooperation Council (GCC) against the Iran missile threat. These include the Bush administration’s ‘Third Site’ plan and the ‘Phased Adaptive Approach’ (PAA) of the Obama administration. The dynamics of these efforts including the development of joint capabilities and their subsequent deployment in respective countries – as in the case of Israel and the Arrow theatre ballistic missile defence (BMD) system – as well as the deployment of US assets in the Mediterranean Sea and the Persian Gulf as well as within the territories of these countries to help ensure their protection will be examined.

The steps taken by the US to counter the Iran threat in the Middle East and Europe have had significant strategic consequences apart from impacting regional dynamics. The former include continuing unresolved Russian concerns and the resulting complications in US-Russia arms control efforts. Russia’s ‘strategic defiance’ involving missile and nuclear modernisation to possibly counter-balance any advantages that would accrue to the US as a result of its missile defence efforts are equally pertinent. The paper then goes on to examine the Chinese responses to US missile defences including its nuclear modernisation programme given that the main purpose of the US nuclear arsenal is to counter China’s as well as Russia’s nuclear arsenal.

The US missile defence initiatives have complicated Iran’s relations with its neighbours such as Turkey, given that the latter has been an integral part of the US efforts since September 2011 when it agreed to host a powerful missile tracking radar on its soil. The paper also deals with the strong US-Israel cooperation in missile defence, including joint development of key systems. The paper next examines the role of the GCC countries in US missile defence plans and their responses to the missile threat from Iran. The latter have included rising defence

expenditures, military modernisation programmes, and the procurement as well as stationing of key missile defence assets. The paper closes by making an assessment of the evolving situation and suggests possible directions for future research, given that the issues examined in this monograph relate to developments in India's 'proximate neighbourhood'.

II US AND IRAN: THREE DECADES OF CONTENTIOUS RELATIONS

US-Iran relations have been highly contentious for over three decades since the breakdown of diplomatic relations between the United States and Iran in the aftermath of the 1979 Islamic revolution (US broke relations with Iran on April 7, 1980). During the Iran-Iraq War, the US sided with Iraq. It not only blocked military sales to Iran but provided battlefield intelligence to Iraq.¹ Positives like the Iranian assistance for freeing US hostages in Lebanon in 1991 and the US assistance during the Bam earthquake in December 2003 have been few and far between. US military flights delivered nearly 70,000 kg of humanitarian supplies in the aftermath of that natural disaster.

Instances of punitive US sanctions against Iran on the other hand have been numerous. These have included the US trade and investment ban imposed on Iran by President Clinton like the Iran-Libya Sanctions Act of 1996 banning investments of more than \$20 million in Iran's energy sector. The Shah-era 'legacy' issues have included the US confiscating Iranian property on its soil as well as the non-return of more than \$400 million in foreign military sales (FMS) that were agreed upon during the Shah's regime but the equipment was not supplied to Iran.²

The Bush administration followed a muscular counter-proliferation policy aimed at countering the threats posed by countries like Iran. It took multi-lateral measures like the 2003 Proliferation Security Initiative (PSI), United Nations Security Council (UNSC) Resolution 1540, strengthened and expanded existing national non-proliferation sanctions regime like the Iran Sanctions Act (ISA), among others.

¹ Kenneth Katzman, 'Iran: US Concerns and Policy Responses', CRS Report, June 27, 2005, p. 28. Excerpted in Milton M. Schwartz (ed.), *Iran: Political Issues, Nuclear Capabilities and Missile Range* (New York: Nova Science Publishers, 2006).

² Ibid. p. 43.

The above policy outlook was compounded by the harsh rhetoric and lack of diplomatic relations between the two sides. The US for instance was/is the ‘Great Satan’ in the terminology of the Iranian regime. There was thus obviously little scope for any sort of positive engagement. The Iranian President Mahmoud Ahmadinejad characterised the Bush administration as the ‘dark era’ in relations between the two countries.³

Though US officials like Richard Armitage asserted in October 2003 that the US was not seeking regime change in Tehran, the State Department’s democracy promotion efforts inside Iran fuelled the charge that Washington was indeed actively doing so. The Bush administration for instance earmarked \$1.5 million in 2004 for ‘making grants to educational, humanitarian and non-governmental organisations inside Iran to support the advancement of democracy and human rights in Iran’.⁴ These funds were increased to \$3 million during the next year while another \$1.5 million was provided for in 2006.

The Obama administration in its initial years held out the prospect of engagement with Tehran if the regime addressed core issues of concern, specifically on the nuclear question. President Obama’s messages on the occasion of the Persian New Year (*Nowruz*) falling on March 20 are an example of this outreach to the Iranian people as well as the regime. In his March 2009 message, Obama held out the prospect of ‘engagement that is honest and grounded in mutual respect’.⁵ His March 2011 *Nowruz* message however, was starker, highlighting the wrongs of the Iranian regime, which ‘cares far more about preserving its own power than respecting the rights of the Iranian people’.⁶ In his 2012 message, Obama said that the ‘Iranian people are denied the basic

³ ‘Iran ready for dialogue with US’, *BBC*, February 10, 2009, at http://news.bbc.co.uk/2/hi/middle_east/7880647.stm (accessed January 27, 2012).

⁴ Katzman, ‘Iran: US Concerns and Policy Responses’, p. 31.

⁵ The White House, ‘Videotaped Remarks by The President in Celebration of Nowruz’, March 20, 2009, at <http://www.whitehouse.gov/video/The-Presidents-Message-to-the-Iranian-People/#transcript> (accessed January 26, 2012)

⁶ The White House, ‘Remarks of President Obama Marking Nowruz’, March 20, 2011, at <http://www.whitehouse.gov/the-press-office/2011/03/20/remarks-president-obama-marking-nowruz> (accessed January 26, 2012)

freedom to access the information that they want'. He however added that 'if the Iranian government pursues a responsible path, it will be welcomed once more among the community of nations'.⁷

The US has also accused Iran of following 'destructive policies' on a host of issues during this time. Iranian foreign policy has been deemed as being against US interests in the region, including Iran's support to groups like the Hamas, Hezbollah and the Islamic Jihad – characterised as 'Foreign Terrorist Organisations (FTO)' by the US State Department as well as Iran's alleged negative human rights record.

The State Department *Country Report on Terrorism 2011* charged that Iran 'continued to be the world's leading sponsor of terrorist activity. In addition to engaging in its own terrorist plotting, the Iranian government continued to provide financial, material, and logistical support for terrorist and militant groups throughout the Middle East'.⁸ The 2010 Report accused Iran of providing medium-range rockets to Hezbollah in Lebanon as well as material support to insurgent groups targeting the US and coalition forces in Iraq.⁹

The State Department's Country Report on Human Rights Practices for 2011 charged Iran with various human rights violations, including 'multiple acts of arbitrary and unlawful killings', 659 executions during the year, 'politically motivated abductions', torture of detainees and prisoners, arbitrary arrests and detentions, among others.¹⁰ Iran's human rights record, its treatment of minorities, including religious minorities and women among other groups, its alleged sponsorship of terrorism, and its alleged interference in internal affairs of regional countries including Iraq and Afghanistan has also riled the US.

⁷ The remarks are available at <http://www.whitehouse.gov/the-press-office/2012/03/20/remarks-president-obama-marking-nowruz> (accessed October 16, 2012).

⁸ Office of the Coordinator for Counter-Terrorism, *Country Reports on Terrorism 2011*, 'Middle East and North Africa Overview', July 31, 2012, at <http://www.state.gov/j/ct/rls/crt/2011/195544.htm> (accessed October 15, 2012).

⁹ Office of the Coordinator for Counterterrorism, *Country Reports on Terrorism 2010*, 'Middle East and North Africa Overview', August 18, 2011, at <http://www.state.gov/s/ct/rls/crt/2010/170257.htm> (accessed December 20, 2011).

¹⁰ The Report is available at <http://www.state.gov/documents/organization/186637.pdf> (accessed October 15, 2012).

The US has followed punitive policies in order to pressurise and/or punish Iran over its record/actions. The Iranian Revolutionary Guard Corp (IRGC) and forces under it like the Basij Resistance Force and its personnel have been the specific targets of the US sanctions on account of 'serious human rights abuses' relating to suppression of political dissent, apart from their involvement in WMD-related activities. The US state and treasury departments in February 2011 instituted visa restrictions and prohibited the US citizens from interacting with the head of the Basij force and a senior IRGC commander.¹¹ At the UN Human Rights Council's (which the US joined in September 2009) 17th session in June 2011, it has worked to appoint a Special Rapporteur for human rights abuses in Iran.

The Obama administration meanwhile has imposed increasingly harsher unilateral economic and non-proliferation-related sanctions on Iran, in the light of Iran's continuing uranium enrichment activities, in contravention of the requirements of the UNSC and the IAEA resolutions. The administration's 'dual-track' strategy to deal with the Iranian nuclear issue at the political-diplomatic level has included 'applying pressure in pursuit of constructive engagement, and a negotiated solution' as was stated by Secretary of State Hillary Clinton in June 2011.¹² This meant applying unilateral and multi-lateral sanctions to force Iran to follow the terms of the IAEA/UNSC resolutions.¹³

This 'dual-track' approach has however not elicited the desired response from Iran, including the stopping of enrichment activities. This has largely been on account of the mutually reinforcing antagonistic nature of the two tracks.¹⁴ As sanctions became tougher, Iran's behaviour

¹¹ See 'Departments of the Treasury and State Announce Designations for Human Rights Abuses in Iran', February 23, 2011, at <http://www.state.gov/r/pa/prs/ps/2011/02/156980.htm> (accessed January 24, 2012).

¹² 'Joint Statement on Iran Sanctions', June 23, 2011, at <http://www.state.gov/r/pa/prs/ps/2011/06/166814.htm> (accessed January 24, 2012).

¹³ As of October 2012, there have been 12 IAEA resolutions since September 2003, six UNSC resolutions and four rounds of UNSC-imposed sanctions since June 2006.

¹⁴ For an examination of the diplomatic-political engagement on the Iranian nuclear issue, see S. Samuel C. Rajiv, 'In Pursuit of a Chimera: Nuclear Imbröglio between Sanctions and Engagement', *Strategic Analysis*, 36(6), November 2012, pp. 911-929.

became more defiant. For instance on February 6, 2006, Iran suspended implementation of the IAEA Additional Protocol (though it was not ratified by the parliament, Iran had signed it in December 2003) after its referral to the UNSC as per the February 4 resolution of the IAEA. Iran also decided not to be bound by the provisions of the revised Code 3.1 of its Subsidiary Arrangement in March 2007 (which it had agreed to do in February 2003) in the immediate aftermath of UNSC Resolution 1747, which intensified the nature and volume of sanctions directed against Iranian entities.¹⁵

Responding to Republican criticism on his 'engagement' strategy vis-à-vis Iran, Obama at a press conference in December 2011 asserted that his 'administration has systematically imposed the toughest sanctions on Iran ever'.¹⁶ Earlier in November 2011, the US treasury department identified Iran as a 'jurisdiction of primary money laundering concern' under Section 311 of the Patriot Act. Secretary Clinton stated that the measure was the 'strongest official warning we can give that any transaction with Iran poses serious risks of deception or diversion'.¹⁷

These were over and above the provisions of the Comprehensive Iran Sanctions, Accountability, and Divestment Act, signed into law by Obama in July 2010. The CISADA restricted investments in Iran's petrochemical sector (limited to \$20 million over a 12-month period), imposed restrictions on provision of loans by US financial institutions (\$10 million in any 12-month period), among other requirements.¹⁸

¹⁵ While the Additional Protocol allowed the IAEA to inspect not just declared but undeclared nuclear facilities, the revised (in 1992) Code 3.1 of IAEA Subsidiary Arrangement (which Iran signed in 1976) makes it incumbent on a NPT member state to intimate the information regarding a nuclear facility, as soon as a decision to construct one has been taken. The earlier provision only mandated that a NPT member state inform the IAEA 180 days prior to the introduction of nuclear material. Iran thus became the last NPT member state to agree to the revised provision, if only for a short period of just over 4 years.

¹⁶ Transcript of the Q&A available at <http://www.whitehouse.gov/the-press-office/2011/12/08/statement-president> (accessed January 26, 2012).

¹⁷ 'Measures to Increase Pressure on Iran', November 21, 2011, at <http://www.state.gov/secretary/rm/2011/11/177610.htm> (accessed January 25, 2012).

¹⁸ CISADA Fact Sheet, May 23, 2011, at <http://www.state.gov/e/eb/esc/iransanctions/docs/160710.htm> (accessed January 21, 2012).

The 2012 National Defence Authorisation Act, under Section 1245, passed by the US Senate in December 2011 and signed by President Obama into law on December 31, required countries importing Iranian oil to ‘significantly’ reduce their imports within 180 days, i.e. by June 28, 2012.¹⁹ The Obama administration as of October 2012 had made the assessment that 20 countries have ‘significantly’ reduced their imports of Iranian crude.

¹⁹ ‘Sec. 1245. Imposition of Sanctions with respect to the financial Sector of Iran’, National Defense Authorization Act for Fiscal Year 2012, at <http://www.gpo.gov/fdsys/pkg/BILLS-112hr1540enr/pdf/BILLS-112hr1540enr.pdf> (accessed April 26, 2012).

III

US STRATEGIC ASSESSMENTS AND IRAN

The Missile Threat

While the above policy context spanning terrorism and human rights practices among others dominated the contentious history between the two sides, US strategic thinking on the threat posed by Iran during the time period under study was informed primarily by concerns relating to its nuclear programme and its ongoing efforts to enhance its ballistic missiles capability.

It is pertinent to note that the US concerns about Iran and ballistic missile proliferation predate the August 2002 Natanz revelations. The 1998 Commission to Assess the Ballistic Missile Threat to the United States headed by Donald Rumsfeld noted that the ‘extraordinary level of resources North Korea and Iran are now devoting to developing their own ballistic missile capabilities poses a substantial and immediate danger to the US, its vital interests and its allies’.²⁰

President Bush in his January 2002 State of the Union address clubbed Iran along with Iraq and North Korea as an ‘axis of evil, arming to threaten the peace of the world. ...’²¹ Addressing the US Military Academy at West Point in June 2002, Bush contended that America was facing ‘a threat with no precedent. ... at the crossroads of radicalism and technology. When the spread of chemical and biological and nuclear weapons, along with ballistic missile technology — when that occurs,

²⁰ See ‘Executive Summary of the Report of the Commission to Assess the Ballistic Missile Threat to the United States’, July 15, 1998, at <http://www.fas.org/irp/threat/bm-threat.htm> (accessed September 22, 2011).

²¹ Text of the speech is available at <http://www.washingtonpost.com/wp-srv/onpolitics/transcripts/sou012902.htm> (accessed January 24, 2012).

even weak states and small groups could attain a catastrophic power to strike great nations'.²²

In the September 2002 National Security Strategy (NSS) document, Bush warned that the 'determination' of rogue states and terrorists 'to obtain destructive powers hitherto available only to the world's strongest states, and the greater likelihood that they will use weapons of mass destruction against us, make today's security environment more complex and dangerous.'²³ His definition of 'rogue' states clearly mirrors the US administration's thinking on Iran. These included 'brutalising their own people'; no regard for international law; determination to acquire WMD; 'sponsor terrorism around the globe'; and 'hate the US and everything for which it stands'.²⁴

The 2006 NSS document affirmed that the United States 'face[d] no greater challenge from a single country than from Iran'. It listed the threats posed by Iran such as its unresolved nuclear concerns, its alleged sponsorship of terrorism, threats to Israel, thwarting of Middle East peace, its negative role in Iraq, as well as denying the 'aspirations of its people for freedom'.²⁵

The September 2008 Department of Energy-Defence document '*National Security and Nuclear Weapons in 21st Century*' noted that 'Iran's leaders have made numerous threats to destroy regional friends of the United States, have made direct threats against the United States, and continue to pursue policies that are hostile to US interests and jeopardize regional security'.²⁶ The document noted with concern Iran's

²² See 'President Bush Delivers Graduation Speech at West Point', June 1, 2002, at <http://georgewbush-whitehouse.archives.gov/news/releases/2002/06/20020601-3.html> (accessed July 4, 2012).

²³ 'The National Security Strategy of the United States of America', September 2002, at <http://www.globalsecurity.org/military/library/policy/national/nss-020920.pdf>, p. 13, (accessed August 8, 2011).

²⁴ *Ibid.*, p. 14.

²⁵ 'The National Security Strategy of the United States of America', March 2006, at <http://georgewbush-whitehouse.archives.gov/nsc/nss/2006/sectionV.html>, p. 20 (accessed July 4, 2012).

²⁶ The document is available at www.Defence.gov/news/nuclearweaponspolicy.pdf, pp. 5-6, (accessed July 5, 2012).

development of a space launch vehicle – which could give it the required technologies to develop an intermediate range ballistic missile (IRBM) – and its procurement of ‘substantial numbers of short- and medium-range ballistic missiles’.²⁷

The May 2009 report of the Congressional Commission on the Strategic Posture of the United States noted that Iran had in its possession ‘several hundred mobile short and medium-range missiles that could threaten US allies and bases, and the recent launch of its *Safir-2* (‘Ambassador’) Space Launch Vehicle demonstrated some technologies necessary for the development of a crude long-range missile’.²⁸

The February 2010 *Ballistic Missile Defence Review* (BMDR), the first ever such review undertaken by the US, affirmed that Iran ‘present[ed] a significant regional missile threat. It has developed and acquired ballistic missiles capable of striking deployed forces, allies, and partners in the Middle East and Eastern Europe. It is fielding increased numbers of mobile regional ballistic missiles . . .’²⁹ The *Review* flagged Iran’s MRBM capabilities, specifically the 2000 kms range *Shahab-3* (‘Meteor’). It also noted the possibility of transfer of WMD capabilities to non-state actors and cited the example of Iranian-sponsored Hezbollah which had targeted Israel in recent past. It went on to add that the ‘advent of ballistic missile threats from such terrorist organizations would raise profound new questions about regional security’.³⁰

The 2010 *Quadrennial Defence Review* (QDR) pointed out that Iran was ‘actively testing and fielding’ new ballistic missile systems and that ‘as the inventories and capabilities of such systems continue to grow, US

²⁷ Ibid.

²⁸ ‘America’s Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States’, May 2009, p. 31, at http://media.usip.org/reports/strat_posture_report.pdf (accessed August 15, 2011).

²⁹ ‘Ballistic Missile Defence Review Report’, February 2010, p. 6, at http://www.Defence.gov/bmdr/docs/BMDR%20as%20of%2026JAN10%200630_for%20web.pdf (accessed August 10, 2011).

³⁰ Ibid., pp. 7-8.

forces deployed forward will no longer enjoy the relative sanctuary that they have had in conflicts since the end of the Cold War'.³¹

The US Director of National Intelligence (DNI) James Clapper in his 2011 intelligence assessment to the US Congress stated that the US was closely watching Iran's space-launch activities in the aftermath of a new rocket engine (*Simorgh* - 'Phoenix') displayed by Iran in February 2010 given that such technology 'could be used for an ICBM-class vehicle'.³² Clapper and Director of the Defence Intelligence Agency (DIA) Ronald Burgess informed the Senate Armed Services Committee in February 2012 that:

Iran can already strike targets throughout the region and into Eastern Europe with ballistic missiles. In addition to its growing missile and rocket inventories, Iran is seeking to enhance lethality and effectiveness of existing systems with improvements in accuracy and warhead designs. Iran's *Simorgh* space launch vehicle shows the country's intent to develop technologies applicable to developing an ICBM.³³

The January 2012 Strategic Guidance for the US defence department 'Sustaining US Global Leadership: Priorities for 21st Century Defence' while surveying the regional security situation in the Middle East noted that 'of particular concern are the proliferation of ballistic missiles and weapons of mass destruction (WMD)'.³⁴ The document goes on to note that countries like Iran and China will increasingly use 'asymmetric capabilities' like ballistic and cruise missiles to 'complicate' America's 'operational calculus' and challenge its freedom to operate freely. In

³¹ 'Quadrennial Defence Review Report', February 2010, p. 31, at <http://www.Defence.gov/qdr/qdr%20as%20of%2029jan10%201600.PDF> (accessed July 5, 2011).

³² See 'Statement for the Record on the Worldwide Threat Assessment of the US Intelligence Community for the House Permanent Select Committee on Intelligence', February 10, 2011, at http://www.dni.gov/testimonies/20110210_testimony_clapper.pdf (accessed July 5, 2012).

³³ See 'Annual Threat Assessment: Statement before the Senate Armed Services Committee, United States Senate', February 16, 2012, at <http://www.dia.mil/public-affairs/testimonies/2012-02-16.html> (accessed July 5, 2012).

³⁴ The text of the document is available at http://www.Defence.gov/news/Defence_Strategic_Guidance.pdf, p.2 (accessed July 5, 2012).

this context, the document calls for improving missile defences apart from developing other capabilities like new stealth aircrafts and space-based assets to effectively counter such moves.³⁵ A robust missile defence capability is also crucial, the document notes, for purposes of homeland defence.

The Nuclear Threat

In the context of the controversy as regards the intelligence assessments of Iraqi WMD capabilities and the subsequent invasion of Iraq which resulted in enormous loss of lives and property for both the US and Iraq, an examination of US intelligence assessments regarding the threat posed by Iran's nuclear and WMD programmes are pertinent. Important sources of these assessments include the Annual Threat Assessments of the DNI to American lawmakers as well as specific National Intelligence Estimates (NIE) which provide an important window into the thinking of the US administrations regarding the purported nature of the nuclear threat from Iran.

Senior US officials like the then Under Secretary for Arms Control and International Security John Bolton, while testifying before the House International Relations Sub-Committee in June 2004 reiterated that the:

‘United States strongly believes that Iran has a clandestine program to produce nuclear weapons ... We cannot let Iran, a leading sponsor of international terrorism, acquire the most destructive weapons and the means to deliver them to Europe, most of central Asia and the Middle East, or beyond’.³⁶

US Undersecretary for Political Affairs Nicholas Burns echoed similar sentiments before the Senate Foreign Relations Committee in May 2005 when he asserted ‘We see no sign that Iran has made the necessary strategic decision to abandon what we conclude is an active nuclear weapons program ...’³⁷ Reports noted that the US in 2004 received

³⁵ Ibid., pp. 4-5.

³⁶ John R. Bolton, ‘Iran’s Continuing Pursuit of Weapons of Mass Destruction’, June 24, 2004, at <http://2001-2009.state.gov/t/us/rm/33909.htm> (accessed December 20, 2011).

³⁷ R. Nicholas Burns, ‘United States’ Policy toward Iran’, May 19, 2005, at <http://2001-2009.state.gov/p/us/rm/2005/46528.htm> (accessed December 20, 2011).

documentation running into many thousands of pages relating to Iran's efforts to develop a nuclear warhead for the *Shahab-3* missile between 2001-2003.³⁸

Despite the above assertions however, the US intelligence community in its November 2007 National Intelligence Estimate (NIE) *Iran: Nuclear Intentions and Capabilities* (released on December 3, 2007), judged with 'high confidence' that Tehran halted its nuclear weapons programme in the fall of 2003.³⁹ The NIE was the combined effort of expert analysts working in 16 different agencies under the DNI. Its assessment differed from the previous NIE in 2005 which assessed that Iran was determined to develop nuclear weapons capability, though it did note that Iran was not 'immovable' from this position.⁴⁰

Reports noted that the 2007 NIE's re-assessment was prompted by the discovery of information on a laptop which supposedly expressed the resentment of high-ranking Iranian officials involved with the nuclear effort over the termination of key nuclear-weapons related work – including engineering efforts on the design of a warhead. The information in these notes, reports added, was also corroborated by communication intercepts made by US intelligence agencies.⁴¹

The 2007 NIE while noting with 'moderate to high confidence' that Iran did not currently have a nuclear weapon, assessed with 'high confidence' that Tehran would have the scientific, technical and industrial capacity to produce nuclear weapons - if it so decided - by about

³⁸ Caita Ann Robbins, 'As Evidence Grows of Iran's Program, US Hits Quandary', March 18, 2005, at <http://online.wsj.com/article/0,,SB111111017248183340,00.html> (accessed October 19, 2012).

³⁹ See 'Iran: Nuclear Intentions and Capabilities', November 2007, at http://www.dni.gov/press_releases/20071203_release.pdf (accessed July 5, 2012). The portions of the section dealing with the 2007 NIE draw on the author's article 'Iran off the Heat: A Tale of Two Reports', *Proliferation and Arms Control*, 4(9), November 2007, pp. 1-5.

⁴⁰ Ibid. See also Jeffrey Lewis, '2005 Iran NIE Details', September 25, 2009, at <http://lewis.armscontrolwonk.com/archive/2469/2005-iran-nie-details> (accessed July 5, 2012).

⁴¹ David Sanger and Steven Lee Myers, 'Details in military notes led to shift on Iran, US says', *The New York Times*, December 6, 2007, at http://www.nytimes.com/2007/12/06/world/middleeast/06intel.html?_r=1&ref=todayspaper&oref=slogin (accessed December 6, 2007).

2015. On the possibility of Iran giving up its nuclear weapons quest, the report noted with ‘moderate confidence’ that convincing the Iranian leadership to forego nuclear weapons development would be difficult because of the sheer effort that has gone into producing a weapon at least till 2003.

Crucially, the report highlighted the continued linkage of nuclear weapons development with key national security and foreign policy objectives by the Iranian leadership. The NIE though stated that the decision to abandon its nuclear weapon aspirations was solely the preserve of ‘an Iranian political decision ...’ Such a decision it further cautioned was ‘...inherently reversible’.

While Washington, Tehran and the IAEA perceived the Estimate’s findings as justifying their respective positions on the issue, reports noted that the principal European interlocutors engaged in dealing with Iran’s nuclear programme – the EU-3 countries comprised of France, Britain and Germany, were surprised by the NIE assessment. These countries, along with Russia and China, during their meetings a few days before the release of the report, had decided to impose a new round of sanctions at the UNSC.⁴²

President Bush affirmed that the report vindicated American concerns over the nature of the Iranian nuclear programme and asserted that Iran ‘was dangerous ... is dangerous ... will be dangerous’ if they were allowed to possess the knowledge necessary to make a nuclear weapon. President Ahmadinejad on his part termed the assessment as a ‘victory’ for Iran’s nuclear stance and vowed to continue its ‘peaceful’ nuclear programme.⁴³ The IAEA Director General Mohammed El

⁴² Elaine Sciolino, ‘Europeans see murkier case for sanctions’, *The New York Times*, December 4, 2007, at <http://www.nytimes.com/2007/12/04/world/europe/04react.html> (accessed December 6, 2007).

