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Editor-in-Chief Air Marshal **Vinod Patney**, SYSM PVSM AVSM VrC, (Retd)
Distributor KW Publishers Pvt. Ltd.

All correspondence may be addressed to

Editor-in-Chief
AIR POWER
Arjan Path, Subroto Park, New Delhi 110 010
Telephone: (91.11) 25699131-32 Fax: (91.11) 25682533
e-mail: diroffice@aerospaceindia.org
capsnetdroff@gmail.com
website: www.capsindia.org

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EDITOR'S NOTE

COERCION AND AIR POWER

MANMOHAN BAHADUR

Coercion has been the subject of many a study. To coerce an adversary's thought process and actions to one's own advantage is its end game. Paradoxically, there needs to be a confluence of interests for discord to occur.[1] Coercion is not necessarily of the military kind only; in fact, a host of other measures constitute many permutations of actions that can be used to coerce an adversary's decision making calculus. The North Vietnamese took on the American military might in their unification effort and movements and groups like Hamas and Hezbollah periodically fight the Israelis despite the military asymmetry that exists between the two; and the indigenous Afghan, in the long run, was not overawed, first by the might of the Soviet Union and then the Americans. In fact, one study suggests that the initiation of approximately 30% of conflicts has been done by the weaker party.[2] Why does this happen and where does air power fit in the equation?

It is important to clarify at this stage the use of the term 'coercion.' Coercion has two parts, namely, deterrence and compellence.[3] While

Air Vice Marshal **Manmohan Bahadur** is a Distinguished Fellow at the Centre for Air Power Studies, NEw Delhi.

1. Thomas Schelling, *The Strategy of Conflict,* (London: Oxford University Press, 1970), p. 11. Schelling wrote, 'The deterrence concept requires that there be both conflict and common interest between the parties involved; it is as inapplicable to a situation of pure and complete antagonism of interest as it is to the case of pure and complete interest. Between these extremes, deterring an ally and deterring an enemy differ only by degrees.'
2. Barry Wolf, *When the Weak Attack the Strong: Failures of Deterrence,* as cited by Adam B Lowther, ed. *Deterrence: Rising Powers, Rogue Regimes and Terrorism in the Twenty First century,* (New York: Palgrave Macmillan, 2012), p. 7.
3. Thomas Schelling, *Arms and Influence,* (New Haven, Connecticut: Yale University Press, 1966), p.70 (pp.70-91).

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purists draw a rigid difference between the two[4] the term coercion is more representative of the 'inducement' or the 'lean-on' that deterrence as well as compellence exert in their individual spheres. Patrick Morgan has, in fact, called deterrence as being composed of 'general' and 'immediate' deterrence. While the former has a wide expanse in terms of time, the latter refers to an environment that requires immediate action to rectify an event that has happened or is going to happen.[5] Immediate deterrence comes close to compellence with hardly a line delineating the two. Thus, there is an overlap in real life which enjoins a researcher to "…put less emphasis on the difference between deterrence and compellence and instead treat them as inter-related components of coercive diplomacy."[6] A similar view is expressed in a 1999 RAND study and the term coercion is used to denote a state where, '…threat of force is used to manipulate an adversary's decision making calculus.'[7] So, hereafter, the term coercion would be used in this paper, the coercive ability of air power.

The development of air power in the past century has been extraordinary, unmatched in the span of improvements in its reach, responsiveness, lethality and precision. The galloping advancements in technology, a virtual transformation every decade, are revolutionizing air power and through it, warfare itself. The target of coercion in military applications has however not changed, which is the human mind, as an adversary takes a decision which is influenced by a host of military and non-military factors; amongst the military causes is the punishment or a threat of punishment. The severity and impact of the punishment is dependent on many factors like its novelty, lethality, surprise, duration of application and frequency of re-application.

4. Ibid., pp 70-91.
5. Patrick Morgan, *Deterrence Now*, (Cambridge: University Press, 2003), p. xvi.
6. Ibid., p. 3.
7. Daniel L Byman, Mathew C Waxman and Eric Larson, *Air Power as a Coercive Instrument* (Santa Monica: RAND, 1999), p. 32.

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Even with all these factors remaining constant, the reaction would differ from one opponent to another and even of the same opponent when variations get introduced in one or more of the listed parameters. The 'type' of adversary is also an important determinant in judging the efficacy of deterrence, especially when using air power, as nation states have physical possessions while non-State actors hold ideologies and beliefs. While attacking physical targets with air power is straight forward, how does one attack a belief or ideology with the use of 'air'? Possibly, influencing the human mind (of the non-state actor) with modern air power's lethal attributes so as to emphasise the futility of taking up arms for his belief could blunt the passion of his ideology. But is it possible with individuals and movements who are fanatically devoted to their cause or belief, as most non-state actors are? It is important to understand coercion as applicable in the case of air power because, though there have been notable successes of its application in the 'military' sense, the final aim of getting the adversary to do its (the coercer's) bidding has not always been achieved through its employment. This is, because in the 'strategy' of war, the event (war) is not a constant-sum game as in game theory but a variable one, as "…the sum of the gains of the participants is not fixed so that more for one inexorably means less for the other."[8]

Coercion is an intangible used by governments, and air power is one of its important tool. This essay will study air power's track record as an instrument of coercion and would attempt to crystal gaze whether it would be effective in the contemporary world and in the milieu of the foreseeable future. The ambit of the study would be limited to the conventional sphere only (as against a nuclear milieu).

This paper analyses the subject in five sections. The first outlines the changes in the battlefield brought about by the introduction of the flying

8. Schelling, n.1, p. 5.

machine and the second covers the impact of the early air power theorists on its development. The third part studies the different nuances of coercion theory and analyses its various interpretations. The employment of airpower as an instrument of coercion constitutes the fourth section followed by the study of its usage as a political tool against different types of adversaries. The paper concludes by summing up the issues raised and evaluated in the paper.

AIR POWER AND THE BATTLEFIELD

War has undergone a transformational change down the ages. The transformation has come about due changes in the two facets that constitute it; firstly, the nature of the adversaries and secondly, the arena in which the contest takes place. Advances in technology have had a defining influence on the changes in these two aspects..

In the modern world, the adversary that beckons a coercer has three forms. Firstly, opponents who could be nation states with modern armies; secondly, 'movements' and non-state actors living in stone age conditions (figuratively speaking) but with access to modern weapons and means of communications. While the former have known state institutions the latter are more amorphous but with access to technologically savvy human resource motivated due ideological or religious affinity; these combine to form, in the latter case, an opponent who lives off the land, has no material holdings whose loss affects him adversely and who does not mind (and sometimes volunteers) losing his life for a cause. The unique power of the 'dispossessed,' if these non-state actors can be termed as such, has been utilized by many nation states to further their own cause; this grouping of states and non-state actors constitutes the third type of opponent, a hybrid adversary that is being increasingly seen in the battlefield of contemporary conflicts. Pakistan is a case in point of the third type, as it utilizes terrorist organizations like the Lashkar-e-Toiba and Hizbul Mujahideen in its

proxy war against India.[9] War, thus, has this unique contestant now, an amalgamation of a Westphalian state and a non-state actor(s), which uses the intrinsic attributes of anonymity, subterfuge and deniability associated with such actors to alter the nature of the battlefield.

What is a battlefield but an arena of a clash of interests which takes on a Clausewitzian variation of 'politics by other means.' The battlefield itself has undergone a radical change from massed armies equipped with bows and arrows to one now with armoured fighting vehicles. The scenario has been similar on the seas with the nature of propulsion changing from manual to nuclear through many stages and firepower too reaching the cruise missile and ballistic missiles levels with conventional and nuclear warheads. These transformations have taken centuries whereas, just within the past one hundred years following the Wright Brother's first flight in 1903, the contest in air has been revolutionized by mind boggling advancements in technology, thanks to rapidly increasing computing power and cutting edge technologies in research, design and manufacturing. The opening up of space has added a new dimension to the contemporary and future battlefield. Almost two decades back the Commander-in-Chief of the US Space Command said that in the not so distant future,"… space will have evolved to the point where the movement of terrestrial forces will be accomplished only at the pleasure of space forces, much the same way that the movement of land and sea forces today can only be accomplished at the pleasure of air forces."[10]

A debate has been ongoing about the span of air power, i.e., whether it encompasses space also. In fact, it has its origins way back in 1946 when, "..a group of US *naval* (emphasis added) officers who had been conducting a satellite feasibility study sought to carve out a leading role for the navy

9. Nadim Asrar, "Barack Obama says Pakistan-based Lashkar-e-Taiba a worldwide terror threat: sources," http://www.ndtv.com/article/india/barack-obama-says-pakistan-based-lashkar-e-taiba-a-worldwide-terror-threat-sources-424866, accessed January 26, 2014.

10. Gen. Howell M. Estes III, commander in chief of US Space Command and commander of US Air Force Space Command, quoted in John T Correll, "Destiny in Space," *Air Force Magazine*, August 1998, p. 2, http://www.airforcemag.com/MagazineArchive/Documents/1998/August%201998/0898edit.pdf , accessed January 14, 2014.

in pursuing military satellite development."[11] Turf wars led to the setting up of the US Space Commission in October 2000 which ruled that the USAF was managing the nation's military space well and that there was no need to set up an independent US space service. However, it rejected the USAF's contention that , 'air and space represented a single aerospace continuum and concluded that space was a separate and distinct mission area warranting separate and dedicated organizational and funding support."[12] The British Air and Space Power Doctrine states that, "Air power's fundamental attributes make precise definitions problematic….In the future, advances in technology and the restructuring of organisations and processes are likely to blur the boundaries between the air and space environments,….. *Until that point is reached* (emphasis added), space power is best regarded as being separate, but complementary to air power, …."[13] The Basic Doctrine of the Indian Air Force states that, "An important aspect of modern air power is that it is really an 'air and space power," (acknowledging that, at present, there is no *aerospace* power) but that the line demarcating 'air' and 'space' is thin.[14] Hereafter, the term 'Air Power' would be used as a generic expression when addressing warfare in the third dimension; special attributes of space, where required to be evaluated and emphasized alone, would be discussed as such.

EARLY AIR POWER THEORISTS AND COERCION

Air power has references dating back to mythological times; while Indian epics talk of the 'Pushpak' *viman* (aircraft) of Lord Ram, stones are said to have been thrown by the Lord from '…Heaven on Joshua's Canaanite

11. Benjamin S Lambeth, *Mastering the Ultimate High Ground: Next Steps in the Military Uses of Space,* (Santa Monica, CA: RAND, 2003), p. 10.
12. Ibid., p. 4-5. To read the Space Commission Report see, *Report of the Commission to Assess United States National security Space Management and Organization,* January 11, 2011 available at http://www.dod.gov/pubs/space20010111.html, p. 34, accessed January 18, 2014.
13. British Air and Space Power Doctrine: AP 3000 Fourth Edition, available http://www.raf.mod.uk/rafcms/mediafiles/9E435312_5056_A318_A88F14CF6F4FC6CE.pdf, p. 13, accessed January 15, 2014.
14. *Basic Doctrine of the Indian Air Force: IAP 2000-12*, (New Delhi: Air Headquarters New Delhi, 2012), p. 23.

enemies.'[15] Though much is being made now of the doctrinal changes being ushered in through unmanned aerial vehicles and the pivotal role they would exercise on the future battlefield, air power actually made its advent in human conflict in 1849 through unmanned vehicles in the form of Montgolfier balloons when, during the siege of Venice, 200 of them were launched with a bomb each with the fervent hope that they would cause damage when they came down.[16] It is interesting to note that even then, 'air power' (balloons) had a deterrent effect as witnessed in the American Civil War when the balloons of the North caused the Confederate soldiers to move during the night to avoid detection.[17] However there were opposite views too, as in the 1898 Cuban campaign, with Theodore Roosevelt dismissing its utility as being '…worse than useless.[18] Manned heavier than air flight after 1903 quickly saw the arrival of aviation in combat in the 1911 Italo-Turkish war when grenades were dropped by hand by Italian pilots;[19] there has been no looking back thereafter.

World War I (WW I) heralded the birth of air power theorists. Brig Gen Douhet of Italy had noted the enormous potential of 'air.' Writing earlier, in 1909, as a young Major he wrote, 'If there are nations which can exist untouched by sea, there are certainly none which exist without the breath of air. In future, then, we shall have three instead of two separate and well defined fields of battle;…We are fully conscious today of the importance of having command of the seas, but soon the command of the air will be no less important.'[20] Douhet prophesied air power as the harbinger of a capability that could win war alone by its coercive capability of bombing the will of the adversary. The 'bomber will always go through' was his bottom line and he visualised in his 1921 book, 'Command of the Air,' a

15. Martin van Crevald, "The Rise and Fall of Air Power," in John Andreas Olsen, ed, *A History of Air Warfare* (New Delhi: Vij Books India Ltd, 2010), p. 351.
16. "Remotely Piloted Aerial Vehicles: An Anthology," available at www.ctie.monash.edu/hargrave/rpav_home.html, accessed November 18, 2013.
17. J A Henneessy, "The United States Army Air Arm, April 1861 to April 1917," as cited by Martin van Crevald, "The Age of Air Power," (New York: Public Affairs, 2011), p. 8.
18. T Roosevelt, "The Rough Riders", as cited by van Crevald, n. 15, p. 9.
19. http://www.century-of-flight.net/Aviation%20history/up%20to%20WW%201/first_bomb.htm, accessed on December 18, 2013.
20. Giulio Douhet, *The Command of the Air,* Edited by Joseph Patrick Harahan and Richard H Kohn, (Tuscaloosa, Alabama: The University of Alabama Press, 2009), p. 27.

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vanquished adversary submitting to the demands of the coercer after the summary collapse of the national will to fight due punishment inflicted by massive (strategic) bombing of the civil populace and infrastructure.[21] It had its effects of sowing panic among the British civilian population;[22] that this did not succeed in WW II is a different question but if ever there was a die-hard believer in the raw coercive ability of air power, it surely was Douhet.

Across the English Channel in Great Britain, Hugh Trenchard took over the Central Flying School of the Royal Flying Corps (RFC) and trained aircrew to man RFC flying units in WW I. After the war he was appointed the Chief of the Air Staff of the fledgling Royal Air Force where, '...the major occupation for Trenchard and his staff was defending the RAF against army and navy attempts to have it abolished."[23] His contribution to air power doctrine was one of advancing the concept of air superiority. That he too had agreed with Douhet's concept of strategic bombing is as much a fact as also an enigma as to his acceptance of this idea that was not reflected in his earlier writings. However, some writers find a difference between the target of strategic bombing of the two theorists; while Douhet wanted to bomb the civilian population centres directly, Trenchard wanted vital industrial and communication target to be attacked resulting in the civilian population pressurizing the government to negotiate.[24] Later though, he did write about the futility of strategic bombing and the colossal waste in terms of costs and lives lost with little to show as result.[25]

21. Douhet, n.20, p. 10.
22. Lee Kennett, *The First Air War, 1914-1918* as cited by David R Mets, *The Air Campaign*: *John Warden and the Classical Air Power Theorists*, (Maxwell Air Force Base Alabama: Air University Press, 1998), p.1.
23. David R Mets, *The Air Campaign*: *John Warden and the Classical Air Power Theorists*, (Maxwell Air Force Base, Alabama: Air University Press, 1998), p.22.
24. Ibid., p.22.
25. H. M. Hyde, *British Air Policy Between the Wars, 1918–1939* (1976) as cited in Oxford Dictionary of National Biography, Vincent Orange, "Trenchard, Hugh Montague, first Viscount Trenchard (1873–1956), A*ir Force Officer* ," http://www.oxforddnb.com/view/printable/36552, accessed 29 Dec 13.

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On the other side of the Atlantic, in America, 'Billy' Mitchell was propagating ideas very similar to Douhet and Trenchard. In his view too, the bomber would always get through (though he believed in the equal utility of the pursuit and the attack plane), that air power was best understood by an airman and that the creation of a separate air arm of the armed forces was necessary. He visualised breaking of the civilian morale by attacking industrial, infrastructural and even agricultural targets.[26] Thus, all three pioneers of air power theory attested to the view that air power had the capability to coerce an adversary by lowering the morale of the civil population. Though their recommended target sets were different, air power was seen as the decisive force to strike where it hurt the enemy the most. They, however, made one basic omission and that was not giving 'air defence' its due; all three were not perceptive enough to visualise that down military history, the advent of a new 'weapon' has always resulted in its counter being developed. Thus, WW II demonstrated the short falls in their predictions with the advent of the radar, first ground based and then its airborne version, and the true air defence fighter that put paid to the 'invincibility' of the bomber in coercing the adversary to sue for peace.

The developments post WW II saw the arrival of the jet age, while new technologies enhanced the reach, speed and destructive capability of air power. New and rapid developments in radars, avionics and optronics enabled precision to be fine tuned to figures as low as a couple of metres while synergisation with space assets brought about a revolution in military affairs that enabled Effects Based Operations (EBO). The 'networking' of ground, air and space assets has introduced the concept of Network Centric Warfare (NCW) where the transparency of the battlefield enables the war fighter to become a clinically efficient killing machine, if he so chooses. These

26. David R Mets, *The Air Campaign*: *John Warden and the Classical Air Power Theorists*, (Maxwell Air Force Base Alabama: Air University Press, 1998), p 34.

developments over the past five decades have seen rapid improvements in the lethality and precision of air power through Korea, Vietnam, the 1991 Gulf War, Iraq and Afghanistan. Col John Warden's five concentric rings and the theory of analyzing the enemy as a system for planning an air campaign[27] made air power a seductive weapon in the hands of the politician who thought that a weapon for avoiding a ground campaign or at best, conducting a short swift one, had been found; this would help avoid own casualties and address the issue of the increasing casualty sensitivity. However, this was not to be as seen in the prolonged warfare and bloodletting in Iraq (twice over), Afghanistan and Bosnia Herzegovina, as the enemy was different in its composition in each case.

Israel's Bekaa Valley campaign in 1982 heralded the employment of Unmanned Aircraft Systems (UAS) which soon became all pervasive in the modern battlefield. In fact, the battlefield itself would perhaps need to be re-defined very soon if one considers that UAS operators are 'flying' operational sorties sitting in the American continent and delivering lethal weapon strikes on targets in Yemen, Pakistan, Afghanistan or anywhere in the world. Soon, with artificial intelligence marrying up with UAS in around two decades time, autonomous operations of unmanned systems with the power to decide usage of lethal force,[28] would bring in an element of surrealness that would require ethics in warfare to be redrafted. Events, thus, seem to be coming a full circle in the 21st Century with advancements in stealth being incorporated in long range bomber technology as part of the Air-Sea Battle concept[29] of the Unites States and hypersonic velocity research for manned (optionally) aircraft; Douhet, it appears, is making

27. John A Warden, *Air Campaign: Planning for Combat*, (Washington DC: Pergamon-Brassey's International Defence Publishers, 1988).
28. *United States Air Force: Unmanned Aircraft Systems Flight Plan 2009-2047,* (Washington DC: Headquarters United States Air Force, 18 May 2009).
29. *Air-Sea Battle: Service Collaboration to address Anti-Access and Area Denial Challenges*, Version 9.0, http://www.defense.gov/pubs/ASB-ConceptImplementation-Summary-May-2013.pdf accessed January 18, 2014.

a comeback![30] There is, however, a counter view expressed by Air Vice Marshal Tony Mason, who quotes the USAF 1991 Gulf War Air Power Survey and writes, "..the same American survey summarises the 'strategic core' of the Gulf War campaign with an objectivity that should lay Douhet, even a precisely-guided Douhet, to rest for good."[31] This aspect would be dealt in more detail later in this paper as air power's role in coercion is analysed.