⁴³ Steven Lee Myers and Helene Cooper, ‘Bush insists Iran remains a threat despite arms data’, *The New York Times*, December 5, 2007, at <http://www.nytimes.com/2007/12/05/washington/05prexy.html?ref=todayspaper>; See also Nazila Fathi, ‘Iranian leader calls report US confession of “mistake”’, *The New York Times*, December 6, 2007, at <http://www.nytimes.com/2007/12/06/world/middleeast/06iran.html?ref=todayspaper> (accessed December 6, 2007).

Baradei insisted that the findings were ‘consistent’ with the IAEA’s assessment and that it provided Iran with a ‘window of opportunity’ to resolve the crisis.⁴⁴ While adding that Iran still needed to “clarify some important aspects of its past and present nuclear activities”, Dr El Baradei admitted that the Agency had “no concrete evidence of an ongoing nuclear weapons programme or undeclared nuclear facilities in Iran”.⁴⁵

Israel rejected the 2007 American assessment regarding Iran’s nuclear programme with Defence Minister Ehud Barak stating that ‘Tel Aviv cannot just depend on one assessment and lower its guard, even if it came from one of Israel’s ‘greatest friend’.⁴⁶ The then prime minister Ehud Olmert however noted that diplomacy remained the correct path to prevent Iran from developing non-conventional weapons.

The NIE assessment toned down the pressure for military strikes against Iran, the clamour for which was building up especially so in Israel. By suggesting that the halt to its pursuit of nuclear weapons in 2003 was directly related to the international scrutiny that Tehran had to face due to its unverified nuclear activities, the report accorded prominence to the view that Tehran was susceptible to renewed pressure over its nuclear weapons intentions. The NIE recommended a greater degree of international scrutiny, coupled with opportunities for Iran to achieve its security, prestige, and goals for regional influence in other ways, which could prompt Tehran to extend the current halt of its nuclear weapons programme. The White House supported the NIE’s assessment and argued for greater pressure, including tighter sanctions to prevent Iran’s nuclear quest.

⁴⁴ ‘US nuclear report opportunity for Iran: IAEA Chief’, *Reuters*, December 5, 2007, at <http://in.news.yahoo.com/071205/137/60312.html> (accessed December 6, 2007).

⁴⁵ See ‘Statement by IAEA Director General on new US intelligence estimate on Iran’, December 4, 2007, at <http://www.iaea.org/NewsCenter/PressReleases/2007/prn200722.html> (accessed December 10, 2007)

⁴⁶ Steven Erlanger and Isabel Kershner, ‘Israel insists that Iran still seeks a bomb’, *The New York Times*, December 5, 2007, at <http://www.nytimes.com/2007/12/05/world/middleeast/05israel.html?ref=todayspaper> (accessed December 6, 2007).

Washington's intelligence re-assessment however did not pave the way for more transparency on the part of Iran or the development of mutual complementarities among the key interlocutors involved to address the unresolved contentions. In the immediate aftermath of the 2007 NIE, the DNI Michael McConnell in his 2008 Annual Threat Assessment noted that: 'Despite the halt through at least mid-2007 to Iran's nuclear weapons design and covert uranium conversion and enrichment-related work, Iran continues to pursue fissile material and nuclear-capable missile delivery systems'.⁴⁷ He went on to add that: 'Iran continues to deploy ballistic missiles inherently capable of delivering nuclear weapons, and to develop longer-range missiles'.⁴⁸ McConnell asserted that: 'Iran's growing inventory of ballistic and anti-ship cruise missiles [was] a key element' of its 'ultimate goal of dominating the Gulf region and deterring potential adversaries'.⁴⁹

In his 2009 testimony, DNI Dennis Blair pointed out that Iran continues to strengthen what he termed the 'three pillars of its strategic deterrence'. These included missiles, long-range rockets and aircraft for retaliation; naval forces for disrupting maritime traffic; and *unconventional forces* [emphasis added]. He however admitted that many of Iranian officials' statements regarding their ability to threaten US interests and those of its allies were 'exaggerations'.⁵⁰ In the same report, the DNI noted that the US intelligence community had judged that Iran had stopped its nuclear weaponisation activities in 2003 and that it had not re-started these activities till at least mid-2007.⁵¹

The May 2009 report of the Congressional Commission on the Strategic Posture of the United States, released in the aftermath of Obama

⁴⁷ 'Annual Threat Assessment of the Director of National Intelligence for the Senate Select Committee on Intelligence', February 5, 2008, at <http://intelligence.senate.gov/080205/mcconnell.pdf> (accessed July 5, 2012), p. 3.

⁴⁸ *Ibid.*, p. 12.

⁴⁹ *Ibid.*, p. 23.

⁵⁰ 'Annual Threat Assessment of the Intelligence Community for the Senate Select Committee on Intelligence', February 12, 2009, at http://www.dni.gov/testimonies/20090212_testimony.pdf (accessed July 5, 2012), p. 10.

⁵¹ *Ibid.*, p. 19.

assuming the presidency, noted that Iran ‘stands at the brink of nuclear weapons capability’ and pointed out that ‘proliferation to belligerent states opposed to the United States and/or the regional status quo is particularly troubling.’ This was because, according to the document, such states could use nuclear threats to coerce neighbours and deter the United States, embolden them to ‘commit acts of aggression or domestic transgression’, and the attendant risk that terrorists could get hold of these weapons.⁵²

DNI Blair in his 2010 assessment stated that Iran:

...would likely choose missile delivery as its preferred method of delivering a nuclear weapon. Iran already has the largest inventory of ballistic missiles in the Middle East and it continues to expand the scale, reach and sophistication of its ballistic missile forces – many of which are inherently capable of carrying a nuclear payload.⁵³

DNI James Clapper in 2011 carried forward the assessments of his predecessor regarding Iranian intentions stating that Iran was ‘keeping open the option to develop nuclear weapons in part by developing various nuclear capabilities that better position it to produce such weapons, should it choose to do so’ and that missiles would be ‘its preferred method of delivering a nuclear weapon’.⁵⁴

⁵² See ‘America’s Strategic Posture’, p. 7, n. 28.

⁵³ The text of the testimony is available at http://www.dni.gov/testimonies/20100202_testimony.pdf, p. 13 (accessed July 4, 2012).

⁵⁴ ‘Statement for the Record on the Worldwide Threat Assessment of the US Intelligence Community for the House Permanent Select Committee on Intelligence’, n. 32, p. 5.

IV ASSESSING THE IRAN THREAT

Ballistic Missiles⁵⁵

Rationale

Iran's pursuit of ballistic missile technology has a 'chequered'⁵⁶ history, involving a host of factors including its reading of strategic environment, threat perception, domestic factors including the state of its military capabilities, among others. The Iran-Iraq war, which lasted from 1980-1988, had a fundamental bearing on Iranian efforts regarding the acquisition of missile capabilities. By 1984, Iraq had achieved significant control of the airspace. While Iraq was able to fire multiple missile salvos on Iranian cities, Iran was able to fire only a single missile per day in 1987. Iran suffered more than 3000 casualties in air and missile attacks in 1987 itself.⁵⁷

The February-April 1988 'war of the cities' had an important effect on the Iranian psyche. Iraqi commanders noted that the 'course of the war had changed in favour of Iraq since the onset of the missile war'.⁵⁸ Reports noted that more than a quarter of Tehran's population fled the city because of the Iraqi missile onslaught.⁵⁹ Analysts note that the

⁵⁵ I am grateful to the valuable and critical inputs of an external reviewer which have helped expand and refine this particular section.

⁵⁶ See Anoushiravan Ehteshami, 'The Military Balance in the Gulf and Its Chequered Career', in Charles Davies (ed.), *After the War: Iraq, Iran and the Arab Gulf* (Chichester: Carden Publishers, 1990).

⁵⁷ Shahrām Chubin, *Iran's National Security Policy: Capabilities, Intentions and Impact*, Carnegie Endowment for International Peace, Washington D.C., 1994, p. 21

⁵⁸ *Ibid.*, p. 22.

⁵⁹ Michael Eisenstadt, 'Déjà vu all over Again? An Assessment of Iran's Military Build-Up', p. 112, in Patrick Clawson (ed.), *Iran's Strategic Intentions and Capabilities*, McNair Paper 29, April 1994, NDU, Washington D.C.

losses suffered as well as the psychological damage as a result of the missile war probably contributed to a significant measure to Iran's decision to end the war in the summer of 1988.

The role played by missiles during the war with Iraq coupled with large Iranian military losses and the difficulties in replenishing these losses within a short period of time strengthened Iranian determination not to be 'caught on the wrong foot', as it were, in future crises or wars. Iran's arsenal for instance reduced dramatically in comparison to Iraq during the war. Analysts have noted that between 1979 and 1991, Iran's tank force dropped from 1700 to 700; operational aircraft from 445 to about 150; helicopters from 600 to 200, among other losses.⁶⁰

Even after the 1991 Gulf War, Iraq retained military superiority over Iran. It had three times the number of armoured vehicles than Iran, over 350 aircraft, 450 helicopters, and 15,000 heavy artillery pieces.⁶¹ The difficulty of maintaining its Shah-era military equipment sourced from Western countries was also very obvious in the light of non-accessibility of spare parts. The then defence minister Akbar Torkan was quoted as stating that Iran's air transport and helicopter fleets were almost exclusively sourced from the US and the priority was to find spare parts 'in order to keep them flying'.⁶²

Iran's air force meanwhile had US-supplied aircraft like the F-4Es which were not mission-capable due to lack of spares and faced maintenance issues while other aircraft in its arsenal like the Chinese-supplied F-7 were not very effective.⁶³ In 1979, Iran had 200 F-4 Phantom fighter bombers, 150 F-5 short range interceptors, a squadron of Boeing aerial refuelling tankers, significant transport fleet of 64 C-130E.H Hercules aircraft as well as 6 Boeing 747s. By 1984 however, only 55 F-5s, 50 F-4s and 12 F-14s were operational.⁶⁴ Iran's air defence systems

⁶⁰ Chubin, *Iran's National Security Policy*, n. 57, p. 35.

⁶¹ Ibid. p. 38.

⁶² Ibid., p. 41.

⁶³ Eisenstadt, 'Déjà vu all over Again? An Assessment of Iran's Military Build-Up', n. 59, p. 126-127.

⁶⁴ Cited in Ahmed Hashim, 'Iran's Military Situation', in Clawson (ed.), *Iran's Strategic Intentions and Capabilities*, n. 59, p. 180.

were also rudimentary and the Western-supplied systems were non-operational.

Iran was not just at the receiving end of missiles but also of Iraqi chemical weapons. Iraq not only used chemical weapons in the battlefield but also in places like Halabja, Iraqi Kurdistan, where thousands of people died. However, Iran felt that there was not much international condemnation of these incidents and that there was no stopping Iraq from using such weapons on its cities as well.⁶⁵ The former Iranian President Ali Akbar Rafsanjani was quoted as stating in October 1988 that: ‘chemical and biological weapons are the poor man’s atomic bombs and can easily be produced. We should at least consider them for our defence’.⁶⁶ Despite the above statement, Iran is a signatory to the Chemical Weapons Convention (CWC) and has expressed legal and religious opposition to the use of chemical weapons. Analysts though note that there is a possibility that Iran has continued to pursue the development of the infrastructure and the dual-use capability to produce such weapons even after 2003 as a sort of ‘hedging behaviour’.⁶⁷

Iran therefore saw missiles as not only militarily effective in the light of its own difficult strategic history but also missiles development and acquisition as a cost-effective way to overcome its military deficiencies as well as countering the stronger air forces of its neighbours.⁶⁸ Rafsanjani was quoted as stating in September 1988 that ‘missiles are the most important weapons today’.⁶⁹ Its missile programme also nicely fitted into its mantra of ‘self-reliance’ in order to better defend itself and overcome the problem of lack of spare parts that it had faced for its Western-sourced equipment in the aftermath of the Islamic revolution.⁷⁰ Further, the 1991 Gulf War demonstrated the significant

⁶⁵ Ibid., p. 211.

⁶⁶ Cited in Chubin, *Iran’s National Security Policy*, n. 57, p. 26.

⁶⁷ See *Iran’s Strategic Weapons Programme: A Net Assessment*, International Institute for Strategic Studies, 2005, p. 70.

⁶⁸ Eisenstadt, ‘Déjà vu all over Again? An Assessment of Iran’s Military Build-Up’, n.59, p. 129.

⁶⁹ Chubin, *Iran’s National Security Policy*, n. 57, p. 22.

⁷⁰ Ibid., p. 19.

gap in conventional capabilities between an advanced military power like the US and those of Iran with its depleted arsenal.⁷¹

The Iranian emphasis on missiles in their military strategy is also noteworthy in the light of the huge gap in defence spending between Iran and countries of the GCC in the aftermath of the Iraq war. For instance, it has been pointed out that from 1988-2007, the GCC countries had spent more than seven times as much as Iran on defence (\$413.7 billion as against \$55 billion by Iran).⁷²

Iran's missile acquisition efforts also nicely dovetailed with its overall strategy of asymmetric warfare to overcome the deficiencies of its capabilities in relation to big powers like the US. The IRGC commander Ali Jafari for instance in September 2007 stated that his force's 'excellent defensive and ballistic capabilities [constitute] one of our present advantages, and we aim to attain superiority [in this area]. IRGC will invest efforts in strengthening its asymmetric warfare capabilities, with the aim of successfully confronting the enemy.'⁷³ The naval chief Vice Admiral Ali Shamkhani echoed the above view when he stated in October 2008 that 'there is an imbalance of power between Iran and those who threaten it ... Iran's deterrence strategy is not based on a balance of power'.⁷⁴

External Sources of Support

China, North Korea, and Russia have played a crucial part in helping Iran realise its objectives as regards missile technology acquisition and production. China for instance was a key arms supplier to Iran during the Iraq war. Iran imported about 200 CSS-8 missiles (150-km range) from China in 1989. It followed this up by buying another about 200 M-11 missiles (280-km range) from China in 1995.⁷⁵ Analysts have

⁷¹ Ibid., p. 28.

⁷² Anthony H. Cordesman and Adam C. Seitz, *Iranian WMD: The Birth of a Regional Nuclear Arms Race?* CSIS, (California: Praeger Security International, 2009), p. 38.

⁷³ Ibid., p. 76.

⁷⁴ Ibid., p. 95.

⁷⁵ Andrew Feickart, *Iran's Ballistic Missile Capabilities*, CRS Report, August 23, 2004. Excerpted in Milton M. Schwartz (ed.), *Iran: Political Issues, Nuclear Capabilities and Missile Range* (New York: Nova Science Publishers, 2006), p. 54.

noted that though China and Iran are not close, ideologically or politically, there is no reason for Tehran to be apprehensive of Chinese geo-political designs, unlike in the case of Russia (see below).⁷⁶

In 1985 Iran also signed an agreement with China to buy HY-2 Silkworm missiles. Other Chinese missiles supplied to Tehran have included the C-802 anti-ship cruise missiles and the C-801 air-launched anti-ship cruise missiles. US officials were particularly apprehensive of the air-launched version, when it was tested by Iran on US-made F-4 jets in June 1997. The then US defence secretary William Cohen noted that Iran posed a ‘360 degree threat’ to US forces.⁷⁷

Though China in 1992 gave a commitment that it would adhere to Missile Technology Control Regime (MTCR) norms, reports in 1996 noted that China sold guidance technology and special steel for possible use in *Shahab* missiles, which have a range that exceeds MTCR limits (300 km; 500 kg payload).⁷⁸ In November 2000, China again publicly assured that it would not assist other countries in developing ballistic missiles. However, US officials in July 2003 charged that though “at the highest levels, the Chinese government has claimed that it opposes missile proliferation. ... Unfortunately, the reality has been quite different.”⁷⁹

Chinese companies have built missile plants for the Iranians near Semnan. North Korea has also built facilities at Isfahan and Sirjan which can produce liquid fuels and other components. Missile test facilities at Shahroud and the Shahid Hemat Industrial Group research facility south of Tehran were also reportedly built by North Korean companies.⁸⁰

⁷⁶ Kenneth Kaztman, ‘Iran: Arms and WMD Suppliers’, CRS Report, January 3, 2003. Excerpted in Milton M. Schwartz (ed.), *Iran: Political Issues, Nuclear Capabilities and Missile Range* (New York: Nova Science Publishers, 2006), p. 85.

⁷⁷ *Ibid.*, p. 88.

⁷⁸ *Ibid.*, p. 90.

⁷⁹ This was US Assistant Secretary of State for Verification and Compliance Paula DeSutter in July 2003. Cited in Victor Zaborosky, ‘Does China Belong in the Missile Technology Control Regime?’ *Arms Control Today*, October 2004, at http://www.armscontrol.org/act/2004_10/Zaborosky (accessed October 16, 2012).

⁸⁰ Al J. Venter, *Iran’s Nuke Option: Tehran’s Quest for the Atom Bomb* (Casemate, Philadelphia, 2005), p. 210.

Iran received about 300 single-stage liquid-propelled 300-km range Scud-Bs from North Korea during the 1990's. It also received the 500-km range Scud-C's from Pyongyang in 1994.

As for Russian assistance, US officials told the Congress in June 1998 – ahead of the first failed test of the 1500-km range *Shahab-3* – that Russia 'has helped Iran save years in its development of the *Shahab-3* ... and is playing a crucial role in Iran's ability to develop more sophisticated and long-range missiles'.⁸¹ Russia has also supplied Iran with the 200-km range SA-5/7 surface-to-air missiles, Mig-29 and Sukhoi combat aircraft, S-300 air defence systems, apart from significant help in its civilian nuclear programme.

Russian missile assistance to Iran is particularly glaring because Russia became a member of the MTCR in 1995. Analysts note that Russian help to Iran has included missiles components like specialty steels, tungsten-coated graphite, gyroscopes, and guidance technology, among others.⁸² In the aftermath of the failed July 1998 *Shahab* test, the Clinton administration sanctioned about 10 Russian entities. The Clinton administration though had some success in blocking the sale of dual-use equipment that could have been used by Iran in its nuclear programme. Moscow for instance desisted from supplying a laser device to Tehran in September 2000 on account of US pressure.⁸³

Worried about the know-how and material that Iran was allegedly getting from countries like Russia and North Korea for its WMD programmes, President Clinton signed the Iran Non-proliferation Act (INA) on March 14, 2000. The INA authorised punitive action:

...on entities for the transfer to Iran since January 1, 1999, of equipment and technology controlled under multilateral export control lists (Missile Technology Control Regime, Australia Group, Chemical Weapons Convention, Nuclear Suppliers Group, Wassenaar Arrangement) or otherwise having the potential to make a material contribution to the

⁸¹ Ibid., 56.

⁸² Kaztman, 'Iran: Arms and WMD Suppliers', n. 76, p. 81.

⁸³ Ibid., p. 85.

development of weapons of mass destruction (WMD) or cruise or ballistic missile systems.⁸⁴

Analysts have noted that Russia's arms and technological help to Iran despite the lack of ideological affinity between the two sides coupled with history of the Russian occupation of northern Iran and Iranian fears of Soviet territorial ambitions in the aftermath of the Afghan invasion was motivated by a variety of factors. These have included the desire to prevent Iran from meddling politically in the ex-Soviet republics, the imperatives of a close relationship in the aftermath of the first Persian Gulf War and the issue of the Caspian Sea energy resources which both countries covet, among others.⁸⁵

Various reports to the US Congress have highlighted the dangers of such continuing Russian, Chinese and North Korean help to Iran's missile programmes. The 'Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, Covering 1 January to 31 December 2007' – presented by the 'Director of Central Intelligence' charged that 'Russian-entity assistance, along with assistance from entities in China and North Korea, has helped Iran move toward self-sufficiency in the production of ballistic missiles'.⁸⁶

Later reports have continued to reiterate the above charges. The 2012 Pentagon report to Congress on '*Military Power of Iran*' underlined the 'broad, essential, long-term assistance from Russia and important assistance from China' that Iran was receiving on its missile programmes, import of missile technology from countries like North Korea, and the development of solid-fuelled rocket technology.⁸⁷ The May 2012

⁸⁴ *Federal Register*, Vol. 71, No. 150, August 4, 2006, Notices, at [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2006_register&docid=\[DOCID:fr04au06-119\].pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2006_register&docid=[DOCID:fr04au06-119].pdf) (accessed January 17, 2012)

⁸⁵ Kazzman, 'Iran: Arms and WMD Suppliers', n. 76, p. 77.

⁸⁶ The report is available at <http://www.dni.gov/reports/Unclassified%20Report%20to%20Congress%20WMD%20Covering%201January%20to%2031%20December%202007.pdf> (accessed July 19, 2012).

⁸⁷ The report is available at <http://media.bloomberg.com/bb/avfile/rNnp87SL4Ew8> (accessed July 19, 2012).

indictment in a US court of a Chinese national for supplying ‘maraging steel’ to Iranian entities is one instance of the continuing Chinese ‘clandestine’ help to Iran’s nuclear and ballistic missile programmes.⁸⁸

Threat Perceptions

The military value of pursuing non-conventional capabilities like chemical and biological weapons as well as its alleged efforts to acquire nuclear weapons capability along with the means to deliver them is based on Iran’s reading of its strategic situation. Since the end of the Iran-Iraq war and the Cold War and even after *Desert Storm*, Iran has had to face a negative regional security situation. Analysts have noted that during the 1990s, as viewed from Tehran, there was an ‘arc of crisis’ extending from Iraq to Afghanistan and the Trans-Caucasus region. To Iran’s south, the enhanced US military force presence significantly curtailed the regional influence that flowed from its demographic strengths and geographic advantages.⁸⁹ The then US secretary of state James Baker was quoted as stating in February 1992 that the US presence in Central Asia was specifically to counter Iran.⁹⁰ Analysts have noted that one of the key strategic motivations for Iran is the need to establish a capability to deter the US from attacking it and to hinder the US’s ability to project force in the region.⁹¹

Iran has continued to face a difficult strategic situation even after the overthrow of Saddam Hussein by US-led forces while being conscious of the fact that it is the dominant power in the Persian Gulf. Iran specifically is apprehensive of the significant US military presence in the region encircling it from all sides. The US forces for instance are currently present in Iraq, Afghanistan, Turkey, Central Asia, and the Persian Gulf as well as in the countries of the GCC – most specifically in Kuwait and Qatar. The US Fifth Fleet, the naval component of the

⁸⁸ See Joby Warrick, ‘Justice probe nets Iran nuclear procurement ring’, July 14, 2012, at http://www.washingtonpost.com/world/national-security/justice-probe-nets-iran-nuclear-procurement-ring/2012/07/13/gJQAYbiniW_story.html?wpisrc=nl_cuzheads (accessed July 16, 2012).

⁸⁹ Chubin, *Iran’s National Security Policy*, n. 57, p. 5.

⁹⁰ Ibid.,

⁹¹ Eisenstadt, ‘Déjà vu all over Again?’, n. 59, p. 95.

US Central Command (CENTCOM), has been based in Manama, Bahrain since 1996, though the US had a naval presence there since 1971. It consists of close to 16,000 military personnel (afloat and on-site) and about 25 war ships, including an aircraft carrier battle group.

Iran views these forces as a direct military threat. In recent times, the US has buttressed its force capabilities in the Fifth Fleet Area of Responsibility (AOR). For instance, five US aircraft carrier strike groups have visited these waters since January 2012. These have included the US naval ships: *Carl Vinson*, *Abraham Lincoln*, *Enterprise*, *Eisenhower* and *John C. Stennis*, as of October 2012. Iranian officials have warned that US forces in the region will be legitimate targets if its nuclear facilities are attacked or economic punitive measures become even tougher.⁹²

The US along with the European Union (EU) meanwhile has been at the forefront of imposing increasingly punitive economic sanctions aimed at constricting Iranian oil revenues, both through the multi-lateral and the unilateral routes. The 2012 National Defence Authorisation Act had provisions sanctioning financial entities that do business with the Central Bank of Iran (CBI). The EU has enforced a ban on the import of Iranian oil since July 2012 as well as an insurance ban making it difficult for tankers to carry Iranian crude. Further stricter EU sanctions measures banning Iranian gas imports as well among others were imposed in October 2012.

In the face of these military moves and the punitive financial sanctions, Iran threatened that it would close the Strait of Hormuz to international shipping. Iranian commanders like the naval chief Habibollah Sayyari in December 2011 asserted that closing the Straits was 'easier than drinking a glass of water' for his forces.⁹³ During military exercises like 'Great Prophet-VII' conducted in July 2012, Iran test-fired the *Shahab-1*, -2, and -3 missiles from locations in Kavir desert in central Iran in order to convey its resolve. An important aspect of the latest series of

⁹² 'Iran missiles can hit all US bases in the region: Commander', July 4, 2012, at <http://www.pr.esstv.ir/detail/2012/07/04/249305/iran-missiles-can-easily-hit-us-bases/> (accessed July 19, 2012).

⁹³ Parisa Hafezi and Humeyra Pamuk, 'US Fifth Fleet says won't allow Hormuz disruption', December 28, 2011, at <http://www.reuters.com/article/2011/12/28/iran-hormuz-closure-idUSL6E7NS0P920111228> (accessed September 15, 2012).

exercises –highlighted by the Iranians – was the demonstration of its ability to fire multiple missiles from different locations at a single target. Iranian reports noted that the ‘high firing density’ so displayed ‘makes it impossible for anti-missile systems to intercept and destroy them’.⁹⁴

While Iran’s apprehensions regarding the US military presence in countries around it have increased over the previous decade, it is pertinent to note that Iranian officials insist that they have no intention of developing capabilities to strike the continental United States. The chairman of Iranian Aerospace Industries Organisation on October 3, 2002 stated that the US was ‘not one of Iran’s strategic defence targets and instead had oriented its ballistic missile development against its principal regional adversary Israel’.⁹⁵ The Head of the IRGC Political Bureau in August 2004 further asserted in August 2004 that ‘the entire Zionist territory, including its nuke facilities and atomic arsenal, are currently in range of Iran’s advanced missiles’.⁹⁶

Threats by Israel that it will attack Iranian nuclear facilities have been cited as an important factor for Iran’s development of longer range missiles like the *Shahab-3* during the 2000s.⁹⁷ Apart from vulnerabilities accentuated by the US force presence and threats from Israel, the proliferation of ballistic missiles in the Middle East in the 1990s – including in Saudi Arabia, Pakistan, Afghanistan, Syria as well as Israel –justified Iran’s efforts.⁹⁸

Capabilities

At the beginning of the decade, Iran was estimated to possess about 60 Scud-B missiles with a range of 300 kms and 10 Scud-C missiles

⁹⁴ ‘Reports: Military manoeuvres displayed better accuracy, firing capability of Iran’s missiles’, *The Washington Post*, July 13, 2012, at http://www.washingtonpost.com/world/middle_east/reports-military-maneuvers-displayed-better-accuracy-firing-capability-of-irans-missiles/2012/07/13/gJQAk1DOhW_story.html?tid=pm_world_pop (accessed July 13, 2012).

⁹⁵ Feickart, *Iran’s Ballistic Missile Capabilities*, n. 75, p. 57.

⁹⁶ *The Jerusalem Post*, August 16, 2004. Cited in *Ibid.*, p. 58.

⁹⁷ Eisenstadt, ‘Déjà vu all over again?’ n. 59, p. 112.

⁹⁸ Hashim, ‘Iran’s Military Situation’, n.59, p.214.

with a range of 500 kms. The April 2010 ‘*Report on the Military Power of Iran*’ mandated by the US Congress notes that ‘Iran is assessed to have the largest deployed ballistic force in the Middle East with approximately 1,000 missiles that range from 90-1200 miles’.⁹⁹

The 2012 Pentagon report has the following to say about Iran’s extant and developing capabilities:

Iran continues to develop ballistic missiles that can range regional adversaries, Israel, and Eastern Europe, including an extended-range variant of the *Shahab-3* and a 2,000-km medium-range ballistic missile, the *Ashura*. Beyond steady growth in its missile and rocket inventories, Iran has boosted the lethality and effectiveness of existing systems with accuracy improvements and new sub-munition payloads. Iran’s missile force consists chiefly of mobile missile launchers that are not tethered to specific physical launch positions.¹⁰⁰

The report also takes note of Iran’s ‘rapid progress in developing the *Shahab-3* [medium-range ballistic missile] MRBM’ which has a range of 1300 km. Analysts have also pointed out that Iran remains the only non-nuclear weapon country that has tested ballistic missiles in excess of range of 1,000 km.¹⁰¹

The US missile defence measures in West Asia and Europe have been contingent on its assessment of Iran’s extant and developing missile capabilities. The initial focus of US efforts was to set up a NMD in tune with the requirements of the NMDA to hedge against a ‘rogue’ state’s ability to strike the homeland. It is pertinent to note that the 1998 Rumsfeld Commission had assessed that Iran had ‘the technical capability and resources to demonstrate an ICBM-range ballistic missile ... within five years of a decision to proceed ...’¹⁰²

⁹⁹ ‘Unclassified Report on Military Power of Iran’, April 2010, at <http://www.foxnews.com/projects/pdf/IranReportUnclassified.pdf> (accessed April 14, 2012).

¹⁰⁰ The text of the report is available at <http://media.bloomberg.com/bb/avfile/rNnp87SL4Ew8> (accessed July 19, 2012).

¹⁰¹ Alex Bollfass, ‘Arms Control and Proliferation Profile: Iran,’ ACA, January 2008. Cited in Cordesman and Seitz, *Iranian WMD*, p. 3.

¹⁰² See ‘Executive Summary of the Report of the Commission to Assess the Ballistic Missile Threat to the United States’, n. 20.

Despite the above contentions in the Rumsfeld report, Iran has not been in a position to demonstrate ICBM-range technologies that can target the US homeland. Iran's fast growing capabilities in short- and medium-range missiles (SRBMs and MRBMs) has instead spurred the Bush and the Obama administrations to erect missile defences to protect US assets at sea and on land and those of its allies in Europe and the Gulf which could be within the range of these missiles.

The 2007 report to Congress by the Director of Central Intelligence noted that Iran was 'fielding increased numbers of short- and medium-range ballistic missiles (SRBMs, MRBMs) and we judge that Iran currently is focusing on producing more capable MRBMs'. The Report went on to detail Iranian capabilities to include the following:

The *Shahab-3* MRBM, capable of striking Israel, was formally handed over to the Iranian military in July 2003. Iran's defence ministry in 2005 stated that it had successfully tested an engine for a 2,000 km ballistic missile and implied it would have two-stages—a key technology in the development of longer-range ballistic missiles. During a military parade in September 2007, Iran displayed a missile, referred to as the *Ghadir-1*, which Iranian officials claimed had a range of 1,800-km. In late November 2007, Iran's defence minister claimed Iran has developed a new 2000 km-range missile called the *Ashura*.¹⁰³

The threats posed by such capabilities have resulted in Bush's 'Third Site' plan and Obama's PAA (See later sections for details). The subsequent reports of 2009 and the 2010 reiterated the above capabilities while the 2011 Report referred to Iran's developing of anti-ship variants of the SRBM like the *Kajil Fars* ('Persian Gulf') and improved variants of existing SRBMs like the *Qiyam I* ('Night Prayer'), which was mentioned in the 2010 report as well.¹⁰⁴ While these developments as

¹⁰³ The report is available at <http://www.dni.gov/reports/Unclassified%20Report%20to%20Congress%20WMD%20Covering%20January%20to%2031%20December%202007.pdf> (accessed July 19, 2012).

¹⁰⁴ The report is available at <http://www.fas.org/irp/threat/wmd-acq2011.pdf> (accessed July 19, 2012).

captured in US intelligence reports to the lawmakers did indicate Iran's growing capabilities, it is important to note that most of them were in various stages of development and the reports were largely based on Iranian claims and/or boasts about its own capabilities.

Some of the 'new' missiles that Iran claimed it was developing were in fact re-badged versions of existing missiles or development efforts. For instance, the 'new' 2000-km range missile *Ashura* ('Tenth Day') that the Iranian defence minister claimed was being developed in 2007 became the *Sejil* ('Baked Clay') by 2008. The two-stage missile was first revealed in November 2007 and test-fired in November 2008, May 2009, September 2009, December 2009 and in February 2011. The *Ghadr-I* ('Might') was also a *Shahab-3* variant, which according to the IISS *Military Balance 2012* has been made operational. The *Shahab-3* is itself a re-badged North Korean-sourced *Nodong* missile, which was first handed over to the Iranian military in July 2003.

Though Iran has not yet demonstrated an ICBM-capability, the April 2012 US Department of Defence report on the '*Military Power of Iran*' states that 'Iran may be technically capable of flight-testing an intercontinental ballistic missile by 2015'.¹⁰⁵ The Report also highlighted the 'regular Iranian ballistic missile training' being undertaken across the country.¹⁰⁶ In September 2009 for instance during the 'Great Prophet IV' exercises, Iran test-fired the liquid-fuelled *Shahab-3* and the solid-fuelled *Sejil-2* missiles.¹⁰⁷ These tests were held in the immediate aftermath of concerns generated by the forced disclosure of its Fordow enrichment plant at Qom.

As regards its cruise missile capabilities, Iran possesses Chinese-sourced C-801/802 coastal defence cruise missiles that have a range of six nautical miles. In March 2010 it reportedly began mass production of the short-range cruise missile *Nasr I* ('Help') which can be fired from

¹⁰⁵ See n. 100.

¹⁰⁶ Ibid.

¹⁰⁷ Alan Cowell and Nazila Fathi, 'Iran Test-Fires Missiles That Put Israel in Range', September 29, 2009, at <http://www.nytimes.com/2009/09/29/world/middleeast/29tehran.html?ref=todayspaper> (accessed September 29, 2009).

ground launchers as well as ships.¹⁰⁸ Iran has also reportedly bought Ukrainian KH-55 and Chinese HY-1/2 (Silkworm) anti-ship cruise missiles.

The cruise missile *Khalij Fars* (which US reports in 2010 and 2011 called '*Kajil Fars*') entered into service in 2011 and is reportedly capable of travelling at speeds exceeding Mach 3 and can carry a 650 kg warhead over 300 kms. The missile was most recently tested on July 4, 2012.¹⁰⁹ DNI Blair in his 2010 intelligence assessment also noted that Iran's 'acquisition and indigenous production of anti-ship cruise missiles (ASCMs) provide capabilities to enhance its power projection'.¹¹⁰

Iran has also made progress in developing longer-range cruise missiles (See Appendix below for tables and maps relating to Iran's MRBM, SRBM and cruise missiles inventory and ranges). Major General Mohammed Ali Jafari the commander of the IRGC, which controls Iran's missile assets, stated in February 2011 that Iran was 'mass producing a smart ballistic missile for sea targets with a speed three times more than the speed of sound'. The *Ghader* ('Capable') cruise missile with a range of 200 kms and backed by 'improved range and radar-evading capabilities' was test-fired in January 2012 in the backdrop of increased tensions with the Western powers and Iranian threats that it will close the Strait of Hormuz.¹¹¹ The missile reportedly entered into service in September 2011.

The 2012 Pentagon report on Iran's military power also highlighted developments relating to Iran's SRBM capabilities. It noted that Iran is 'developing and claims to have deployed short-range ballistic missiles with seekers that enable the missile to identify and manoeuvre toward

¹⁰⁸ 'Iran begins cruise missile production', March 17, 2010, at <http://www.washingtontimes.com/news/2010/mar/07/iran-begins-cruise-missile-production/> (accessed April 14, 2012).

¹⁰⁹ 'Iran test-fires anti-ship missiles', *LANS*, July 4, 2012, at http://zeenews.india.com/news/world/iran-test-fires-anti-ship-missiles_785591.html (accessed July 19, 2012).

¹¹⁰ See n. 53.

¹¹¹ 'Iran Navy tests cruise missile in drill', January 2, 2012, at <http://www.usatoday.com/news/world/story/2012-01-01/iran-missile-test/52318422/1> (accessed April 14, 2012).

ships during flight. This technology also may be capable of striking land-based targets'.¹¹²

In June 2011, Iran unveiled new underground missile silos, purportedly for *Shahab-3* missiles. Additional missile silos are reportedly located near Tabriz and Khorramabad in northwest Iran.¹¹³ Other missiles that Iran has been developing include the *Mebrab* ('Altar') short-range surface-to-air missiles (SAM) with anti-radar and anti-jamming systems, which were tested for the first time in December 2011 during the *Velayat* ('Guidance') 90 war games.¹¹⁴

Iranian efforts to put satellites into orbit have also attracted US attention, given that similar technologies could be used in ICBM-range missiles. Iran had launched its first satellite (*Sina*) aboard a Russian vehicle in 2005. US intelligence assessments in the aftermath of the 2007 NIE specifically expressed concerns regarding Iran's growing capabilities in this regard. The *Safir* ('Ambassador') satellite launch vehicle (SLV) was launched in August 2008 and the *Safir-2* SLV successfully put the *Omid* ('Hope') satellite in orbit in February 2009. US officials however contended that the first satellite launch was a failure.

In February 2010, Iran had showcased a larger SLV called the *Simorgh*. While *Safir* is believed to be capable of carrying satellites weighing over 60 kgs, Iranian officials claimed that *Simorgh* could carry satellites with weight exceeding 100 kgs. In February 2012 Iran announced that the first launch to place *Toloo* (Sun Rise) a communications satellite in orbit by using this larger SLV would take place in 2013.¹¹⁵ Iran had launched its second satellite *Rasad* ('Observation') in June 2011.

¹¹² See n. 100.

¹¹³ William J. Broad, 'Iran Unveils Missile Silos as it Begins War Games', *New York Times*, June 28, 2011, p. A4, at http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB372/index.htm#_edn16 (accessed April 2, 2012).

¹¹⁴ 'Iran Navy test-fires domestically built smart missile', January 1, 2012, at <http://www.tehrantimes.com/politics/94129-iran-navy-test-fires-domestically-built-smart-missile> (accessed April 14, 2012).

¹¹⁵ 'Iran to launch satellite by home-built carrier', February 14, 2012, at <http://old.isna.ir/ISNA/NewsView.aspx?ID=News-1949782&Lang=E> (accessed July 19, 2012).

Despite such demonstrations and claims of Iran's not so insignificant capabilities however, analysts note that the tough economic and non-proliferation-related sanctions since 2010 have significantly impeded Iranian efforts to develop longer-range missiles. In July 2012 the International Institute for Strategic Studies (IISS) assessed that 'if sanctions continue to disrupt Tehran's access to the key propellant ingredients and components needed to produce large solid-propellant rocket motors, Iranian attempts to develop and field long-range ballistic missiles could be significantly impeded, if not halted altogether'.¹¹⁶

The report specifically points out that Iran has not tested the *Sejjil-2* missile since February 2011, when it was tested for the sixth time. The February test was also conducted after a long gap of 14 months since the earlier test in November 2009. The report concludes that the 'most-likely explanation' for the long delay other than the November 2009 explosion at a key solid-fuel missile facility or design flaws or UNSC sanctions could be 'supply-chain disruptions' of high-quality solid-propellant ingredients.¹¹⁷

The report concludes that if this reasoning is indeed true, and 'if future applications of sanctions prevent Iran from establishing a reliable source of propellant ingredients regulated by the Missile Technology Control Regime, the Islamic Republic will not be able to create missiles capable of threatening western Europe, much less the United States, before the end of this decade'.¹¹⁸ It is also pertinent to note that the IISS's 2005 net assessment of Iran's capabilities had noted that the *Shahab-3* production could be still dependent on the import of critical components from North Korea and possibly Russia.¹¹⁹

¹¹⁶ 'Iran sanctions halt long-range ballistic-missile development', *IISS Strategic Comments*, July 2012, at <http://www.iiss.org/publications/strategic-comments/past-issues/volume-18-2012/july/iran-sanctions-halt-long-range-ballistic-missile-development/> (accessed July 24, 2012).

¹¹⁷ Ibid.

¹¹⁸ Ibid.

¹¹⁹ See *Iran's Strategic Weapons Programme: A Net Assessment*, IISS, London, 2005, p. 95.

Apart from such ‘indigenous’ efforts for developing ballistic missile technologies, Iran is also alleged to have procured IRBM-range missiles and/or technologies clandestinely. US intelligence assessments in February 2010, according to Wikileaks, concluded that Iran had obtained 19 Russian-designed R-27/BM-25 IRBM’s with a range exceeding 3000 kms from North Korea. The assessment noted that BM-25 technologies could be used as ‘building blocks’ for the production of long-range missiles.¹²⁰ In fact, US officials had alleged that R-27 engines were used in the *Safir* launch. Other reports however cited Russian officials who dismissed the US conjectures regarding R-27/BM-25 as being ‘without reference to any reliable sources’.¹²¹

The Nuclear Question

US officials have been insisting that in case Iran does acquire a nuclear weapons capability, it will not hesitate to use it on its arsenal of long-range missiles. The time period in which Iran could acquire this capability – as well as ICBM-range missiles – varies. As stated above, the Rumsfeld Commission in 1998 had indicated that Iran could produce an ICBM within five years of the decision to acquire it. The 2007 NIE had indicated that Iran could have the scientific, technical and industrial capability to produce a nuclear weapon by 2015. Later US assessments have taken this time line as being feasible, contingent of course on an Iranian political decision.

Motives for Iran’s Nuclear Weapons Quest

Various motives have been attributed to Iran’s alleged nuclear weapons quest. It is pertinent to note that the former US defence secretary Gates during his Senate confirmation hearings on December 5, 2006 had stated that ‘Tehran was ‘surrounded by powers with nuclear weapons: Pakistan to their east, the Russians to the north, the Israelis to the west

¹²⁰ William J. Broad, James Glanz and David E. Sanger, ‘Iran Fortifies Its Arsenal with the Aid of North Korea’, November 28, 2010, at <http://www.nytimes.com/2010/11/29/world/middleeast/29missiles.html> (accessed April 14, 2012).

¹²¹ Gareth Porter, ‘US papers twist Iranian missile tale’, December 2, 2010, at http://www.times.com/atimes/Middle_East/LL02Ak01.html (accessed April 14, 2012).

¹²² The transcript of the hearings is available at http://media.washingtonpost.com/wp-srv/politics/documents/rgates_hearing_120506.html (accessed October 18, 2012).

and us in the Persian Gulf.¹²² The former Israeli Prime Minister Ehud Olmert, in a television interview with a German television channel on December 11, 2006, while responding to a question about Iran's nuclear weapon aspirations, stated: 'Can you say that this is the same level, when they [Iran] are aspiring to have nuclear weapons, as America, France, Israel, Russia?'¹²³

Analysts have also noted that in the context of its strategic vulnerability as regards missiles highlighted by the Iraq War, Iran believes that nuclear weapons along with missiles will constitute a powerful deterrent in the light of the qualitative and quantitative military build-up in the Gulf States. For instance, during the time period 1988-2007, the total number of operational combat aircraft of GCC countries was 706 compared to Iran's 319. The GCC countries also spent 18 times as much as Iran (\$100 billion vs. \$5 billion) during this period on arms deliveries and agreements.¹²⁴ Strategic weapons were also viewed as being a cost-effective means to achieve that deterrent. It is reported that South Africa's nuclear quest cost it about \$850 million, which was less than the cost of a modern fighter aircraft squadron.¹²⁵

It has also been pointed out that Iran's nuclear weapons quest may have been strengthened by revelations in the aftermath of the Gulf War that Iraq had been able to develop and conceal its huge nuclear weapons programme.¹²⁶ Other motivating factors range from issues of the prestige and status accorded to nuclear weapon states, Iran's ambition for regional hegemony, its fear of encirclement by the US, fear of US and/or Israeli attacks, 'denial of Islamic legitimacy to Shiite beliefs', among others.¹²⁷

¹²³ See 'Olmert Under Fire for Implying Israel Has Nukes', December 12, 2006, at <http://www.spiegel.de/international/tv-gaffe-mars-germany-visit-olmert-under-fire-for-implying-israel-has-nukes-a-453934.html> (accessed October 18, 2012).

¹²⁴ Cordesman and Seitz, *Iranian WMD*, n. 72, p. 41, 49.

¹²⁵ Eisenstadt, 'Déjà vu all over Again?' n. 59, p. 102; See also 'Appendix D: Assessing the Costs of Other Nuclear Weapon States', in the *Nuclear Weapons Cost Study Project*, Brookings Institution, at <http://www.brookings.edu/about/projects/archive/nucweapons/appendixd> (accessed October 18, 2012).

¹²⁶ HSS, *Iran's Strategic Weapons Programme*, n. 119, p. 12.

¹²⁷ Cordesman and Seitz, *Iranian WMD*, n. 72, pp. 31-32.

Missile Accuracy and WMD Payloads¹²⁸

The nuclear question assumes significance in the light of the fact that the missiles in Iran's inventory are not particularly accurate. While the 300 km range *Shahab-1* (Scud-B) has an accuracy of 500-1000 m (CEP)¹²⁹, the 280-350 km range *Shahab-2* (Scud-C) has a CEP 700-1500 m.¹³⁰ The 1300-2000 km range *Shahab-3*, which is a derivative of the North Korean *No Dong* missile, with older guidance technology is stated to have a CEP of 1,000-4,000 m. With improved guidance technology on newer versions of the missile however, the CEP is assumed to be as good as below 200 m.¹³¹

Analysts have noted that missiles lacking reliability and accuracy can only function as 'terror weapons' when they are mated with high explosive conventional warheads. If they are armed with WMDs however, they can 'achieve significant lethality'.¹³² Iran is also stated to lag in the development of chemical warheads for these missiles.¹³³ Even if they are armed with chemical warheads, analysts note that such missiles will be militarily ineffective 'against well-protected coalition military in Persian Gulf'.¹³⁴ It is pointed out that missile accuracy is not imperative to enhance the deterrent effect of a nuclear-armed *Shahab-3*.¹³⁵

The IAEA Contentions

In the light of the above, apprehensions about Iran's alleged nuclear weapons activities assume significance. In the aftermath of the 2002

¹²⁸ One of the reviewers pointed me to this line of enquiry in the context of discussing the nuclear issue.

¹²⁹ CEP (Circular Error Probability) signifying the probability that 50 per cent of the missiles launched will hit within the stated radius.

¹³⁰ Feickart, *Iran's Ballistic Missile Capabilities*, n. 75, pp. 55-56; Cordesman and Seitz, *Iranian WMD*, Chapter 4, n. 72; IISS, *Iran's Strategic Weapons Programme*, n. 119, pp. 87-106.

¹³¹ Cordesman and Seitz, *Iranian WMD*, n. 72, p. 114.

¹³² *Ibid.*, p. 97.

¹³³ Eisenstadt, 'Déjà vu all over Again?' n. 59, p. 115. Iran though has signed the CWC in 1993.

¹³⁴ IISS, *Iran's Strategic Weapons Programme*, n. 119, p. 104.

¹³⁵ *Ibid.*, p. 106.

Natanz revelations, the IAEA has expressed its concerns to Iran about its activities – including those relating to the development of a possible nuclear warhead for the *Shahab-3* missile – and sought clarifications from it.

The February 24, 2004 report of the IAEA DG to the BOG for instance sought clarifications regarding bismuth irradiation, which could produce Polonium-210, and had dual-use applications (neutron initiator in nuclear weapons). Iran informed the Agency that it did conduct some experiments for civilian applications.¹³⁶ Later, based on discussions between the two sides in September 2007, the Agency was satisfied with Iran's response and treated it as 'no longer outstanding'.¹³⁷

The September 24, 2005 resolution of the BOG stated that the 'the history of concealment of Iran's nuclear activities ... and the resulting absence of confidence that Iran's nuclear programme is exclusively for peaceful purposes have given rise to questions that are within the competence of the Security Council, ...'¹³⁸ The Iranian nuclear issue was eventually referred to the UNSC in the February 4, 2006 resolution of the IAEA.

Subsequent reports like that of November 18, 2005 have expressed concerns over the presence of a 15-page document containing details related to the machining of enriched uranium into hemispherical forms.¹³⁹ When the Agency requested a copy of the document, Iran initially refused. The copy was however eventually given to the IAEA on November 8, 2007, after both sides agreed on a 'Work Plan' to address outstanding issues on August 27, 2007.¹⁴⁰ The Agency later

¹³⁶ The report is available at <http://www.iaea.org/Publications/Documents/Board/2004/gov2004-11.pdf> pp. 5-6 (accessed October 19, 2012).

¹³⁷ See the February 28, 2008 report of the IAEA DG available at <http://www.iaea.org/Publications/Documents/Board/2008/gov2008-4.pdf> (accessed October 19, 2012).

¹³⁸ The resolution is available at <http://www.iaea.org/Publications/Documents/Board/2005/gov2005-77.pdf> (accessed October 19, 2012).

¹³⁹ See the November 18, 2005 report of the IAEA DG available at <http://www.iaea.org/Publications/Documents/Board/2005/gov2005-87.pdf> p. 8 (accessed October 19, 2012).

¹⁴⁰ See the November 15, 2007 report of the IAEA DG available at <http://www.iaea.org/Publications/Documents/Board/2007/gov2007-58.pdf> (accessed October 19, 2012).

shared the document with Pakistan, the country of origin of the document and sought more information, which confirmed that it possessed an identical document.¹⁴¹ Iran's contention had been that the document was received by it along with P-1 centrifuge documentation in 1987 and that it had not requested for it.

The February 27, 2006 report made a mention of 'alleged studies, known as the Green Salt Project, concerning the conversion of uranium dioxide into UF₄ [uranium hexa-fluoride] (often referred to as "green salt"), as well as tests related to high explosives and the design of a missile re-entry vehicle, all of which could involve nuclear material and which appear to have administrative interconnections'. Iran dismissed these allegations as 'based on false and fabricated documents'.¹⁴²

The February 22, 2008 report of the IAEA DG noted that the Agency had been provided information relating to nuclear weapons-related work, including the testing of high-voltage firing equipment, development of exploding bridge wire detonators (EBW):

...parameters and development work related to the *Shahab-3* missile, in particular technical aspects of a re-entry vehicle, and made available to Iran for examination a computer image provided by other Member States showing a schematic layout of the contents of the inner cone of a re-entry vehicle. This layout has been assessed by the Agency as quite likely to be able to accommodate a nuclear device.¹⁴³

The March 26, 2008 report of the IAEA DG for the first time included a sub-heading on 'possible military dimensions', which has since been part of all subsequent reports. Iran on its part in its May 14, 2008 reply to the Agency insisted that the allegations were 'forged' and 'fabricated' and that the documents 'do not show any indication that the Islamic Republic of Iran has been working on [a] nuclear weapon'. Iran further

¹⁴¹ See the May 26, 2008 IAEA report available at <http://www.iaea.org/Publications/Documents/Board/2008/gov2008-15.pdf>, p. 5 (accessed October 19, 2012).

¹⁴² See the February 27, 2006 report of the IAEA DG available at <http://www.iaea.org/Publications/Documents/Board/2006/gov2006-15.pdf> (accessed October 19, 2012).

¹⁴³ The report is available at <http://www.iaea.org/Publications/Documents/Board/2008/gov2008-4.pdf> (accessed October 19, 2012).

stated that work on the EBW detonators was for civilian and conventional military purposes. On the *Shahab-3* re-entry vehicle, Iran insisted that since the documents with the Agency were in a computer, they could have been easily doctored. The Agency however continued to urge Iran to fully explain the role of military institutions in its nuclear programme.¹⁴⁴ Iran in later meetings also informed the Agency that addressing the issues raised relating to its missiles would require it to share sensitive military information with the Agency, which it was not required to do.