COERCION AND THEORY OF DETERRENCE

The Chi of Coercion

Coercion is about altering costs and benefits in the calculations of the adversary. Thomas Schelling has written that, "To be coercive, violence has to be anticipated. And it has to be avoidable by accommodation. The power to hurt is bargaining power. To exploit it is diplomacy-vicious diplomacy, but diplomacy."[32] This assertion of the authority of 'bargaining power' encompasses the chi of coercion. It links air power to coercion, for, what is air power if not (potential) violence, which when sheathed is the 'anticipation' that Schelling wrote about and an instrument of 'punishment' that would follow, when unleashed. As the British Air and Space Power doctrine puts it, "It provides an ability to coerce an adversary by holding him at continuous risk. The demonstrable capability to attack an adversary underpins a graduated range of credible threats, from diplomatic warning and military signaling, including operational and tactical level non-kinetic demonstrations of power, through to the actual use of force…..However, the ultimate goal at the strategic level of warfare is to influence an adversary to follow a desired course of behaviour. In this sense, air attack is always a means to an end, but air power's ability to escalate the use of force in easily

30. Mets, n. 23, p. 63. Mets writes "At least for the time being, the bombers with stealth can get through with acceptable losses. Now bombers with PGM can get results as fast as Douhet had dreamed. A target can be taken out with far, far fewer bombs than in earlier eras. PGM makes strategic attack all the more feasible, and even makes parallel attack possible in many cases.
31. Tony Mason Air Vice Marshal, *Air Power: A Centennial Appraisal,* (London: Brassey's, 1994), p. 273.
32. Schelling, n. 3, p. 2.

controlled steps means that it has become an increasingly important element of coercive strategies."[33] The Indian Air Force Doctrine also, talking about the coercive capability of air power, states that, "...diplomacy has emerged as the first option for both power projection and conflict resolution, albeit with military power to back it up with deterrence and coercive capability."[34]

Successful coercion has no fixed template; its quality and success depends on a number of factors. While military capability, staying power and training of personnel of the coercer are obvious boxes to be ticked, the communication of the coercive intent and the credibility of the coercer (to carry out the threat) in the eyes of the target of coercion is an intangible that would be the final arbiter for the target to abide or not to abide by the coercer's diktat.[35] Equally incumbent on the coercer is the requirement to have good and timely intelligence of the adversary regarding what he values as important and worth going to war for so as to craft an appropriate strategy to coerce him successfully. Iran and Iraq went to war in the 1980s as each thought poorly of the other in terms of motivation and war waging capability. In the Vietnam War, the Americans spent a large amount of ordnance and effort to interdict the North's transportation network, especially the Ho Chi Minh trail through which the Vietcong were getting their supplies to the South. In the event, the colossal effort was a waste as the guerillas needed only a small amount of material for their sustenance.[36] Other factors that come into play include terrain, which aid the adversary in protecting himself for interdiction from the air. While examples for terrain

33. British Air and Space Power Doctrine: AP 3000 Fourth Edition, http://www.raf.mod.uk/rafcms/mediafiles/9E435312_5056_A318_A88F14CF6F4FC6CE.pdf, p. 51, accessed January 07, 2014. Explaining the strategic effect of airpower, the Doctrine quotes the bombing carried out on Stanley airfield in the Falkland War by a Vulcan B2 bomber on the night of 30 April 1982. Supported by Air to Air refuelling, the Vulcan dropped twenty-one 1,000lb bombs cratering the runway and denying its use to Argentinean fast-jet aircraft. In effect, it also demonstrated Britain's capability to attack at huge ranges, potentially threatening the Argentine mainland and resulting in an Argentinean redeployment of air assets away from the Falklands 'denying their potential use in the rest of the conflict.'
34. *Basic Doctrine of the Indian Air Force: IAP 2000-12*, (New Delhi: Air Headquarters New Delhi, 2012), p. 120.
35. Patrick Morgan has defined credibility as, "….the quality of being believed,,,,; it was not a state's capacity to do harm that enabled it to practice deterrence, it was others' belief that it had such a capacity." Morgan, n. 5, p.15.
36. Byman, et al, n. 7, p. 45.

from Korea, Vietnam and Afghanistan (Soviet occupation period) are many, the most famous recent one was from the initial period of America's attack on the Taliban in Afghanistan. In December 2001, Taliban fighters, including Osama bin Laden, hid in the Tora Bora caves and successfully evaded American air power to eventually escape into Pakistan.[37]

Effect of Time

Time too plays an important role where its availability to the target of coercion helps him negate the aims of the coercer, as happened in the Tora Bora case itself and in the escape of bin Laden. The developments taking place in the US in the concept of Conventional Prompt Global Strike (CPGS) are a step towards addressing the time factor from the moment of sensing of a target and its engagement by air power within an hour anywhere on the globe. A Carnegie Endowment study says that while CPGS has many connotations in studies of coercive use of air power, both positive and negative, the aspect of increased deterrence for its exponent and assurance for the allies is a given.[38] A US Congressional Research Study report, quoting the 2010 National Posture Review of the US says that, '…. (the Review) viewed PGS as an important component of U.S. regional deterrence capabilities when it noted that "these capabilities may be particularly valuable for the defeat of time-urgent regional threats."[39]

Op Parakram launched by India following the attack on the Indian Parliament in December 2001 is an example where extended time comes to

37. John F. Kerry, *Tora Bora Revisited: How We Failed to Get Bin Laden and Why it Matters Today, A Report To Members of the Committee on Foreign Relations, United States Senate, First Session, November 30, 2009,* (Washington DC: US Government Printing Press, 2009), http://www.gpo.gov/fdsys/pkg/CPRT-111SPRT53709/html/CPRT-111SPRT53709.htm, accessed December 31, 2013.
38. James M Action, *Silver Bullet? Asking the Right Questions about Conventional Prompt Global Strike*, (Washington DC: Carnegie Endowment for International Peace, 2013), p.113, available http://carnegieendowment.org/files/cpgs.pdf, accessed December 31, 2013. The Study states that "CPGS might make potential adversaries more wary about transgressing key interests of the United States and its allies, thus enhancing deterrence and potentially also the assurance of those allies."
39. Amy F. Woolf, "Conventional Prompt Global Strike and Long-Range Ballistic Missiles: Background and Issues," http://www.fas.org/sgp/crs/nuke/R41464.pdf, 26 April 2013, p. 4, accessed December 31, 2013. The Report further quotes James Miller (on page 8), the US Undersecretary of Defense for Policy, stating In February 2012, that "programs like CPGS could help strengthen U.S. non-nuclear forces as a part of the U.S. deterrent."

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the aid of the target of coercion in ameliorating its effects. Op Parakram set in motion the mobilization of the Indian armed forces and was launched to coerce Pakistan into clamping down on the terrorist network flourishing within its borders. The operational deployment continued for ten months but failed in its larger aim of getting Pakistan to stop aiding the terrorists.[40] While India may have come out with the aura of a nation that is mature in its thinking and response, the fact remains that the extended duration of the exercise, while imposing high financial costs on Pakistan, did not help the coercive effect sought by India, as Pakistan's leaning towards the militants remained (and remains) undiminished.

Capability, Perception and Coercion

Is the success of coercion dependent on the technical prowess of the adversary it is addressing? Coercion, in the final analysis, is a mind game. It is a game of 'chicken,' where both sides plan to play their cards to make the opponent accept their own terms. History has been witness to the fact that technical 'backwardness' has not forced contestants to concede to the coercer's terms. The technically and logistically 'backward' Vietcong and the North Vietnamese did not give-in to the American assault; a similar script is playing out for the Americans in Afghanistan, as it did there for the USSR earlier. In the 1950s, the North Vietnamese had not been coerced by the French military might just as the Algerians had not been brow beaten earlier by the same colonial power. Military dictatorships and autocracies too have had a history of standing up to technologically superior adversaries, even at the cost of their lives; Saddam Hussein, Gaddafi (against the NATO

40. There are many analyses of Op Parakram. One reason for failure is the fact that the adversary was also a nuclear weapon state. For e.g., see Seminar report of Institute of Peace and Conflict Studies: Coercive Diplomacy: Operation Parakram: An Evaluation, *http://www.ipcs.org/seminar/indo-pak/coercive-diplomacy-operation-parakram-an-evaluation-577.html,* August 30, 2003, accessed January 01, 2014.

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grouping), al Qaeda and Prabhakaran (of LTTE against Sri Lankan forces) are recent examples. These examples also hold up for the fact that military asymmetry is also not the arbiter in coercion but what determines its success or failure is the credibility of the coercer in the eyes of the target of coercion.[41] Perceptions have a major effect on the success or failure of coercion, independent of the technological prowess and/or the military asymmetry that may exist between the adversaries. The 1999 RAND study quoted earlier brings out that, "Perceptions are shaped by a variety of factors, including leadership dynamics, regime type and culture, all of which can affect the way the adversary views and calculates the costs and benefits of resistance." Leaders, who are a law unto themselves, are more likely to make mistakes than those who listen to advice.[42] The case of the Japanese attack on Pearl Harbour is a classic case of a misperception of an adversary's will.[43] The effect of technology too can be obscured by operational restrictions and impediments. The message of Op Rolling Thunder (which utilized American air power) that was sought to be conveyed to the North Vietnamese was diluted due spasmodic action that resulted from bad weather and friction generated due 'fog of war'.[44] Coercion may also not succeed because the target of coercion may hold a conviction that, come what may, the coercer would continue to maintain the hostile posture. This happens when the concessions made by the coercer lack credibility or are not considered sufficient; this is a failure of persuasion or inducements offered by the coercer.

With the intermeshing, literally, of the air, space and cyber domains in modern conflict, new synergistic capabilities would be required to influence

41. Byman et al, n. 7, pp 50-53.
42. Ibid, pp 49-50.
43. Michael Slackman, *Target: Pearl Harbor*, as cited by Adam B Lowther, ed., *Deterrence: Rising Powers, Rogue Regimes and Terrorism in the Twenty First century*, (New York: Palgrave Macmillan, 2012), pp 7-8.
44. Lowther Ibid.

the decision making calculus of the adversary.[45] The freedom that these domains afford to both, the coercer and the target of coercion, opens a new arena of conflict. Since these three fields are an intricate part of daily human activity worldwide, the capability of coercion that can be exerted (and opposed) through them would be far reaching, requiring multi-disciplinary tools, including air power.

Assessment of Success of Coercion

'How is success of coercion measured' is a question that has perhaps as many answers as there are scholars of the subject. Can it be a simple yes or a no or can there be a partial fulfillment of these states? Adopting a binary route (of a straight forward success or failure) is not supported by real life occurrences and outcomes in conflict. For example, in Israel's war against the Hezbollah in Lebanon in 2006, the Israel Air Force conducted a very successful air campaign but overall, the performance of the Israel Defence Forces was sub-optimal in delivering the final result desired by the political leadership. So, "… the war's less than satisfying outcome in no way reflected failure of the Israel Air Force to perform…..Rather it stemmed from a more overarching deficiency in strategy choice.." said an in-depth study.[46] The coercive results sought by Israel were not fully achieved though it would be an understatement to say that what was obtained was very substantial.[47] Another example of the absence of a black and white result can be found in Israel's conflicts with its neighbouring nation states. Prior to the 1967 Arab-Israeli war, Syria would permit the terrorists to strike Israel from bases within its territory but after the resounding defeat in the '67 war, especially due actions of air power, it circumvented the coercive capability of Israel by routing the terrorist strikes through Lebanon. The measurement of success of coercion by the Israeli Air Force in the change of Syrian policy is not possible using a binary metric of success or failure. A comparison

45. William A Chambers Maj Gen, in foreword to Adam B Lowther (ed), *Deterrence: Rising Powers, Rogue Regimes and Terrorism in the Twenty First century*, (New York: Palgrave Macmillan, 2012), p. x11.
46. Benjamin S Lambeth, *Air Operations in Israel's War against Hezbollah*, (Santa Monica CA: RAND Corporation, 2011), p. xx (pp 335-343).
47. Ibid.

between the international position of the United States in 1963, before the expansion of the coercive conflict against Hanoi, and in 1973, at the time of the withdrawal from Vietnam, shows that "failure" does not simply mean returning to the previous status quo -- it could be worse, as in this case.[48]

A 'spectrum approach,' where the *degree* to which certain conditions are present or absent before and after commencement of coercion gives a better idea of the success or failure rather than a simple presence and absence.[49]

AIR POWER AND COERCION

Air power has always been available in the arsenal of the politicians but its significance suddenly sky-rocketed after its stupendous showing in the 1991 Gulf War. It needs to be noted that all other conflicts were also conventional engagements and hence an explanation is due why the nuclear environment is not being considered for studying coercion through air power. In the cold war era, the threat to use nuclear weapons was the threatened use of brute force where the annihilation of either side was almost pre-ordained. Since there were only two super powers, it was a zero sum game and deterrence was being exerted due the capability of the weapon and not the means of delivering it, which were many, and were available to both the protagonists. Thus, though air power was a means of delivery, it was by no means the sole one. In the conventional environment, while the weapons certainly have an important bearing in the quality of coercion, it is the unique characteristics of the delivery means of air power instruments that forms an important part of coercion.

Escalation Dominance Tool

The power of punishing gives air power the qualification to attain escalation dominance, which is "The ability to escalate credibly against the

48. Patrick C Bratton, "When is Coercion Successful? And Why can't we Agree on it?" UN Naval War College Document p. 13, available at http://webcache.googleusercontent.com/search?q=cache:http://www.usnwc.edu/getattachment/4e9e93e3-50b9-4fe9-b6e8-c7aca4218a9b/When-Is-Coercion-Successful--And-Why-Can-t-We-Agre.aspx accessed January 27, 2014.
49. For more on this as well as 'backfiring and hardening' of adversary resistance that cannot be evaluated by binary assessments see Byman et al., n. 7, pp 23-26. See also Bratton Ibid.

adversary……(and) allows the coercer to manipulate the level of costs the adversary associates with particular behaviour."[50] A perfect example of this was obtained in the Bosnian conflict of the 1990s where, "..airpower was used not only to pressure the Serbs into specific action on the ground…. but also to pressurize the Muslims into accepting the emerging partition of Bosnia…and it was the end of the bombing that opened the door to a ceasefire agreement and all party negotiations."[51] In reality, all no-fly zones are nothing but an 'escalation dominance' state where a message of 'don't fly or else…' is conveyed to the adversary, with an unspoken but embedded message of infliction of punishment. This was clearly apparent in Libya where, after the air strikes in Op El Dorado canyon in 1986, there was a sharp decline in Libyan sponsored terror attacks.[52] This denial strategy was also visible in the attack of Indian Air Force Mirages on the main Pakistani logistics base at Muntho Dhalo during the 1999 Indo-Pak Kargil conflict. The will of the intruders to continue fighting was broken after the strike on 17 June that totally destroyed the base and caused a very large number of casualties.[53] Muntho Dhao was revisited by Indian Air Force fighter

50. Byman et al., n. 7, p. 30.
51. Steven L Burg, "Coercive Diplomacy in the Balkans," in Robert J Art and Kenneth N Waltz, eds., *The Use of Force: Military Power and International Politics,* (Oxford: Rowman & Littlefield publishers, Inc., 2004), p. 254. The referred essay is a concise evaluation of the use of military force in two conflicts, successful in Bosnia (1995) but its misapplication later in Kosovo (1999), as per the author (pp 247-269).
52. Walter J Boyne, 'El Dorado Canyon,' *The Air Force Magazine Online Journal*, March 1999, http://www.airforcemag.com/MagazineArchive/Pages/1999/March%201999/0399canyon.aspx accessed January 04, 2013. The article says that after the air strikes, '….. the following months would see a dramatic decrease in the number of Libyan-sponsored, anti-American terrorist events. The Red Army Faction, one of the groups that had claimed responsibility for the La Belle disco bombing, reduced its activities. Other Libyan-sponsored groups followed suit.'
53. AY Tipnis Air Chief Marshal, "Operation Safed Sagar," *FORCE magazine,* October 2006, p. 16. For military action to implement a denial strategy, see Byman et al, n-7, p. 38.

aircraft a day later to ensure that it was not resurrected.[54] A telling comment on the escalation dominance capability of airpower is from Air Marshal Vinod Patney, the then Air Officer Commanding in Chief of Western Air Command, who was in the forefront of Kargil operations, "It is the nature of airpower that escalation is inherent in its use, unless its use is one-sided, as happened this time… . Before May 26, when we went into action, one of our apprehensions … was the degree of enemy resolve and to what extent we could expect such escalation.[55]

Indirect Coercing Tool

Using the indirect route to deter an adversary by reducing his ability to defend against a third party is another way air power aids in a nation's coercive effort. The Bosnian imbroglio is an example where the Bosnian Muslims started procrastinating on the suggested bifurcation of Bosnia, as the NATO bombing of the Serbs was helping their cause and the Serbians were feeling the coercive effect. The Muslims were themselves then coerced into coming to the negotiating table by the threat of 'ending of the bombing,' which started the peace negotiations.[56]Another view of the conflict, but with the same analysis, is that the Serbs felt that due the NATO airstrikes on them they could lose territorial advantages to Croatian ground forces which had been gaining ascendency due help from NATO.[57]

Creating Internal Instability

Creating and helping internal instability is one way of increasing the

54. Benjamin S Lambeth, *Airpower at 18,000': The Indian Air Force in the Kargil War*, (Washington DC: Carnegie Endowment for International Peace, 2012), available at http://carnegieendowment.org/files/kargil.pdf accessed on 04 Jan 2013. p. 21. This RAND monograph further states at page 33 that, "By one informed assessment, hundreds of enemy troops were killed by IAF air action in such attacks…and enemy radio transmissions during the campaign… attested to the effectiveness of those attacks". Especially during the campaign's final days, intercepted traffic revealed severe shortages of rations, water, medical supplies and ammunition, as well as an inability …..to evacuate their wounded. Yet another telling testament….when Pakistan's Foreign Minister Sartaj Aziz. .implored the IAF to "stop its air strikes" as one of three specific requests that he levied on the Indian government.
55. Pushpindar Singh, *Himalayan Eagles: History of the Indian Air Force*, Volume III: World Air Power, as cited by Lambeth, n. 54, p. 33.
56. Burg, n. 51, p.54.
57. Byman et al, n. 7, p. 40.

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coercive effects on an adversary. While sanctions, no-fly zones *et al* have this aim in their execution, using military power can backfire on the coercer by stiffening the morale of the civilian populace. This is especially true of the use of air power, as seen on both sides of the English Channel in WW II and later in Afghanistan, where war lords came together due the air strikes launched by the Soviets. A similar scene is being played out in the AfPak area due air strikes carried out by America's armed drones; while terrorist leaders are being killed in these UAV attacks, the fact remains that the environment of terror that the drone use has created is generating more recruits to the cause of the terrorists.[58] The asymmetrical availability of technology, especially air power, has caused the technologically disadvantaged to try and coerce the coercer in other domains as riposte to air attacks. In Chechnya, the rebels resorted to bombings in Russia in response to attacks by the Russian Air Force. After the miniscule Chechen 'air force' was destroyed by the Russians, the Chechen leader Dudayev had reportedly signaled the Russian Commander, "I congratulate you and the Russian Air Force on another victory in achieving air superiority over the Chechen Republic -- will see you on the ground".[59] Thus, coercers using air power as an instrument need to be wary of the pitfalls when not calibrating its destructive usage. This is a strategy that targets of coercion use to their advantage, as was seen in the intransigence of Saddam Hussein during inspections carried out by UNSCOM inspectors for Weapons of Mass Destruction (WMD); the Americans, in no way could have used military power, especially airpower, to counter his political strategy of gaining political mileage and strengthening his domestic base.[60]

58. A large number of reports attest to this fact. For eg see Owen Bowcott, "Drone Attacks in Pakistan are Counterproductive, says Report," 25 Sep 2012, available at http://www.theguardian.com/world/2012/sep/25/drone-attacks-pakistan-counterproductive-report; "Do Drone Attacks do more Harm than Good?" The New York Times, http://www.nytimes.com/roomfordebate/2012/09/25/do-drone-attacks-do-more-harm-than-good both accessed January 05, 2014.
59. Benjamin S Lambeth, "Russia's Air War in Chechnya," as cited by Byman et al, n. 7, p. 34, 115.
60. Byman et al., n. 7, p. 39.

Domestic Politics and Air Power's Coercive Ability **XXX**

Domestic political peculiarities and orders place limitations on the unfettered use of air power, as would be preferred by an airman. An apt example is that of its use by India against the intruders in the Kargil conflict. A fiat from the civilian leadership did not permit the IAF from crossing the Line of Control.[61]That this resulted in critical limitations for the IAF would be an understatement, but in the event, the order was respected to the last detail. Similarly, in the Indian intervention in the Sri Lanka-LTTE conflict, though India deployed nearly all offensive equipment, including attack helicopters and tanks, fighter aircraft were not sent as a policy decision, as this level of commitment of air power would have detrimentally affected perception of the Indian intervention in another nation. However, the air dropping of food articles on 04 June 1987 by An-32 aircraft, escorted by Mirage fighters, was a show of coercive power by India utilizing air power, which was followed by the Sri Lanka accord for the induction of the Indian Peace Keeping Force.[62] The political costs of deploying air power assets (fighter aircraft) for the protection of An-32s was acceptable to the political executive while it was not considered so for routine operations. A very contemporary example of the coercer being coerced and not being able to use air power was in Syria, where chemical weapons were allegedly used by the Assad regime in 2013. Despite Syria having crossed his publicly declared 'red line,' President Obama could not use coercive air power due domestic political compulsions,[63] highlighting the import of domestic limitations on its usage. Similarly, in the UN mandated NATO operations against Col Gaddafi in Libya in 2011, a very

61. Tipnis, n. 53, p. 12.
62. Harkirat Singh Maj Gen, *Intervention in Sri Lanka: The IPKF Experience Retold*, (Delhi: Lordson Publishers Pvt Ltd., 2007), p. 25
63. Peter Grier, "Syria airstrike: Can Obama persuade Congress to share responsibility?" The Christian Science Monitor, 04 Sep 2013, http://www.csmonitor.com/USA/DC-Decoder/2013/0904/Syria-airstrike-Can-Obama-persuade-Congress-to-share-responsibility, accessed on January 24, 2014.

high standard of weapon delivery, termed as 'accountable warfare' was mandated to avoid collateral damage; on many an occasion, pilots aborted weapon release as they were not sure of this aspect.[64] So, in contemporary warfare, where casualty sensitivity is high and increasing by the day, the coercive application of air power would be monitored very intimately, thereby placing restrictions on its unfettered use.