The Agency in its May 2008 report did acknowledge that it has ‘no information — apart from the uranium metal document — on the actual design or manufacture by Iran of material components for a nuclear weapon or of certain other key components, such as initiators, or related nuclear physics studies’.¹⁴⁵ The Agency however continued to insist that the information it had in its possession was ‘derived from multiple sources over different periods of time, appears to be generally consistent, and is sufficiently comprehensive’ and that ‘it does not consider that Iran has adequately addressed the substance of the issues ...’¹⁴⁶ The Agency also urged the member-states which had provided it the relevant information to share the information with Iran, which they were unwilling to do.

Since August 2008, the Agency noted that Iran’s levels of cooperation for addressing these specific issues relating to possible military dimensions had declined considerably.¹⁴⁷ In October 2010, the Agency urged Iran to address issues relating to the ‘possible military dimensions’ including the ‘manufacture of components for high explosives initiation systems ...’¹⁴⁸ In the light of the lack of progress on these issues, the

¹⁴⁴ See the May 26, 2008 report of the IAEA DG to the BOG available at <http://www.iaea.org/Publications/Documents/Board/2008/gov2008-15.pdf>, pp. 4-5 (accessed October 19, 2012).

¹⁴⁵ See the November 19, 2008 report available at <http://www.iaea.org/Publications/Documents/Board/2008/gov2008-59.pdf>, p. 4 (accessed October 19, 2012).

¹⁴⁶ See the August 28, 2009 report of IAEA DG available at <http://www.iaea.org/Publications/Documents/Board/2009/gov2009-55.pdf>, pp. 4-5 (accessed October 19, 2012).

IAEA DG sent a letter to the head of the Iranian atomic energy commission in May 2011 ‘expressing the importance of clarifying these issues’. Further, he reiterated that nuclear-related activities ‘may have continued beyond 2004’.¹⁴⁹

The November 8, 2011 report of the DG meanwhile contained ‘credible’ information sourced from more than 10 countries regarding ‘activities related to the development of a nuclear payload for a missile; ... the acquisition of nuclear weapons development information and documentation from a clandestine nuclear supply network; [and] work on the development of an indigenous design of a nuclear weapon including the testing of components’.¹⁵⁰ Iran on its part again dismissed this information as ‘fabricated’.

The report also alleged that work on a large explosives containment vessel ‘designed to contain the detonation of up to 70 kilograms of high explosives’, had been undertaken at Parchin and that a foreign expert had assisted in the process.¹⁵¹ Reports identified this ‘expert’ as Vladimir Danilenko, a Russian scientist with expertise in the creation of ultra-dispersed diamonds (UDD or nano-diamonds).¹⁵² He had earlier worked for his country’s nuclear weapons complex and had also worked in Iran from 1996 to 2002. However, other analysts have

¹⁴⁷ See the February 9, 2008 report of the IAEA DG available at <http://www.iaea.org/Publications/Documents/Board/2010/gov2010-10.pdf>, p. 9 (accessed October 19, 2012).

¹⁴⁸ See the November 23, 2010 report of the IAEA DG to the BOG available at <http://www.iaea.org/Publications/Documents/Board/2010/gov2010-62.pdf>, p. 8 (accessed October 19, 2012).

¹⁴⁹ See the May 24, 2011 report of the IAEA DG available at <http://www.iaea.org/Publications/Documents/Board/2011/gov2011-29.pdf>, p. 7 (accessed October 19, 2012).

¹⁵⁰ The report is available at <http://www.iaea.org/Publications/Documents/Board/2011/gov2011-65.pdf> (accessed February 24, 2012).

¹⁵¹ *Ibid.*, Annex, p. 10.

¹⁵² Joby Warrick, ‘Russian scientist Vyacheslav Danilenko’s aid to Iran offers peek at nuclear program’, November 14, 2011, at http://www.washingtonpost.com/world/national-security/russian-scientist-vyacheslav-danilenkos-aid-to-iran-offers-peek-at-nuclear-program/2011/11/12/gIQAcuiCJN_story.html (accessed March 1, 2012).

pointed out that the patented design of Danilenko is for a vessel designed to contain 10 kgs of high-explosives.¹⁵³

The November 2011 report further stated that satellite imagery showed the construction of infrastructure consistent with a high-explosives testing facility - as an earth berm 'constructed between the building containing the cylinder and a neighbouring building, indicating the probable use of high explosives in the chamber.'¹⁵⁴ In the aftermath of the November 2011 report, two rounds of inspections were carried out by IAEA teams from January 29 to 31 and February 20 to 21, 2012. Iran turned down the IAEA request to visit the Parchin site and both sides could not also agree on the contours of a 'structured approach' regarding further cooperation.

It is pertinent to note that Iran had allowed the IAEA access to the Parchin facility twice during 2005 when it carried out random checks at five locations. The IAEA DG report of September 2, 2005 had this to say regarding those visits:

In January 2005, Iran agreed, as a transparency measure, to permit the Agency to visit a site located at Parchin ... Out of the four areas identified by the Agency to be of potential interest, the Agency was permitted to select any one area. The Agency was requested to minimize the number of buildings to be visited in that area, and selected five buildings. *The Agency was given free access to those buildings and their surroundings and was allowed to take environmental samples, the results of which did not indicate the presence of nuclear material, nor did the Agency see any relevant dual use equipment or materials in the locations visited.* [emphasis added]¹⁵⁵

There have been vigorous debates regarding Parchin in the light of allegations that Iran is 'cleaning up' the site ahead of possibly allowing

¹⁵³ Gareth Porter, 'Using Access as a Bargaining Chip: Iran, the IAEA and the Parchin Site', February 23, 2012, at <http://www.counterpunch.org/2012/02/23/iran-the-iaea-and-the-parchin-site/> (accessed February 24, 2012).

¹⁵⁴ See n. 150, Annex, p. 10.

¹⁵⁵ The report is available at <http://www.iaea.org/Publications/Documents/Board/2005/gov2005-67.pdf>, p. 10 (accessed October 19, 2012).

IAEA access to it.¹⁵⁶ The February 24, 2012 report urged Iran ‘to address the Agency’s serious concerns about possible military dimensions to Iran’s nuclear programme, including, as a first step, by responding to the Agency’s questions related to Parchin and the foreign expert, and by granting early access in that regard’.¹⁵⁷ The August 30, 2012 report of the IAEA DG expressed concerns regarding activities at the Parchin site, specifically since February 2012, as borne out by satellite imagery that allegedly showed efforts to “clean up” the site by Iran. These activities, according to the IAEA, include demolition of buildings, ground scaping and landscaping, among others.¹⁵⁸

Analysts meanwhile have noted the technical difficulties that Iran has encountered in the running of its nuclear enterprise. The February 24, 2012 report for instance noted that Iran had informed the IAEA on February 1, 2012 that it intended to install three new types of centrifuges – IR-5, IR-6 and IR-6S, at the Natanz enrichment plant. Former IAEA Chief Inspector Olli Heinonen notes that because Iran is testing so many models simultaneously, ‘it indicates that Iran has not yet reached a point where it can decide which would be the next generation centrifuge to be deployed.’¹⁵⁹ Iran’s ability to mass-produce second generation centrifuge models has also been under the scanner. Iran has however continued to advertise the progress of its other nuclear efforts like loading of indigenously produced nuclear fuel rods into the Tehran Research Reactor on February 14, 2012.

¹⁵⁶ David Albright and Robert Avagyan, ‘Further Activity at Suspected Parchin High Explosive Testing Site: Two Small Buildings Razed’, *ISIS Imagery Brief*, May 30, 2012, at http://www.isisnucleariran.org/assets/pdf/Parchin_site_activity_May_30_2012.pdf (accessed June 18, 2012).

¹⁵⁷ See ‘Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran’, February 24, 2012, at http://www.isisnucleariran.org/assets/pdf/IAEA_Iran_Report_24February2012.pdf (accessed February 27, 2012).

¹⁵⁸ The report is available at http://www.isisnucleariran.org/assets/pdf/Iran_report_-_August_30_2012.pdf, accessed September 6, 2012.

¹⁵⁹ Fredrik Dahl, ‘Iran may be “struggling” with new nuclear machines’, February 28, 2012, at <http://uk.reuters.com/article/2012/02/28/uk-nuclear-iran-enrichment-idUKTRE81Q0WI20120228> (accessed February 27, 2012).

V THE IRAN THREAT AND US MISSILE DEFENCE PANACEA

Occupying pride of place among US military efforts (apart from the political-diplomatic efforts) to counter Iran's extant and upcoming WMD delivery systems and ensure security of its allies like Israel, Turkey, GCC and NATO countries and safeguard its interests has been the ballistic missile defence (BMD) system.

The 1999 NMDA, passed in the context of the increasing capabilities of countries like Iran as captured by the Rumsfeld Commission, coupled with a diminished Russian threat, stated that 'it is the policy of the United States to deploy as soon as is technologically possible an effective National Missile Defence system capable of defending the territory of the United States against limited ballistic missile attack . . .'¹⁶⁰

US concerns about ballistic missile proliferation and its presumed vulnerabilities to deal with it effectively forced it to quit the ABMTreaty in December 2001. Diplomatic notes sent to Russia, Belarus, Kazakhstan and Ukraine on December 13, 2001 reiterated that as states and non-state entities are involved in 'actively seeking to acquire WMD' as well as long-range ballistic missiles as a means of delivering them, the US 'has concluded that it must develop, test, and deploy anti-ballistic missile systems for the defence of its national territory, of its forces outside the United States, and of its friends and allies'.¹⁶¹

Earlier, while addressing students and faculty of the National Defence University (NDU) in May 2001 and announcing the decision to quit

¹⁶⁰ See 'Public Law 106-38', July 22, 1999, at <http://www.gpo.gov/fdsys/pkg/PLAW-106publ38/pdf/PLAW-106publ38.pdf> (accessed April 13, 2012).

¹⁶¹ 'US Withdrawal from the ABM Treaty: President Bush's Remarks and US Diplomatic Notes', *Arms Control Today*, January/February 2002, at <http://www.armscontrol.org/print/972> (accessed August 5, 2011).

the treaty – in tune with the six-months notice to do so as required by the treaty provisions – Bush insisted that ‘no treaty that prevents us from addressing today’s threats, that prohibits us from pursuing promising technology to defend ourselves, our friends and our allies is in our interests or in the interests of world peace’.¹⁶² Bush insisted that ‘this treaty does not recognize the present, or point us to the future. It enshrines the past’. He added that the ‘constraints’ of the treaty ‘perpetuate[d] a relationship based on distrust and mutual vulnerability’ with Russia. Bush stated that defensive measures like missile defences ‘can strengthen deterrence by reducing the incentive for proliferation’ as in his words, ‘deterrence can no longer be based solely on the threat of nuclear retaliation’.¹⁶³

The 1972 treaty allowed the US and Russia only two ABM systems to protect their respective national capitals and an Inter-Continental Ballistic Missile (ICBM) site over 1300 kms apart. It also did not permit the transfer of such systems or components including radars to other states, among other provisions.¹⁶⁴ It is however pertinent to note that the US and Russia did negotiate an agreement in September 1997 under which theatre (non-strategic) BMD systems were allowed. However, the agreement could not enter into force.¹⁶⁵

US strategic policy documents and pronouncements of the decade reinforce the importance of BMD for tackling the potential threat posed by ‘rogue-state’ ballistic missiles. Missile defences were an integral part of the ‘new triad’ of US strategic posture (in contrast to the ‘original’ triad of land, sea, and air-based delivery systems and nuclear warheads) as envisaged in the 2002 Nuclear Posture Review (NPR) report. The other aspects of the triad were non-nuclear and nuclear offensive missile

¹⁶² See ‘Remarks to Students and Faculty at National Defence University, Fort Lesley J. McNair, Washington, DC’, May 1, 2001, at <http://2001-2009.state.gov/t/ac/rls/rm/2001/2873.htm> (accessed July 6, 2012).

¹⁶³ Ibid.

¹⁶⁴ The text of the treaty is available at <http://www.state.gov/www/global/arms/treaties/abm/abm2.html> (accessed April 3, 2012).

¹⁶⁵ See ‘The Anti-Ballistic Missile (ABM) Treaty at a Glance’, <http://www.armscontrol.org/factsheets/abmtreaty> (accessed April 3, 2012).

forces and responsive national security infrastructure.¹⁶⁶ The 2002 NPR specifically identified Iran along with North Korea, Iraq, Syria, and Libya as countries that ‘sponsor or harbour terrorists and all have active WMD and missile programmes’.¹⁶⁷

President Bush while addressing cadets at the American military academy at West Point on June 1, 2002 stressed that missile defence along with homeland defence was an ‘essential priority’ for America because ‘even weak states and small groups could attain a catastrophic power to strike great nations’ if they attained ballistic missile technology.¹⁶⁸ The 2002 National Security Strategy (NSS) listed ‘pro-active counter-proliferation’ to ‘deter and defend against the threat before it is unleashed’ as an essential element of the comprehensive strategy to combat WMD. Key capabilities that according to the document were important included those related to detection, *active and passive defences* [emphasis added], and counterforce capabilities.¹⁶⁹

The February 2006 National Military Strategy to Combat WMDs listed active and passive defences as among eight key mission areas for development.¹⁷⁰ The 2006 NSS document reaffirmed that America’s strategy was to ‘block the threats posed by the [Iranian] regime’ and added that capabilities being pursued (prominent among them being missile defences) ‘will better deter some of the new threats we face, while also bolstering our security commitments to allies’.¹⁷¹

The May 2009 Congressional Commission Report said that ‘defences that are effective against regional aggressors are a valuable component

¹⁶⁶ ‘US Nuclear Posture Review 2002’, pp. 12-14. Portions of the report available at http://www.fas.org/blog/ssp/united_states/NPR2001re.pdf (accessed August 8, 2011).

¹⁶⁷ Ibid., p. 16.

¹⁶⁸ ‘President Bush Deliver s Graduation Speech at West Point’, n. 22.

¹⁶⁹ ‘The National Security Strategy of the United States of America’, n. 23, pp. 14-16.

¹⁷⁰ The report is available at <http://www.Defence.gov/pdf/NMS-CWMD2006.pdf>, p. 8, (accessed August 9, 2011).

¹⁷¹ See ‘The National Security Strategy of the United States of America’, March 2006, at <http://georgewbush-whitehousearchives.gov/nsc/nss/2006/sectionV.html> (accessed July 4, 2012).

of the US strategic posture'.¹⁷² The Report went on to state that active defences (like missile defence capabilities):

...can play a useful role in support of the basic objectives of deterrence, broadly defined, and damage limitation against limited threats ... These capabilities may contribute to deterrence by raising doubts in a potential aggressor's mind about the prospects of success in attempts to coerce or attack others. They may contribute to assurance of allies, by increasing their protection and also reducing the risks that the United States would face in protecting them against a regional aggressor.¹⁷³

The February 2010 BMDR asserted that 'the United States will continue to defend: the homeland against the threat of limited ballistic missile attack; against regional missile threats to US forces, while protecting allies and partners and enabling them to defend themselves'.¹⁷⁴

These three policy imperatives according to the Review 'strengthen US goals of deterrence, extended deterrence, and assurance'.¹⁷⁵ According to the 2010 *Quadrennial Defence Review (QDR)*, 'the rapid growth in [US] sea- and land-based ballistic missile defence capabilities will help meet the needs of combatant commanders and allies in several regions'.¹⁷⁶

¹⁷² 'America's Strategic Posture', n. 28, p. xvii.

¹⁷³ Ibid.

¹⁷⁴ See 'Ballistic Missile Defence Review Report', n. 29, p. 47.

¹⁷⁵ Ibid., p. 12.

¹⁷⁶ Ibid., p. 39.

VI

ERECTING THE ARCHITECTURE

While the US strategic policy documents articulated missile defence as the solution to address the concerns generated by Iran, it has developed capabilities such as ground-based midcourse defence (GMD) to defend the US homeland using ground-based interceptors (GBI), and systems for protection of allies in the Middle East/West Asia and in Europe and deployed US forces with assets like the Patriot Advanced Capability (PAC) systems and its advanced counterpart the Medium Extended Air and Missile Defence System (MEADS, currently under development and facing budgetary problems), supplying theatre high altitude area defence (THAAD) assets, sea-based defence consisting of Aegis-equipped ships supporting land-based interceptors, among others. The dynamics of the pursuit of such efforts as they relate to countering the Iran threat during the Bush and the Obama administrations will be delineated below.

The Bush Administration and Missile Defence

Prime Strategic Priority, Prior to 9/11 and Even After

Missile defence was the top most strategic priority for the Bush administration when it came to office. Addressing the NDU in May 2001, President Bush held that ‘deterrence can no longer be based solely on the threat of nuclear retaliation. Defences can strengthen deterrence by reducing the incentive for proliferation. We need a new framework that allows us to build missile defences to counter the different threats of today’s world’.¹⁷⁷

In the light of the new policy direction, the Bush administration dispatched senior officials to various world capitals – primarily to

¹⁷⁷ See ‘Remarks to Students and Faculty at National Defence University’, n. 162.

NATO allies as well as allies in Asia like Japan and South Korea – in order to fully explain its strategic priorities like missile defence and counter-proliferation. During the meetings with their counterparts they clarified the US intentions behind the decision to quit the ABM Treaty, in order to pursue a new form of ‘strategic stability’ with Russia as well to be better prepared to face new kinds of threats.

It is pertinent to note that just a day before 9/11, President Bush and the then Australian Prime Minister John Howard in a joint statement expressed:

... shared concern about the threat to global stability posed by ballistic missile proliferation and weapons of mass destruction and increasingly capable ballistic missiles as a means of delivery. They agreed on the need for a comprehensive approach to counter these threats, including enhanced non-proliferation and counter-proliferation measures as well as continued nuclear arms reductions. They also agreed that missile defence could play a role in strengthening deterrence and stability as part of this comprehensive approach.¹⁷⁸

Even after 9/11 and the concomitant focus on terrorism, missile defence continued to be a prime priority for the administration. Bush told a military audience in December 2001 that ‘almost every state that actively sponsors terror is known to be seeking weapons of mass destruction and the missiles to deliver them at longer and longer ranges. ... The attacks on our nation made it even more clear that we need to build limited and effective defences against a missile attack. ... We must be able to build the defences we need against the enemies of the 21st century’.¹⁷⁹

National Missile Defence

In a December 2002 statement, Bush stated that he had directed the defence secretary to ‘proceed with an initial set of missile defence

¹⁷⁸ ‘Joint Statement Commemorating the 50th Anniversary of the Alliance between the US and Australia’, September 10, 2001, at <http://2001-2009.state.gov/t/isn/rm/2001/45600.htm> (accessed July 16, 2012).

¹⁷⁹ ‘Remarks to Citadel Cadets on the War Effort’, December 11, 2001, at <http://2001-2009.state.gov/t/isn/rm/2001/45596.htm> (accessed July 16, 2012).

capabilities' including ground based interceptors (GBI), sea-based interceptors, additional Patriot (PAC-3) units, and sensors based on land, at sea, and in space to become operational by 2005'. He contended that missile defences would protect America from the 'gravest danger' posed by 'the catastrophic harm that may result from hostile states or terrorist groups armed with weapons of mass destruction and the means to deliver them'. In his view, missile defences 'will add to our ability to deter those who may contemplate attacking us with missiles'.¹⁸⁰

The administration went ahead and erected 'national' missile defence systems involving GBI in Alaska and California to defend the homeland. This was also in tune with the directives of the 1999 NMDA which envisaged the setting up of a NMD system 'as soon as technologically possible'. About 20 GBI (16 in Alaska and four in California) and an equal number of sea-based interceptors were to have been made operational before 2004.¹⁸¹ As part of the initial operational capability (IOC) requirements, Great Britain, Denmark and Greenland were asked to upgrade some of their radars and tracking devices.

It is pertinent to note that when Bush made the announcement in December 2002 about IOC of missile defence system, three out of the eight missile defence tests since 1999 had failed. In four operational tests involving the PAC-3 systems during 2002 involving multiple missile launches, only two out of the seven units had achieved successes.¹⁸² The administration officials however including Secretary Rumsfeld held that 'at the leading edge of technology, you're going to learn and gain knowledge both by our successes and also by your failures'. Rumsfeld termed the system as 'limited' but that it was 'better than nothing'.¹⁸³

¹⁸⁰ 'President Announces Progress in Missile Defence Capabilities', December 17, 2002, at <http://georgewbush-whitehouse.archives.gov/news/releases/2002/12/20021217.html> (accessed April 12, 2012)

¹⁸¹ Wade Boese, 'Bush to deploy "modest" missile defence by 2004', *Arms Control Today*, January/February 2003, at http://www.armscontrol.org/act/2003_01-02/misssileDefence_janfeb03 (accessed July 6, 2012).

¹⁸² Ibid.

¹⁸³ John King, 'Bush rolls out missile defence system', December 17, 2002, at http://articles.cnn.com/2002-12-17/us/bush.missile_1_ground-based-interceptor-missiles-first-interceptors-ballistic-missile-attack?_s=PM:US (accessed July 6, 2012).

The National Missile Defence Independent Review Team (NMDIRT) constituted by Rumsfeld in its report in June 2000 had indicated that ‘stressing challenges remain to demonstrate the required performance and reliability of the Ground-Based Interceptor in time for a 2005 IOC’.¹⁸⁴ It did add though that the technical capability to develop and field the limited system by that time frame was available.

Bush administration officials also highlighted the fact that the missile shield was not for countering a Cold War-era threat from Russia but to counter the ‘new threats of proliferation of weapons of mass destruction and ballistic missiles. And indeed that threat in a number of countries is accelerating’.¹⁸⁵ Thus spoke the then US Deputy Defence Secretary Paul Wolfowitz while addressing reporters in Paris in May 2001. Wolfowitz also said that ‘we are not talking about the mid-1980s idea of a US missile shield to protect the United States from 10,000 Soviet warheads. ... What we are worried about are much more limited kinds of threats ...’¹⁸⁶

Richard Armitage, US Deputy Secretary of State though admitting to reporters in Seoul in May 2001 that missile defence was ‘not an umbrella or shield, which makes the world 100 percent safe from missiles’ however added that the system ‘will be able to protect ourselves and our allies from a handful of missiles and, therefore, greatly increase the difficulty for any potential enemy in an attack on us’.¹⁸⁷

Armitage was also in New Delhi in May 2001 to brief the Indian leadership about US missile defence plans. Talking to reporters in the aftermath of his meetings, Armitage said:

The missile defence that we envision is one that will be directed only against a handful of rogue states and only against a handful

¹⁸⁴ The Executive Summary of the report is available at <http://www.mda.mil/global/documents/pdf/welchsum.pdf> (accessed July 6, 2012).

¹⁸⁵ Paul Wolfowitz, ‘Press Conference on Deterrence’, May 9, 2001, at <http://2001-2009.state.gov/t/ac/rls/rm/2001/2895.htm> (accessed July 16, 2012).

¹⁸⁶ Ibid.

¹⁸⁷ ‘North Korea and the Agreed Framework’, Remarks to the Republic of Korea Ministry of Foreign Affairs and Trade, May 9, 2001, at <http://2001-2009.state.gov/s/d/former/armitage/remarks/2001/2879.htm> (accessed July 16, 2012).

of missiles. Indeed, if carried to its fullest, I'd say that a missile defence which works or a limited missile defence will make unnecessary some states producing or manufacturing their own ballistic missiles as a response to a threat from a neighbour; they would have another option – defence rather than offence – which seems to me a very reasonable approach to the new threats of the 21st century.¹⁸⁸

It is pertinent to note that Bush administration officials made much of the advantages that had accrued to the US after its withdrawal from the ABM Treaty in terms of the enhancement of its missile defence capabilities; its relationship with Russia and progress in arms control efforts. In November 2002 John Bolton the under secretary for arms control and International security stated that 'the Treaty's demise instead has been liberating'. He gave the example of the October 2002 missile intercept test that involved the 'sea-based, mobile radar' mounted on a US Navy Aegis destroyer, which had been made possible by the withdrawal as the treaty had banned the testing of such a capability.¹⁸⁹

Others like Stephen G. Rademaker, who was assistant secretary of state for arms control in December 2004, also said that the ABM Treaty 'was not the cornerstone of strategic arms control, but rather a principal obstacle to progress in arms control'. He said the Treaty's demise was responsible for 'ushering a new round of US-Russia strategic arms control' because for the first time they could come to an agreement on the May 2002 Moscow Treaty after the 1993 START-2 treaty.¹⁹⁰

Bolton also said that 'as the US-Russia relationship has broadened and deepened, the significance of the ABM Treaty has diminished'. The

¹⁸⁸ Richard Armitage, 'The New Strategic Framework', Press Conference following Meeting with Prime Minister Vajpayee, New Delhi, May 11, 2001, at <http://2001-2009.state.gov/s/d/former/armitage/remarks/2001/2881.htm> (accessed July 16, 2012).

¹⁸⁹ John R. Bolton, 'Missile Defence in a New Strategic Environment: Policy, Architecture, and International Industrial Cooperation after the ABM Treaty', November 18, 2002, at <http://2001-2009.state.gov/t/us/rm/15224.htm> (accessed July 16, 2012).

¹⁹⁰ Stephen G. Rademaker, 'America's Cooperative Approach to Missile Defence', December 17, 2004, at <http://2001-2009.state.gov/t/isn/rls/rm/39920.htm> (accessed July 16, 2012).

‘new strategic relationship’ with Russia – with missile defence cooperation as one of the ‘building blocks’ of this partnership in the Bush administration’s world-view – has however failed to come to pass a decade down the line.

Theatre Missile Defence and Cooperation with Allies

The Bush administration’s policy on missile defence eliminated, what it termed the ‘artificial distinction between “national” and “theatre” missile defences’, insisting that such distinction was ‘largely a product of the ABM Treaty and is outmoded’. It was their view that ‘the defences we will develop and deploy must be capable of not only defending the United States and our deployed forces, but also friends and allies’.¹⁹¹ This was, because, the technologies used in ‘national’ and ‘theatre’ missile defence systems could be used interchangeably depending on the nature of the threat.

As regards missile defence cooperation with allies, the Bush administration followed, what Bolton termed, a ‘dual-track approach’. These included cooperation on a ‘collective track’ with alliances like NATO and on a ‘bilateral track’ with allies in Europe and Asia. As Bolton said in November 2002, it was ‘no longer a question of whether missile defences will be deployed. Rather the relevant questions are now “what”, “how” and “when”’.¹⁹²

President Bush issued the National Security Presidential Directive-23 (NSPD-23) in December 2002 reaffirming that:

...because the threats of the 21st century also endanger our friends and allies around the world, it is essential that we work together to defend against them. The Defence Department will develop and deploy missile defences capable of protecting not only the United States and our deployed forces, but also our friends and allies.¹⁹³

¹⁹¹ ‘National Policy on Ballistic Missile Defence Fact Sheet’, May 20, 2003, at <http://georgewbush-whitehouse.archives.gov/news/releases/2003/05/20030520-15.html> (accessed April 12, 2012)

¹⁹² Bolton, ‘Missile Defence in a New Strategic Environment’, n. 189.

¹⁹³ The text of the NSPD-23 is available at <http://www.fas.org/irp/offdocs/nspd/nspd-23.htm> (accessed July 26, 2012).

It is pertinent to note that despite the best efforts of the Bush administration officials like Armitage, Bolton and Wolfowitz, the cooperation of European allies was not a given. Key allies like Germany and Denmark were initially sceptical and Russian concerns continued to hinder the development of a cooperative framework on the issue. In the immediate aftermath of the Bush administration decision to quit the ABM Treaty, the Danish Foreign Minister in an interaction with visiting US envoy Marc Grossman on May 9, 2001 said: 'it's necessary to maintain the ABM treaty, or if necessary and agreed among the parties, to renegotiate it. It has been the position of the Danish Government that a unilateral cancellation of the treaty would not be a good signal'.¹⁹⁴

Grossman in Rome on May 10, 2001 however expressed the 'hope that those European allies who are interested will participate in ways that will be helpful to them'.¹⁹⁵ Denmark's opposition to US policy is pertinent in the context that the Bush administration's NMD plan included cooperation with NATO allies like Denmark, Britain and Greenland for the use of facilities like radars on their territory. The Danish government eventually allowed the US to upgrade its early warning radar in Greenland in May 2004. This was to better enable the radar to detect missile launches from the Middle East. The US and UK on their part signed a BMD cooperation agreement in June 2003.¹⁹⁶

Specific plans to protect continental Europe with US missile defence assets however got concretised only in 2007, after a series of 'exploratory' talks with a host of NATO countries. In order to protect European mainland from the Iranian short- and medium-range missile threat, the Bush administration put forward the 'third site' plan which entailed deployment of 10 permanent GBI in Poland and a large, fixed radar installation in the Czech Republic. US officials held a 'third

¹⁹⁴ Marc Grossman and Mogens Lykketoft, 'Strategic Stability', Remarks at Danish Ministry of Foreign Affairs, May 9, 2001, at <http://2001-2009.state.gov/p/us/rm/2889.htm> (accessed July 16, 2012).

¹⁹⁵ Marc Grossman, 'Consultations with the Italian Government', Remarks at US Embassy, Rome, May 10, 2001, at <http://2001-2009.state.gov/p/us/rm/2887.htm> (accessed July 16, 2012).

¹⁹⁶ Rademaker, 'America's Cooperative Approach to Missile Defence', n. 190.

site' could have 'the advantage that it could both defend much of Europe and supplement our capability to defend the United States'.¹⁹⁷ Agreements to this effect were signed in 2008. There were however uncertainties relating to the basing of the radar in the Czech Republic, in the light of Russian security concerns.¹⁹⁸

Justifying the move to base US missile defence assets in Europe, Daniel Fried, assistant secretary for European and Eurasian Affairs in a testimony before the House Foreign Affairs Committee Subcommittee on Europe and the Subcommittee on Terrorism, Non-proliferation and Trade in May 2007 reminded his audience about Iranian President Mahmoud Ahmadinejad's threat in October 2006 when he reportedly stated: 'We have advised the Europeans that the Americans are far away, but you are the neighbours of the nations in the region. ... If a storm begins, the dimensions will not stay limited to Palestine, and you may get hurt'.¹⁹⁹

Fried went on to note that the site of the proposed defence installations in Poland and the Czech Republic was 'optimal for covering the most Alliance territory possible. ... However, some Allies could still face threats from shorter and medium-ranged missiles'. He added that NATO's proposed Active Layered Theatre Ballistic Missile Defence system (ALTBMD) could deal with such threats while US assets can be used to tackle long-range threats.²⁰⁰

The Bush administration's missile defence policy not only raised concerns among its European allies and Russia (more on this in later sections) but also faced opposition from the US Congress and the Senate, which imposed cut backs on the administration's missile defence funding requests. President Bush for instance at the NDU in October 2007

¹⁹⁷ Ibid.

¹⁹⁸ Yury Fedorov, 'American Ballistic Missile Defence, Russian Iskanders and a New Missile Crisis in Europe', May 22, 2009, at <http://www.chathamhouse.org/sites/default/files/public/Research/Russia%20and%20Eurasia/220509summary.pdf> (accessed April 12, 2012).

¹⁹⁹ Daniel Fried, 'Do the United States and Europe Need a Missile Defence System?' May 3, 2007, at <http://2001-2009.state.gov/p/eur/rls/rm/84258.htm> (accessed July 9, 2012).

²⁰⁰ Ibid.

cited budget cuts by the US Congress which according to him negatively affected US missile defence and counter-proliferation efforts. These cuts included \$139 million from missile defences in Europe; \$51 million from the airborne laser programme; \$50 million from the Multiple Kill Vehicle Programme; and \$50 million from the Space Tracking and Surveillance System.²⁰¹

The ‘Statement of Administration Policy’ made to the US Senate of October 2, 2007 contended that ‘excessive reductions to the Multiple Kill Vehicle and Ballistic Missile Defence Core programmes put future missile defence capabilities at considerable risk’.²⁰² It is pertinent to note that some of the above programmes have since been terminated. The airborne laser, for instance, was cancelled in 2012 after 16 years of development and over \$5 billion in costs.²⁰³

As regards Iran’s ability to threaten the US homeland directly, President Bush told the NDU in October 2007 that ‘with continued foreign assistance, Iran could develop an intercontinental ballistic missile capable of reaching the US and all of Europe before 2015’.²⁰⁴ The GBI in Alaska and California were held to be sufficient to deal with such a threat. The 2010 *BMD Review* also supported this contention when it affirmed that the US arsenal of 30 operational GBI deployed at Alaska (26) and California (4) was sufficient protection against a future Iranian ICBM threat.²⁰⁵

The Obama Administration and Missile Defence

President Obama in September 2009 announced that the US would take a Phased Adaptive Approach (PAA) for the erecting of missile

²⁰¹ ‘Fact Sheet: Defending America and Its Allies Against Ballistic Missile Attack’, October 23, 2007, at <http://georgewbush-whitehouse.archives.gov/news/releases/2007/10/20071023-5.html> (accessed April 12, 2012).

²⁰² The Statement is available at <http://www.presidency.ucsb.edu/ws/index.php?pid=75855#axzz1rvZ4GWz6> (accessed April 13, 2012).

²⁰³ Tom Z. Collina and Kelsey Davenport, ‘Airborne Laser Mothballed’, *Arms Control Today*, March 2012, at http://www.armscontrol.org/act/2012_03/Airborne_Laser_Mothballed (accessed April 7, 2012).

²⁰⁴ ‘Fact Sheet: Defending America and Its Allies against Ballistic Missile Attack’, n. 201.

²⁰⁵ ‘Ballistic Missile Defence Review Report’, February 2010, n. 29, p. 15.

defences in Europe, with the system to reach maturity levels by 2020. Obama held that in the light of ‘intelligence assessment of Iran’s missile programmes, which emphasises the threat posed by Iran’s short- and medium-range missiles’, the US will concentrate its efforts on regional missile defence assets to tackle Iranian missile threat to its own interests as well as its NATO allies.²⁰⁶ He added that the PAA ‘is also consistent with NATO missile defence efforts and provides opportunities for enhanced international collaboration going forward’.²⁰⁷

The PAA will be made up of the Aegis Ballistic Missile Defence system (sea-based mid-course defence/earlier Navy Theatre Wide defence, also termed ‘Aegis Afloat’) based on elements incorporating sea-based sensors and interceptors (Standard Missile 3 (SM-3) Block IA) on cruisers and destroyers and powerful missile tracking radars (Raytheon-produced AN/TPY-2 X-band radars, with a range of over 4,300 kms). Currently, two of these radars in operation include one that is installed in Israel (Site 512, Negev desert) and in Turkey (Kurecik) as it relates to the defence of Europe and Israel. The third radar, to be operational by 2012, is being installed in Qatar.

PAA involves a total of four stages: Phase I includes the currently deployed assets at sea and on land in Israel, Turkey and in the Mediterranean Sea; capabilities against medium-range ballistic missiles (MRBM) by 2015; intermediate-range ballistic missiles (IRBM) by 2018; and early intercept capabilities by 2020. Later stages will include improved versions of sea-based sensors and SM-3 interceptors for a total of over 500 such interceptor missiles.

Some of these interceptors will be based on land (‘Aegis-Ashore’) in Romania (SM-3 Block IB interceptors at Deveselu by 2015) and Poland (24 SM-3 Block IIA interceptors currently being developed jointly with Japan at Redzikowo by 2018). The US eventually intends to have 43 Aegis BMD-equipped ships, 18 X-band radars and space based

²⁰⁶ ‘Remarks by the President on Strengthening Missile Defence in Europe’, September 17, 2009, at http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-Strengthening-Missile-Defence-in-Europe (accessed April 12, 2012).

²⁰⁷ Ibid.

sensors.²⁰⁸ However, in 2012 the Pentagon decided to only field 11 X-band radars. SM-3 Block IIB interceptors are expected to be operational by 2020, and will purportedly possess capabilities to counter ICBM-range missiles. (See Appendix for map depicting US missile defence assets which are part of European PAA).

Obama's PAA vs. Bush's 'Third Site'

Obama while announcing the new US missile defence policy said that the PAA 'will provide capabilities sooner, build on proven systems, and offer greater defences against the threat of missile attack than the 2007 European missile defence programme'. He added that 'because our approach will be phased and adaptive, we will retain the flexibility to adjust and enhance our defences as the threat and technology continue to evolve'.²⁰⁹

Initially, Obama's PAA will incorporate 'proven' technologies like mobile SM-3 Block IA interceptors to respond to developing capabilities and threats. The PAA also involves countries like Romania, Poland and Spain (four Aegis-equipped ships will be based at Rota beginning 2015).²¹⁰ The Forward Deployed Naval Forces (FDNF) presence at Rota is expected to save the Pentagon about \$26 million over 2013-2017 as against their being deployed from continental United States.²¹¹

Such a deployment also gels with the policy directions contained in the *QDR* 2010 which noted that 'selectively home-porting additional naval forces forward could be a cost-effective means to strengthen deterrence

²⁰⁸ 'Missile Defence Agency Programme Update 2011', at http://www.mda.mil/global/documents/pdf/The_Missile_Defence_Program.pdf (accessed April 13, 2012); See also 'The Phased Adaptive Approach at a Glance', *Arms Control Today*, <http://www.armscontrol.org/factsheets/Phasedadaptiveapproach> (accessed April 6, 2012)

²⁰⁹ 'Remarks by the President on Strengthening Missile Defence in Europe', n. 206.

²¹⁰ David Brunnstrom and David Alexander, 'Spain to Host US Missile Defence Ships', October 5, 2011, at <http://www.reuters.com/article/2011/10/05/us-nato-missile-defence-idUSTRE7945B620111005> (accessed April 11, 2012).

²¹¹ Ronald O'Rourke, 'Navy Aegis Ballistic Missile Defence (BMD) Program: Background and Issues for Congress', *Congressional Research Service*, March 19, 2012, pp. 21-23, at <http://www.fas.org/sgp/crs/weapons/RL33745.pdf> (accessed April 14, 2012).

and expand opportunities for maritime security cooperation with partner navies'.²¹² The SM-3 interceptors are also less costly (\$10 million each) as against GBI (\$70 million).²¹³

The 'advantages' of Obama's PAA contrast with the elements of the Bush Plan which included immobile interceptors, technology which was not yet mature and/or proven and privileged specific bilateral arrangements with Poland and the Czech Republic as against involving more members of the 28-member NATO alliance.²¹⁴ The revised US missile defence architecture however created complications in US-Czech relations given the latter's diminished and/or undefined role in the PAA. The Czech Republic eventually chose to opt out of the US BMD system in June 2011.²¹⁵

Further, the November 2010 NATO Summit in Lisbon endorsed the primary role of the US PAA to provide 'territorial/strategic' defence and decided to integrate NATO's own 'tactical/theatre' ALTBMD with the PAA. NATO's ALTBMD, in development since 2001, is expected to cost about \$1 billion, while its involvement with PAA is expected to cost the Alliance about \$260 million. The ALTBMD, being designed to be effective against below-1000 km range missile threats, is expected to be operational by 2018.²¹⁶

²¹² 'Quadrennial Defence Review Report', February 2010, n. 31, p. 34.

²¹³ George N. Lewis and Theodore A. Postol, 'A Flawed and Dangerous US Missile Defence Plan', *Arms Control Today*, May 2010, at http://www.armscontrol.org/act/2010_05/Lewis-Postol (accessed April 11, 2012).

²¹⁴ 'Obama's new missile-defence strategy', *IISS Strategic Comments*, Volume 15, Issue 8, October 2009, <http://www.iiss.org/publications/strategic-comments/past-issues/volume-15-2009/volume-15-issue-8/obamas-new-missile-defence-strategy/> (accessed April 12, 2012)

²¹⁵ Karel Janicek, 'Czech Republic Withdraws From US Missile Shield Plan after Diminished Role Frustrations', June 15, 2011, at http://www.huffingtonpost.com/2011/06/15/czech-republic-us-missile-shield-plan-withdrawal-_n_877398.html (accessed April 12, 2012).

²¹⁶ Steven A. Hildreth and Carl Ek, 'Missile Defence and NATO's Lisbon Summit', *Congressional Research Service*, December 28, 2010, at <http://fpc.state.gov/documents/organization/154176.pdf> (accessed April 12, 2012).

Criticism of Obama's PAA

The Defence Science Board (DSB) in September 2011 termed the PAA's long-term goal to develop early intercept (EI) capability for medium, intermediate and ICBM-range missiles by 2020 as 'not a particularly useful goal or protocol for design of a regional BMD system'.²¹⁷ It however concluded that 'overall, the basic components in inventory now, namely Aegis ships with radars and long-range interceptor missiles, are well suited as the foundation of the regional defence mission, including the defence of Europe'.²¹⁸

The 1979 Nobel Physics Laureate, Steven Weinberg, has termed the Obama missile defence programme 'an expensive, ineffective defence against an implausible threat'.²¹⁹ Others have similarly argued that 'the US's ABM crusade is therefore not only targeted at a threat that does not yet exist, but by its very nature it will help bring about that threat'.²²⁰

Prominent critics like Theodore Postol and Geoffrey Lewis while noting that the Bush 'third site' plan was 'technically flawed ... that could never produce a useful level of defence for Europe, and [which] averted a potentially disastrous foreign policy confrontation with Russia' have also termed the Obama administration's plans as 'nothing more than a fiction'. They note that given the 'actual state of missile defence technologies', the 'policy strategy that follows from these technical myths could well lead to a foreign policy disaster'.²²¹

Such criticism has been sustained by the evolving nature of technologies involved and the attendant lack of success of some tests. GBI tests in

²¹⁷ 'Defence Science Board Task Force Report on Science and Technology Issues of Early Intercept Ballistic Missile Defence Feasibility', September 2011, at <http://www.acq.osd.mil/dsb/reports/ADA552472.pdf> (accessed April 13, 2012).

²¹⁸ *Ibid.*, p. 8.

²¹⁹ Cited in Elliot Blair Smith and Gopal Ratnam, '\$35B Missile Defence Misses Bullet With Bullet', August 3, 2011, at <http://www.bloomberg.com/news/2011-08-03/missile-defence-costing-35-billion-misses-bullets-with-bullets.html> (accessed April 11, 2012)

²²⁰ Mark Adomanis, 'Why the US Doesn't Need Ballistic Missile Defence in Eastern Europe (or Anywhere Else)', April 4, 2012, at <http://www.forbes.com/sites/markadomanis/2012/04/12/why-the-us-doesnt-need-ballistic-missile-defence-in-eastern-europe-or-anywhere-else/> (accessed April 14, 2012).

²²¹ Lewis and Postol, 'A Flawed and Dangerous US Missile Defence Plan', n. 213.

January and December 2010 for instance failed to achieve their desired objective. The SM-3 IB interceptor, scheduled for deployment in Romania by 2015, failed in its first flight test in September 2011.

The US Missile Defence Agency (MDA) on its part advertising the second successful intercept of a missile by the SM-3 IB interceptor launched from an US naval ship equipped with the AN/SPY-1 radar on June 27, 2012, noted that it was the ‘54th successful hit-to-kill intercept in 68 flight tests since 2001’ and the ‘23rd successful intercept in 28 flight test firings for the Aegis BMD program’.²²² The first successful flight test of the Block IB missile was done in May 2012 using the same ship (*USS Lake Erie*), indicating a successful advancement in capabilities.

However on October 25, 2012, billed as the ‘largest missile defence test in history’ by the MDA, an SM-3 Block IA interceptor launched from the *USS Fitzgerald* failed to intercept an SRBM. During the same test however, a PAC-3 system successfully intercepted another SRBM, while a THAAD missile ‘successfully intercepted its first Medium Range Ballistic target in history’.²²³

Given the nature of technologies being pursued, their funding imperatives and the policy choice of the Obama administration for pursuing a European PAA – which overturned some elements of the policy followed by the previous Republican-led administration, missile defence has been a prime arena for domestic political jostling within the United States as well. Republicans like House Leader John Boehner have termed Obama’s PAA as one designed to ‘empower Russia and Iran at the expense of our allies in Europe’.²²⁴

²²² ‘Second-Generation Aegis Ballistic Missile Defence System Completes Second Successful Intercept Flight Test’, June 27, 2012, at <http://www.mda.mil/news/12news0008.html> (accessed July 18, 2012).

²²³ ‘Ballistic Missile Defence System Engages Five Targets Simultaneously during Largest Missile Defense Flight Test in History’, October 25, 2012, at <http://www.mda.mil/news/12news0011.html> (accessed November 6, 2012).

²²⁴ Peter Baker, ‘White House scraps Bush’s approach to missile shield,’ September 18, 2009, at <http://www.nytimes.com/2009/09/18/world/europe/18shield.html> (accessed April 12, 2012)

The Obama administration was able to get Republican support for the Senate ratification of New START, in lieu of the commitment that it will continue to privilege the pursuit of US missile defence efforts, apart from continued budgetary and technological investments in the nuclear weapons complex. Addressing Republican concerns, President Obama informed the US Senate in February 2011 that: 'It is the policy of the United States to continue development and deployment of United States missile defence systems to defend against missile threats from nations such as North Korea and Iran, including qualitative and quantitative improvements to such systems'.²²⁵

Budgetary Pressures

The Obama administration meanwhile is facing budgetary pressures on its defence dollars. The Budget Control Act of August 2011 mandated a reduction in defence spending of \$487 billion over the next decade (by 2022). Therefore the administration in Fiscal Year (FY) 2013 decided to defer procurement of new ships, restructure programmes like the Joint Strike Fighter aircraft, implement force structure reductions, eliminate seven tactical air squadrons, and retire seven naval cruisers among other measures.²²⁶

Missile defence programmes too have not been immune from budgetary imperatives. The FY 2013 budget request for instance sought \$9.7 billion - \$700 million less than the previous year - and a total of about \$48 billion till 2017 for missile defence. New missile defence-related investments include the procurement of two Aegis-class destroyers, as part of \$18.2 billion effort to acquire 10 new warships (inclusive of the Aegis-ships).²²⁷

²²⁵ The White House, 'Message from the President on the New START Treaty to the Senate of the United States', February 2, 2011, at <http://www.whitehouse.gov/the-press-office/2011/02/02/message-president-new-start-treaty-0> (accessed August 10, 2011).

²²⁶ Leon Panetta, 'Opening Summary: Senate Budget Committee (Budget Request)', February 28, 2012, at <http://www.Defence.gov/speeches/speech.aspx?speechid=1653> (accessed March 19, 2012).

²²⁷ Idem, 'Opening Summary — Senate Armed Services Committee (Budget Request)', February 14, 2012, at <http://www.Defence.gov/speeches/speech.aspx?speechid=1651> (accessed March 19, 2012).

The FY 2012 budget sought \$10.7 billion for ballistic missile defence programmes, of which \$8.6 billion was for the MDA. This was to be spent for more regional radars, flight test programmes, additional GBIs etc. The budget also included more than \$2 billion for missile defence systems required to implement the PAA.²²⁸ The Congress sanctioned \$10.4 billion.

As with the Bush administration, the Obama administration faced difficulties in securing the funding for key missile defence programmes. The House Armed Services Committee for instance cut \$75 million from the requested amount for the 'Aegis Ashore' BMD system. Obama said that such a step 'would jeopardise the implementation of the European Phased Adaptive Approach (EPAA) to missile defence and limit the ability to protect the United States, deployed US Forces, allies, and partners'.²²⁹

Obama also termed as 'premature' the provisions inserted by the Committee which would require the US to build a third interceptor site on the US east coast as 'the Administration has not identified a requirement for a third US-based missile defence site, nor assessed the feasibility or cost in a cost-constrained environment'.²³⁰ However, it is pertinent to note that the US Strategic Command Chief General Robert Kehler had in May 2012 indicated that the military was indeed considering a possible third interceptor site as part of its 'hedge' strategy.²³¹

In view of such budgetary pressures, Republican lawmakers have been urging the Obama administration to explain its position vis-à-vis US

²²⁸ 'Summary of the DOD Fiscal 2012 Budget Proposal', http://www.Defence.gov/pdf/SUMMARY_OF_THE_DOD_FISCAL_2012_BUDGET_PROPOSAL_%283%29.pdf (accessed April 11, 2012).

²²⁹ 'Statement of Administration Policy', May 15, 2012, at http://www.whitehouse.gov/sites/default/files/omb/legislative/sap/112/saphr4310r_20120515.pdf (accessed July 18, 2012).

²³⁰ Ibid.

²³¹ Rachel Oswald, 'GOP Lawmakers Demand Pentagon Provide "Hedging Strategy" on Missile Defence', July 17, 2012, at <http://www.nti.rsvp1.com/gsn/article/senior-house-lawmakers-demand-pentagon-provide-hedge-strategy-missile-defense/?mgh=http%3A%2F%2Fwww.nti.org&mgf=1> (accessed July 18, 2012).

capabilities more clearly. Two senior lawmakers House Armed Services Committee Chairman Buck McKeon and Strategic Forces Subcommittee Chairman Michael Turner for instance in a letter to Defence Secretary Panetta on July 13, 2012 wanted the administration to make its stand known regarding a ‘hedging strategy’ as regards alternatives in case US capabilities do not come online as envisioned due to technological or budgetary pressures or if Iran’s capabilities to threaten the US homeland mature faster than anticipated. In this regard, they specifically referred to the increasing ballistic missile capabilities of Iran as stated in the April 2012 Pentagon’s report to the US Congress on Iranian military capabilities.²³²

Cooperative Missile Defence Efforts: Case of MEADS

In the light of the budgetary imperatives, the ability of the Obama and later US administrations to sustain missile defence programmes – especially those being jointly pursued with the US’s European allies – could come under the scanner. Funding problems currently being encountered by a key cooperative missile defence effort – the Medium Extended Air and Missile Defence System (MEADS) being built by Lockheed Martin Corp and its partners in Italy and Germany – is a case in point.

The project was started in 2005 as a replacement for the Patriot theatre missile defence system. The system was expected to offer protection to US troops against tactical ballistic missiles, cruise missiles, apart from fighter planes. It was expected to cost about \$3.4 billion.²³³ The first system was intended to come online by 2018. Germany’s contribution was expected to be about \$1.5 billion for about 12-24 MEADS units.²³⁴

The Pentagon however indicated in 2011 that it may not buy any of the systems being developed and that funding for the programme would be terminated after 2013. For fiscal year 2013 however, the US

²³² The letter is available at http://armedservices.house.gov/index.cfm/files/serve?file_id=7cf75fa7-721b-4e25-9b51-e058bb57c687 (accessed July 18, 2012).

²³³ Jill R. Aitoro, ‘Italy and Germany say future of MEADS is uncertain without US support’, June 13, 2012, at http://www.bizjournals.com/washington/blog/fedbiz_daily/2012/06/italy-says-future-of-meads-is.html (accessed July 18, 2012).

²³⁴ Rademaker, ‘America’s Cooperative Approach to Missile Defence’, n. 190.

defence department requested the US Congress to appropriate \$401 million. US officials including Defence Secretary Panetta have argued that the funding would allow the key work to be completed which would give the option to Italy and Germany to buy the systems if they so desired as well as allow the US to make use of the key technologies that have been jointly developed.²³⁵

The funding request was however denied by three Congressional panels. The Obama administration officials had warned that any negative response of the Senate Appropriations Committee to its request could hurt US standing and create difficulties in its relations with its key European allies. Italian and German officials and lawmakers have on their part also expressed concern over possible cutting off of funds, with a German lawmaker stating that such a move ‘could cause significant financial and national security relationship challenge’.²³⁶

In the Statement of Administration Policy regarding the National Defence Authorisation Act 2013 issued on May 13, 2012, Obama stated that prohibiting the use of funds for the MEADS programme:

... would be perceived by our partners Italy and Germany as breaking our commitment under the Memorandum of Understanding, and could harm our relationship with our Allies on a much broader basis, including future multinational cooperative projects. It also could prevent the completion of the agreed Proof of Concept activities, which would provide data archiving, analysis of testing, and software development necessary to harvest technology from US and partner investments in MEADS.²³⁷

Despite the above difficulties being encountered by programmes such as MEADS however, officials insist that the US will continue ‘to maintain our defence commitments to Europe ...’²³⁹ This was stated

²³⁵ Andrea Shalal-Esa, ‘US leaders see fallout if joint missile funds nixed’, *Reuters*, June 28, 2012, at <http://in.reuters.com/article/2012/06/28/lockheed-missile-congress-idINL2E8HS0AV20120628> (accessed July 18, 2012).