Space and its Militarisation

Militarisation of space has been continuing from almost the day man started launching satellites. Most space systems developed by the two super powers were for the purpose of enhancing their nuclear war fighting capability but as the realization of Mutual Assured Destruction sunk-in, "…the stability that MAD imposed on the strategic environment extended into the space domain."[65] The 1967 Outer Space Treaty banned deployment of weapons of mass destruction in orbit around the earth, but weaponisation continued surreptitiously. The Russians continued to develop dazzlers and other directed energy weapons and the US an ASAT weapon. The demise of the Cold War gave some respite to the militarisation race,[66] but that was short lived as the Anti-Satellite (ASAT) test carried out by China in 2007 jolted the world to the realities of the weaponisation drive being undertaken by many other nations. The link of air and space being almost inextricable and a large number of critical non-defence sectors getting dependent on space assets has lead to the realization that space assets need to be protected from hostile action. If not done, the resultant technological and military asymmetry that it would afford its exponents would give coercive capabilities difficult to match by those handicapped by its non-availability. Conversely, if a weaker nation is able to deny a stronger nation the use of space capabilities, then the

64. For example see Royal Aeronautical Society Paper, "Lessons Offered from the Libyan Campaign," London: July 2012. Stressing the point that very low levels of collateral damage were mandated, the paper brings out that, "The Storm Shadow missions included one which was aborted minutes before weapon release owing to collateral damage concerns…," p.11. http://aerosociety.com/Assets/Docs/Publications/SpecialistPapers/LibyaSpecialistPaperFinal.pdf, accessed January 16, 2014.
65. Forrest E Morgan, *Deterrence and First Strike Stability in Space*, (Santa Monica , CA: RAND Corporation, 2010), p. 10.
66. Ibid., pp., 13-16

chances of a terrestrial war increase due a breakdown in deterrence stability. So, "effective space deterrence fortifies general deterrence and stability."[67] The coercive capability, thus, of space power adds to general stability by preventing an aggressor from being tempted to assess the opponent as weak and to challenge him through a kinetic engagement.

Air power and ISR

Down history of warfare, a Commander has always wanted to know what's lying 'over the hill' so that he could plan his strategy. If he could get a live view *continuously, for unlimited time and of a quality on which he could plan his operations,* he would be infinitely more informed and prepared. If we discount the early Montgolfiers of the nineteenth century,[68] Intelligence, Surveillance and Reconnaissance (ISR) capability with a vertical 'God's eye view' became available with the launch of reconnaissance satellites. However, satellites have their own serious limitations that do not lend the quality of 'persistent stare' that has become available with UAVs of all hues and shapes and with varying endurance, range, time on station, loiter altitude and surveillance devices (ranging from simple optical cameras to synthetic aperture radars). With the arming of UAVs, a very potent capability has been introduced, that of minimal time loss between sensing of a target and its engagement by a kinetic weapon. Nowhere has its coercive effect been seen better than in the tribal areas of Pakistan and adjoining Afghanistan, where drone strikes have 'taken out' a large number of terrorist leaders and forced them to change their operational pattern and indeed their daily routine.[69] The coercive effect of the new capability that removed the safety afforded by night was starkly apparent in United Nations' peace keeping Mission in DR Congo (MONUC/MONUSCO) too. On arrival of Mi-25 attack helicopters of the Indian Air Force in 2003, the

67. Ibid., p. 21.
68. See n. 12.
69. Hussain Nadim, "How Drones Changed the Game in Pakistan," The National Interest, 03 August 2012, http://nationalinterest.org/how-drones-changed-the-game-pakistan-7290, accessed 03 Jan 2014. Also see James Igoe Walsh, *The Effectiveness of Drone Strikes in Counterinsurgency and Counterterrorism Campaigns,* (Carlisle PA: US Army War College Press, September 2013), http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB1167.pdf accessed January 03, 2014.

rebels shifted their nefarious activities to night time, but then had to put their 'heads down' when the night capable Mi-35 attack helicopters were deployed in 2005. The withdrawal of these attack helicopters by the Indian Government after six years resulted in an operational situation described as 'grave' in a conference held at UN Head Quarters New York, to discuss the low availability of Rotary Wing assets for peace keeping missions. The paper of the Centre for International Cooperation of New York University presented at the Conference stated that armed groups made forays into villages at night and made a getaway in the morning --- "however the arrival of night capable Mi-35s became a deterrent to these nightly raids…."[70] and underscored the coercive capability of air power.

However, nowhere is the 'persistent stare' capability of UAVs more evident than in the continuous surveillance of Arab territories by Israel. As Benjamin Lambeth records in his book on the operations of the Israeli Air Force in July-August 2006 during Operation Change of Direction, "For nearly seven straight years thereafter (after withdrawal from Lebanon in the year 2000), it had been conducting *round the clock* (emphasis added) ISR monitoring in support of IDF low intensity warfare against Palestinian terrorists operating out of the West Bank and Gaza Strip."[71] This enabled the sensor to shooter time in cases of engagement of Palestinian rocket launchers to be reduced to single digit figures, sometimes even before the last rocket could be fired by the launcher in its sequence. The UAVs were aided by three satellites that provided electro-optical, infrared and Synthetic Aperture Radar imagery with a reported resolution of less than three feet![72] The coercive effect on Palestinian operators of knowing that a counter strike would hit them before they could clear out from the area can well be imagined. A similar situation exists in the ongoing campaign of targeted killings indulged-in by America in its 'war against terror' and by the Israelis against Palestinian fighters. The use of armed UAVs in these

70. Jake Sherman, Centre of International Cooperation, NY University, Discussion Paper "Assessment of Force Generation Challenges Relating to Rotary Wing Assets for UN Peacekeeping Operations," 2011, presented at UN Workshop on Rotary Wing Assets held at UN Headquarters, New York, April 27/28, 20 11.
71. Lambeth, n. 46, pp. 111-112.
72. Lambeth, n. 46, p. 121.

killings, "..reminds terrorists of the long arm of the state's coercive abilities and of the real power asymmetries that exist. They also reiterate that death and capture is often sudden and unanticipated. Both can help lower a group's morale."[73] Long term effects like becoming unwelcome in their own communities, other people avoiding them in cafes and actually vacating the area on the arrival of the wanted men and not getting a girl in marriage[74] add to the coercive aura and effect of the UAV and in turn, air power.

Directed Energy Weapons and Air Power

Nowhere in the future would a more lethal and instantaneous attack combination be found other than in the integration of directed energy weapons and a vehicle which has a persistent stare capability, i.e., a UAV or a satellite. The presence of such a 'shooter' on board a 'sensor' would drastically reduce the engagement time after detection of a target. The first kill using a laser was obtained during trials in the US in 1973 when the USAF shot down a drone with a laser fired from the ground. The first airborne engagements were through the USAF Airborne Laser Lab (ALL) programme which started in 1976 with the aim of a technology demonstrator in a KC-135 Stratotanker aircraft; the project ran for 11 years in which five AIM-9 missiles and a drone were shot down.[75] Work is currently ongoing at DARPA to demonstrate a functional airborne laser weapon under the High Energy Liquid Laser Area Defence System (HELLADS) to fit into a tactical aircraft.[76] A step further would be employment of the weapon in space; though the technical obstacles to be overcome would be enormous, but when the technology matures further to enable such employment, then, the term 'star wars' would become a reality. Any target in the footprint of

73. Alex S Wilner, Targeted Killings in Afghanistan: Measuring Coercion and Deterrence in Counterterrorism and Counterinsurgency," *Studies in Conflict and Terrorism,* (London: Routledge, 2010), p. 315.
74. Ibid., p. 316..
75. Carlo Kopp, High Energy Laser Directed Energy Weapons, ir Power Australia, Updated 2012, available http://www.ausairpower.net/APA-DEW-HEL-Analysis.html#mozTocId408377, accessed on January 14, 2014.
76. Graham Norwick and Guy Norris, "DARPA at 50: Blue Sky Thinking: Guided by the Light" *Aviation Week and Space Technology,* August 18/25 issue, 2008, p. 14. Programme director Don Woodbury is quoted as saying that, "…it will be the same kind of revolution in military affair as PGMs."

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AIR POWER AS A POLITICAL TOOL

In the final analysis, air power is a tool in the hands of politicians to enforce state craft. Considering its very many positive attributes, it is a handy instrument for sabre rattling and communicating the escalation in the coercive intent through graduated signaling. The air drop of food by the Indian Air Force on 04 June 1987 in the Jaffna peninsula of Sri Lanka was an indication of the political intent of the Indian government that not only would it not let the Tamil community in Sri Lanka suffer but also that it would not let events in Sri Lanka affect the political stability of the Indian Union by the turmoil it would cause in the adjoining Tamil Nadu state.[77] An additional intent was to coerce the Sri Lankan government to enter into an agreement for a solution of the Tamil problem.[78] A similar intent was demonstrated in the attack on Libya by America through Op El Dorado Canyon, after which there was a marked decrease in Libyan support to anti-American terrorist activities.[79] The no-fly zones also are but coercive interventions and a form of kinetic signaling to convey political intent and resolve to inflict punishment if transgressed. But one of the most telling incident representative of the coercive result of air power on a political decision was the strike by Indian Air Force MiG-21s on the Governor's House in Dhaka on 14 Dec 1971 while a meeting convened by the Governor of then East Pakistan was

77. JN Dixit, "IPKF in Sri Lanka," *USI Journal*, CXIX, no. 49, p. 254. The author was the Indian High Commissioner in Sri Lanka and was instrumental in events leading to the induction of the IPKF. He stated, "… the IPKF is several things….it is an external projection of our influence to tell our neighbours that if….you pose a threat to us, we are capable of, or have a political will to project ourselves within your territorial jurisdiction for the limited purpose of bringing you back."
78. Harkirat Singh Maj Gen, *Intervention in Sri Lanka: The IPKF Experience Retold*, (Delhi: Lordson Publishers Pvt Ltd., 2007), p. 25.
79. Walter J Boyne, 'El Dorado Canyon,' *The Air Force Magazine Online Journal*, March 1999, http://www.airforcemag.com/MagazineArchive/Pages/1999/March%201999/0399canyon.aspx accessed on January 04, 2013.

underway; the precise delivery of a few 57 mm rockets conveyed the firm resolve of the attacking forces which resulted in the Governor suing for surrender of the Pakistani garrison.[80]

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Air power in COIN

Internal political legitimacy of many a state has been called into question in various forms. Firstly, by home grown insurgencies like the Taliban in Afghanistan, Maoists in India, ETA in Spain, and the Chechen rebels in Russia; secondly, situations exist in some countries where inter-state disagreements result in the conflicts transforming into sub-conventional warfare with the adversarial parties supporting their proxy groups, e.g., the factional parties in Congo which are supported by the countries that border it and in India itself where the Kashmiri separatist groups are supported by Pakistan. Lastly, in yet another variation, groups like al Qaeda, the Red Army *et al* have a pan-international presence, with linkages existing in many countries. Can air power be used in such counter insurgency operations to enforce the writ of the state?

Historical use of air power in COIN operations in the three situations mentioned has seen large variations in the strategy and the tactics applied in each. The variables have been governed by one basic factor, which is, whether the adversaries are one's own people or not? This question can be reframed to ask whether the entity applying the COIN strategy is an indigenous one or an outsider? The supportive (as against coercive) role of air power in the overall national COIN strategy of a state brings greater dividend than its coercive usage. This does not imply that air power cannot be used to deliver kinetic effects, as indeed has happened, but the technological advances offer a multitude of options to support the state in its COIN actions.[81] Though the basics of winning an anti-insurgency campaign remain the same, whether the insurgents are one's own nationals

80. Jasjit Singh, *Defence from the Skies*, (New Delhi: KW Publishers Pvt Ltd, 2013), pp. 167-168.
81. *Basic Doctrine of the Indian Air Force: IAP 2000-12*, (New Delhi: Air Headquarters New Delhi, 2012), p. 110.

or not, the discrimination exercised in usage of the various facets of air power has been found to be different. The strategy of "Winning Hearts and Minds," which is the corner stone of any anti-insurgency strategy, was not too visible in Algeria, Korea, Vietnam, Iraq, and Afghanistan where the coercer was an outside power. In these anti-insurgencies campaigns, collateral loss of lives of innocent civilians was, and has been, rampant unlike the other variable where the coercer is indigenous to the problem, as in India.[82] There is no singular magic solution to all types of insurgencies and the Indian state has used a variety of means to address them, some successfully some otherwise.[83] It is also true that offensive air power has hardly been used against insurgents in India[84] but the very reason of its non-usage is the acceptance of the fact by the Indian state that brute force does not succeed in quelling a rebellion of one's own people.[85] As a RAND study puts it, in COIN, air power by itself, "is unlikely to be decisive on its own against insurgents, but it has historically proven to be enormously valuable

82. For the inevitability of collateral damage in COIN operations see Lara M Dadkhah, "Close Air Support and Civilian Air Casualties in Afghanistan," *Small Wars Journal,* https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=16&cad=rja&ved=0CEQQFjAFOAo&url=http%3A%2F%2Fsmallwarsjournal.com%2Fmag%2Fdocs-temp%2F160-dadkhah.pdf&ei=VobYUq3PDLD5yAPVuICABQ&usg=AFQjCNE03Pb8aTWQSDsxBZF4Nux0-ZDwkQ&bvm=bv.59568121,d.bmk. As an example see Micah Zenko, "Collateral Damage in Afghanistan is Unavoidable, 30 June 2009, http://www.theguardian.com/commentisfree/cifamerica/2009/jun/24/mcchrystal-usa-afghanistan-air-attacks, 17 January 17, 2014. In the article, the collateral damage due in one particular air strike in Granai village in Afghanistan is said to have killed between 26 (US CENTCOM figure), 86 (Afghan human rights groups figure) and 140 (Afghan Government claim) locals.
83. Paul Staniland, *Routledge Handbook of Indian Politics* See draft of the article available at http://home.uchicago.edu/~paul/StanilandHandbookDRAFT.pdf , accessed January 15, 2014.
84. The only case of armed action against insurgents by the Indian state s against the Mizo insurgents who had surrounded the treasury in the town of Aizawal. Fighter aircraft of the IAF strafed the area around as helicopters ferried in troops to break the uprising. See "Harry' Ahluwalia Air Vice Marshal, "Helicopter Operations in the Indian Air Force," available at http://www.bharat-rakshak.com/SRR/2006/02/53.html, accessed January 28, 2014.
85. "Air power against Naxals must Avoid Collateral Damage: Naik," report in *The Hindu,* Allahabad, 12 Apr 2010, Speaking on the use of air power against Naxal insurgents, the Indian Air Force Chief, Air Chief Marshal PV Naik said, :We have the capability to conduct strikes with utmost precision. However, it must be understood that if a 250 kg bomb is dropped at a spot, its impact will be in a radius of at least 800 metres and that may affect many people who may not themselves be insurgents…. If at all a situation arises where the use of Air Force becomes inevitable, there has to be clarity on the magnitude of the force we are supposed to use so that the collateral damage is minimum. After all, we are dealing with our own people in our own territory," accessed 20 Jan 2014.

to forces that have been fortunate enough to have access to."[86]

Air power against States

What is the coercive capability of air power against established states? Here, force of any type has the advantage of having an adversary which has claims to tangible assets, unlike in the case of non-state actors. The full weight of all capabilities of national power can be brought to bear in creating the coercive effect. Force not only includes kinetic military action but also has diplomacy, economic and informational elements of national power.[87] For the two super powers during the cold war, nuclear capability was, inter se, the cornerstone of deterrence. Nuclear war fighting was never an issue in their conflicts with, and in, other countries. Even Israel, which has an existential threat from its neighbours to its right to live as a state, has never factored-in its reported nuclear capability in its strategy against its adversaries.[88] However, conventional war under a nuclear overhang has been a subject of raging debate and writers have been asking policy makers not to neglect this aspect even as most nations battle sub-conventional threats and engage with non-state actors. That adequate space exists for such conventional confrontation was proved during the Kargil conflict between India and Pakistan where military power (including air) were used to telling effect to force the intruders to withdraw and for Pakistan, the state sponsor behind the incursions, to be coerced into stopping aid to them.[89] An added factor was the aspect of escalation control that was clearly visible due the Indian Air Force not crossing the line of control, as per directions of the political leadership. While this imposed operational and tactical restrictions for the IAF, the fact is that compellence was made easy due the political high ground occupied by India and the aggression literally coerced-out through both punishment and denial; the punishment was through ground and air

86. Alan Vick, Adam Grissom, William Rosenau, Beth Grill, Karl P Mueller, *Air Power in the New Counter Insurgency Era,* (Santa Monica, CA: RAND, 2006), p. 150.

873 Wolf, n. 2, p. 6.

88. Avner Cohen and Benjamin Franknel, "Opaque Nuclear Proliferation" in Benjamin Franknel (ed.), *Opaque Nuclear Proliferation: Methodological and Policy Implications,* (Portland: Frank Cass, 1991), p25 quoted in Nuclear section of Nuclear Threat Initiative available at www.nti.org/country-profiles/israel/nuclear/, accessed Decemer 07, 2012.

893 Lambeth, n. 54, p. 1-2.

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action while denial was the through occupation of the political high ground by maintaining the sanctity of the line of control that precluded Pakistan from using its air force and army assets overtly.

Does military coercive capability work against all types of states, including those governed by dictatorial and autocratic regimes, euphemistically now called 'rogue' regimes? The major change in contemporary world politics, and into the foreseeable future, is the trend towards coercion in situations of asymmetry.[90] It finally has to be tailored to each individual case consequent to a detailed understanding of the opponent.[91] With terrorism becoming an independent threat as well as a weapon in the hands of rogue states, coercing it such that it loses its importance is essential. While ensuring it through a strategy of punishment is straight forward (whether it will succeed or not is a different question), the use of a strategy of denial is favoured by some analysts. In an incisive commentary titled 'Terrorism and Deterrence by Denial,' Smith and Talbot talk of making the terrorist threat irrelevant by addressing it at the tactical, operational and strategic level.[92] While the thrust of their essay is on policies and actions to be taken by the political leadership, they say that air power can contribute in a big way through its ISR and strike capability in the tactical and operational ambit. Tactically, the authors talk in terms of shielding the population by "delinking terrorism from its victim." and preventing the terrorists from access to populace while at the operational level they recommend through 'removing access

90. Jeffrey W. Knopf, "The fourth Wave in Deterrence Research," *Contemporary Security Policy*, Vol. 31, No 1, April 2010, p. 3. The author writes that, not only does the US want to ensure deterrence of rogue states but also wants to prevent them from being able to get in a position to deter the US – this has led to the Americans adopting a policy of pre-emption, as being seen in the drive to prevent Iran from going nuclear and the international sanctions being applied on North Korea to prevent it becoming a threat to the US and its allies.
91. Ibid., p. 9. The Bush administration officially labeled it 'tailored deterrence.'
92. James M Smith and Brent J Talbot, "Terrorism and Deterrence by Denial," cited in Paul R Viotti, Michael A Opheim and Nicholas Bowen (eds.), *Terrorism and Homeland Security: Thinking Strategically about Policy*, (Boca Raton, FL: CRC Press, 2008), pp. 53-68.

to sanctuaries…and keeping terrorist leadership underground and on the run.'[93] Air power is a major cog in these actions through persistent surveillance by means of UAVs, as is being done by Israel (in Gaza and other territories) and the US (in AfPak region) and by regular kinetic air strikes against adversary leadership by both countries. In the long run, these effects synergise to have a strategic effect in the overall picture.

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CONCLUSION

Deterrence and compellence constitute coercion. Power politics influences the coercive capabilities of nations as they try to establish a pecking order in the constant struggle to be ahead of competitors and peers. Before the advent of air power, land and maritime power of a nation determined the coercive strength of a nation. Air power brought along with it certain attributes that redefined the coercion that was, and is, exercised by military power. Air power's range, speed, flexibility and the potential to inflict punishment has brought a new paradigm of coercive capability in the hands of the politician. The advancement of ISR competence due galloping innovations in optics and optronics coupled with air launched precision weapons resulted in an exponential jump in the destructive potential of air power. The technological asymmetry that these advances brought along resulted in the generation of an adversary who, though extremely well motivated, lacked the tangible wherewithal to match the modern opposing knowhow and equipment. This technologically challenged adversary's answer has been to use the sub-conventional means of irregular warfare and resort to terrorism to further his aims. As a result of its great success in the 1991 Gulf War, air power has become the preferred tool to meet the challenge. Not every time has air power been successful, as history shows that threatening ideology and a 'movement' by brute force has not always been successful.

While air power's record in coercion in inter-state wars has been positive,

93. Ibid.

it has not always got due credit for its efforts. This is because, in the overall picture, the final coercive aims may not have been met in the endeavours put in by a nation. Air power is but one tool in the bouquet of actions that are brought into play against an adversary. While die-hard proponents sing paeans in its favour there are critics who do not see the big picture but just concentrate on the results, taking a binary view. Both tracks are far from the ideal and if one understands and accepts that, in the final analysis, military power is just an adjunct to political authority, one's analysis cannot go wrong. Air power has coercive capabilities that are available to be tapped by a judicious leadership.

US AND RUSSIAN AIRBASES IN CENTRAL ASIA

VIVEK KAPUR

BACKGROUND

The Central Asian region comprises the former Soviet Socialist Republics that are since 1991 the newly independent states of Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan, and lie between the Caspian Sea and western China. This region occupies a central position in world geography. The region lay at the heart of the great Asian empires of the Mongols, Omayyads, Abbasids, Samanids, and Saljuquid Turks and was the base of Timur the Lame or Tamerlane who forayed into northern India also. Babur emerged from this region to invade India and establish the Mogul Empire.[1] Geo-politically the power that is able to control Central Asia is in a position to access all other parts of Asia as well as Eastern Europe and the Middle East with relative ease; this makes this area a hotbed of competition between the major global powers.

The ancient Silk trade route from China to Europe passed through Central Asia and led to the establishment of several important cities along its path. Some of these exist even today. This area was initially populated primarily by nomadic tribes which later settled into the cities as the benefits of this method of social organisation became apparent, with the trade routes between China, and other parts of East Asia, and Europe

Group Captain **Vivek Kapur** is a Senior Fellow at the Centre for Air Power Studies, New Delhi.

1. Devendra Kaushik, *Central Asia in Modern Times*, (New Delhi: Prince Art Printers, 2011): p 5-22

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getting established.[2] The nature of the land did not generate great agricultural systems here for lack of water among other reasons. By the 15th and 16th century, however, advances in irrigation had led to fairly well developed agricultural systems in Central Asia; and other crafts, sciences and literature also developed. Near constant wars and conflict between different political bodies embodied by the local Khanates led to decay in almost all cultural fields and agriculture over the 16th to mid-19th centuries.[3]

Imperial Russia slowly expanded eastwards, in search of new markets and resources to supplement its power. The expansion was facilitated by the fractured nature of the political entities in internally warring Central Asia. After several battles and wars, by the close of the 19th century and early 20th century, most of current Central Asia came to be occupied by Imperial Tsarist Russia.[4] The Central Asian region was treated predominantly as a market for Russian goods, especially in view of British goods of superior quality / price crowding out Russian manufactures in most other markets, and a supplier of resources for Russian industries.

Over time, apart from Russian military personnel and the ruling classes ordinary Russian citizens, who moved to the Central Asian region in search of jobs, also came into contact with the indigenous people of Central Asia. This led to a fusion of cultures and greater understanding of each other.[5] Basic development of the region, however, was apparently not of importance to Tsarist Russia at the time.

PASSAGE INTO UNION OF SOVIET SOCIALIST REPUBLICS (USSR)'S CONTROL

2. Ibid.
3. Ibid pp 23-25.
4. Devendra Kaushik, *Central Asia in Modern Times*, (New Delhi: Prince Art Printers, 2011): p 26-48
5. Ibid. pp 65-76.

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The Bolshevik revolution in Russia ushered in the formation of the Soviet Union. The Soviets expanded their power into Central Asia in a piecemeal manner with regions coming under their sway one by one. This process involved infiltration of Bolshevik thought and organisers into the regions. These infiltrators then established grassroots support for joining the Soviet Union amongst the local populations.[6] Attempts by a few local ruling elites to stem the ingress of Bolshevik thought and ideology through political control was supported by the other great imperial power of the time, Great Britain. However, this contest was won by the Bolsheviks, in some part due to the close mingling of Russian and local ethnic groups coupled with the exploitative nature of the primarily feudal ruling system in vogue in the area, and Central Asia came under the sway of the then newly constituted Union of Soviet Socialist Republics (USSR).[7]

The Soviets formed separate republics in the Central Asian region, in three stages. The borders of these new republics were drawn apparently without too much thought about local considerations. Language and ethnicity appeared to be the two main drivers of the demarcation of the borders of the new Soviet Republics in Central Asia, -- Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan. The demarcation of the borders was done in three stages in 1920, 1924 and 1930.[8] Due to the ad hoc nature of border determination, several territories and populations that had traditionally been part of one political entity, ended up being placed in another.

Once the region was incorporated into the USSR, the Soviet leadership embarked upon its attempt to build a Soviet man as against people owing

6. A similar process is claimed by NATO and the West, supported government in Kiev, to be in progress at the current time with respect to the Russian annexation of the Crimea peninsula and allegations about the pro-Russian movement in parts of East and South Ukraine.
7. Kanisk, pp.77-95.
8. Ibid. pp. 202-213.

allegiance to different parts of the vast reaches of the USSR. Steps in formation of the Soviet man included use of the Cyrillic script in place of earlier scripts, imposition of the Russian language as the official language, modern education which included indoctrination of the local people into a common Soviet identity. National services were open for all the local populations to join. The armed forces saw induction of the Central Asian people as from other parts of the USSR. Local politics was dominated by politicians with leanings towards Moscow.[9]

SOVIET THREAT PERCEPTIONS AND DEPLOYMENTS OF FORCES

The main threat faced by the USSR, since the end of World War II came from the West comprising capitalist America and the North Atlantic Treaty Organisation (NATO). NATO had been formed specifically to check or even reverse the spread of Communism in Europe. Thus USSR's military might was oriented towards the West into Europe where NATO was located. The regions in the centre of the USSR were seen to be at relatively little risk. To the south, USSR faced a collection of third world countries with little military or economic might and these came into prominence for security reasons primarily when, established Western 'client states' such as Iran under the shahs of the Pahlavi dynasty, were set up with Western connivance[10]. To the east lay Communist China which was initially (at least till the early 1960s when a rift developed between the leadership of the two communist States)[11] seen as a client state or a sympathetic fellow Communist nation. The Far East saw some major military deployment due to the presence of US forces in Japan and unresolved territorial disagreements with Japan itself. The USSR's territorial disputes with Communist China were at that time less problematic.

Hence, the Central Asian region at the peak of Soviet power saw relatively

9. Ibid. pp 245-250. and Prof. K Warikoo Lectures on Central Asia, as part of the course SA639, during January and February 2014 at the Centre for Inner Asian Studies/ school of International Studies, Jawaharlal Nehru University .
10. "Rise of Reza Khan", http://www.britannica.com/EBchecked/topic/293359/Iran/32184/Rise-of-Reza-Khan
11. "The Great Debate Documents of the Sino-Soviet Split", http://www.marxists.org/history/international/comintern/sino-soviet-split/, accessed on March 15, 2014.

little military deployments by the Red Army and Red Air Force. In contrast, the portions of the USSR facing Western Europe were heavily militarised. The Soviets treated the region as a source of raw materials to feed industry in other parts of the USSR. Some light industry was, however, developed in the region. The USSR also set up its first and largest space launch and space training complex at Baikonur in current day Kazakhstan. New military equipment, including even submarines, were often tested in the Central Asian region due to its location deep within the USSR, far from the active western borders.[12] During World War II when the Nazi invasion threatened the western parts of the USSR, some military industries were shifted to the Central Asian region. Prominent in this shift is the relocation of Plant 85, which was earlier located outside Moscow and engaged in building civil aircraft, to Tashkent in Uzbekistan, where it came to be known as the Tashkent Aircraft Production Organisation (TAPO) or the Chkalov Plant.[13]

In Soviet times, the Central Asian region was seen as essential for overall security, especially as the region was considered to be the USSR's soft underbelly. The Central Asian Military District of the USSR was an important and powerful military region that sought to ensure stability of the /USSR's borders and to provide security to the Soviet heartland while keeping a check on potentially hostile forces across the border in China and in the Muslim countries to the South and South West And South East.[14] The Soviet Union's Afghan intervention in 1979 increased the importance of the region exponentially. The Soviet Union's intervention in Afghanistan provided the US with an opportunity to make this the Soviets' 'Vietnam' and, seizing upon this opportunity to put down its archrival in the Cold War, the US actively supported, armed and trained local warlords and extremist elements in Afghanistan. The Soviet intervention, thus, became a long drawn out 10-year-long war for the Soviet forces against insurgents who followed

12. Prof. K Warikoo, " Ethnicity and Politics in Central Asia",(Lecture in Room 237, Jawaharlal Nehru University, New Delhi, February 11, 2014).
13. "Uzbek Plane Maker to Take Off Again", http://centralasiaonline.com/en_GB/articles/caii/features/main/2013/12/02/feature-01, accessed on 11 Feb 2014.
14 Igor Torbakov, "The West, Russia and China in Central Asia: What Kind of Game is Being Played in the Region?", http://www.turkishweekly.net/article/204/the-west-russia-and-china-in-central-asia-what-kind-of-game-is-being-played-in-the-region.html, accessed on March 17, 2014.

quasi-guerrilla tactics.[15] Sustaining the war in Afghanistan required heavy use of the Soviet Central Asian Republics bordering Afghanistan.

SITUATION POST THE SOVIET UNION'S DEMISE

While the demise of the USSR, a mere two years after cessation of its active military involvement in Afghanistan led to a temporary fall in the importance of the region for Russia, the USSR's successor state, events after the 9/11 terrorist attacks in the US which led to America's declaration of the Global War on Terror (GWOT) have increased its importance in Russia's world view.[16] When the USSR broke up, giving the Central Asian states independence, the military facilities located within the borders of these new states were handed over to them. Russia, however, still leased some of these erstwhile Soviet facilities such as the Baikonur cosmodrome located in Southern Kazakhstan. The US' and NATO's intervention in Afghanistan led to these Western countries seeking alternative routes of access to Afghanistan apart from the route through Pakistan as the latter has been beset by problems from the very start.[17] The West's troubled relations with Iran did not allow for an Iran based access route. As an alternative to the Pakistan-based access routes to landlocked Afghanistan, the International Security Assistance Force (ISAF), the UN sanctioned United Nations Assistance Mission in Afghanistan (UNAMA) and the US military forces' "Operation Enduring Freedom," hence, set up the Northern Distribution Network (NDN).[18] The NDN was operationaslised in 2010-11 and comprises a series of marine, rail and road lines of communication that join the Baltic and Caspian Seas to Afghanistan through Russia, the Caucasus and the

15. "Milestones: 1977–1980 The Soviet Invasion of Afghanistan and the U.S. Response, 1978–1980", https://history.state.gov/milestones/1977-1980/soviet-invasion-afghanistan, accessed on March 30, 2014

16. Andrew Feickert, "U.S. Military Operations in the Global War on Terrorism: Afghanistan, Africa, the Philippines, and Colombia August 26, 2005", http://www.fas.org/sgp/crs/natsec/RL32758.pdf, accessed on March 31, 2014.
17. **Umar Hayat** , "An Analysis of Logistic Support to the US and NATO in fghanistan: Is Pakistan Still Relevant?", http://zameer36.com/an-analysis-of-logistic-support-to-the-us-and-nato-in-afghanistan-is-pakistan-still-relevant/, accessed on April 1, 2014.
18. Northern Distribution Network (NDN)", https://csis.org/program/northern-distribution-network-ndn, accessed on 27 March 2014.

Central Asian states. This route, however, is as much as 3,500 km long and suffers from the need for frequent reloading of its throughput due to its multi-modal nature[19], quite apart from the poor state of transport infrastructure along several major stretches.

The West, in the time immediately after the 9/11 attacks, looked at the newly independent Central Asian states as stepping stones into Afghanistan. The American push to make inroads into Central Asia while initially spurred by the imperative of maintaining open supply routes into Afghanistan in order to support the military and other operations, also aimed at establishing a presence in the strategically important areas in Russia's soft underbelly. The Afghanistan operations logistics issues extend to the planned withdrawal of Western forces from Afghanistan in 2014. This withdrawal involves moving out a large number of military and civilian personnel as well as substantial amounts of equipment. Substantial US inroads into Central Asia would also help ensure that the US is able to threaten Russia from both the south/ southeast as well as from the west. Such a situation would ensure that the US is in a position to retard, or even deny, any possibility of a Russian resurgence to be able to challenge the near absolute global hegemony exercised by the US since the demise of the Soviet Union.[20] The Central Asian region is also rich in important resources including oil and natural gas. This presence of important mineral resources is an additional factor in the US interest in establishing a presence in the region.[21] This resulted in the US obtaining leases facilitating the use by Western forces of several air bases in the Central Asian region.

SITUATION AFTER THE 9/11 ATTACKS IN THE US: GLOBAL WAR ON TERROR (GWOT)

19. Equipment and stores need to be shifted from ships to railroad wagons and trucks based on the best means of transport available at different points along its length.
20. Su Huimin, "NATO a Dupe for Washington", http://www.network54.com/Forum/155335/thread/1088528573/last-1088528573/NATO+a+dupe+for+Washington, accessed on March 18, 2014.
21. Maj Paul J. Bellaire, "Back to the Future Thoughts on a Bipolar World Redux", *Aerospace Power Journal*, (Spring 2002), http://www.au.af.mil/au/afri/aspj/airchronicles/apj/apj02/spr02/bellaire.html, accessed on March 24, 2014.

XXX Convinced that the perpetuators of the 9/11 attacks resided in Afghanistan under the Taliban's protection, the US commenced military operations in Afghanistan against the Taliban and suspected Al Qaeda elements. To facilitate induction of forces, equipment and supplies to support military operations in Afghanistan, the USA obtained Pakistani cooperation to set up the NATO, ISAF, and US supply routes from the southern coast of Pakistan into Afghanistan. But, it also looked at obtaining access to airbases in Central Asia to support the Afghanistan operations. These requests met with initial success as the newly independent Central Asian states were interested in balancing Russia's influence in the area and trying to play one party against the other for their own benefit. Russia, however, expectedly viewed this development with concern, especially after having seen its earlier buffer in Europe having been incorporated into the European Union (EU) and NATO, thus, bringing potentially hostile forces up to the Russian border for the first time in over a century. This resulted in a struggle between the West and Russia. The former employed economic and political means to retain a foothold in Central Asia, while Russia tried through similar measures to get the West removed from the area. This undeclared struggle makes the progression of Russian and US bases in Central Asia a fascinating study.

RUSSIAN AIR-BASES IN CENTRAL ASIA

The demise of the USSR led to renewed interest in Central Asia by the Muslim states of the Middle East. Turkey, Iran and other Muslim states such as Pakistan saw an opportunity to increase their influence in this region based upon their common cultural and Islamic links. The leaderships of the central Asian states by and large rebuffed these advances in favour of maintaining close ties with Russia. The Radical Islamic regime established in Afghanistan by the Taliban led to the radical Islamic influence spreading into Central Asia across Afghanistan's borders with Tajikistan. As radical

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Islam spread into Central Asia, a need was felt by the states of the region for further means to increase their security. Russia also felt a need to bolster the security of these states for the sake of its own security interests threatened by the potential threat of radical Islam across its own borders. This was especially in view of Russia's experience in Chechnya[22], as well as its geo-strategic interests in the region, which included forming and maintaining a buffer between itself and potentially hostile outside forces. Such a buffer that had existed in the past between Russia and the West. But, it had been eroded by the steady eastward expansion of the European Union (EU) and NATO. A similar push by the US, the West, and radical Islam was feared in Central Asia.

Moreover, Russia needed to check the fast paced moves of China that already treated Central Asia as a buffer for its western regions as it sought to fight religious extremism in Xingjian province. China was seen to be steadily encroaching into Central Asia through trade, building of infrastructure and entering into bilateral deals with individual Central Asian states to exploit the region's natural resources. Russia also sought to control resources, including strategic Uranium reserves, other important minerals and water and energy resources in the region. Thus a mixture of economic and security concerns drive Russia's interest in modern day Central Asia.

Several academics have opined that a new 'Great Game', the name given to Russo-British contest for ascendancy in Central Asia in the 18th and 19th centuries is unfolding again in Central Asia the difference being that this time the main players are Russia, the US, European Union (EU) and China. Russia has used economic incentives as well as the formation of the Collective Security Treaty Organisation (CSTO), documents for which were signed on May 15, 1992, in Tashkent by Armenia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan. Subsequently, Azerbaijan, Georgia and

22. Mariya Yevsyukova, "The Conflict Between Russia and Chechnya", http://www.colorado.edu/conflict/full_text_search/AllCRCDocs/95-5.htm, accessed on March 20, 2014.

Belarus joined CSTO.[23] The treaty came into force on April 20, 1994. In April 1999, the Protocol on prolongation of the treaty was signed by all of them, except for Azerbaijan, Georgia and Uzbekistan. The main aims of CSTO are to combine efforts to curb terrorism and 'other security threats' in the region. But it also seeks to achieve closely coordinated military and technical co-operation and integration for collective security while also combating international crime, drug trafficking, and cyber threats.[24] The military component of the CSTO includes Russian military forces located in Central Asia to train local forces as well as to carry out necessary operations alongside local military forces. The Russian army's 201st Motorised infantry division has been based in Tajikistan since the demise of the USSR. As part of the CSTO it was used to combat the spill over of Islasmist forces from Afghanistan into Tajikistan.

In fact, Tajikistan was the first Central Asian state to formally request deployment of Russian troops on its territory. This division played an important role in controlling the path of the Tajik civil war in the mid 1990s. In 2004, the 201st Motorised Rifle Division started to hand over responsibility for the Afghan-Tajik border to Tajik forces, a process completed by 2005. Negotiations commenced in 1999 to transform the Russian 201st Motorised Rifle Division into a permanent Russian military base and these were completed in 2004. In return for this permanent military base, Russia has offered not payments but preferential treatment to Tajikistan in arms purchases, such as the Tajiks paying prices charged to Russian forces for weapons, etc. The erstwhile 201st Motorised Rifle Division now is part of the Rapid Collective Deployment Force and is based at Dushanbe. It also undertakes training of Tajik forces. It has shared access to the Tajik airbase of Ayni, about 10 km South West of Dushanbe, where Russian helicopters are based. In 2012 Russia won a deal on extending the tenure of its military base in Tajikistan by 30 years till 2042, but at the compromise of declaring a willingness to place Russian forces under fire if required in defence of Tajik

23. "Collective Security Treaty Organization", http://mfa.gov.by/en/organizations/membership/list/cddd96a3f70190b1.html, accessed on March 17, 2014.
24. Ibid.

interests and security.[25]

In Kyrgyzstan, Russia maintains its only air base in Central Asia at the Kant air base, about 20 kilometres east of the capital Bishkek. Kant air base houses about 10 Sukhoi fighters in addition to helicopter and transport asserts. This air base was originally set up as a Soviet Air Force base in 1941 with a pilot training task. On the break-up of the USSR, the base was handed over to Kyrgyzstan. In October 2003, it became Russia's first and only foreign air base when it became a part of the CSTO's Rapid Deployment Force. Russia and Kyrgyzstan agreed in 2012 to extend the lease for Kant air base by 49 years with an automatic extension every 25 years.[26] As part of this deal, the number of aircraft at Kant air base are to be increased and greater emphasis to be given to train Kyrgyz personnel.[27] Some disagreements between Russia and Kyrgyzstan over the lease of the base and the benefits the lease was to deliver to the host government appear to have been resolved satisfactorily and Russia has obtained an extension of the lease till at least 2032.[28] At the same time, it has stated that it is likely to double its aviation assets at Kant airbase and will proceed to use its equipment and personnel at the air base to help train and establish Kyrgyzstan's air force. With this agreement Russia has strengthened its position considerably ion the Central Asia region especially across from the Chinese border. The lease extension of Kant air base and the increase in strength of aircraft assets there should enable a robust Russian or CSTO response to any contingency in the area.