²³⁶ *Idem*, ‘Germany, Italy urge funding for missile program’, *Reuters*, June 13, 2012, at <http://www.reuters.com/article/2012/06/14/us-lockheed-missile-idUSBRE85D02N20120614> (accessed July 18, 2012).

²³⁷ ‘Statement of Administration Policy’, May 15, 2012, n. 229.

by the Defence Secretary Panetta while releasing the January 2012 *Defence Strategic Guidance* as per which the US ‘will have global presence emphasising the Asia-Pacific and the Middle East ...’ A senior US naval official in a briefing on the FY2013 budget proposal pointed out that US has significant deployments in the ‘two hubs’ – ‘29 ships deployed to the Middle East and 52 deployed in the Pacific’. He added that ‘we are where we need to be, and we’ll continue to operate in these areas around the world’.²⁴⁰ Ellen Tauscher, Special Envoy for Strategic Stability and Missile Defence on March 26, 2012 noted that the Pentagon has met Obama’s goal of erecting the first phase of PAA before 2011 with the ‘Aegis Cruiser, the USS *Vella Gulf*, providing our at-sea Phase 1 missile Defence presence along with the AN/TPY-2 radar in Turkey’.²⁴¹

\$390 million were allocated for fiscal year 2012. Republican lawmakers like Senator John McCain have on their part insisted that it would be unwise on the part of the US to keep funding a programme when the Pentagon has already decided not to buy the system.²³⁸

Eventually, the US Senate Committee on Appropriations on July 31, 2012 decided to incorporate the administration’s views on the MEADS programme and allocated \$400 million for the FY 2013 budget. The Committee also provided \$500 million over and above the administration’s funding requests for missile defence, with \$190 million for SM-3 Block IB interceptors, an additional X-band radar, as well as more than \$200 million for the Israeli Iron Dome programme.²⁴²

²³⁸ Shalal-Esa, ‘German y, Italy urge funding for missile program’, n. 236.

²³⁹ See n. 34.

²⁴⁰ ‘DOD News Briefing by Rear Adm. Mulloy from the Pentagon on the Fiscal 2013 Budget Proposal’, February 13, 2012, at <http://www.Defence.gov/transcripts/transcript.aspx?transcriptid=4977> (accessed March 19, 2012).

²⁴¹ Ellen Tauscher, ‘Ballistic Missile Defence: Progress and Prospects’, March 26, 2012, at <http://www.state.gov/t/186824.htm> (accessed April 13, 2012).

²⁴² See US Senate Committee on Appropriations, ‘Summary: Department of Defence Appropriations Act, 2013’, July 31, 2012, at <http://www.appropriations.senate.gov/news.cfm?method=news.view&cid=793bc530-cada-41c9-ba63-e4042a220f9a> (accessed October 20, 2012); See also ‘Senate Appropriators Allocate \$500M Extra to Missile Defence Agency’, at <http://www.nti.rsvp1.com/gsn/article/senate-appropriators-allocate-funds-meads-sm-3-pac-3-interceptors/?mgh=http%3A%2F%2Fwww.nti.org&mgf=1> (accessed August 6, 2012).

VII STRATEGIC CONSEQUENCES

The 2010 Aspen European Strategy Forum report held out the hope that ‘ballistic missile defence (BMD) may end up being used as a convenient, non-violent, political hedge by which to respond to Iran’s reaching the nuclear threshold’.²⁴³ However, the US pursuit of missile defence measures has had strategic consequences primarily relating to Russian and Chinese nuclear force modernisation along with regional repercussions. These are: problems in Iran-Turkey relations; the strong US-Israel cooperation on missile defence given the latter’s privileging of such efforts in its own security posture; and efforts by GCC countries to procure/station US missile defence assets on their territories. The more significant of these will be delineated below.

Russia: Unresolved Contentions and Strategic Defiance

The Bush administration viewed missile defence cooperation with Russia as ‘an important means to build new relationships with new friends like Russia’.²⁴⁴ Bush administration officials like the then Under Secretary of State for Political Affairs Marc Grossman, in May 2001 held that missile defences were important ‘defensive’ measures to ensure ‘strategic stability’ with Russia in a re-defined cooperative framework in the aftermath of the Cold War.²⁴⁵ President Bush on December 13, 2001

²⁴³ Joachim Krause and Charles King Mallory IV (eds.), ‘The Strategic Implications of Iranian Nuclear Programme’, 2010 Aspen European Strategy Forum, at <http://aspensite.org/publication/download/20/The+Strategic+Implications+of+the+Iranian+Nuclear+Program+Conference+Papers.pdf>, p. 25 (accessed March 8, 2012).

²⁴⁴ ‘National Policy on Ballistic Missile Defence Fact Sheet’, May 20, 2003, n. 191.

²⁴⁵ Marc Grossman, ‘The Future of Strategic Stability and Deterrence’, May 8, 2001, at <http://2001-2009.state.gov/p/us/rm/2893.htm> (accessed July 16, 2012).

– the day the US notified Russia that it was withdrawing from the ABM Treaty – asserted that ‘the greatest threats to both our countries come not from each other, or other big powers in the world, but from terrorists who strike without warning, or rogue states who seek weapons of mass destruction’.²⁴⁶

Russia however opposed the US missile defence plans and its decision to quit the ABM Treaty. It has also been hedging its response to the US offers of cooperation on missile defence. Foreign Minister Igor Ivanov in an interaction with the then US Secretary of State Colin Powell in May 2001 said that the ‘set of issues having to do with strategic stability [which] requires, in our mind, the most detailed and careful review with the consideration of a whole variety of different factors’.²⁴⁷

Ivanov in an article in *Foreign Affairs* also warned against the possibility of an arms race following the upgrading of the US BMD systems given that such upgrades would be based ‘not [on] the evolution of external threats but the progress of military technology in the interests of the military-industrial complex that would dictate the rules of the game – or, to be more precise, the game with no rules’.²⁴⁸ As to the threat posed by ‘rogue states’ such as Iran and Russia’s not very enthusiastic acceptance of the thesis, US officials like Stephen Hadley, the then Deputy Director of the US National Security Council opined that ‘for Americans who lived through the Gulf War and saw the effect of SCUD missiles in that conflict, the threat has a certain reality and urgency that maybe is not shared’.²⁴⁹

Despite Russia’s not-so-favourable response, the Bush administration pursued its policy framework vis-à-vis missile defence cooperation

²⁴⁶ ‘President Discusses National Missile Defence’, December 13, 2001, at <http://2001-2009.state.gov/t/ac/rls/rm/2001/6847.htm> (accessed July 16, 2012).

²⁴⁷ ‘Press Remarks with Russian Minister of Foreign Affairs Igor Ivanov’, May 18, 2001, at <http://2001-2009.state.gov/secretary/former/powell/remarks/2001/2956.htm> (accessed July 16, 2012).

²⁴⁸ Igor Ivanov, ‘The Missile-Defence Mistake: Undermining Strategic Stability and the ABM Treaty’, *Foreign Affairs*, 79(5), September-October 2000, pp. 15-20.

²⁴⁹ ‘Consultations in Moscow’, May 11, 2001, at <http://2001-2009.state.gov/t/ac/rls/rm/2001/2890.htm> (accessed July 16, 2012).

vigorously to bring it to fruition. The Joint Statement released in the aftermath of the May 2002 Moscow Summit (where the 'Joint Declaration on the New Strategic Partnership' was signed by President Putin and President Bush) stated:

The United States and Russia have agreed to implement a number of steps aimed at strengthening confidence and increasing transparency in the area of missile defence, including the exchange of information on missile defence programs and tests in this area, reciprocal visits to observe missile defence tests, and observation aimed at familiarization with missile defence systems. They also intend to take the steps necessary to bring a joint centre for the exchange of data from early warning systems into operation.²⁵⁰

The statement further noted that both countries have agreed to 'explore possible areas for missile defence cooperation', including joint exercises, joint research and development of missile defence technologies, 'opportunities for intensified practical cooperation on missile defence for Europe ...'²⁵¹ In the aftermath of the Joint Declaration, the US-Russia Missile Defence Working Group was established in September 2002.

Similar sentiments were reiterated at the St. Petersburg Summit in June 2003 where the Instruments of Ratification for the 2002 Strategic Offensive Reductions Treaty (SORT)/Moscow Treaty were exchanged. Putin and Bush declared their 'intention to advance concrete joint projects in the area of missile defence which will help deepen relations between the United States and Russia'.²⁵²

The US efforts to allay Russian concerns have however not been successful so far. Russia continues to contend that the US missile defence measures, in as much as they relate to the security of America's European allies, challenges the efficacy of its strategic deterrent. This has also

²⁵⁰ The excerpts of the May 22, 2002 Joint Statement are available at <http://2001-2009.state.gov/t/isn/rm/45598.htm> (accessed July 16, 2012).

²⁵¹ Ibid.

²⁵² 'St. Petersburg Summit Joint Statement', June 1, 2003, at <http://2001-2009.state.gov/t/isn/rm/45569.htm> (accessed July 16, 2012).

evoked a belligerent response from senior Russian armed forces officials. In August 2008 the then Deputy Chief of Staff Gen. Anatoly Nogovitsin warned Poland that it could face a nuclear attack for agreeing to house a US BMD system on its soil.²⁵³

The Chief of Russia's General Staff General Nikolai Makarov in February 2010 stated that 'it is natural that we view this [US missile defence system] very negatively, because this to some extent can weaken our missile capability'.²⁵⁴ Russia's Deputy Prime Minister Sergei Ivanov told the Munich Security Conference in 2009 that 'the potential US missile defence European site is not just a dozen of anti-ballistic missiles and a radar. It is a part of the US strategic infrastructure aimed at deterring Russia's nuclear missile potential'.²⁵⁵

US officials have consistently dismissed such Russian contentions as unwarranted. In February 2007, Kurt Volker, the then Principal Deputy Assistant Secretary for European and Eurasian Affairs, stated that the US does not:

...expect Russia to be using nuclear weapons or sending missiles to the United States; we don't expect to be sending them to Russia. What we're worried about is states that develop nuclear or other missile technologies and can aim them, in small numbers, at the United States.

Volker also said that US assets in Eastern and Central Europe 'give you the radar coverage and the picture of things that might come from the Middle East region, it's not aimed against Russia in any way'.²⁵⁶

²⁵³ Cited in Robert S. Norris and Hans M. Kristensen, 'Nuclear Notebook: Russian Nuclear Forces 2009', *Bulletin of the Atomic Scientists*, May/June 2009, p. 55.

²⁵⁴ Ellen Barry, 'Russia: Missile Defence Delaying Arms Talks, Top General Says', February 10, 2010, at <http://www.nytimes.com/2010/02/10/world/europe/10briefs-Russia.html?ref=todayspaper> (accessed February 10, 2010).

²⁵⁵ Sergei Ivanov, 'Non-Proliferation of WMD: The Case for Joint Effort', June 2, 2009, at <http://www.securityconference.de/Sergej-B-Iwanow.224+M52087573ab0.0.html> (accessed April 12, 2012).

²⁵⁶ Kurt Volker, Interview with Thomas Nehls of WDR German Public Radio, February 12, 2007, at <http://2001-2009.state.gov/p/eur/rls/rm/80542.htm> (accessed July 16, 2012).

National Security Advisor Hadley, in February 2007, said that ‘this deployment is not directed at them, is not a threat to their security, but it is an understandable step by Europe and North America to provide a limited capability against threats like Iran’.²⁵⁷ Assistant Secretary Fried in May 2007 asserted that ‘ten unarmed interceptors, no warheads at all, are hardly going to make a difference whatsoever with respect to the Russian nuclear deterrent force’.²⁵⁸

Interacting with press persons in Washington, Fried also indicated that there ‘could be an element of politics involved’ in the Russian opposition to US missile defence efforts apart from their fears regarding the viability of their deterrent. He was specifically referring to the Russian criticism of missile defence as corresponding to Western European arguments critical of the US during the Cold War.²⁵⁹

Analysts have noted that Russian domestic politics do indeed play an important role in determining the rhetoric/actions of its political leaders. This is partly related to extreme sensitivity on nuclear issues, the Russian elite’s suspicion of the US, especially so on the issue of strategic arms control, cultural differences on the nature of the threat posed by Iran (the US narrative is scarred by the 1979 hostage issue which Russia may not sufficiently understand while US is un-appreciative of Russian sensitivities regarding the threats posed to its strategic depth by US missile defence assets in Europe), among other issues.²⁶⁰

Russian concerns continue to be apparent in its interactions with the Obama administration. While announcing the PAA in September 2009, the White House insisted that ‘we have repeatedly made clear to Russia

²⁵⁷ ‘Press Roundtable’, NATO Headquarters, Brussels, Belgium, February 21, 2007, at <http://2001-2009.state.gov/p/eur/rls/rm/82017.htm> (accessed July 16, 2012).

²⁵⁸ ‘US-Russia Relationship, Kosovo, and Missile Defence’, May 17, 2007, at <http://2001-2009.state.gov/p/eur/rls/rm/85125.htm> (accessed July 9, 2012).

²⁵⁹ ‘Missile Defence Plans for Europe’, May 4, 2007, at <http://2001-2009.state.gov/p/eur/rls/rm/84411.htm> (accessed July 9, 2012).

²⁶⁰ Mikhail Tsypkin, ‘Russian Politics, Policy Making and American Missile Defence’, *International Affairs*, 85(4), 2009, pp. 781-799.

that missile defence in Europe poses no threat to its strategic deterrent. Rather, the purpose is to strengthen defences against the growing Iranian missile threat'.²⁶¹

During the negotiations and subsequent signing of the New Strategic Arms Reduction Treaty (New START), Russia insisted that the new treaty will 'be viable only if the United States of America refrains from developing its missile defence capabilities quantitatively or qualitatively'.²⁶² In May 2011, the then Russian President Dmitri Medvedev warned that 'if missile defence systems are to be developed – which would mean the disruption of strategic parity – the treaty [New START] could be suspended or even terminated'.²⁶³

The Obama administration on its part insisted that 'missile defence systems are not intended to affect the strategic balance with Russia ...'.²⁶⁴ Secretary Clinton at a NATO Foreign Minister's meeting in Brussels in December 2011 asserted that the US BMD system is 'not directed at Russia, it's not about Russia, it's frankly about Iran'.²⁶⁵ Other NATO allies have been even more explicit in describing the intent of the BMD system. The then French President Nicolas Sarkozy told reporters on the sidelines of NATO-Russia conference in November 2010 that "France calls a cat a cat: the threat of the missiles today is Iran."²⁶⁶

²⁶¹ 'Fact Sheet on US Missile Defence Policy: A "Phased, Adaptive Approach" for Missile Defence in Europe', September 17, 2009, at http://www.whitehouse.gov/the_press_office/FACT-SHEET-US-Missile-Defence-Policy-A-Phased-Adaptive-Approach-for-Missile-Defence-in-Europe (accessed April 11, 2012).

²⁶² Cited in Amy Wolf, 'The New START Treaty: Central Limits and Key Provisions', April 21, 2011, p. 16, at www.fas.org/sgp/crs/nuke/R41219.pdf (accessed August 13, 2011).

²⁶³ Cited in Tom Z. Collina, 'Missile defence cooperation stalls', *Arms Control Today*, July-August 2011, at http://www.armscontrol.org/act/2011_%2007-08/Russia_Missile_Defence_Cooperation_Stalls (accessed April 3, 2012).

²⁶⁴ 'Missile Defence Agency Programme Update 2011', n. 208.

²⁶⁵ Cited in Tom Z. Collina, 'US-Russia Missile Defence Talks Deadlock', *Arms Control Today*, January-February 2012, at http://www.armscontrol.org/act/2012_01-02/US_Russia_Missile_Defence_Talks_Deadlock (accessed April 3, 2012).

²⁶⁶ Cited in Robert Golan-Vilella, 'NATO Approves Expanded Missile Defence', December 2010, at http://www.armscontrol.org/act/2010_12/NATO_MissileDefence (accessed April 6, 2012).

US strategic policy documents like the May 2009 Congressional Commission report accept that ‘defences sufficient to sow doubts in Moscow or Beijing about the viability of their deterrents could lead them to take actions that increase the threat to the United States and its allies and friends’.²⁶⁷ The Report urges the US to strengthen missile defence cooperation with its allies as well as with Russia and ‘work with Russia and China to control advanced missile technology transfer’.²⁶⁸

Despite these suggestions and US/NATO assurances, the outgoing Russian President Medvedev called for ‘written guarantees’ that the US/NATO missile defence shield was not directed at Russia.²⁶⁹ US officials like Frank Rose, Deputy Assistant Secretary, Bureau of Arms Control, Verification and Compliance meanwhile continue to maintain that legal guarantees would ‘create limitations on our ability to develop and deploy future missile defence systems. ... We would be willing to agree to a political framework including a statement that our missile defences are not directed at Russia’.²⁷⁰

The US Special Envoy for Strategic Stability and Missile Defence Ellen Tauscher, addressing the RUSI Missile Defence Conference in London on May 30, 2012 asserted:

We are committed to deploying effective missile defences to protect the US homeland and our Allies and partners around the world from the proliferation of ballistic missiles. We will not agree to limitations on the capabilities and numbers of our missile defence systems. We cannot agree to any “criteria,” that would, in effect, limit our ability

²⁶⁷ ‘America’s Strategic Posture’, May 2009, n. 28, p. 32.

²⁶⁸ *Ibid.*, p. 33.

²⁶⁹ Will Englund, ‘Medvedev calls missile defence a threat to Russia’, March 23, 2012, at http://www.washingtonpost.com/world/europe/medvedev-calls-missile-Defence-a-threat-to-russia/2012/03/23/gIQA9Id2VS_storyhtml?wpisrc=nl_cuzheads (accessed March 24, 2012).

²⁷⁰ Frank A. Rose, ‘A US State Department Perspective on the Phased Adaptive Approach to Missile Defence’, April 12, 2012, at <http://www.state.gov/t/avc/ds/187774.htm> (accessed April 15, 2012).

to develop and deploy future missile defence systems that will protect us against regional threats such as Iran and North Korea.²⁷¹

Others like NATO Deputy Secretary General Alexander Vershbow said that legal guarantees ‘are not politically feasible for the United States, because when the New START treaty was ratified, the government promised Congress that it would never agree to any constraints that would limit the country’s missile defence capability’.²⁷²

In spite of the above issue relating to legal guarantees by US and NATO officials, the Russian President Vladimir Putin addressing a joint press conference with the French President Francois Hollande in June 2012 dismissed American ‘assurances’. He said that ‘mere declarations like – “Don’t worry, we promise you that nothing will happen” – this is absolutely not enough in the modern world and sounds childish. ... We would like these (assurances) to be not just declarations, but we want to have military-technological guarantees stipulated by legally binding documents. Only then can we feel secure and maintain a good partner-like dialogue’.²⁷³

Apart from expressing vigorous opposition, warning the NATO states where US missile defence assets are to be stationed, driving hard bargains in bilateral arms control negotiations like New START and insisting on legal guarantees, Russia has been making efforts to fine tune its deterrent and build advanced versions of missiles like the *Bulava* MIRV (multiple independently targetable re-entry vehicle) missiles that could more effectively negate the perceived dangers posed by US missile defence efforts. In a speech on November 23, 2011, the then President Medvedev affirmed that Russia was going ahead with developing new

²⁷¹ The text of her remarks available at <http://www.state.gov/t/191539.htm> (accessed July 25, 2012).

²⁷² ‘No Binding Pledge on Missile Defence, NATO Official Says’, May 30, 2012, at <http://www.nti.org/gsn/article/no-binding-pledge-missile-defense-nato-official-says/?mgh=http%3A%2F%2Fwww.nti.org&mgf=1> (accessed July 18, 2012).

²⁷³ ‘Putin Demands Enforceable Guarantee on NATO Missile Shield’, June 4, 2012, at <http://www.nti.org/gsn/article/putin-demands-legal-guarantee-na-to-missile-shield/> (accessed July 18, 2012).

strategic missiles that ‘will be equipped with advanced missile defence penetration systems and new highly effective warheads’.²⁷⁴

Medvedev also warned that Russia would deploy *Iskander* tactical missiles in Kaliningrad, a Russian enclave bordering Poland and Lithuania, if NATO went ahead with its missile defence plans. The *Iskander* family of missiles have ranges of 300 kms to 500 kms, with the *Iskander K* cruise missile being the most dangerous with an extendable range of 2000 kms giving Russia first-strike capability.²⁷⁵ The missiles are reportedly most effective for precision strikes on high-value targets like command posts and air defence sites.

Medvedev, currently Russia’s prime minister, told reporters in July 2012 that the *Iskander* would ‘form the backbone of Russian ground forces missile detachments’. During a visit to the factory that produces the missile, Medvedev stated that the government has ‘invested over 24 billion roubles [\$750 million] in modernising and building production capacity for series production of *Iskander M* missiles’.²⁷⁶ President Putin on July 26, 2012 asserted that ‘nuclear weapons remain the most important guarantee of Russia’s sovereignty and territorial integrity, and play a key role in maintaining the regional balance and stability’. He further asked his officials to take steps to ensure that by 2020, nearly 80 per cent of Russia’s nuclear forces and 70 per cent of its space and air defence forces are modernised.²⁷⁷

Russian concerns regarding the US BMD system in Europe become more stark in the light of Wikileaks revelations of US officials assuring Poland in November 2009 that such systems could also protect them

²⁷⁴ David M. Herszenhorn, ‘Russia Elevates Warning about US Missile-Defence Plan in Europe’, November 23, 2011, at <http://www.nytimes.com/2011/11/24/world/europe/russia-elevates-warning-about-us-missile-Defence-shield-plan.html> (accessed April 14, 2012).

²⁷⁵ Fedorov, ‘American Ballistic Missile Defence, Russian Iskanders and a New Missile Crisis in Europe’, n. 198, pp. 3-4.

²⁷⁶ ‘Medvedev calls for faster re-armament’, July 23, 2012, at http://en.rian.ru/military_news/20120723/174740545.html (accessed July 25, 2012).

²⁷⁷ ‘Putin pushes nuclear, space defence reform’, July 26, 2012, at <http://rt.com/politics/re-armament-sets-defense-priority-100/> (accessed July 27, 2012).

from ‘threats from an unforeseen direction, land-based sites could be upgraded with more interceptors if the scale of the threat were increased, and radars could be reoriented’.²⁷⁸

The cable also reports Polish officials expressing their disappointment that the GBI site at Redzikowo would not become operational till 2018 and wanting information on how soon preparations for deployment could be made.²⁷⁹ The Polish government’s official stance however is that the BMD system ‘is primarily to guard against Iranian short and medium range missiles’.²⁸⁰ The first batch of Patriot missile batteries were deployed in Poland in April 2010. Russia would also not have been impressed by the Bush administration’s efforts to seek missile defence cooperation with non-NATO countries like Ukraine, bordering Russia.²⁸¹

During the April 2008 US-Russia Sochi Summit, Russia for the first time formally agreed to cooperate with US/NATO on missile defence. President Medvedev participated in the November 2010 Lisbon conference where in NATO adopted its new strategic concept and pledged to cooperate with Russia on missile defence. Medvedev asserted that ‘either we are fully involved, exchanging information and taking responsibility for particular areas, or we do not take part at all’.²⁸²

It is pertinent to note that NATO and Russia had first ‘committed to explore cooperation in theatre missile defence’ (TMD) at the 2002

²⁷⁸ Ian Traynor, ‘WikiLeaks cables: Poland wants missile shield to protect against Russia’, December 6, 2010, at <http://www.guardian.co.uk/world/2010/dec/06/wikileaks-cables-poland-russia-shield> (accessed April 13, 2012).

²⁷⁹ The text of the November 12, 2009 cable is available at <http://www.guardian.co.uk/world/us-embassy-cables-documents/234255> (accessed April 13, 2012).

²⁸⁰ ‘Poland approves revised US missile shield agreement’, March 2, 2010, at http://www.spaceaily.com/reports/Poland_approves_revised_US_missile_shield_agreement_999.html (accessed April 13, 2012).

²⁸¹ See for instance ‘A New Century Agenda for the Ukrainian-American Strategic Partnership’, April 4, 2005, at <http://2001-2009.state.gov/t/isn/rm/45568.htm> (accessed July 16, 2012).

²⁸² Golan-Vilella, ‘NATO Approves Expanded Missile Defence’, n. 266.

Rome Summit.²⁸³ An ad-hoc working group on TMD was established under the aegis of the NATO-Russia Council. The Group developed a common terminology (in English, French and Russian) and experimental TMD Concept of Operations (CONOP's), 'for use in joint crisis response operations'. The Group also explored issues related to 'inter-operability' of NATO and Russian missile defence systems.²⁸⁴

Though NATO and Russia later cooperated on such issues as Joint Threat Assessment, they hold divergent views on the 'mechanics of BMD cooperation' and other aspects such as joint management, areas of responsibility, among others.²⁸⁵ It is important to note that earlier efforts for cooperation with Russia on the issue of missile defence like the Global Protection against Limited Strikes (GPALS) and a Joint Data Exchange Centre (JDEC) also did not materialise.²⁸⁶ Due to continued divergence of views, President Putin did not participate at the May 2012 NATO Summit in Chicago.

China: Strategic Concerns and Policy Responses

The White House Press Secretary on September 14, 2001 stated that the US 'will hold intensive discussions with China ... will make clear that the US missile defence programme does not threaten China but seeks to counter limited missile threats from rogue states and the danger of accidental or unauthorized launches'.²⁸⁷ The statement went on to say that 'no one should try to blame the modernisation of China's offensive nuclear forces on our missile defence efforts. China's ongoing

²⁸³ Rademaker, 'America's Cooperative Approach to Missile Defence', n. 190.

²⁸⁴ Paula A. DeSutter, 'State Department's Role in Missile Defence', April 4, 2006, at <http://2001-2009.state.gov/t/vci/rls/rm/64126.htm> (accessed July 16, 2012).

²⁸⁵ Manpreet Sethi, 'Is US Missile Defence Worth It?', March 20, 2012, at <http://the-diplomat.com/flashpoints-blog/2012/03/20/is-u-s-missile-defence-worth-it/> (accessed March 21, 2012).