An examination of open source satellite imagery of Kant Air base helps understand the capability that this base can enable from the fixed infrastructure point of view. The base has two parallel primary landing surfaces. The longer runway measures 2.67 km and appears to comprise relatively recently laid concrete. Orientation is Runway 29 L (left) and Runway 11R (Right). This primary runway has a 220-metre long under- /

25. Operational Group of Russian Forces in Tajikistan", http://www.globalsecurity.org/military/world/russia/ogrv-tajikistan.htm, accessed on March 20, 2014.
26. "Russian Govt. Approves Kyrgyz Airbase Lease Extension to 49 Years", http://en.ria.ru/russia/20090529/155119256.html, accessed on March 21, 2014.
27. "Russia to Expand Kyrgyzstan Military Base ",http://www.naharnet.com/stories/en/103443, accessed on 22 March 2014.
28. Ibid.

overrun towards the eastern end and a 183-metre long under/ over run towards the western end. The other runway to the north of this runway measures 2.67 km also but lacks prepared underruns or overruns. This second runway appears to be of much older and weathered concrete construction or to be partially of blacktop material. There are no runway markings visible on this surface. The two parallel runways are joined by two link taxi ways at their ends. There is a 2.58-km-long parallel taxi track to the north of the runways. This taxi track connects to the northern runway through four link taxi tracks. Four link taxi tracks connect the parallel taxi track to a 1.1 km long tarmac or aircraft parking apron. This size of apron should be able to accommodate as many as 50 to 60 large fighter aircraft such as the Sukhoi-Su-27/Su-30 in addition to up to 100 to 120 smaller aircraft such as MiG-21s, MiG-29s, or Su-25s. further north of these aircraft operating surfaces adjoining the apron lie buildings including air traffic services etc. in a google earth image dated October 20, 2013, what appear to be 32 MiG-21 variant aircraft along with four Su-25 fighters and two An-24/ 26 class of Medium transport aircraft are visible on the apron. From an examination of the runway markings, the newer concrete runway appears to be in current use while the next runway appears to be out of use at the time of the imagery as it lacks standard runway markings. Close examination of the google earth satellite images indicate that the aircraft apron and the second runway surfaces are in fairly bad condition and require urgent repair or resurfacing as wide cracks and breaks are clearly visible on these surfaces. Such condition of aircraft operating surfaces can cause damage to aircraft using these surfaces through loose fragments of the surface being sucked up in by jet engines and causing engine failure or being flung at high speeds by the jet exhaust and causing damage to aircraft in the vicinity. This indicates that despite the number of years that the airbase has been in use considerable refurbishment work still requires to be carried out. The Russian delay in carrying out this work could be a contributory factor in the reported Kyrgyz unhappiness with Russia's

presence at Kant air base.[29] The airbase has structures that correspond to typical locations for instrument landing systems, precision approach radar installations and airfield lighting facilities. From this, it can be concluded that the airbase is capable of sustaining all weather day and night operations. No revetments or hardened aircraft shelters can be discerned in the satellite image of the airfield. This leads to the implication that in a conventional war an attacking enemy air raid could destroy aircraft on the ground at Kant air base relatively easily as the airfield lacks hardened aircraft shelters.

The other air base, to which Russia has access in Central Asia, as mentioned earlier, is the Ayni air base outside Dushanbe in Tajikistan. Russian helicopters operate from this airbase as part of the Russian component of the CSTO's rapid reaction force. This Russian land component of this CSTO force was earlier known as the 201st Motorised Rifle Division. This air base had fallen into a state of disrepair in the years after the demise of the USSR and was rebuilt by India at a cost of $70 million.[30] The air base has one main runway of 2.76 km length with overruns of 270 to 300 meters at each end. Runway orientation is 08/26. A 2.58-km-long parallel taxi track lies north of the runway and this is connected to the runway by five link taxi tracks. Small about 50-60-metre wide aprons exist at the ends of the runways and parallel taxi track to facilitate aircraft ground manoeuvres and turnaround. There is one large aircraft parking apron of dimensions 117metres x 460 metres. A small loop taxi track is positioned to the north east of the apron. Along this loop taxi track and along the Western half of the parallel taxi track there are several Hardened Aircraft Shelters (HAS) and open revetments for aircraft and equipment. Along the shoulders of the runway can be seen installations for instrument landing systems, precision approach radar and airfield lighting to facilitate night operations. Other revetments along the shoulders of the aircraft operating surfaces are in all likelihood locations of airfield defence missile systems and air

29. Bakyt Baimatov, "Growing Uncertainty In Kyrgyz-Russian Relations", http://old.cacianalyst.org/?q=node/5784, accessed on March 23, 2014.

30. "Ayni Air Force Base also Known as Gissar Air Base", http://www.healthcare.reachinformation.com/Ayni%20Air%20Base.aspx, accessed on March 22, 2014.

XXX defence artillery guns. This air base corresponds to a full-fledged frontline airfield configured for war, with adequate protection for assets as well as defensive and offensive firepower. This is not surprising as the airfield was rebuilt as a front line military airfield by Indian personnel under Indian Air Force guidance. In its current use it houses only helicopters that belong to Tajikistan as well as those that are a part of Russia's contribution to the CSTO's Rapid Collective Deployment Force. In Google earth imagery dated November 09, 2013, in addition to 10 utility helicopters of the Mi-8/17 class there are 10 light straight wing aircraft and two medium transport aircraft visible at the airfield. While capable from the infrastructure point of view there seem to be no combat airpower deployed at Ayni airfield at least in early November 2013.

US AIRBASES IN CENTRAL ASIA

As stated earlier, after the 9/11 attacks, in addition to the land routes that the US put in place to facilitate operations in Afghanistan, it also sought air bases on lease from the Central Asian countries. At the time the US gained access to the Kashi-Khanabad (called K2 by the Americans) airbase in Southern Uzbekistan. In addition, the US also obtained the Manas airbase located 23 km north of the Kyrgyz capital Bishkek on lease before its invasion of Afghanistan in 2001.[31] Each of these airbases housed about 1,000 American soldiers most of whom were part of the US Air Force's (USAF)'s Expeditionary Air base Units. These bases provide refuelling and other transit facilities to troops moving to and from Afghanistan. In addition some quantities of equipment are housed here for onward shipment to Afghanistan based forces.

Establishment of US air bases was viewed with concern by both Russia and China, in addition the members of the Shanghai Cooperation

31. Lionel Beehner, "ASIA: U.S. Military Bases in Central Asia", http://www.cfr.org/russia-and-central-asia/asia-uzsz-military-bases-central-asia/p8440?breadcrumb=%2Fregion%2F269%2Fuzbekistan, accessed on March 23, 2014.

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Organisation (SCO), of which both Russia and China are founder members, took a poor view of an American presence in the area. In 2005 the US took issue with Uzbekistan on human rights issues.[32] After being censured by the US on its human rights record by America, Uzbekistan retaliated by denying the US use of the K2 air base and going back to rejoin the CSTO which it had earlier shunned in favour of building relations with the US.[33]This left the US with just the Manas air base in Kyrgyzstan as its sole air base in Central Asia. K2 air base has one runway orientated 07/25 and a long discontinuous taxi track with 30 open revetments able to house one large fighter of the F-15 or Su-27 class each.[34] There are also four large aircraft parking aprons and all other facilities expected at a frontline airbase. Thus with the sheer space and facilities offered by K2, not to mention the relative proximity of this air base to Afghanistan, its loss is a major blow to US interests.

The remaining US air base at Manas lies 20km north of Bishkek. This air base has a-4-km long main runway with orientation 08/26. A parallel taxi track, of length 2.66 km, extends about two thirds of the way from the 08 end of the runway. Five link taxi tracks join the parallel taxi track to the runway. There are six large aircraft aprons for parking of aircraft and each of these is able to park more than four large transport aircraft. Space measuring 1.5 km x 650 metres exists towards the southwest side of the airfield complex for the US transit facility linked ground infrastructure. Thus, this air base is ideally suited to the transit transport aircraft operations required by US led forces in Afghanistan. As a matter of interest the US leased Manas air base lies a mere 38 km, as the crow flies, from the Russian Kant air base. This is probably the closest non-belligerent deployment ever of the two sides'

32. Ibid.
33. Robin Wright and Ann Scott Tyson, "U.S. Evicted From Air Base In Uzbekistan", http://www.washingtonpost.com/wp-dyn/content/article/2005/07/29/AR2005072902038.html, accessed on March 23, 2014.
34. Careful examination of Google Earth imagery of K2 air base.

military air forces. However, indications are that Kyrgyzstan will follow through with its demand for the US to vacate Manas air base by July 2014 when the US and NATO deployment in Afghanistan ceases.[35] The US still is likely to require a transit airbase to facilitate smooth withdrawal of its own and allied forces. In preparation for moving out of Manas air base, the West, led by the US, is already reported to be using an air base in Romania as an alternative to Manas.[36] This Romanian an air base is in eastern Romania and is called "Forward Operating Site Mihail Kogalniceanu", or "MK" for short.[37]

In discussing US air bases in Central Asia, mention should be made of a few more arrangements made by the US or / and its allies with Central Asian states. In May 2009, it was announced that Uzbekistan had given the US and its allies transport aircraft transit facilities at the cargo airport located close to the city of Novoi. The airport was renovated by South Korea which country also facilitated the lease agreement between the US and Uzbekistan despite the earlier falling out between the two over US criticism of Uzbekistan's human rights record. With a 4 km long runway and three large aircraft parking aprons, this base is well suited to the US and NATO's transit facilities requirements especially as the future of other facilities in the region is uncertain. Novoi takes some of the pressure off Manas air base and will provide a fall back once Manas airbase's transit facility is closed down later this year.[38] Even a cursory examination of this air base shows that it has limited military potential and so should not find too much disfavour with Russia and China as long as the use is not extended past the US withdrawal from Afghanistan. The Temez air base in Southern Uzbekistan has been used since at least between 2005 and 2009 by German and NATO

35. "Russian Ally Kyrgyzstan Sets US Air Base Closure Deadline", http://www.voanews.com/content/russian-ally-kyrgyzstan-sets-us-airbase-closure-date/1686063.html, accessed on March 22, 2014. March 2014
36. Agha Iqrar Haroon, "A US Journey to Romania from Kyrgyzstan", http://www.eturbonews.com/39204/us-journey-romania-kyrgyzstan.
37 Ibid.
38. Deirdre Tynan, "Uzbekistan: Karimov Gives Washington the Air Base it Needs for Afghan Operations", http://www.eurasianet.org/departments/insightb/articles/eav051109a.shtml, accessed on March 23, 2014.

forces for transit to and from Afghanistan.[39] Temez boasts of a 3-km-long runway and 3.5 km of taxi tracks along with two large aircraft aprons.[40] These features apart, it is the runway length that enables heavy transport aircraft to operate from here along with its proximity to Afghanistan that are its main advantages. These operational issues irrespective, in Germany protests were on regarding this German "cooperation" with an 'oppressive regime' in Uzbekistan in terms of payments to Uzbekistan for use of the Temez air base.[41] Both Navoi and Temez provide the US and its allies some respite from the pressure they were under with regard to lack of airbases close to the Afghan theatre of operations.

Though not publicised as much, the US has obtained access to use almost all military airfields in Turkmenistan. These include the capital Ashkabat's airport, the airfield at Nebit Dag and Mary-2. The goods transiting through these airfields comprise military equipment including ammunition while the agreement was for "non lethal" supplies to be allowed transit through Turkmenistan territory.[42] Russian concern about this US presence in Turkmenistan has been much more muted possibly because Turkmenistan from the time of its independence has been furthest from Russia's influence as compared to other Central Asian countries and its distance from Russia proper may be another factor in a lower threat perception from foreign forces on its territory.[43]

INDIA'S MAIDEN AIR BASE EFFORT IN CENTRAL ASIA

In the late 1990s, at the time that India was negotiating with Russia for the major Sukhoi Su-30MKI deal and other military security issues, including

39. "Germany's Payments For Military Base In Uzbekistan Unveiled", http://www.rferl.org/content/germany_termez_uzbekistan_eu_sanctions/3538998.html, accessed on March 23, 2014.
40. Careful examination of Google Earth satellite images of Temez air base.
41. "Germany's Payments For Military Base In Uzbekistan Unveiled", http://www.rferl.org/content/germany_termez_uzbekistan_eu_sanctions/3538998.html, accessed on March 23, 2014.
42. Catherine A. Fitzpatrick, "Turkmenistan: Secret U.S. Base For Afghanistan, Iraq, Iran Campaigns", *http://www.globalresearch.ca/turkmenistan-secret-u-s-base-for-afghanistan-iraq-iran-campaigns/20411*, accessed on March 25, 2014.
43. *Nikolai Sokov,* "The Not-So-Great Game in Central Asia", PONARS Policy Memo No. 403, Monterey Institute of International Studies December 2005

taking the old Soviet era aircraft carrier *Admiral Gorshkov* off Russia's hands and negotiating the 10 year lease of a nuclear powered Akula-II class submarine, India entered into negotiations with Tajikistan to refurbish the old Soviet era air base at Ayni which was in an acute state of disrepair. At the time, there appeared to be a tacit understanding between India, Tajikistan and Russia that after the air base had been refurbished it would be India's first foreign base and India would base a unit of Russian / Soviet origin fighter or helicopter aircraft there. After the base was refurbished at a cost of $70 million by India, however, the earlier understanding fell apart and in the face of suspected Russian pressure Tajikistan backtracked on permitting Ayni to be an Indian base. After completion of the refurbishment of Ayni air base, India has had two Indian officers posted as commanders of the base before it was handed over to the Tajikistan government. No explanation for this has been found, at least in open sources.[44] In informal interactions with Russia specialists at think tanks level interactions, it has been gleaned that the slow movement of India towards a closer relationship with the West in general and the US in particular worried the Russians that India may be moving from being a friend of Russia to being a member of the American camp.[45] Events of that period, including the civil nuclear deal, contracts to purchase major weapons systems from the US and Europe instead of from Russia fuelled this impression in Russia. Already wary of a Western presence in Central Asia, Russia elected to play strategically safe and keep India out of the region at least in terms of an Indian military presence.[46]

Russia has been in control of Central Asia since the time that Imperial Tsarist Russia expanded into this region in the 19th century. On formation of the USSR, this control was further consolidated. The Central Asian states are a construct of Soviet political engineering and gained independence and separate existence for the first time after the demise of the USSR in 1991. Russia sees itself as having genuine interests and rights in this region.

44. Joshua Kucera, "India Proposes Greater Cooperation With Russia In Central Asia", http://www.eurasianet.org/taxonomy/term/2883, accessed on March 17,2014.
45. "ASIA: U.S. Military Bases in Central Asia", http://www.cfr.org/russia-and-central-asia/asia-us-military-bases-central-asia/p8440, accessed on March 12, 2014.
46. Informal discussions with academicians from Russia and Indian Russia experts in the Think tank Centre for Air Power Studies (CAPS).

Similarly, Russia sees itself having similar and genuine security interests in Ukraine. The events unfolding in eastern Ukraine, especially after the absorption of Crimea by Russia are quite likely to breed insecurities amongst the Central Asia states. Such insecurity could have at the extremes two possible results. These states may elect to go in for closer ties with the US and the West or China in return for security guarantees against Russian attempts to annex their territories. Alternatively, given their history these states may elect to bind themselves closer to Russia and thus seek security akin to that enjoyed by them when they were part of the USSR. The fact that these states were the only parts of the erstwhile Soviet Union to overwhelmingly oppose dismemberment of the USSR could point towards the second of these two possibilities as being more likely.

However, whichever way the situation progresses, it is likely that other outside powers', such as China and India, attempts to gain a foothold in the region are likely to become more difficult in a situation of more open and intensive US and Russian jockeying for the upper hand in Central Asia. That said, given the fact that India enjoys good relations with both the US and Russia and is generally seen as a benign outside power with no inimical motivations India, through deft diplomacy could better its position in the region for mutual benefit by leveraging its experience in, setting up and maintaining required institutions of effective Governance, economic cooperation, especially in high technology, and trade. Through avoiding military aspects of the relationship except for sharing its experience in training for, and executing, internal security operations, India could maintain a posture that no party involved in the area finds threatening. In such an eventuality India may be able to succeed in gaining access to Central Asia.

CONCLUSION

Central Asia has been the stage for great power rivalry from as long ago as the 18th and 19th centuries. Central Asia's location at the heart of the Asian landmass led to its being at the canter of the major trade routes from Asia to Europe. This location led to its importance rising. The great powers of the

age tried to gain control of this region while denying their opponents similar access. This happened earlier between Imperial Russia and Great Britain. Central Asia came under Russian control towards the end of the 19th century. Subsequently with formation of the USSR the Central Asian region became part of the USSR. In the Soviet time, the region saw some advancement and comprised an important place in the Soviet security viewpoint. The borders of the five Central Asian Socialist Republics were decided by Moscow for its own reasons in three stages starting from 1920 and going on till 1924 to 1930. On dissolution of the USSR, the five Central Asian Republics gained independence as sovereign states. Thereafter, these states readily accepted close cooperation with Russia for economic and security reasons. The CSTO is a manifestation of this cooperation. Events after the 9/11 terrorist attacks in the US led the US, NATO and ISAF to intervene militarily in Afghanistan. This intervention led to the need for the NDN as a back-up to the Afghanistan supply routes through Pakistan. Air base requirements were met initially by leasing the K2 airfield in Uzbekistan and Manas air base in Kyrgyzstan. Subsequently political issues led to loss of US access to K2 air base. In addition to Manas air base, the US and NATO have access to Novoi and Temez air bases in Uzbekistan and to most military airfields in Turkmenistan. Russia itself has a presence at Kant airbase in Kyrgyzstan and partial control of Ayni air base in Tajikistan. US interest in establishing a presence in Central Asia stems from the Afghanistan resupply and logistics issue but also from a desire to encroach onto what was exclusively Russian strategic space. This encroachment has been viewed seriously by both Russia and China who have worked tirelessly to get the US and other western countries evicted from Central Asia. There is a viewpoint that there is a new great game in progress involving the US, Russia, China and the EU, that is, four players in place of two in the earlier edition of the great game. This is, of course, denied by all the supposed players in the new Great Game. India will need deft diplomacy to gain access to Central Asia, a task made more difficult by the lack of direct surface routes between the two.

CYBER-SPACE: IMPLICATIONS FOR NATIONAL SECURITY

A.K. TIWARY

Nothing Remains, Neither the State nor Wealth nor Valour without the Security provided by the Armed Forces.

— S H Ukraniti

CYBER SECURITY

Cyber space and the possibility of cyber war, as it emerged in the late 1980s got mixed up with Information War (IW)/Electronic War (EW). This led to numerous definitions of IW/EW/cyber war, and most definitions, instead of clarifying the issue, only created further confusion. For the purpose of this paper, the latest definition of cyber space, promulgated in the USA in 2010 being the most comprehensive, has been adopted. It defines cyber space as, "A global domain within the information environment consisting of the inter–dependent network of information technology infrastructure and resident data, including the Internet, tele-communication networks, computer systems and embedded processors and controllers."[1] This indicates that there is a physical domain of hardware, and an information domain of software. How we deal with the information or data resident in this domain to deceive the enemy/cyber criminal becomes part of the third domain—the cognitive domain. As the paper analyses the hardware and

A.K. Tiwary

1. Martin C. Libicki, "Cyber Deterrence and Cyber War." Rand Project Air Force, Santa Monica, CA, 2009.p.13.

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software domains to discern their vulnerabilities, one must keep in mind the cognitive domain and the attendant possibilities of solutions to the problems that seem insurmountable in the earlier two domains.

When we talk of cyber security, we mean security of each component in the above definition as well as successful performance of the system as a whole, more so when under attack. To understand the type and amount of threat to cyber security and its resultant impact, let us briefly look at the attackers/ criminals in the cyber space and their modus operandi. The attackers/ criminals could be classified into individuals, small groups of individuals, criminal gangs, terrorist organisations, patriotic groups and, finally, the proper cyber organisation at the state level, created and maintained by the state. The threat could be financial fraud, data theft, espionage at the corporate/national level, and damage to software and/or hardware, which could also result in physical damage to systems/infrastructures run by the computer network. The targets could be civil as well as military.

Individuals: At this level, individuals deal mostly in financial fraud, credit card data theft**,** siphoning money from bank accounts, stealing passwords, stealing data to sell **or** misuse. Some eccentric individuals also invade cyber space for strange reasons. One such case was of a Taiwanese computer engineering student named Chen Ing Hau.He created, "Chernobyl or Win-CH" virus which damaged thousands of computers on 26 April 26, 1999. The stated purpose of the creation of VIRUS was to humiliate incompetent anti-VIRUS software providers! Thereafter, he lent a helping hand in fire-fighting his own VIRUS.[2]

Terrorists: Unlike any other medium, the cyber medium is easiest to access and communicate/intrude with others worldwide, often undetected. Attribution as to who and where the attack originated is difficult to pinpoint. Therefore, terrorists prefer to use cyber space to their advantage and also

2. *The Times of India*, January 29, 2000.

to create havoc and fear among the public to gain propaganda mileage. **XXX**

Criminal Gangs: Operating within the deep web, where anonymity is ensured,criminals are offering drugs, criminal services including assassins for hire. One such gang called Silk Road was unearthed by the Federal Bureau of Investigation FBI in September 2013.[3]

Patriotic Hackers: These voluntary individuals, either individually or in collaboration, express their patriotic sentiments by attacking known/perceived adversaries. This often happens between India and Pakistan. In China, it assumed massive proportion after the US attack on the Chinese Embassy in Bosnia in 1999 and after a mid air collision between a US spy plane, a P-3C Orion, and the Chinese fighter interceptor in which the Chinese pilot suffered fatal injuries. The Chinese government overlooks such hacking activities. At times, it supports it for national purposes. It even recruits from amongst such hackers for a Chinese web militia. It is believed that the civil web militia planned by Chinese numbers many thousands of hacktivists. Mostsuch hackers remain nonpaid recruits.[4]

Corporate Espionage: Some Corporates, at intra-national as well as international level indulge in cyber espionage to steal technical data, consumer behaviour data, etc. and to find the strategies of competing corporate houses. As the volume of data keeps increasing towards the infinite, its analysis helps a lot in furthering marketing and designing of newer products. This activity could also be backed by the state. It is alleged by the USA that the Chinese government as well as Chinese state companies have been stealing data from US companies to catch up with new complex technologies. Richard A. Clarke, a cyber adviser to US presidents from 2000-2010 reinforces the above allegation. Among many technologies stolen, extensive software data of the F-35 fighter plane, - the latest US fighter is also alleged. A cursory look

3. *Time*, October 21, 2013, p.15.
4. *The Times*, April 15, 2013. pp.40-42.

at the remarkable rapid development of Chinese military aviation seems to reinforce the US claim.

State Level: Cyber activities by a state should be considered at two levels. One is the cyber attack as a preliminary integrated step of an active war. The targets are not only military but could also include critical infrastructure like the telecom network, power distribution, power generation, financial services, media, etc..,Some known examples are the Israeli cyber attack on the Syrian air defence network in 2007 when Israeli warplanes struck at Syrian nuclear sites. In 2010 Iran's nuclear enrichment plant's centrifuges were attacked using the Stuxnet VIRUS which impacted the control mechanism and caused thousands of centrifuges to overspeed and self-destruct. Estonian networks were attacked(distributed denial of service) in 2007 and made non-functional for a few days as a reaction to removing an earlier era Russian war memorial from Tallinn, the capital, to a cemetery. Georgia was cyber attacked along with conventional Russian attack in 2008. The other level is cyber espionage during peace-time. For such ventures to be successful, a whole lot of exploratory work, cyber preparation, development of specific cyber weapons, etc. needs to be undertaken. Cyber defence and offence are continuing cycles. As a threat develops and is detected, counters are developed to nullify the threat. These are called anti-VIRUS programmes or security patches. Whereas, a conventional bomb or a missile once produced remains a threat forever, this is not so for cyber weapons. In the cyber world one has to keep designing new weapons as old ones become negated quite fast. Even pure cyber defence makes it essential to develop cyber policing tools. Perforce, these are offensive in nature and design.This blurs the traditional difference between defence and offence in cyber space.

Cyber Weapons: Having seen the cyber actors,one needs to have a look at cyber weapons and their classification. This is essential to understand subsequent actions by the cyber warriors as also by the strategy makers. Basically, there are two types of cyber weapons, the SIGNATURE type and the BEHAVIOUR type. VIRUSes and WORMS are the signature type as they have their distinct signature. Thus, they can be recognised by filters, firewalls, anti-virus programmes, etc.. Behaviour type weapons are

extremely difficult to detect. The above devices cannot detect their presence. They may remain undetected for months engaged in their unauthorised activity. The counters can only be made once their presence is detected. This makecyber activities highly complex, demanding numerous experts in multiple cyber disciplines. Starting from a small beginning in the 1980s, today the USCYBERCOM employs around 27,000 personnel in the cyber field and plans to urgently train "cyber warrior" specialists numbering 6,000.[5]

VIRUS: The initial cyber attacks were characterised by a VIRUS programme entering the computer. A VIRUS is an undesirable software programme that causes damage to information within the computer. Its full form is "Virtual Information Under Seize". This software attaches itself to either a programme or a file. It can infect software and /or hardware. It can be mild or severe. A human action is required for the VIRUS to enter. The most common human action is to open an infected link. Unfortunately, there is no way of making out an infected link from a normal link.Both appear the same. Since 1989, when the first VIRUS was made as a deliberate experiment, today, there are more than one million VIRUSES. Their number doubles every 8 ½ months. Once a VIRUS is identified, its anti-VIRUS programme is made to nullify the VIRUS. So the anti-VIRUS is a reaction strategy. It is not preventive. A certain amount of damage will take place till the anti-VIRUS is made and implemented.

Worms: These are VIRUSES which travel/infect computers by themselves. No human action is required like clicking on a link or opening an attachment. They also replicate themselves, thereby saturating the affected computer or server. They can damage the affected system immediately or plant unwanted cyber weapons like the Trojan horse, Scanners, Sniffers, Logic bombs, etc..

Behaviour Type Cyber Weapons: VIRUSES and WORMS are recognised by their signature, permitting detection, and creation of anti-VIRUS software. The other cyber tools like the Trojan horse, Botnots, blended programmes, spear phishing, mutating/ polymorphic VIRUS, scanners, sniffers, etc. do

5. Ibid., Libicki.

not have a detectable signature. They enter a computer piggy back on a friendly permitted programme. So security systems treat them as friendly programmes. Once inside the system and activated, their actions leads to abnormal behaviour. It could be vast damage/destruction of software; takeover of affected Personal Computers (PCs) and servers; stealing of data, etc.Their detection requires constant monitoring of the system behaviour. Any abnormal behaviour monitored is to be investigated. This makes their detection extremely difficult because it is not so straightforward to classify system behaviour into normal and abnormal, more so as the system complexity itself increases. ATrojan horse can create a backdoor entry into the affected computer or server. Botnots permits remote control over computers, even from halfway around the world. Spear phishing is insertion of remote access tools. Polymorphic VIRUSES mutate themselves, thus, assume new signatures which the anti-VIRUS cannot detect. Scanners detect security holes in the hardware/software. Sniffers record information. Trace routers trace the network route. Password crackers decode passwords. Logic bombs trigger an action which could cause software/physical damage. The two famous examples are the Stuxnet attack on Iranian nuclear centrifuges which overspeeded thousands of centrifuges resulting in their destruction. Other was the causing overspeeding of a Russian oil pipe line motor, which resulted in the pipeline explosion and a massive fire. Both are believed to be handiwork of the USA.

Zero-Day Vulnerability: When new software and hardware systems are developed, they are initially run over a period of time to try out the system; to find the weaknesses and their rectification. This is called the beta version. After the beta version, the new systems are marketed. Yet in this complex cyber world, – the new systems have weaknesses not yet noticed by the manufacturer in spite of trials during the beta version. But the same weaknesses are uncovered by hackers. The period between introduction of a new system and rectification of weaknesses discovered by hackers is called zero day vulnerability. During this period, there is no defence against cyber attacks. This period could last long if the hackers do not divulge the weaknesses, and plan to use then for nefarious purposes. Or even after the

weaknesses have been brought to the manufacturer notice, the manufacturer himself may take time to design the proper counter.

Zero-DateVulnerability: Even after designing the security patch for zero day vulnerability, some time elapses till the patch is installed on the affected systems. There will be many persons/organisations who are not aware of the new security patch or are lazy in its procurement and installation. Of course, a pirated operating system cannot be patched up. So the affected system remains vulnerable. This period is termed the zero-date vulnerability period.

Detection of Cyber Attack: A VIRUS or malicious software called 'malware' needs to be detected to keep a computer safe. The first line of defence is a firewall. It is a software/ hardware or combination that checks each new data packet wanting to enter a computer. Based on certain rules and logic, it does not allow unwanted data packets to enter. The next line of defence is by way of an intrusion detection system looking for unauthorised entry. Thereafter, the defence is by the "anomaly detector."

Anomaly Detection: A network/system/computer has software which manages systems information and events within called SIEM (System Information and Event Management). It is a sort of watch dog over all the activities taking place. It watches firewalls, authentication process, authorisation levels, access rights to various users, working of switches, routers, servers, content filters, data storage, data usage, analyses, etc.. It compares the multitude of activities with what is permitted in programme and detects anomalies or abnormal behaviour. For instance, if a low level user accesses information allowed only to a high level user, this will be detected as an anomoloy and investigated. Since cyber attacks without a signature trail as in a Trojan horse give no indication of entry into the system, it is only the subsequent behaviour of the computer, like stealing large data/unauthorised entry/unauthorised extraction of data, etc.or any other abnormal behaviour which will give the first indications of malicious activities.These types of attacks have become more common in the last decade and are known as "Advanced PersistentThreat (APT)". The system can be under attack for months or even years if the malicious software

XXX is being run with great care. The Chinese are believed to have done extremely well when they penetrated many systems in the USA and stole massive amounts of data from the defence and aviation industry.

SIEMs designing is complex and needs dynamism. If there are too many false positives, it reduces the system's operating efficiency. It will slow down the system excessively defeating the very purpose of the security in the first place. If there are too many false negatives, then the security provided will be inadequate. What is normal and what is abnormal behaviour is not easy to define – making detection difficult. The process is an ongoing one requiring corrections and tweaking often. It needs constant interaction between the users of the system and the security providers. An organisation requires many specialists, multiple cyber tools, cyber experience and enormous patience to deal with APT. That is why the cyber defence is for more expensive than cyber offence.

RECOMMENDED STRATEGY FOR CYBER SPACE SECURITY.

Press reports indicate that a lot of work has been done for cyber security in India. Since public knowledge is limited and an outsider is not aware of the current status of the cyber security programme, one can only list down what should be done theoretically. The following recommendations are based mostly on a study of US efforts, especially of the US Air Force (USAF) as it is the lead agency for cyber space. Also, the USA can be considered the motherland of the cyber world. The first chip was made in the USA. TheInternet was born in the USA and is even today owned by the USA. The world uses the Internet free kind courtesy the US Department Of Defence (DoD). Microsoft and Silicon Valley have led the software/ hardware development. The USA has maximum experience in the cyber world. Its cyber journey since the late 1980s can be summarised as follows. The USAF recognised the possibilities of cyber warfare early on.It

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experimented within, with the industry, and with the academia for cyber knowledge and cyber experience.Its cyber organisation, started with an IW cell in the 1980s; an IW Centre established at Kelly Air Force Base in 1993 has now grown into a Cyber Command (CYBERCOM) ,achieving Full Operational Capability in 2010. The USAF CYBERCOM is part of the US CYBERCOM. A 4-star General, Keith Alexander, heads the US CYBERCOM. He also heads the infamous National Security Agency (NSA); and is responsible for cyber support to Department of Homeland Security (DHS), and the central security services. The US CYBERCOM partners with 100 universities for cyber education and recruits from amongst their graduates. The NSA itself has 700 PhD professionals and the rest of the cyber force benefits from their technical expertise. The NSA has invested huge amounts of money in super computers and data storage, data analytics, etc.. The USAF has a manning of 15,000 in the USAF CYBERCOM.A new cadre, Cyber Warrior, has been established, with rigorous cyber training and testing, incentive pay, career progression, etc.. It conducts many exercises including participation in the "Red Flag" Exercises.

Apart from the USA, not much in known about other countries' cyber set-up with certainty. Israel is believed to have invested heavily in cyber capabilities. China is also believed to be in cyber space very seriously. But all the countries are behind the USA in cyber experience.We are also aware that the USAF model has evolved, being put to test regularly in wars since the Iraq War 1991, Bosnia in 1995, Kosovo in 1999,Afghanisatn in 2001and Iraq in 2003. So it is a product of war-time experience. Therefore, it is a good model to study and adapt with modifications, as necessary, for our conditions. A brief account of the USAF cyber organisation and its experiences follows.

The USAF set up IW Squadrons in the 1980s. As a result of the success of IW in the Gulf War 1991, the USAF decided on IW across the full spectrum of command and control. So the 688th Information Operations Wing was set up. The wing has technical skill sets of the AF Electronic Warfare Centre; and the AF Cryptographic Support Centre's Securities Directorate, and intelligence capabilities from the former AF Intelligence Command.

In 1993, the USAF established an IW Centre at Kelly Air Force Base, Texas. By the mid-1990s, the IW flights, consisting of 25 personnel each, would work alongside the CAOC (Combined Air Operation Centre) whenever operations were going on. IW operations were undertaken during the Bosnia operation in 1995 and against Serbia in 1999. The comprehensive operations included EW against radars and Surface-to-Air Missiles (SAMs), cyber attacks against Integrated Air Defence System (IADS), operations against televisionand Radio, as well as cyber attacks against computer based systems like power generation, oil refining systems, etc..

In the past, the USA caused a massive explosion in a new trans-Siberian oil pipeline running from the Urengoi gas fields in Siberia across Kazakhstan, Russia and Eastern Europe. This was done by causing its pumping station to overrev by computer malware, in cooperation with some outraged Canadians, who had supplied the software for the pumps.[6] The US navy (USN) established its cyber cell in 1999 and mandated the unit to become like the 'Top Gun' amongst fliers.In December 1998, the DoD / USAF established the Joint Task Force on Computer Network Defense (JTF – CND). It was headed by a major general and was to work with the US Army, Navy and Marine Corps. This was an immediate result of a massive malware attack on US military nets. It took the US 14 months to clean up this virus, termed Solar Sunrise, from its systems, numbering more than 500. It also revealed the enormity of possible damage to improperly secure networks.

Cyber War exercises named "Eligible Receiver' and "Solar Sunrise' were conducted in which federal agencies / Services, Israeli analysts and

6. Thomas C. Reed, *At the Abyss: An Insider's History of the Cold War*, (New York: Ballantine Books, 2004), p. 268

Californian teens attacked defence networks. Weaknesses and vulnerabilities were identified and preventive steps initiated. In September 2001, the Pentagon created Joint Task Force- Computer Network Operations- (JTF-CNO). The Computer Network Operations (CNO) replacing CND implied a need to attack in order to defend proactively. From defence to offence was a major change in strategy.

Cyber defence now meant the following: secure all exclusive networks in which individuals cannot plug in pen drives, CDs and external devices. Ensure defence in depth by installing firewalls. When under a cyber attack, the system should degrade gradually rather than have a catastrophic collapse. When the attack is over, the system should recover.The system should be self-diagnosing and have built in healing capability.[7] Data bases must employ stealth methodologies where, for example, modulating chip technology enables then to hide, morph and masquerade as effectively as any attacking agent. Also, cyber security relates to place and time. Unlike conventional war, in which offense is the best defence, in cyber war defense becomes primary because of nature of attacker. There are no hostile cyber bases which preemptive cyber bombing can destroy. The recovery from an attack can be fast. The success of the cyber-attack itself cannot be known with certainty.

In 2001 USAF placed Cyber Wing under Space Command. By May 2002 it had a manning of 340 personnel. Later Cyber Command was made a sub unit of US Strategic command. Cyber command looks after all military networks numbering 15000 in all the Services. It has replaced the earlier Joint Task Force – Computer Network Operating and the Joint Functional Component Command for Network Warfare JFCC – NW. It has under it the Cyber Commands of US Army, Navy, Marine Corps and Air Force. It is responsible for both defense and offense in Cyber War. In addition it provides technical and electronic warfare support to Department of Homeland Security (DHS). If and when asked by DHS it will provide additional assistance. DHS looks after civil and private networks. NSA

7. "USAF Strategy – Past, Present & Future 2018 – 2023" AF Research Institute, 2008 Gen John A. Shaud Ph. D Air University, January 2009.pp. 45 – 50.

looks after all the government networks apart from the ones in military domain. USCYBERCOM has been tasked to develop:

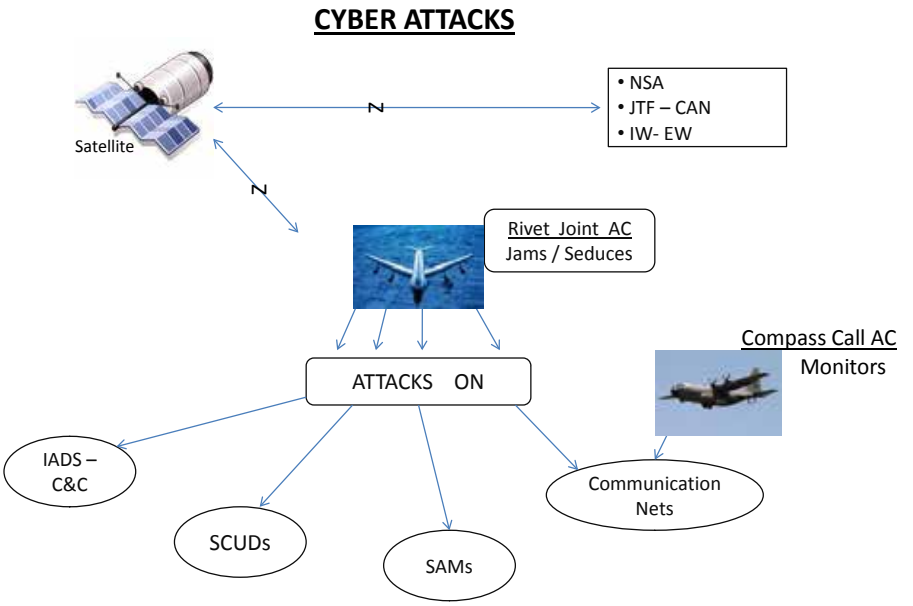
- Methods to assess operational impact of intrusions.
- Identify proper response.
- Co-ordinate action with appropriate organizations.
- Prepare Response Plans.
- Execute plans through Service components.

US CYBERCOM will also issue Operational Alert conditions depending upon detected threats. The conditions are normal, A, B, C& D. Over and above these arrangements the Cyber organizations seeksupport and rely on private security specialists companies to deal with cyber threat.The earlier concept of cyber security was purely defensive. However, as the cyber process and attacks kept increasing, especially post 9/11 and after the incident of US spy plane P3C Orion's collision with a Chinese interceptor in which the Chinese pilot died, USA selected a new strategy for cyber security. This was a result of sustained persistent attacks on their networks. In 2006 a new term was coined- Advanced Persistent Threat (APT). Such a long duration attack could be a result of attacks by another state or by organised criminal gangs who steal data in order to sell it. The method adopted was in three phases. Initially the attacks were to recce, launch and infect the targeted network. After identifying vulnerabilities, the target was infected. In the next phase, control of the network/machine was taken over, attacks were updated, data was discovered and exfiltration persisted till it was stopped by the host. The attack would also be spread to other machines.Against APT, it was felt that a purely defensive strategy was reactive and insufficient to ward off theb cyber threat. There was a need to monitor the content and context of outgoing data, and links visited. The web gateways needed to be secured. There was a need to monitor incoming data as well as e-mails and data across the web. For proper cyber security, there was a need to actively patrol the cyber network for detecting potential trouble. Since the original Internet IPv 4 has many security weaknesses, it was necessary to develop a new Internet. The new Internet is called IPv

6.To reduce vulnerabilities, the external access point of the GIG (Global Information Grid) was reduced from 120 to only 16. All 8,50,000 users were integrated into one common GIG/AFNET which was provided embedded security. Thus, the defence was made stronger and now the attacker was forced to work harder to find vulnerabilities.

Rivet Joint is an specialist transport aircraft (KC-135) which is used for CNA. It is in contact with agencies like the NSA, JTF – CNA, and IW–EW centres via satellite links to receive and send back the latest information for CNA planning. It injects cyber weapons, as appropriate into the hostile IADS network, the Scud type missiles command and control centre and the communication networks. Another special aircraft called Compass Call (C-130 modified) monitors the effectiveness of communication networks.

Fig 1: Cyber Attacks



In the USA, the 24th AF looks after cyber operations.Manned by 14,000

airmen, the 24th AF has three major wings and an operations centre under it. These are:

- **67th Network Warfare Wing:** It looks after information operations. Its 8,000 strong manpower is located at some 100 locations worldwide. There are 35 squadrons and these deal in the operations of television, radio, telephone exchange and networks including mobile phones and networks.
- **688th Information Operation Wing:** This deals in cyber space Research and Development (R&D) and is manned by 1,000 staff members who are a mix of the military and civil.
- **689th Combat Communication Wing:** Its mission is to train, deploy and deliver expeditionary and specialised communication; and air traffic and landing systems for relief and combat operations.

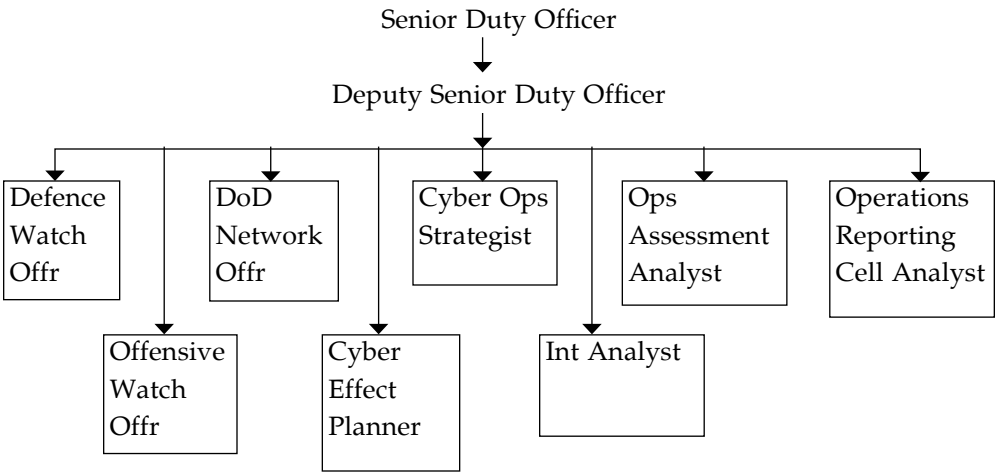
USAF leadership has adopted a novel approach, to overcome bureaucratic procedures and fast track cyber development. For the Iraq War, 1991, they had created a Combined Air Operation Centre (CAOC) in Saudi Arabia on an ad hoc basis. The CAOC turned out to be a phenomenal enabler for successful prosecution of the war. But this ad hoc arrangement hindered proper establishment of CAOCs in other commands subsequently. Therefore, in 1995, the USAF declared CAOC to be a weapon system essential for war fighting. They named it the Falconer Weapon System. This allowed proper authorisation, financial allocation, manpower, training, standardisation, regular testing, etc.. A similar approach has been adopted for CYBERCOM. The USAF has established six cyber weapon systems. These are:

- Air Force Cyber Space Defence Weapon System.
- Cyber Space Defence Analysis Weapon System.
- Cyber Space Vulnerability Assessment Hunter Weapon System.
- Air Force Intranet Control Weapon System.
- Air Force Cyber Security and Control System.
- Cyber Command and Control Mission System Weapon System.