²⁸⁶ Jeffrey Mankoff, 'The politics of US missile defence cooperation with Russia', *International Affairs*, 88(2), at http://www.chathamhouse.org/sites/default/files/public/International%20Affairs/2012/88_2/88_2mankoff.pdf (accessed April 12, 2012)

²⁸⁷ 'US, China to Discuss Missile Defence', Statement by the Press Secretary, The White House, Washington, DC, September 4, 2001, at <http://2001-2009.state.gov/t/ac/rls/rm/2001/4803.htm> (accessed July 16, 2012).

modernisation effort was initiated years ago. We will tell the Chinese that it is unnecessary and that it is not good for regional stability or for peace'.²⁸⁸

Despite the above assertion, the Chinese foreign ministry stated that they would need to 'ensure the effectiveness of China's nuclear forces' in response to US missile defence efforts purportedly directed against 'rogue-states like Iran (and for China more pertinently North Korea). This was especially so in view of the limited numbers of Chinese ICBMs with the capability of reaching the US (about 20 in 2001) and the possible role of US missile defences in neutralising them, thus effectively negating the Chinese nuclear deterrent'.²⁸⁹

The later US strategic policy documents – like the September 2008 '*Nuclear Weapons and National Security in the 21st Century*' – however asserted that China 'is qualitatively and quantitatively modernising its nuclear forces, developing and deploying new classes of missiles, upgrading older missile systems, and developing methods to counter ballistic missile defences'.²⁹⁰

The December 2008 Report of the Secretary of Defence Task Force on DoD Nuclear Weapons Management noted that 'the newly self-confident and economically vibrant China is modernising and increasing its nuclear forces, as well as transforming its conventional military capabilities for force projection and access denial missions'.²⁹¹

The May 2009 Congressional Commission report also acknowledged that 'China may already be increasing the size of its ICBM force in response to its assessment of the US missile defence program'.²⁹²

²⁸⁸ Ibid.

²⁸⁹ Wade Boese, 'US Outlines Plans for Missile Defence Talks with China', *Arms Control Today*, October 2001, at http://www.armscontrol.org/act/2001_10/chimisdefoct01 (accessed July 6, 2012).

²⁹⁰ See n. 26, p. 7.

²⁹¹ The report is available at <http://www.defense.gov/pubs/pdfs/PhaseIIReportFinal.pdf> (accessed July 27, 2012).

²⁹² 'America's Strategic Posture', n. 28, p. 32.

The 2012 Pentagon report on Chinese military power takes note of China's 'improved capabilities' in nuclear deterrence and strategic strike, including credible at-sea nuclear deterrent and the new class of nuclear powered ballistic missile submarines (Type 094) that are capable of carrying the JL-2 sea-launched ballistic missile with a range of 7,400 kms, among other advancements. It noted that 'China continues work on technologies to counter US and other countries' ballistic missile defence systems ... The new generation of mobile missiles is intended to ensure the viability of China's strategic deterrent in the face of continued missile defence advances in the United States and, to a lesser extent, Russia'.²⁹³

The report states that by 2015, China is expected to field more road-mobile DF-31 ICBMs and enhanced silo-based DF-5 ICBMs. The report estimates China's inventory of ICBMs to number about 50-75, apart from the MRBMs for regional deterrence missions, and developing capabilities pertaining to deterrence at sea.

The 2010 Pentagon report 'Military and Security Developments Involving the Peoples Republic of China' noted that China was 'currently working on a range of technologies to attempt to counter US and other militaries' ballistic missile defence systems, including manoeuvring re-entry vehicles [MARV's], MIRVs, decoys, chaff, jamming, thermal shielding, and anti-satellite (ASAT) weapons'.²⁹⁴ It is pertinent to note that China had conducted two anti-satellite weapons tests in 2007 and 2010.

Analysts critical of Obama's missile defence efforts have warned about the possible negative deterrence implications of the latter two stages of the PAA involving the deployment of more capable SM-3 Block II interceptors on Russia and China.²⁹⁵ Chinese views on missile defence

²⁹³ 'Annual Report to Congress: Military and Security Developments Involving the People's Republic of China', May 2012, at http://www.defense.gov/pubs/pdfs/2012_CMPR_Final.pdf (accessed July 27, 2012).

²⁹⁴ The report is available at http://www.defense.gov/pubs/pdfs/2010_CMPR_Final.pdf, p. 34. (accessed July 27, 2012).

²⁹⁵ Yousuf Butt and Theodore A. Postol, 'Upsetting the Rest: The Technical Basis of Russian Concern over NATO Missile Defence', September 2011, at http://www.fas.org/pubs/_docs/2011%20Missile%20Defence%20Report.pdf (accessed April 12, 2012).

according to analysts have revolved around three issues: effect on global strategic stability and arms control and non-proliferation issues; the viability and credibility of its limited nuclear arsenal; and the possible regional repercussions. While the first two considerations relate to the US pursuit of missile defence generally – which has a significant bearing on US strategy vis-à-vis Iran in the West Asian and European context – the third consideration primarily relates to East Asian security.²⁹⁶

As regards the first consideration, Chinese officials had earlier expressed concerns over the US withdrawal from the ABM Treaty for it had ensured a ‘strategic balance’ between the two countries. China also viewed US NMD plans as efforts by the US to seek ‘absolute security’.²⁹⁷ In April 2012, the Chinese delegate to an international conference on the nuclear non-proliferation treaty (NPT) in Vienna asserted that the ‘development of missile defence systems which disrupt global strategic balance and stability should be abandoned’.²⁹⁸

As regards the second consideration, it is pertinent to note that US writings acknowledge the ‘vulnerability’ of ‘limited’ Chinese nuclear forces. The May 2009 Congressional Commission Report for instance admitted that China views its concerns regarding US missile defence efforts as being ‘more immediate, given the much smaller size of its nuclear force’. It goes on to note that ‘US assessments indicate that a significant operational impact on the Chinese deterrent would require a larger and more capable defence than the United States has plans to construct ...’²⁹⁹

Chinese concerns regarding the vulnerability of its deterrent are especially pertinent in the context of the increasing debates over China’s no-first-use pledge. Given that Chinese nuclear forces are ostensibly to be used only for ‘assured retaliation’ in case of a nuclear attack, analysts

²⁹⁶ Jing-Dong Yuan, ‘Chinese Responses to US Missile Defences: Implications for Arms Control and Regional Security’, *Non-Proliferation Review*, Spring 2003, pp. 75-96.

²⁹⁷ *Ibid.*, p. 80.

²⁹⁸ Fredrik Dahl, ‘China wants “drastic” US, Russia nuclear arms cuts’, April 30, 2012, at <http://www.reuters.com/article/2012/04/30/us-nuclear-china-weapons-idUSBRE83T0SD20120430> (accessed July 27, 2012).

²⁹⁹ ‘America’s Strategic Posture’, n. 28, p. 32.

note that China is worried about the US ‘military’s development of a trifecta of non-nuclear strategic capabilities: (1) missile defences, (2) long-range conventional strike, and (3) sophisticated command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) assets to locate and target China’s nuclear forces’.³⁰⁰ The combination of these capabilities according to Chinese analysts could potentially neutralise the Chinese nuclear deterrent, echoing earlier concerns about the small size of its arsenal.

Thirdly, China is concerned about the advantages of missile defence measures for the US and its allies as regards East Asian security. This is especially so in the context of the unresolved Taiwan issue and possible future attempts by China to seek a military solution for the issue. It is pertinent to note that the first deployment of the powerful 4,000 km range AN/TPY-2 radar was done in Japan in 2007. Though this was done in order to counter possible North Korean missile adventurism, the radar along with the presence of Japan’s six Aegis-equipped ships presents a formidable challenge not just to Pyongyang but to China as well. Japan is also currently working with the US for developing the SM-3 Block IIA interceptor, to be deployed by 2018. Reports note the possibility of third x-band radar which could be deployed most probably in the Philippines.³⁰¹

While most of its modernisation efforts are designed to counter US forces in a possible confrontation over the Taiwan Straits, there is no stopping China from fielding increasingly advanced MRBM’s/SRBM’s towards the west for targeting India.

In this context, it is worth quoting Fravel and Madeiros:

If deployed, MaRV’s [manoeuvring re-entry vehicles] and MIRV warheads could affect China’s strategic relationships with other nuclear

³⁰⁰ M. Taylor Fravel and Evan S. Madeiros, ‘China’s Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure’, *International Security*, 35(2), Fall 2010, p. 83.

³⁰¹ Adam E. Entous and Julian E. Barnes, ‘US Plans New Asia Missile Defences’, August 23, 2012, at <http://online.wsj.com/article/SB10000872396390444812704577605591629039400.html> (accessed October 18, 2012).

powers by increasing the options available to China for using its nuclear weapons, including providing it with additional options against smaller nuclear powers such as India. This shift could undermine strategic stability in China's relationships with India and Russia because MIRV'd missiles, in particular, have first-strike potential.³⁰²

The US's NATO allies on their part have been urging closer missile defence cooperation with not just Russia but also with China. The Danish foreign minister for instance told the visiting US under secretary Marc Grossman in May 2001 that:

It is very important that these [missile defence] consultations are carried out with the Allies, with the Russians, with the Chinese. ... we think it is extremely important in the long-term perspective that development between the United States and China are stable and friendly because these two powers in the next generation may become the next two superpowers of this world.³⁰³

Such cooperation however with China, as with Russia, has not met with much success, given the inherent concerns generated by such 'defensive' measures.

³⁰² Fravel and Madeiros, 'China's Search for Assured Retaliation', n. 300, p. 84.

³⁰³ Grossman and Lykketoft, 'Strategic Stability', n. 194.

VIII

REGIONAL DYNAMICS

Israel: Close Missile Defence Cooperation with the US

Given Israel's security environment and the nature of its strategic engagement with the US – including massive security funding to the tune of \$3 billion annually and joint development of key weapons systems, there has been close cooperation with the US on missile defence. Advanced systems such as the Arrow Weapon System (AWS) for instance have been jointly developed. The project initiated in 1986 consists of the 150 km range Arrow interceptor missile, the 'Green Pine' radar and associated battle management systems. The AWS was first inducted into the Israel Defence Forces (IDF) in 2000, making it the first operational theatre missile defence system in the world.³⁰⁴

Israel currently operates the Block 2 version of AWS, while the Block 3 AWS is expected to be inducted in 2014. The Block 4 version was successfully tested in February 2012.³⁰⁵ Though the system has not been exported to third countries, countries like India have reportedly shown keen interest - especially since it bought the Green Pine radar in 2001.

Israel also possesses the US-made PAC-3 system capable of tackling threats at a range of 40 km. Israel allowed the US to deploy the X-band AN/TPY-2 radar in the Negev desert in October 2008, which is manned by US personnel. Israel has also expressed an interest in participating in sea-based mid-course defence provided by the US Navy's Aegis-equipped missile defence ships. Efforts to integrate US

³⁰⁴ 'US-Israel Missile Defence Cooperation', December 21, 2006, at http://www.aipac.org/~media/Publications/Policy%20and%20Politics/AIPAC%20Analyses/Issue%20Memos/2006/12/U_S_Israel_Missile_Defence_Cooperation.pdf (accessed April 15, 2012).

³⁰⁵ 'US - Israel Arrow Weapon System Completes Successful Flight Test', February 10, 2012, at <http://www.mda.mil/news/12news0003.html> (accessed April 15, 2012).

BMD systems and Israeli systems to ensure inter-operability are also being carried out by the respective missile defence agencies.³⁰⁶

The US MDA in its FY 2013 Budget Outline indicated that it will 'initiate Arrow-3 Low Rate Initial Production' along with 'David's Sling' system flight test.³⁰⁷ The latter programme was initiated in September 2010 and is expected to tackle short-range threats including 'large-calibre rockets and cruise missiles'.³⁰⁸

US intelligence assessments and reports to the Congress on Iran's military capabilities specifically highlight Iran's growing capabilities as regards its ability to target Israel. The 2012 Pentagon report on Iran's military power for instance notes that Iran has 'developed medium-range ballistic missiles to target Israel and continues to increase the range, lethality, and accuracy of these systems'.³⁰⁹

The US and Israel, apart from joint development of key systems, have also carried out joint exercises pertaining to missile defence to fine tune inter-operability in possible crisis situations as well as highlight their close cooperation on such key security issues. The 'Juniper Cobra' missile defence exercises are pertinent in this regard. The exercises were first initiated in 2001 and have continued to increase in sophistication. Five such exercises have been conducted so far.

The October 2012 'Austere Challenge' exercises were the largest ever missile defence joint exercises undertaken by the two countries. While over 1,000 US and Israeli personnel had participated in the 2010

³⁰⁶ See 'National Defence Authorization Act for Fiscal Year 2011: Report of the Committee on Armed Services House of Representatives on H.R. 5136 together with Additional Views [Including cost estimate of the Congressional Budget Office]', May 21, 2010, at <http://www.gpo.gov/fdsys/pkg/CRPT-111hrpt491/pdf/CRPT-111hrpt491.pdf> (accessed April 11, 12)

³⁰⁷ 'Missile Defence Agency (MDA) Fiscal Year 2013 Budget Outline', at <http://www.mda.mil/global/documents/pdf/budgetfy13.pdf> (accessed April 13, 2012).

³⁰⁸ 'United States and Israel Sign Project Agreement for the David's Sling Defensive Weapon System', September 27, 2010, at <http://www.mda.mil/mzvipc22011zx302z/sdjow3mszz/news/10news0012.html> (accessed April 15, 2012).

³⁰⁹ See n. 100.

exercises, over 5,000 personnel were slated to participate in the 2012 version. Both countries were expected to test the Arrow-2 high altitude system as well as the short-range 'Iron Dome' system against a simulated Iranian missile attack.³¹⁰ Israel has currently deployed three 'Iron Dome' systems and according to reports it was seeking close to \$700 million to deploy four more of such short-range missile defence systems through 2015. The Obama administration had authorised \$205 million for the system in 2011.³¹¹

However, reports in August 2012 noted that the US has decided to scale back the exercises, and deploy only 1,500 personnel, one Aegis-equipped BMD-capable ship instead of the two envisioned earlier and two Patriot missile batteries but without their complement of crew. According to analysts the move was to dispel the notion that the US and Israel were planning military strikes against Iran in a surcharged strategic environment.³¹²

Turkey: Key Role for Iran's Neighbour in EPAA

When Turkey agreed to host a NATO missile defence radar in September 2011 at Kurecik about 700 kms from its border with Tehran after initial hesitation, US officials lauded it as 'the biggest strategic decision between the United States and Turkey in the past 15 or 20 years'.³¹³ President Ahmadinejad on his part stated that it was not a 'correct' decision and that 'such shields can't prevent the collapse of the Zionist

³¹⁰ 'Israel-US drill will boost missile plans', July 2, 2012, at http://www.upi.com/Business_News/Security-Industry/2012/07/02/Israel-US-drill-will-boost-missile-plans/UPI-83011341259939/?rel=16591342803443 (accessed July 24, 2012).

³¹¹ 'US Congress mulls \$680M for Israeli Iron Dome', April 23, 2012, at http://www.upi.com/Business_News/Security-Industry/2012/04/23/US-Congress-mulls-680M-for-Israeli-Iron-Dome/UPI-81261335195616/?rel=16591342803443 (accessed July 24, 2012).

³¹² Karl Vick and Aaron J. Klein, 'US Scales Back Military Exercise with Israel, affecting Potential Iran Strike', August 31, 2012, at <http://world.time.com/2012/08/31/exclusive-u-s-scales-back-military-exercise-with-israel-affecting-potential-iran-strike/?iid=gs-main-lead> (accessed September 17, 2012).

³¹³ Thom Shanker, 'US Hails Deal with Turkey on Missile Shield', September 15, 2011, at <http://www.nytimes.com/2011/09/16/world/europe/turkey-accepts-missile-radar-for-nato-Defence-against-iran.html> (accessed March 12, 2012).

regime'.³¹⁴ During a visit to Tehran in March 2012, Prime Minister Recep Tayyip Erdogan assured the Iranians that the radar was not a threat to Tehran and that it could be 'dismantled' if NATO did not follow through on its commitments.³¹⁵

President Obama at the May 2012 NATO Summit held in Chicago said that he had directed that the radar be transferred to NATO operational control. Reports indicated that Turkey had agreed to host the system after NATO agreed that information gathered by the radar would not be shared with Israel. Turkey was also emphatically opposed to NATO identifying any specific country as the target for US PAA radar at the 2010 Lisbon Summit. President Abdullah Gul insisted that 'Turkey cannot join a project that is aimed at a specific country. The project must cover all [NATO] members without exception ... It will not be aimed at Iran'.³¹⁶

Iran and Turkey share a complex relationship, apart from a 450 kms border. Turkey has played a key role as a diplomatic facilitator on the Iranian nuclear issue, hosting talks between Iran and P5+1 group in January 2011 and again in April 2012. The July 2012 'technical' talks between the two sides were also held in Istanbul.

Iran and Turkey also share rising economic ties. Bilateral trade during 2011 was \$16 billion, and both sides aim to increase it to \$30 billion by 2015. Despite these positives however, there are disagreements on issues like missile defence and Turkey's role in Syria which Iran believes is inimical to its interests. The latter issue in fact almost derailed the talks in Istanbul in April 2012, with some Iranian lawmakers insisting that Baghdad was a better venue.

³¹⁴ 'Iran criticizes Turkey over missile defence shield', October 5, 2011, at <http://www.alarabiya.net/articles/2011/10/05/170229.html> (accessed March 12, 2012)

³¹⁵ 'Erdogan, in Iran, says NATO radar could be dismantled if needed', March 30, 2012, at <http://www.todayszaman.com/news-275856-erdogan-in-iran-says-nato-radar-could-be-dismantled-if-needed.html> (accessed April 15, 2012).

³¹⁶ 'NATO Adopts US Missile Shield in Europe at Lisbon Summit', November 20, 2010, at http://www.novinite.com/view_news.php?id=122351 (accessed April 12, 2012)

GCC: Missile Defence and ‘Umbrella of Deterrence’

The January 2012 Strategic Guidance for the US defence department stated that given the proliferation of ballistic missiles and WMDs in the Middle East, ‘the US policy will emphasize Gulf security, in collaboration with Gulf Cooperation Council countries when appropriate, to prevent Iran’s development of a nuclear weapon capability and counter its destabilizing policies’.³¹⁷

Secretary of State Hillary Clinton addressing a press conference with Saudi Foreign Minister Saud Al-Faisal in the aftermath of the first US-GCC Strategic Forum at Riyadh on March 31, 2012 stated that apart from bilateral military cooperation, the US ‘can do even more to defend the Gulf through cooperation on ballistic missile defence’.³¹⁸

The above policy outlook was reiterated by the US deputy assistant secretary of defence Frank Rose in Abu Dhabi on April 12. Pointing out that ‘President Obama has made international cooperation on missile defence a key priority’, Rose stated that ‘the United States will pursue a Phased Adaptive Approach (PAA) within key regions that is tailored to the threats unique to that region ...’.³¹⁹

The US in 2010 decided to deploy eight Patriot anti-missile systems in Qatar, the United Arab Emirates, Bahrain and Kuwait.³²⁰ Kuwait also intends to buy about 60 PAC-3 air defence missiles in a deal worth over \$4 billion in 2012. Kuwait had also bought versions of these missiles in 1992 and 2007.³²¹ Aegis-equipped ships are also to be on

³¹⁷ The text of the document is available at http://www.Defence.gov/news/Defence_Strategic_Guidance.pdf (accessed July 5, 2012).

³¹⁸ Hillary Clinton, ‘Remarks with Saudi Arabian Foreign Minister Saud Al-Faisal’, March 21, 2012, at <http://www.state.gov/secretary/rm/2012/03/187245.htm> (accessed April 15, 2012).

³¹⁹ Rose, ‘A US State Department Perspective on the Phased Adaptive Approach to Missile Defence’, n. 270.

³²⁰ David E. Sanger and Eric Schmitt, ‘US Speeding up Missile Defences in Persian Gulf’, January 31, 2010, at <http://www.nytimes.com/2010/01/31/world/middleeast/31missile.html?ref=todayspaper> (accessed February 4, 2010).

³²¹ ‘US plans \$4.2 bn Patriot missile sale to Kuwait’, *AFP*, July 26, 2012, at <http://www.arabtimesonline.com/NewsDetails/tabid/96/smld/414/ArticleID/186087/refTab/36/Default.aspx> (accessed July 27, 2012).

permanent patrol in the waters of the Persian Gulf. The UAE became the first international partner to buy two THAAD batteries along with 96 interceptor missiles from the US in December 2011, in a deal worth close to \$2 billion. Analysts have noted that the THAAD missiles are expected to provide 'an extra layer of defence' in addition to the protection provided by the Patriot batteries against lower-level threats.³²²

Lockheed Martin, which produces the THAAD batteries, has indicated that other GCC countries have also expressed an interest in the system, given that it 'is the sole technology with the ability shoot down short- and intermediate-range missiles above and below the earth's atmosphere'.³²³ Company officials insisted that 'as long as the threat [of Iran] continues to evolve, there will be many opportunities to provide the capabilities'.³²⁴ Indeed, in October 2012, the Pentagon approved additional THAAD weapons systems to Qatar and UAE worth \$7.6 billion.³²⁵

The third X-band radar site in Qatar is scheduled to be completed before 2012, apart from the two operating AN/TPY-2 radars in Israel and Turkey. It is reported that US efforts to create a missile defence infrastructure in the Gulf countries had faced difficulties due to disagreements among them complicating the possible sharing of intelligence data among other issues.³²⁶ The GCC secretary general at a symposium in Abu Dhabi in April 2012 however insisted that cooperation on missile defence was 'practical. It sends a strong message

³²² Adam Entous and Julian E. Barnes, 'Pentagon Bulks up Defences in the Gulf', July 17, 2012, at http://online.wsj.com/article/SB10001424052702304388004577531331722511516.html?mod=googlenews_wsj (accessed July 23, 2012).

³²³ 'Iran Tensions to Boost arms sales: Lockheed', *Reuters*, April 12, 2012, at <http://www.reuters.com/article/2012/04/11/emirates-lockheed-idUSL6E8FB4IZ20120411> (accessed July 18, 2012).

³²⁴ *Ibid.*

³²⁵ 'US clears sale of Lockheed missile defence system to UAE, Qatar', *Reuters*, November 6, 2012, at <http://www.reuters.com/article/2012/11/06/lockheed-missiles-mideast-idUSL1E8M611L20121106> (accessed November 9, 2012).

³²⁶ Entous and Barnes, 'Pentagon Bulks up Defences in the Gulf', n. 322.

to our allies and enemies. We need to develop an integrated missile defence shield'.³²⁷

US officials have also publicly aired the possibility that the US nuclear deterrent could be useful to deter a nuclear Iran. In a famous debate with the then Senator Barack Obama on the issue during the 2008 Democratic presidential nominations, candidate Hillary Clinton had asserted that the US 'should be looking to create an umbrella of deterrence that goes much further than just Israel. ... We will let the Iranians know, that, yes, an attack on Israel would trigger massive retaliation ...'³²⁸

Secretary Clinton in November 2009 reiterated her earlier comments when she stated:

We want Iran to calculate what I think is a fair assessment that, if the United States extends a defence umbrella over the region, if we do even more to support the military capacity of those in the Gulf, it's unlikely that Iran will be any stronger or safer because they won't be able to intimidate and dominate as they apparently believe they can, once they have a nuclear weapon.³²⁹

The head of the US Strategic Command Gen. Kehler in July 2012 asserted that the US nuclear deterrent could be effective in deterring a nuclear Iran. He said:

Strategic deterrence vis-à-vis any country – Iran, for example – would involve a number of different assets, to include partnerships with friends and allies in the region. ... And then ultimately, the president always has available the strategic nuclear deterrent to provide both a

³²⁷ 'GCC needs to develop an integrated missile defense shield: Zayani', April 11, 2012, at http://www.wam.ae/servlet/Satellite?c=WamLocNews&cid=1289998517507&pagename=WAM%2FWAM_E_Layout&parent=Query&parentid=1135099399852 (accessed July 18, 2012).

³²⁸ Jeff Mason, 'Clinton, Obama tackle Iran issue in debate', *Reuters*, April 16, 2008, at <http://www.reuters.com/article/2008/04/17/us-usa-politics-democrats-iran-idUSN1639555120080417> (accessed July 25, 2012).

³²⁹ 'Clinton says US considers "defence umbrella" to deter a nuclear Iran', November 2, 2009, at <http://www.voanews.com/content/a-13-2009-07-22-voa8-68653952/354476.html> (accessed July 25, 2012).

deterrent from an attack on the United States standpoint, but also an attack on our allies and friends.³³⁰

Apart from such 'nuclear' assurances, GCC countries are heavily committed to strengthening their defence inventories. Saudi Arabia and UAE for instance bought over \$15 billion of US arms during 2008-2010. The Pentagon notified the US Congress in October 2010 that it intended to sell arms worth \$60 billion to Saudi Arabia over the next decade, including 84 F-15 fighter planes, Apache helicopters, satellite-guided smart bombs, anti-ship and anti-radar missiles among other equipment.³³¹ The nearly \$30 billion deal for the F-15's was eventually signed in December 2011. Defence cooperation including the possible sale of Typhoon Eurofighter jets was high on the agenda of British Prime Minister David Cameron's November 2012 visit to the UAE and Saudi Arabia.³³²

GCC countries led by Saudi Arabia have some of the biggest defence budgets in the world. Riyadh in 2011 had the seventh highest defence budget in the world, at \$46 billion. Saudi Arabia and Oman also have the highest defence spend in terms of the percentage of their gross domestic products (GDP). Riyadh's defence expenditure in 2011 was 8.26 per cent of its GDP while Oman spends 6.42 per cent of its GDP on defence.³³³ Iran has spent less than 3 per cent of its GDP on defence between 2003-2011 (in 2004, it spent 3.4 per cent) as indicated by data from IISS *Military Balance*. Israel has spent between 6-9 per cent of its GDP on defence during the same period. (See Appendix, Table 2).