A first look at the above list may indicate duplication of work. This is correct, but is needed. To illustrate, all SAMs are meant to shoot enemy

aircraft, yet we have the short range SAMs, medium range SAMs and long range SAMs. Similarly, all transport aircraft are meant to move men and cargo from one place to another. Yet we have the C-17Globemaster, C-130 Hercules and yet smaller transporters. Therefore, the arrangement in cyber space is similar. Without going into the tasks of each weapon system, the set up of only one weapon system is illustrated below (Fig 2) to show the multifaceted nature of work in cyber space.

Fig 2: Cyber Command and Control Mission System



China's rapid rise has compelled the USA to enter into a strategic partnership with India. We must capitalise on this opportunity. In the cyber field, the US has agreed to provide courses in cyber security, critical infrastructure protection, financial terrorism and anti-terrorism intelligence. In addition, the US will help in creating specialised training institutions to develop skills, capacity building and technology development. All the concerned departments under the Ministry of Home Affairs (MHA), nearly 15 of them, send their personnel to the USA for training. The training modules include cyber security, cyber forensics, technical surveillance counter-measures, control systems security programme for end to end networks and system security for servers, routers, switches, transmission and all

XXX Information and Communication Technology (ICT) hubs and facilities including encryption/ decryption.But as we do this collaboration with the USA, we must not forget the shenanigan of the NSA, and take all the necessary steps. As per a reputed report:

- The NSA has deliberately introduced flaws in many encryption systems on the Internet in order to weaken them for the NSA's intelligence collection.
- Software companies and Internet Service Providers (ISP) were asked to insert secret vulnerabilities and backdoors into apparently secure systems.
- The NSA has set lower encryption standards for the industry, which it is able to break into.
- "Five Eyes "i.e. the USA, UK, Australia, New-Zealand and Canada tap into fibre optic cables to steal data.

The cyber world is connected by communication nets. So a brief look at communication security is in order when we talk of cyber security. Edward Snowden's wikileaks about the US NSA eavesdropping on friends and foes alike have once again brought communication security into prominence. We need to remember that this has been an ongoing programme carried out by the USA—earlier, under the nomenclature of Project "Echelon" since the 1980s, and now the same, though greatly upgraded, it is called Prism and Muscular.The current Standard Operating Procedures (SOPs) for telecom security are good enough provided these are followed religiously. In addition, at the strategic level, we need to again review communications with the following in mind: separate the one way communication from two-ways communication. A large portion under one-way can be unclassified like weather information, welfare information, etc.,Separate real time information from the rest. For example, warning of an air attack/missile attack/rocket attack may not need classification because it is of no interest the moment the

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event is over. Plan encryption level commensurate with security classification. Cryptography must be developed indigenously. In this we should be wary of encryptions standards set by the USA (NSA) internationally—Edward Snowden has revealed the, NSAs blatant interference.Plan to integrate radio, TV, Twitter,Facebook, and U-tube for passage of warning or relevant information. These means could be either primary or as back-up, depending upon various activities.Plan to use commercial satellite channels – Indian as well as international. Also plan to use transponders in all bands like C, S, Ka, and Ku. It will be very difficult to jam all the above.We have 250 plus languages and dialects. Use them as natural encrypted communication, at least as back-up.Fibre optic cables are mostly underground/underwater. Their physical security becomes more important in the light of the revelations about Western countries tapping in to the fiber optic cables of companies like Google, Yahoo, etc. for data. Unmanned Aerial Vehicle (UAV) communication links and the aeronautical telecom networks are all open and use the Internet. The Internet IPv4 has many security holes due to its evolution in the civil field. UAV frequencies are open, unregulated and manufacturer- specific. There is no mechanism for authentication and encryption. Sequence number spoofing, and authentication attacks are possible. Denial of Service, (DoS) TCP 'SYN' attacks during 3-way handshakes are also a reality. ICMP/ CMP attacks are unreachable.To remedy the problems listed above, the following are suggested. Use AES encryption algorithm on unsecured links. Use authentication for UAV control. Use mobile Internet Protocol (IP) technology for UAV address. Use the "make before break" strategy for UAV handover. Specify that UAV software upgrade to be done only on the ground.Consider firewalls, shielding, SNMP version-3, and anti-jamming circuits for UAVs. Reduce electro-magnetic interference caused largely by own IED jammers unintentionally jamming our UAVs.

CONCLUSION

While the cyber threat is real and serious, it is certainly not like another dimension of war as in the land, on the sea, and in the air. It is more akin to EW which complements and enhances conventional attacks. Cyber attacks can create corridors through which other attackers can attack more effectively. It may also lead to physical damage. But the consequences of cyber-attacks can be controlled before too much or catastrophic damage is done. Cyber espionage, on other hand, can cause far more loss by enhancing attacker's capability, provided they have the means and the will to exploit the stolen data. Therefore, a proper balance of defence and offence is essential for cyber security.

BALLISTIC MISSILE DEFENCE IN ASIA

ARJUN SUBRAMANIAN P.

The one continent where ballistic missiles have proliferated tremendously is Asia. There are some important factors that have been, and are contributing to such a trend in the region. Firstly, the demand for the ballistic missile as it is a relatively cheap weapon to develop and deploy compared to a large and sophisticated air force. Also, this weapon is hard to counter even by the most technologically advanced countries. Secondly, the existing geo-political make-up where confrontation is between states that are at opposite poles of the power spectrum, where the weaker side finds such weapon most suitable to counter a technologically superior adversary. Thirdly, the ready availability of the technology, assistance and availability of vital components through both legal and clandestine means. These factors have enabled states like North Korea with a less than meagre technology base to adapt the technology, of course, with tremendous assistance, to develop ballistic missile capability. With the rapid proliferation of these weapons in Asia, countries facing this threat have been looking for ways to counter it. Most have turned to some level of Ballistic Missile Defence (BMD). This paper attempts to study the ballistic missile threat and the missile defence efforts of US and its allies in East Asia, China, Israel and India.

MISSILE DEFENCE IN EAST ASIA: US AND ALLIES

As far as ballistic missile defence in contemporary Asia is concerned, the

Arjun Subramanian P. is a Research Associate at the Centre for Air Power Studies, New Delhi.

XXX United States is the largest player in this arena. The US has deployed and continues to deploy missile defence components as part of its larger missile defence architecture. These deployments are linked to the larger geo-political game plan of the United States in the Asian continent linking key players in the region like Russia, China, Iran, Japan and North and South Korea. At present, the U.S maintains that its BMD effort in the region is not directed at China and that it is meant to intercept only North Korean missiles. However, the deployed components are capable of tracking and intercepting Chinese ballistic missiles as well. The United States and Japan in 2013 announced plans to deploy a long range X-band radar in the Kyoto Prefecture, Southern Japan to track and counter any missile launched from North Korea. Japan already has one such high frequency radar in northern Japan. In addition to this, Japan fields 17 Patriot Advanced Capability-3 (PAC-3) units, protecting key locations in Tokyo and throughout the Archipelago and has plans to deploy more of these systems.[1] Apart from the land based components, the United States Navy (USN) and Japanese Maritime Self-Defence Force (JMSDF) have deployed Aegis equipped ships to defend against ballistic missiles. These Aegis systems have S-band primary radar and X-band engagement radars and are capable of intercepting ballistic missiles of all ranges with unitary and separating warheads in the terminal phase, except Intercontinental Ballistic Missilesss (ICBMs). They can provide terminal defence against Short Range Ballistic Missiles (SRBMs) and mid-course defence against Medium Range Ballistic Missiles (MRBMs) and Inter-mediatory Range Ballistic Missiles (IRBMs). In addition to these sensors the United States has deployed space-based tracking and surveillance systems which consist of two satellites (technology demonstrators) that scan for targets in the infra-red and visible regions of the spectrum. These space based sensors can

1. Ian E. Rinehart, Steven A. Hildreth, Susan V. Lawrence, "Ballistic Missile Defence in the Asia-Pacific Region: Cooperation and Opposition", *Congressional Research Service (R43116)*, June 24, 2013, p. 9, See http://www.fas.org/sgp/crs/nuke/R43116.pdf

detect missiles in their boost phase where they emit high intensity short-wave Infra-Red (IR) radiations and can transmit information to other sensors and fire control systems.

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The US has established cooperation in ballistic missile defence with the allies in East Asia. This cooperation is underpinned by the ballistic missile threat faced by the allies in the region. China has a huge inventory of ballistic missiles with varying ranges capable of reaching Taiwan, Japan and South Korea. The configuration of sensors, Command and Control (C2) centres, and missile interceptors in East Asia—in other words, the regional "architecture" of the US BMD—has slowly evolved in concert with contributions from treaty allies. Cooperation on regional BMD offers the potential for greater effectiveness and cost efficiency, but it is proceeding at different rates with different countries. The US-Australia partnership on early warning satellites dates back to the early Cold War and the Defence Support Programme (DSP) that began in 1970. The United States and Japan have been cooperating on BMD programmes since the 1990s and have a mature partnership. South Korea and Australia are beginning to acquire the necessary hardware and software for a more robust BMD capability to include missile interceptors.[2]

North Korea (Democratic People's Republic of Korea – DPRK) too has developed ballistic missiles that have the range to target Japan and South Korea. In 2013, North Korea tested a nuclear weapon for the third time and in the tension that ensued, the DPRK threatened to launch nuclear armed ballistic missiles on South Korea and the United States. As a result of this threat, the US decided to deploy its Theatre High Altitude Advanced Air Defence (THAAD) system in Guam to protect its bases from missile attacks. However, the North Korean missile technology is not mature enough to attain the range sufficient to reach the continental United States or Guam despite such threats from North Korea. The ability of North Korea

2. Ibid. , p. 2.

to miniaturise its nuclear warheads to fit into its ballistic missile is also doubted. Nevertheless, the US alerted and strengthened its BMD systems in the region, as a show of support to South Korea and to deter the DPRK from any further nuclear adventurism, it sent the nuclear capable B-2 stealth bombers on patrol to this region.

The US has made BMD one of key the components of its strategic policy in the region because of the need to strengthen its alliance by showing its commitment to protect its allies, retain its strong presence and dominance in the region and protect its military bases which are within the strike range of ballistic missile of China and North Korea. Looking at the nature and characteristics of the BMD components in the region, it is evident that the deployments are not intended to alter the nuclear deterrence balance between the US and China as these system are capable of intercepting only Short Range Ballistic Missiles (SRBMs) and Medium Range Ballistic Missiles (MRBMs). However, technically speaking these sensors deployed in the region are part of the overall BMD architecture of the United States. These forward deployed sensors are networked together and are capable of providing early warning and tracking data of any ICBM launch from China and hand over the details to the Ground-based Midcourse Defence (GMD) command centre for interception.

The other key player in the region and alliance partner with the United States is South Korea. But South Korea is not interested in taking part in the US missile defence network in the region. In October 2013, South Korea's Minister of National Defence Kim Kwan-jin said "South Korea was "obviously" not going to take part in the US missile defence system and would only be pursuing its own Korean Air and Missile Defence (KAMD) system."[3] South Korea has deployed the PAC-2 system, and the defence minister clarified that the state intends to upgrade the system to the capability of PAC-3, however, it will not be integrated with the overall BMD architecture of the US. Nevertheless, it is an open secret that the US hopes for integrated missile defence systems with Japan and South Korea

3. Park Byong-su and Ha Eo-young, "Minister Says no US Missile System for South Korea", *The Hankyoreh*, http://english.hani.co.kr/arti/english_edition/e_international/607467.html , October 17, 2013.

to enhance effectiveness and reduce costs.[4]

The other ally of the US in the region, Taiwan, also has some missile defence capability but not sufficient to protect all of Taiwan and its military installations. Taiwan too has the Patriot systems, the PAC-2, which are being upgraded to Capability- 3. Taiwan has deployed long range radars to provide early warning on missile launches. A Taiwan Air Force long range radar based in Hsinchu county, northern Taiwan, detected a North Korean missile launch in December 2012 minutes earlier than radars in Japan. Looking at the number of missiles deployed across the Taiwan Strait by China and the cost considerations of establishing a nationwide BMD cover, it would be preferable for Taiwan to opt for a sufficient number of systems just to cover its air bases and other vital military installations that could protect the airstrips to enable landing of US reinforcements during a conflict.

The United States plays the key role in missile defence in the East Asian region involving allies and friends. The US plans to expand on this by establishing more sensors in the region including some in the Philippines in order to improve and expand its missile defence network, and also by networking all these system to the US National Missile Defence (NMD) to provide crucial early warning and trajectory data to prepare its Ground Based Mid-Course Defence (GMD) system to intercept the incoming missiles. The US BMD programme is also a way of reassuring and a show of strengthening its commitment for defending its allies in the region.

EXPERIMENTING WITH AVAILABLE TECHNOLOGY: CHINA

Ever since China was founded, it harboured a deep mistrust and hostility towards the United States of America: this hostility was rooted in the ideological struggle between the Communist bloc and the democratic Western bloc. Within 15 years of its foundation, the People's Republic of China (PRC) went nuclear by testing a nuclear weapon in 1964. Despite acquiring nuclear weapons, for the next couple of decades, China did

4. "S. Korea Requests Pentagon's Information on THAAD Missile Defense System: Source", *The Korea Herald*, http://www.koreaherald.com/view.php?ud=20131018000139 , 18 October 2013.

not have efficient means (ICBMs) to deliver the nuclear weapons on the continental United States and, hence, the deterrence capability against the US was lacking with China. On several instances during the Cold War, the US had planned to use nuclear weapons on China. But, ever since China deployed the DF-5 ICBMs, it attained deterrence capability against the US. However, China only deployed a limited number of DF-5s and, hence, when the US announced the Star Wars (Strategic Defence Initiative) ballistic missile defence programme, it threatened the balance of Chinese deterrence against the U.S. Even today, China has fewer deployed ICBMs, though the numbers and variants are increasing slowly. The US too is aggressively working on its missile defence programmes and has made considerable progress in this area. While this is one of the primary reasons for China to start building its own ballistic missile defence system, there are other factors too. One is the national pride in having such a capability which only few countries have. Second could be the Indian pursuit for a BMD system. And the third and the most important is the future vision for putting a functional national missile defence system in place. The major enabling factor is the technical knowhow acquired by China on radar systems and interceptors primarily through acquisition of air defence technology and systems from Russia. It is understood that building an indigenous BMD system requires quite a high level of technological maturity, particularly in building advanced and powerful radars, command and control systems and interceptors. At present the only deployed Chinese BMD capable system is the imported Russian S-300 systems which according to the Russian manufacturer, is capable of intercepting SRBMs in its terminal phase. Among the S-300 series, the S-300PMU-2 has the best chance of intercepting an SRBM missile as it employs the 48N6E2 missile, which has a warhead optimised for destroying ballistic missiles, and numerous necessary radar design optimisations.[5] Otherwise, China has not yet developed a deployable BMD system. China's original BMD programme started in 1964, but there was barely any progress, possibly due to lack of technology. At present, there are some activities in

5. Dr. Martin Andrew, "China's Anti-Ballistic Missile Test: Much Ado About Nothing", *Air Power Australia NOTAM*, *http://www.ausairpower.net/APA-NOTAM-140110-1.html*, January 14, 2010.

China in the missile defence area. In this regard, the Chinese Anti-Satellite (ASAT) weapons test conducted in 2007 is of relevance. On January 11, 2007, China conducted an ASAT test using a direct ascent weapon which was reported to consist of a rocket booster and a Kinetic Kill Vehicle (KKV). In that test, a Chinese weather satellite – the Feng Yun 1C –was destroyed, leaving huge amount of space debris. The booster is speculated to be either a modified DF-21 or a DF-31 and is designated as the SC-19. A study of this system is necessary to understand the BMD capabilities of China as the technology involved is more or less the same. However, the details available on the test are limited as the Chinese are known for not divulging enough details of their strategic weapons tests.

For both BMD and ASAT, the requirements are long range tracking radars, guidance radars and an interceptor with range sufficient enough to reach and destroy the target at the designated altitude. Before the 2007 test, two more tests were reportedly undertaken by China, but no satellites were destroyed. In July 7, 2005, a SC-19 was launched and it reached an unknown altitude; this was followed by another launch in 2006 where the interceptor is believed to have just passed near a satellite.[6] These tests are speculated to be preliminary tests of the ASAT systems to evaluate the efficiency of the rocket and the tracking and guidance radar systems. Looking at the ASAT test conducted in 2007, the interception of the satellite occurred at an altitude of 865km.[7] This shows that the interceptor has sufficient range to intercept a ballistic missile at this altitude. Looking at the apogee of ballistic missiles of various ranges, it can be said that this interceptor is capable of intercepting MRBMs and IRBMs in the descending phase. Theoretically speaking, the interceptor could intercept an ICBM at the extreme final stage of its descending phase of its mid-course flight and just before re-entry. But practically, it is quite impossible for China to achieve this at this stage as long range high frequency radar to detect and track an ICBM target and a

6. Michael R. Gordon and David S. Cloud, "U.S. Knew of China's Missile Test, but Kept Silent", *The New York Times*, *http://www.nytimes.com/2007/04/23/washington/23satellite.html?pagewanted=print&_r=1&* , April 23, 2007.
7. Brian Weeden, "Anti-Satellite Test in Space – The Case of China, Security World Foundation", p. 3, *http://swfound.org/media/115643/China_ASAT_Testing_Fact_Sheet_Aug2013.pdf* , August 29, 2013.

XXX fire control system to launch the interceptor at the appropriate time and position it at a suitable place to utilise the time window. A rough estimation would suggest that the radar should have the power to detect and track a target at least at an altitude of 2000 – 3000 km (elevation) and the high frequency would be necessary considering the low Radar Cross-Section (RCS) of a reentry vehicle owing to its shape and various possible aspect angles that might be acquired by the radar.

Even the ASAT capability of China is limited according to Desmond Ball, "Direct-ascent weapons only threaten satellites in Low Earth Orbit (LEO) that come within their range and the range of their associated ground-based radar tracking stations. Weapons launched from China are also restricted to high-inclination polar-orbiting satellites, being unable to reach those in low-inclination equatorial orbits."[8] Also, highly elliptical satellites, with perigees of a few hundred kilometres and apogees of as high as 40,000 km [such as Soviet/Russian Molniya communications satellites and US Jumpseat/Trumpet Signals Intelligence (SIGNT) satellites], are only vulnerable to direct-ascent weapons launched from China if their perigees are over northeast Asia, where they mostly have their apogees, and even then their relatively high speed at perigee would defy interception by either direct-ascent or co-orbital weapons."[9] Nevertheless, an ASAT capability doesn't translate into BMD capability as it is relatively easier to predict the trajectory of a satellite than of a ballistic missile target. Additionally, a satellite will have a large RCS unlike a ballistic missile target, making it relatively easy for the radar and homing system to acquire and track.

On January 11 2010, China conducted an anti-ballistic missile test and is reported to have successfully intercepted and destroyed a ballistic missile target. There are some speculations that the target missile was the B6 11 (CSS-X-11)

8. Desmond Ball, "Assessing China's ASAT Program", *Nautilus Institute APSNet Special Reports*, http://nautilus.org/apsnet/assessing-chinas-asat-program/#axzz2sAzikzab, June 14, 2007.
9. Ibid.

SRBM with a range of 250 km, but looking at the reported interception altitude (250 km), it appears that a different and more powerful booster might have been used. The test also reportedly involved a hit-to-kill system boosted by a modified DF-21 solid rocket motor. In 2013, another mid-course interception of a ballistic missile was successfully conducted at an unknown altitude and the target missile is also not known. When the United States, the world's leader in ballistic missile technology, is itself struggling to perfect the technology, the consecutive successful tests at the start itself is startling and combined with the Chinese secretiveness on the details of the test leads to speculation on the nature of the test, the environment under which the test was conducted and the overall qualification of the tested systems. All these factors raise doubts on the actual effectiveness of the Chinese BMD capability. These tests could best be viewed as trials on exploring their own capability and feasibility for building a ballistic missile defence system to intercept incoming MRBMs, IRBMs and possibly ICBMs. According to the Chinese Global Times, a senior colonel from the PLA Second Artillery Command College, told people.com.cn that China's ground based mid-course interception test was aimed at intercepting ICBMs.[10] For military analysts to further monitor China's progress in this direction, the PRC's focus on sensor development, both radar and optical, should be followed. Their acquisition of weapon system from foreign manufactures which has sensor components that could be possibly adopted for missile defence applications should also be looked at.