³³⁰ Elaine Grossman, 'Senior General: US Atomic Arsenal Could Deter a Nuclear-Armed Iran', July 12, 2012, at <http://www.nti.rsvp1.com/gsn/article/senior-general-us-atomic-arsenal-could-deter-nuclear-armed-iran/?mgh=http%3A%2F%2Fwww.nti.org&mgf=1> (accessed July 24, 2012).

³³¹ Dana Hedgpeth, 'Pentagon plans \$60 billion weapons sale to Saudi Arabia', October 21, 2010, at http://www.washingtonpost.com/wp-dyn/content/article/2010/10/20/AR2010102006518.html?wpisrc=nl_cuzhead (accessed October 22, 2010).

³³² Lynne Nahhas, 'Britain's Cameron visits Gulf to sell jets, discuss security', November 5, 2012, at <http://www.google.com/hostednews/afp/article/ALeqM5j88qFomzyjbJoePhrKBCPf8qgQIQ?docId=CNG.c8b2cec292dc2e8da0ab1f3ca8eb6a87.531> (accessed November 6, 2012).

³³³ See International Institute for Strategic Studies, 'Comparative Defence Statistics', *Military Balance 2012*, pp. 31-38.

IX AN ASSESSMENT

The missile defence measures taken by the US in order to counter and/or hedge against the Iranian threat has had significant strategic consequences as well as repercussions for regional stability. Among the former are Russia's unresolved issues and its continuing 'strategic defiance', as well as complications in bilateral arms control efforts like New START. China's nuclear force modernisation driven in part by the need to overcome the presumed vulnerability of its 'limited' deterrent in the face of developing US missile defence assets is equally pertinent. Among regional repercussions are the complications in Iran's relationship with Turkey, enhanced US-Israel missile defence cooperation, and the procurement of sophisticated missile defence assets by countries of the GCC.

Another strategic consideration underpinning US missile defence efforts was that it would reduce the US dependence on its nuclear arsenal. This was to better face the 'new' security challenges following a diminished Russian threat in the aftermath of the Cold War and the twin challenges of catastrophic terrorism and 'rogue state' proliferation. This consideration has however not been fulfilled. The US continues to privilege nuclear weapons in its strategic posture and US efforts to increase the salience of its nuclear weapons in the decade after 9/11 have been more pertinent than efforts geared towards reducing the salience of its arsenal.³³⁴

The US has had to navigate tricky issues with its NATO allies over measures to protect them from the Iran threat. The Bush administration's

³³⁴ See S. Samuel C. Rajiv, 'Deterrence in the Shadow of Terror: US Nuclear Weapons Policy in the aftermath of 9/11', *IDSIA Occasional Paper*, May 2012, available at http://www.idsa.in/system/files/OP_DeterrenceintheShadowofTerror.pdf (accessed July 25, 2012).

initial plan for NMD required the support of countries like Denmark and Britain. Denmark however was vigorous in opposing the US withdrawal from the ABM Treaty. The Obama administration's missile defence plans – which overturned the Bush-era plans in detail (by excluding the Czech Republic and including new partners like Romania) though not in substance – led to not inconsiderable concerns in their bilateral relationship.

Much progress has however been achieved as regards cooperation from the NATO allies. The Obama administration officials for instance advertise the fact that NATO allies will be contributing more than \$1 billion for the ALTBMD system. Netherlands has also reportedly pledged to spend close to \$250 million to modify radars on its frigates so that they can track ballistic missiles at longer ranges. Other potential NATO contributions to missile defence efforts could include a new airborne infra-red sensor being developed by Germany and an early warning satellite being developed by France.³³⁵ Given that space-based assets are an integral part of forthcoming phases of Obama's PAA, such cooperation can indeed be mutually beneficial for NATO countries as well as the US.

Iran on its part has pursued ballistic missiles development and procurement (as well as its nuclear weapons programmes according to critics) as part of its asymmetric strategy in order to counter the vulnerabilities posed to its strategic well-being. This has been on account of US encirclement and the Iraq War experience when it was at the receiving end of Iraqi missiles. Iran also viewed missiles as cost-effective and militarily-effective means to make up for its short-comings in force levels vis-à-vis its neighbours and its own resource constraints in building effective conventional forces.

Despite pursuing such technologies for nearly three decades however, the Iranian ability to hit the US homeland has not yet materialised.

³³⁵ Frank A. Rose, 'Missile Defence and European Security', July 6, 2012, at <http://www.state.gov/t/avc/ids/194453.htm> (accessed July 6, 2012).

Even if it does get such capabilities, it is not a given that the current Iranian regime or a future dispensation could risk its very own survival as well as of substantial numbers of its population and industrial infrastructure by targeting the US homeland. In this context, it is pertinent to note that US policy makers including Secretary Clinton and US Strategic Command chief General Kehler have reiterated that the US could provide extended nuclear deterrence to its allies in the Gulf in case Iran does acquire the nuclear weapons capability. If indeed the US does so, then any attack on US allies would be construed as an attack against America and could invite swift and devastating nuclear response.

Iran's capabilities to effectively target much of Europe are also constrained by the limitations of its current inventory of largely inaccurate and vulnerable liquid-fuelled IRBM's. Its efforts to develop solid-fuelled, longer-range missiles are facing difficulties – as indicated by the July 2012 report of IISS cited in the paper. As the map regarding Iranian MRBM capabilities indicates (See Appendix), if and when *Sejjil-2* system can be operationalised, it could just about threaten parts of Eastern Europe. This will be so if these missiles are launched from the underground missile silos in Tabriz and Khoramabad in north western Iran that Tehran had advertised it had constructed. They could presumably reach further into Eastern Europe including Poland if launched from mobile transporter erector launchers (TEL) that Iran apparently has in some numbers.

Iranian abilities to hit Israel and US interests in the Mediterranean and the Persian Gulf are not in doubt. Iran could potentially overwhelm US assets in the region by indulging in 'high firing density' missile manoeuvres that it has demonstrated in the recent series of 'Great Prophet' military exercises. While US missile defence assets in Turkey, apart from ship-based assets in the Persian Gulf and the Mediterranean, could play a useful role in deterring and/or countering possible Iranian missile adventurism, the motives behind the EPAA being erected to hedge against the Iran threat that currently has serious shortcomings and may not materialise in the near-to-long-term future can be subject of valid contention on the part of Russia. Russia could however possibly overwhelm the SM-3 interceptors being deployed in Romania and

Poland with the sheer numbers at its disposal as speculated by analysts if the need arose.³³⁶

Iran's growing capabilities in short-range missiles particularly cruise missiles though constitutes a 'tactical nuisance' for the US and its allies in the region. Iran continues to fortify its coastal defence capabilities and is equipping its ships with increasingly capable cruise missiles. The *QDR 2010* for instance noted that 'Iran has fielded large numbers of small, fast attack craft designed to support "swarming" tactics that seek to overwhelm the layers of defences deployed by US and other nations' naval vessels'.³³⁷ Iranian capabilities to inflict considerable damage on US interests and the global shipping trade in the event of skirmishes in the Persian Gulf are therefore significant.

Given that the waters of the Persian Gulf are an important energy corridor, there could be negative consequences for Asian energy security as a result of any incidents at sea. The US however continues to maintain a formidable military presence in the region, with the deployment of two aircraft carrier battle groups 'on-station' in the Fifth Fleet AOR and innovative assets like mine-defusing underwater robots, among others. Senior US officials on their part have asserted that Iran will find it difficult to carry through with its threats to close the Strait of Hormuz, given the buttressed US force presence in these waters.

The future course of developments will determine whether the US is justified in hedging against a possible threat from Iran or whether it will exacerbate the instabilities in its strategic relationships with Russia and China as well as increase regional uncertainties by equipping its allies with sophisticated 'defensive' measures for targeting Iran's limited extant and uncertain future ballistic missile capabilities. Such efforts could paradoxically, also strongly incentivise Iran to continue to develop its asymmetric capabilities to hurt US and European interests.

³³⁶ The above point was made by Dr. Probal K. Ghosh, Senior Fellow, ORF, while discussing the author's paper during the Fellows Seminar presentation at the IDSA, New Delhi, April 20, 2012.

³³⁷ See n. 31, p. 31.

The US pursuit of missile defence— which has been a strategic priority through out the Bush and the Obama administrations – has had a fundamental bearing on global security as well as regional strategic stability.³³⁸ An analysis of the implications and repercussions of this pursuit will continue to be of prime policy relevance not just for the countries involved but also for key regional players like India given that these developments relate to its ‘proximate neighbourhood’. These could include rising regional strategic uncertainties, increasing militarisation and presence of sophisticated military assets in its strategic neighbourhood, more sophisticated Chinese nuclear assets to counter US missile defence measures, among others. A study of the implications for India however could be the subject of future research.

³³⁸ This view was expressed by Professor Satish Kumar while chairing the session in which the initial draft of this paper was presented. IDSA, April 20, 2012.

APPENDIX



X

APPENDIX

TABLE 1
Iran's Missiles Inventory

	Missile Name	Meaning of Term	Numbers	Range (km)	Payload (kg)	Fuel	Status
Medium-Range Ballistic Missiles (MRBM's) - 1000-3000 kms range							
	<i>Shahab-3</i>	Meteor	About 6 launchers; 20-30 missiles	800-1300	800-1200	Liquid-fuelled	Operational since 2003
	<i>Ghadr-I</i>	Might	Unknown	1500-2000	1000	Solid-fuelled	Shahab-3 variant, first exhibited in a 2007 military parade; operational a/c to IISS Military Balance 2012
	<i>Sajjil</i>	Baked Clay	Under development	2200+	1000	Two stage Solid-fuelled	Earlier termed <i>Asbura</i> ; sanctions affecting progress, a/c to IISS Strategic Comments (July 2012)
Short-Range Ballistic Missiles (SRBM's) - Less than 1000 km range							
	CSS-8		175-200	150	190	Solid-fuelled	Chinese-sourced; First acquired in 1989
	M-11		200	280	800	Solid-fuelled	Chinese-sourced; First acquired 1995
	<i>Shahab-I (Scud-B)</i>	Meteor	200-300	300	985	Liquid-fuelled	Soviet/North Korean-sourced

	Missile Name	Meaning of Term	Numbers	Range (km)	Payload (kg)	Fuel	Status
	<i>Shahab-2</i> (Scud-C)	Meteor	200-300	500	600	Liquid-fuelled	Soviet/North Korean-sourced
	<i>Fateh-110</i>	Conqueror	Unknown	200-300	450-650	Solid-fuelled	In production since 2002; CSS-8 derivative
	<i>Khalij Fars</i>	Persian Gulf	Unknown	300	650	Solid-fuelled	Supersonic anti-ship ballistic missile; first unveiled 2008; CSS-8 derivative
	<i>Zelzal</i>	Earthquake	Unknown	210	600	Solid-fuelled	Based on Soviet FROG-7 missile
Cruise Missiles	C801/802			6nautical miles	165		Chinese-sourced
	<i>Nasr-I</i>	Help	Unknown	35	150	Solid-fuelled	Can be fired from ships as well as ground launchers; mass production began in March 2010; capable of destroying 1500 tonne targets; based on China's C-704 missile
	KH-55		Allegedly exported to Iran from Ukraine	2500	400		Long-range anti-ship cruise missiles
	HY-1/2	Silkworm	Unknown	85	500	Liquid engine and solid booster	Chinese anti-ship cruise missiles
	<i>Ghader</i>	Capable	Unknown	200	165		Radar-evading anti-ship cruise missile; Inducted in September 2011; Variant of C802 missile

Sources: *IJSS Military Balance 2012*, 'Iran', pp 323-326; *Iran's Strategic Weapons Programme: A Net Assessment*, IJSS, London, 2005; *Arms Control Today*, 'Worldwide Ballistic Missile Inventories', January 2012, at <http://www.armscontrol.org/factsheets/missiles#> (accessed July 20, 2012); 'Ballistic Missiles of the World', at <http://www.missilethreat.com/missiles-of-the-world/pageID.134/default.asp> (accessed July 20, 2012); Wikipedia

TABLE 2
GDP and Defence Budgets:
Saudi Arabia, Iran, Israel (2003-2011)

(All figures in US Dollars Billion)

Year	Saudi Arabia			Iran			Israel		
	GDP	DB	% age of GDP	GDP	DB	% age of GDP	GDP	DB	% age of GDP
2003	214	18.7	8.7	135	3.61	2.6	110	10.3	9.3
2004	250	20.9	8.3	163	5.6	3.4	117	9.9	8.4
2005	309	25.4	8.2	184	5.2	2.8	123	9.8	7.9
2006	349	29.5	8.4	220	6.4	2.9	140	9.7	6.9
2007	377	35.4	9.4	260	7.4	2.8	162	11.6	7.1
2008	468	38.2	8.1	337	9.6	2.8	199	12.08	6
2009	376	41.3	10.9	328	8.6	2.6	196	17.5	8.9
2010	447	45.2	10.1	413	10.6	2.5	218	17.2	7.9
2011	559	46.2	8.2	499	12	2.4	255	18.3	7.1

Note 1: GDP – Gross Domestic Product; DB – Defence Budget

Note 2: Defence budget figures for Israel includes US military assistance

Source: IISS, *Military Balance 2003-2012*, Routledge, London

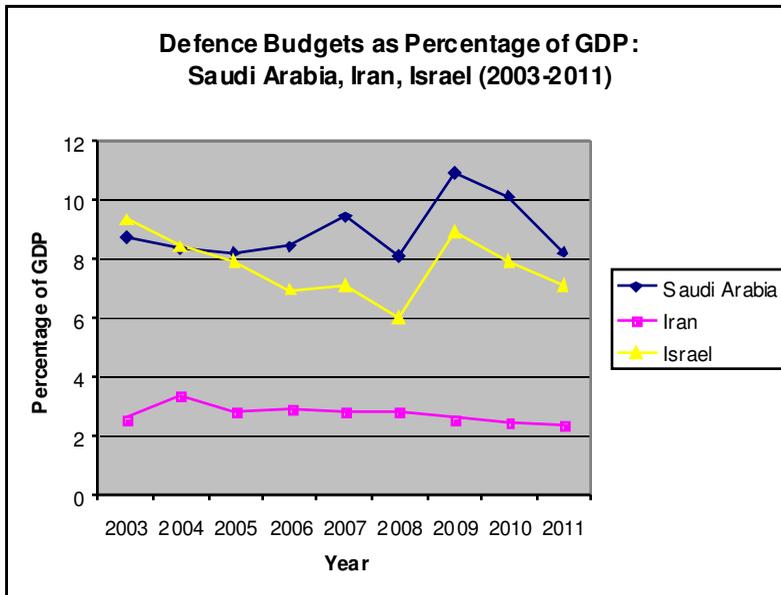


TABLE 3
GDP and Defence Budgets
GCC Countries other than Saudi Arabia (2003-2011)

(All figures in US Dollars Billion unless otherwise specified)

Year	Bahrain		Kuwait		Oman		Qatar		UAE	
	GDP	DB	GDP	DB	GDP	DB	GDP	DB	GDP	DB
2003	9.47	550.4m	40.3	3.8	21.8	2.5	19.4	1.9	78.2	2.5
2004	10.8	498.6m	52.9	3.9	25	2.5	28.3	2.06	103	2.5
2005	13.2	481.8m	66.5	4.4	30	3.7	42	2.1	128	2.5
2006	15.5	493.5m	102	3.5	36.6	3.3	52	2.3	142	9.5
2007	17.9	554.3m	113	3.7	40	3.2	71	1.1	184	10
2008	20	556m	155	6.8	54.7	4.7	100	1.7	270	13.7
2009	20.6	713m	98.1	3.8	46.1	4.1	98.3	2.5	224	7.9
2010	22.5	766m	132	3.9	57.5	4.2	127	3.1	302	8.6
2011	26.3	892.5m	174	4	66.6	4.3	173	3.4	358	9.3

Note 1: GDP – Gross Domestic Product; DB – Defence Budget; m – US Dollars Million

Note 2: Defence budget figures for Bahrain and Oman includes US military assistance

Note 3: UAE defence budget figures for 2003-2005 and 2009-2011 excludes what IISS calls ‘extra-budgetary procurement funding’

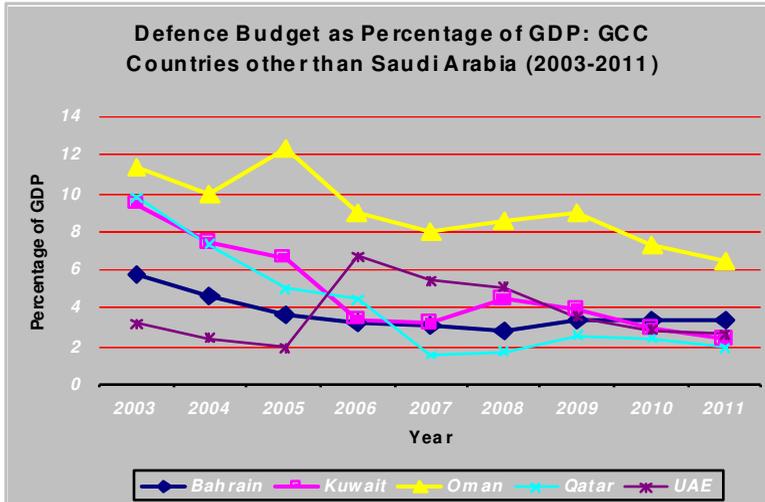
Source: IISS, *Military Balance 2003-2012*, Routledge, London.

TABLE 4
Defence Budgets as Percentage of GDP
GCC Countries other than Saudi Arabia (2003-2011)

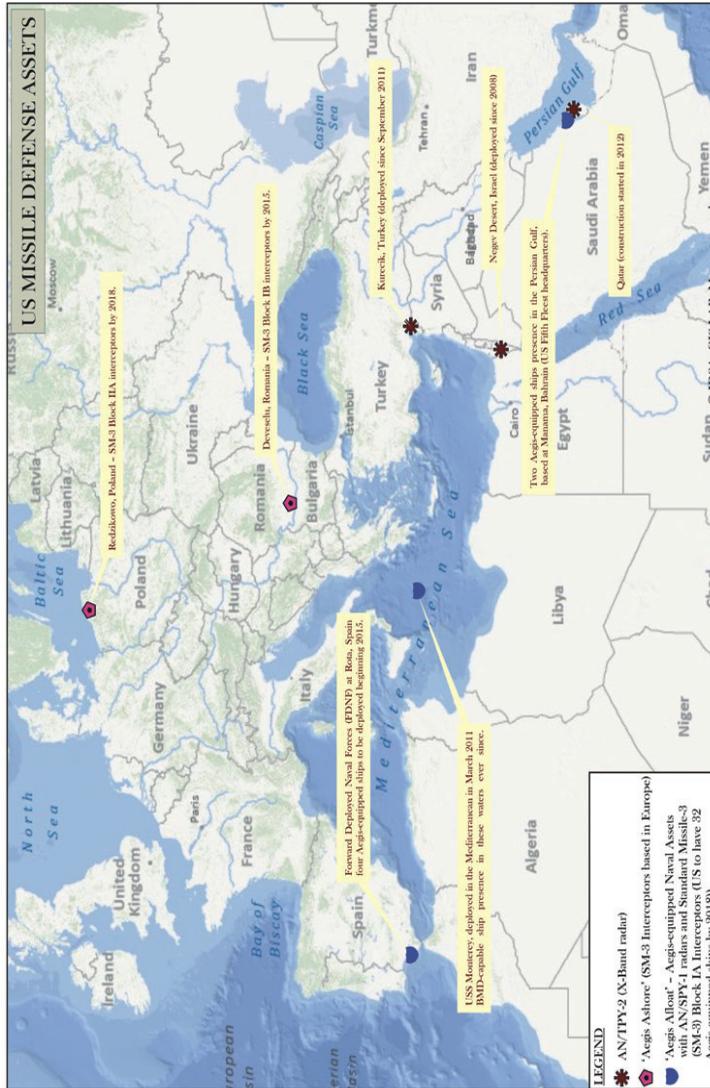
(All figures in US Dollars Billion)

Year	Bahrain	Kuwait	Oman	Qatar	UAE
2003	5.8	9.4	11.4	9.8	3.2
2004	4.6	7.4	10	7.3	2.4
2005	3.6	6.6	12.3	5	1.9
2006	3.2	3.4	9	4.4	6.7
2007	3.1	3.2	8	1.5	5.4
2008	2.8	4.4	8.6	1.7	5.07
2009	3.4	3.9	8.9	2.5	3.5
2010	3.4	2.9	7.3	2.4	2.8
2011	3.4	2.3	6.4	1.9	2.6

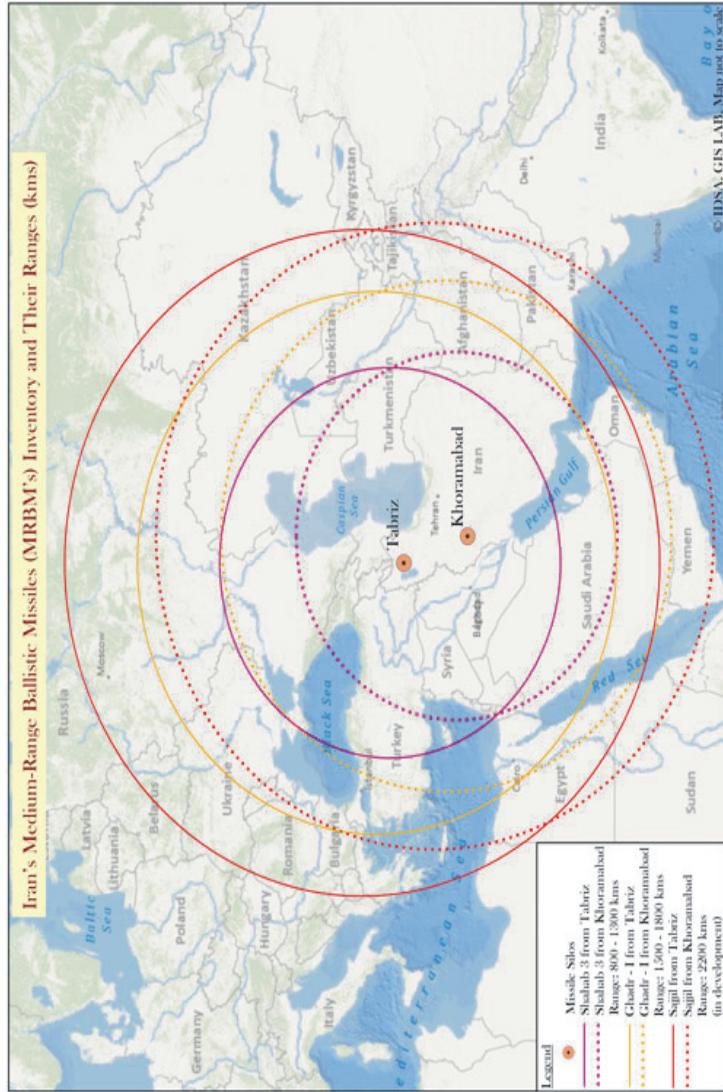
Source: IISS, *Military Balance 2003-2012*, Routledge, London.



Map :1 US Missile Defence Assets



Map : 2 Iran's MRBMs and their Ranges



© IDSA, GIS LAB, Map and its Scale

S. Samuel C. Rajiv is Associate Fellow with the Nuclear and Arms Control Centre at the Institute for Defence Studies and Analyses (IDSA), New Delhi. His publications include journal articles (“In Pursuit of a Chimera: Nuclear Imbroglia between Sanctions and Engagement”, *Strategic Analysis*, November 2012; “India and Iran’s Nuclear Imbroglia: Navigating the Consequences”, *Middle East Review of International Affairs*, June 2012; “The Delicate Balance: Israel and India’s Foreign Policy Practice”, *Strategic Analysis*, January 2012; and “India and Iran’s Nuclear Issue: The Three Policy Determinants”, *Strategic Analysis*, September 2011); and IDSA Occasional Papers (“Iran’s Nuclear Imbroglia at the Cross-Roads: Policy Options for India”, July 2012; “Deterrence in the Shadow of Terror: US Nuclear Weapons Policy in the Aftermath of 9/11”, May 2012), among others. Rajiv has also contributed Op-Ed’s in *The Jerusalem Post* and *The Business Standard* as well as articles to the ‘Security Watch’ column of the International Relations Security Network (ISN), ETH, Zurich. Prior to joining IDSA in 2006, he worked at the publication *India’s National Security Annual Review* from 2002-2005 including as an Assistant Editor and was a Visiting Research Scholar at the Began-Sadat (BESA) Centre for Strategic Studies, Israel during 2005-06.

The US has taken missile defence measures like the 'Third Site' plan and the 'Phased Adaptive Approach' in Middle East/West Asia and in Europe in order to counter and/or hedge against the threat posed by Iran's ballistic missile capabilities and concerns generated by its nuclear programme. The US pursuit has had significant strategic consequences as well as repercussions for regional stability. The former include Russia's unresolved strategic issues and its continuing 'strategic defiance' and China's nuclear force modernisation driven in part by the need to overcome the presumed vulnerability of its 'limited' deterrent in the face of US missile defence assets. Among the latter include the complexity of Iran's relationship with Turkey, enhanced US-Israel missile defence cooperation, and the procurement of sophisticated missile defence assets by countries of the GCC.

Iran has pursued ballistic missiles development and procurement (as well as its nuclear weapons programmes according to critics) as part of its asymmetric strategy in order to counter the vulnerabilities posed to its strategic well-being on account of US encirclement, and as cost- and militarily-effective instruments to compensate for its shortcomings in force levels vis-à-vis its neighbours and its own resource constraints for building effective conventional forces. The Iranians have been developing these technologies for nearly three decades but they have still not acquired the capability of hitting the US homeland. Its capabilities to effectively target much of Europe are also constrained by the limitations of its current inventory of largely inaccurate and vulnerable liquid-fuelled intermediate-range ballistic missiles. Iran's growing capabilities in short-range missiles particularly cruise missiles though constitute a 'tactical nuisance' for the US and its allies in the region.

Institute for Defence Studies and Analyses

No.1, Development Enclave, Rao Tula Ram Marg,
Delhi Cantt., New Delhi - 110 010
Tel.: (91-11) 2671-7983 Fax: (91-11) 2615 4191
E-mail: contactus@idsa.in Website: <http://www.idsa.in>