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WEST ASIAN SCENARIO AND ISRAELI BMD

Israel is a Jewish Middle Eastern state, surrounded by Islamic countries

10. Xu Tianran, "China's Anti-Missile Test successful: govt", *Global Times*, www.globaltimes.cn/content/758804.shtml , January 29, 2013.

that are hostile and are virtually at a state of constant war with it. Israel has fought several wars of various magnitudes with its neighbours and in most of the wars for its survival, it has come out spectacularly victorious as a result of its superior strategy and weaponry. But a new kind of threat has emerged for Israel which is hard to defend against and that is the acquisition and development of ballistic missiles, especially SRBMs by its adversaries in the Middle East which are Iraq, Iran, Syria, Libya, Egypt and possibly Saudi Arabia.

Syria possesses a huge arsenal of ballistic missiles; the foundation of Syria's arsenal is the Scud, of which Syria possesses three variations. Syria first received the Scud-B from North Korea in the late 1980s, and the Scud-C shortly thereafter. With assistance from North Korea and Iran, Syria established its own production line, and now assembles, maintains, and repairs its Scud B and C missiles. Capable of producing approximately 30 Scud-B/Cs per year, Syria nonetheless remains dependent on foreign assistance for advanced missile components and technologies. Syria is believed to possess several hundred Scud-Bs and Scud-Cs, but has fewer than 50 launchers for each system.[11]

Iran is progressing rapidly in developing and deploying longer range ballistic missiles that are capable of reaching Israel and it is also alleged that Iran is secretly developing nuclear weapons. It has grown increasingly self-sufficient in the production of SRBMs, but it still probably relies on others for some key components. Iran is developing and producing MRBM capabilities with ranges estimated up to about 2,000 km, sufficient to strike targets throughout the Middle East. U.S. intelligence assessments state such missiles are inherently capable of carrying a nuclear warhead. Although the number of Iran's MRBMs is thought to be relatively small by official U.S. estimates, it is expected to continue to build more capable MRBMs. Iran has also constructed an underground network of bunkers and underground silo-like missile launch facilities, and is seeking improved air defences presumably to enhance the survivability of the MRBMs against

11. "Syria Missile", *Nuclear Threat Initiative*, http://www.nti.org/country-profiles/syria/delivery-systems/ , September 2013.

preemptive attack.[12] In early February 2014, Iran successfully tested a long range ballistic missile which, according to Brig Gen Hosseni Dehqan, have radar evading capabilities.[13]

Israel is a state which had already suffered ballistic missile strikes during the Gulf War when Iraq launched several Scud missile attacks on its territory. During the Gulf War, 39 out of the 42 Al Husseins (Iraqi-modified Scud B SRBM) fired by Iraq landed in Israel. Altogether, Iraq fired a total of 92 Al Husseins at Israel and Saudi Arabia.[14] However, these missiles were conventionally armed and resulted in some casualties for Israel. However the psychological impact of the attack was quite high on the Israeli population. In the present times, the threat has exacerbated as Iran is suspected to be pursuing nuclear weapons capability. When it comes to defending against nuclear weapons, the gravity of the situation and the precision requirements for intercepting a ballistic missile are demanding.

Additionally, some countries surrounding Israel possess chemical and biological weapons. So what kind of response does Israel have to counter these threats? Having been a realist state till date, Israel is working to meet the threat using a wide variety of possibilities from political, military to technological means. Former Israeli Defence Minister Yitzhaq Mordechai, speaking at the Galili Centre for Strategy and National Security, described Israel's five tiered strategic defence system that is set up to deal with the threats:

> "The first is prevention of war through greater peace efforts. The second is building a reliable deterrent capability. The third component is active defense based on the Arrow missile…[T]he fourth defense component is the need to carry out a pre-emptive attack on the missiles and the ballistic missile launchers inside their bases"…

12. Steven A. Hildreth, "Iran's Ballistic Missile and Space Launch Programs", *US Congressional Research Service*, https://www.fas.org/sgp/crs/nuke/R42849.pdf , December 6, 2012.
13. Parisa Hafezi, "Iran Test-Fires Long-Range Missile: Minister", *Reuters*, http://www.reuters.com/article/2014/02/10/us-iran-missile-idUSBREA191R220140210 , 10 February 2014.
14. Guermantes E. Lailari, "HOMA: ISRAEL'S NATIONAL MISSILE DEFENSE STRATEGY", Air Command and Staff College, Air University Maxwell AFB (Alabama: United States), April 2001, p 39.

> He qualified these remarks by adding that this component is limited by political considerations. The fifth tier, the defence minister said, "is passive defence, which consists of the procurement of protective kits and the construction of bomb shelters."[15]

At the operational and technological levels, Israel has adopted a multi-tier defence method. Firstly, the pre-launch phase destruction of the missiles and missile launch vehicle. There are two stages in this one, destroying the missile production, storage and fixed launch sites, and the other, destroying the launcher after a missile has been fired. The challenge at both these levels is that it requires persistent and wide area surveillance to detect, locate and pass on the co-ordinates to the strike platform in real-time. The other requirement is to have a strike platform to perform this within the permitted strike window as missile launch units are mobile. The first level of defence is more complicated as the enemy might use camouflaging and other counter-measures to evade the surveillance and reconnaissance platforms. The second level, i.e. to destroy the launcher after a missile is fired is relatively easy compared to the first level as the high intensity short wave IR radiation released by the missile exhaust can be easily picked by the optical sensors of the satellites and other air platforms and a coordinated hunt and strike can by performed. Or, in case the detecting platform and the strike platform are same (a single aircraft), the possibility of a kill is very high.

Secondly, to shoot the ballistic missiles in its boost phase, where it is easiest to kill due to its slow speed, large RCS and high IR signature. Moreover, the kill can be performed over enemy territory from where the missile is launched. It again requires persistent surveillance, particularly with optical sensors, and a strike platform on station to fire the interceptor. In this case, a blast fragment warhead is sufficient to perform the kill. Thirdly, to deploy the theatre ballistic missile defence system for terminal defence of ballistic missiles. Israel has three current systems deployed to destroy ballistic missiles: the Hawk, Patriot Advanced Capability Level

15. Ibid., p. 16.

3 (Patriot PAC-3), and the Arrow Weapon System (AWS).[16] The Arrow Weapon System currently forms the key part of the Israeli defence against the Scud variants and the other long range variants being deployed by its adversaries.

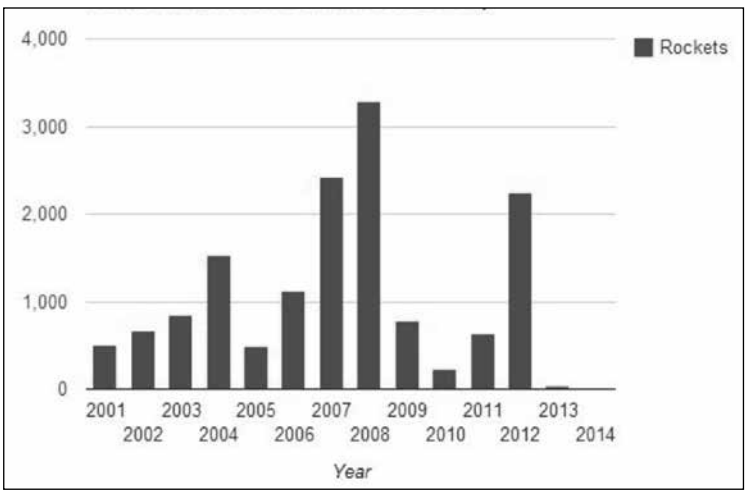
The Arrow Missile Defence System

The Arrow missile defence systems are the components which are designed to create a national missile defence shield for Israel. The system is being built specifically to suit Israeli operational requirements. Since, Israel is a geographically small country; the Theatre Missile Defence (TMD) - based architecture has been adopted to build its NMD. The Arrow system is a two tier system where the Arrow 2 programme is for the lower tier defence and the Arrow 3 for the upper tier defence. The Arrow project is a collaboration of Boeing and Israel Aircraft Industry (IAI) to produce the missile interceptors that accompany the required radars, satellites, and command and control systems.[17] The Arrow-2 is centred on the Israeli made Green Pine Long Range Tracking Radar and the Citron Tree Battle Management Centre (BMC). Unlike the US Patriot system, the Israeli interceptor uses the radio proximity fused fragmentation warhead method to intercept targets. The Arrow 2 interceptor is designed for endo-atmospheric interception of ballistic missile targets. The two-stage missile is equipped with solid propellant booster and sustainer motors. The missile uses an initial burn to carry out a vertical hot launch from the container and a secondary burn to sustain the missile's trajectory towards the target at a maximum speed of Mach 9, or 2.5km/s. The intercept altitudes are from a minimum of 10km up to a maximum of 50km. The maximum intercept range is approximately 90km.[18] The Arrow 3 is meant for exo-atmospheric interception and it completed its first flight in February 2013 and the second flight in January 2014.[19]

16. Ibid., p. 19.
17. "Israel's Arrow Theatre Missile Defence", *Defense Industry Daily*, *http://www.defenseindustrydaily.com/israel-successfully-tests-arrow-theater-missile-defense-01571/* , February 22, 2011.
18. "Arrow 2 Theatre Ballistic Missile Defence System, Israel", http://www.army-technology.com/projects/arrow2/, accessed on 4 February 2014.
19. Ibid.

Apart from these missile threats, Israel suffers from frequent rocket and mortar attacks from several militant groups like Hamas and Hezbollah. Ever since Israel withdrew from the Gaza Strip in 2005, terrorists have fired more than 8,000 rockets into Israel. Over 3.5 million Israelis are currently living under threat of rocket attacks. More than half a million Israelis have less than 60 seconds to find shelter after a rocket is launched from Gaza into Israel. Most rockets launched from Gaza into Israel are capable of reaching Israel's biggest southern cities.[20] Fig 1 gives an estimate of the rocket attacks on Israel from Gaza alone,

Fig 1: Rocket Attacks on Israel From the Gaza Strip



Source: http://www.idfblog.com/facts-figures/rocket-attacks-toward-israel/

Israel's response to the rocket attacks has been to launch punitive air and ground offensives to deter its adversaries. However, this policy of Israel has not deterred the militant organisations from repeating the attacks. In the face of these attacks, Israel has developed the Iron Dome system. Firing of rockets by Hezbollah during the Second Lebanon War in 2006 led to the development of the Iron Dome. Nearly 4,000 rockets, mostly of the short-range Katyusha type, were fired on Haifa and other northern

20. "Rocket Attacks on Israel from Gaza", *Israel Defense Force*, http://www.idfblog.com/facts-figures/rocket-attacks-toward-israel/ , accessed on February 6 , 2014.

regions of Israel.[21]The Iron Dome is an effective, truck-towed mobile air defence system developed by Rafael Advanced Defence Systems. The system has been developed to counter very short range rockets and artillery shells (155mm) with ranges up to 70km. It can be operated in all weather conditions, including fog, dust storm, low clouds and rain. The Iron Dome is composed of three fundamental elements: detection and tracking radar, Battle Management and Weapon Control (BMC) system and a Missile Firing Unit (MFU).[22] In March 2012, the Iron Dome succeeded in its first real battle test, when it intercepted more than 60 rockets fired by Hamas. Since 2010, the US has budgeted more than $800 million for Iron Dome batteries. In August 2013, Israel stationed additional Iron Dome batteries in the north of the country as well as in the Haifa and Tel Aviv region to protect against possible missile threats out of Syria.[23]

To bridge the Iron Dome (short range interceptor) with the Arrow System, Israel has developed the David's Sling system which is capable of intercepting targets with ranges between 63-185 miles. "David's Sling was developed as a flexible, multipurpose weapon capable of engaging aircraft, cruise missiles, and ballistic guided missiles. David's Sling was designed to target incoming missiles during their terminal phase unlike the Iron Dome which intercepts missiles at their highest trajectory. Its primary role will be to intercept medium- and long –range ballistic and guided rockets, such as the Iranian Fajr-5 and BM-25 as well as the Syrian M-600 and Yakhont supersonic cruise missile."[24]

One major issue with rocket based interceptors is the high cost factor as the cost of a single interceptor is several times higher than the utterly cheap rockets and mortars being fired from across the border. One answer to this is to switch over to Directed Energy Weapon (DEW) based interceptors. Towards this, Israel has made a major leap in missile defence technology by integrating laser guns to its systems. However, the planned system,

21. See http://www.army-technology.com/projects/irondomeairdefencemi/ , accessed on February 6, 2014.
22. Ibid.
23. http://www.jewishvirtuallibrary.org/jsource/talking/88_missiledefense.html , accessed on 6 February 2014.
24. Ibid.

XXX at present, is intended to intercept and destroy incoming rockets and mortars, but it will, in a way, act as a concept demonstrator to prove the efficacy of using laser guns to intercept ballistic missiles. Lasers have certain advantages over rocket powered interceptors. Firstly, they are cheaper. "The U.S. Navy unveiled a ship-borne laser weapon whose shots cost about $1 a piece, which radically changes the cost calculation of offense and defence."[25]Secondly, the entire process of guiding the rocket powered missile interceptor is removed in a laser based system as the system just needs to adjust the angle of the laser transmitter. Thirdly, the magazine is unlimited, as the laser gun can keeps firing as long as the power supply remains. All these advantages make laser guns a promising weapon for missile defence. However, there are, at present, challenges in using lasers for long range and high altitude interception of ballistic missiles because of the difficulty in building a solid state laser gun that could generate sufficient laser power to have that reach. And also the scattering of the laser and reduction in intensity when it has to reach very high altitude is another challenge as enough power needs to be delivered on the target for the required time to effect a kill.

Being a state that strongly believes in realism and force, Israel is leaving no stone unturned to help itself in its continuing fight for survival as a state. The future shift in this area will be largely towards advanced and new technology and strong collaboration and partnership with countries like the United States and India.

ATTEMPTING A BIG LEAP: INDIAN BMD

The trigger for the Indian BMD programme was the Pakistani acquisition of M-11 missiles from China.[26] The Indian BMD programme was initiated

25. Kelsey D. Atherton, "Laser to Join Israel's Missile Defense System", *Popular Science*, January 22, 2014, See http://www.popsci.com/article/technology/lasers-join-israels-missile-defense-system
26. Pravin Sawhney, "Games DRDO Plays," *Force*, April 4, 2011.

in 1995[27] and the first successful test firing was conducted in 2006. There has been a total of eight test firings so far and only the fourth test was aborted as the target missile deviated from its path, while the other seven tests were successful.[28] This is a remarkable achievement considering that only five countries have demonstrated successful interception of ballistic missiles. The last test in November 2012 was more significant and difficult from previous tests as two targets were engaged simultaneously, though one was a simulation.

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The Nuclear Threat Scenario

In no other part of the world are there three nuclear armed countries sharing land borders with each other.[29] More importantly, India is the only nation to share land borders with two nuclear armed states with which it has serious territorial disputes and other security issues, and one among them (Pakistan) has a first use policy. Pakistan has never declared a No-First-Use (NFU) intent, and on several occasions, has threatened to use nuclear weapons (first strike) against India or Indian forces in its territory. Pakistan is using its nuclear weapons capability as a hedge to continue its policy of bleeding India with a thousand cuts through proxy war. In other words, Pakistan is using its nuclear capability as a safeguard against any punitive conventional offensive from India in retaliation to any of its state-sponsored terrorist activities.

China which has a stated policy of NFU has very recently created a great deal of ambiguity and concern by not mentioning it in its recent defence White Paper.[30] However, Col Yang Yujun, a spokesman for China's Ministry

27. Ibid.
28. http://idp.justthe80.com/missiles/ballistic-missile-defense-bmd-system , accessed on
29. Pakistan Shares a Land Link with China Through the Occupied Part of Kashmir Controlled by it.
30. James M. Acton, "Debating China's No-First-Use Commitment: James Acton Responds," *Proliferation Analysis*, *Carnegie Endowment*, April 22, 2013. Available at: http://carnegieendowment.org/2013/04/22/debating-china-s-no-first-use-commitment-jamesacton-responds/g0lx

of Defence, clarified on this question unambiguously during a briefing on April 25, 2013, when he stated: "China repeatedly reaffirms that it has always pursued no-first-use nuclear weapons policy, upholds its nuclear strategy of self-defence, and never takes part in any form of nuclear arms race with any country. The policy has never been changed. The concern about changes of China's nuclear policy is unnecessary."[31] Yet there is a possibility that China is rethinking on its NFU policy largely due to the improving US conventional precision strike capability and BMD efforts. Nevertheless, ambiguity, particularly in nuclear weapons employment doctrine, is more dangerous than a clearly stated first use policy.

Pakistan and China have an advanced ballistic missile programme which was developed primarily for delivery of nuclear weapons. China has the longest and the most advanced ballistic missile programme in Asia after Russia. A recent report of the US National Air and Space Intelligence Centre (NASIC) says that "China has the most active and diverse ballistic missile development programme in the world." It further states, "It (China) is developing and testing offensive missiles, forming additional missile units, qualitatively upgrading missile systems and developing methods to counter ballistic missile defences. The Chinese ballistic missile force is expanding in both size and types of missiles."[32] China has developed and deployed various versions of ballistic missiles like the short range DF- 11, DF-15 and DF-18. Very recently, China inducted another SRBMs–theDF-12, which reportedly is a copied version of the Russian Iskander missile. In the MRBM category, China has three to four versions of the DF-21s among which the DF- 21C has a very high Circular Error Probable (CE P) of around 30m which indicates that it would be largely used for conventional strikes. The DF-21D is an anti-ship version designed to target large ships like aircraft carriers. The rest of the DF-21 versions could be for nuclear strikes.[33] Pakistan, a recipient of covert nuclear and missile technology transfer and

31. Hui Zhang, "China's No-First-Policy Promotes Disarmament," The *Diplomat*, May 22, 2013.
32. "Ballistic & Cruise Missile Threat," National Air and Space Intelligence Center, 2013. Available at: http://www.fas.org/programs/ssp/nukes/nuclearweapons/NASIC 2013_050813.pdf
33. The CEP of other DF-21 versions other than DF-21C and DF-21 D are comparatively large and hence could be used for nuclear delivery, while the more accurate ones will be suitable for conventional precision attacks.

assistance from China also has advanced variants of ballistic missiles in its inventory.[34] Its nuclear doctrine and strategy is *wholly and solely India centric,* designed to address perceived conventional and nuclear threats from India. Consequently, the nature and function of the Pakistani nuclear deterrent (including delivery mechanisms), as also its rules of employment and deployment, are all tailored to meet this one requirement.[35] Added to this there is also the danger of the Pakistani nuclear weapons falling into the hands of Islamic radicals either within the state institution or outside. The attack on Pakistan Naval Station (PNS) Mehran is an example where the terrorist attack is believed to have taken place with insider help. It is also believed that the base is a storage site for the Pakistani nuclear arsenal.[36] Moreover, if Pakistan deploys its tactical battlefield nuclear missile Nasr, which by its nature should have a decentralised command and control, then the possibility of radical elements gaining access to the tactical nuclear weapons is high, leading to possible unauthorised use.

Indian interest in acquiring BMD capability started in the mid-Nineties when Pakistan acquired advanced Chinese SRBMs. Initially, India had considered all options, from developing an indigenous BMD system to acquiring the systems from other countries. For indigenous development, the Akash low-to-medium range Surface-to-air-Missile system was considered as the base line system. The plan was to deploy a system capable of shooting down ballistic missiles with ranges up to 2,000 km. For this requirement, the range of the Rajendra phased array radar which was just 50 km had to be increased to 500–600 km. Foreign systems including the Russian S-300s and the Israeli Arrow systems were also considered initially. India began negotiations with the Russians for acquiring the S-300 SAM technology, which also has the capability to engage SRBMs.[37] "An Indian delegation, led by the minister of defence, reportedly observed the testing of the S-300V system in August 1995 at Russia's Kapustin Yar firing range. In addition,

34. Duncan Lennox, *Jane's Strategic Weapons Systems* (Surrey, UK, 2011), issue 55.
35. Manpreet Sethi, *Nuclear Strategy: India's March Towards Credible Deterrence* (New Delhi: Knowledge World, 2009), p. 45 (pp 43-86)
36. Kelsey Davenport, "Militants Attack Pakistani Base," *Arms Control Today*, September 2012.
37. Gregory Koblentz, Viewpoint: Theatre Missile Defence and South Asia: A Volatile Mix, *The Nonproliferation Revie,*Spring-Summer 1997, p. 55.

Russia displayed the S-300PMU-1 at India's second international military equipment exhibition in March 1996. At the end of 1996, Oleg Sidorenko, deputy director general of Rosvoroozhenie, Russia's arms export agency, stated: "Negotiations are more than half way through and we expect to sell the systems to India very soon."[38]After much consideration India chose the Arrow technology over the Russian system probably because the Israeli system is a dedicated Anti Theatre Ballistic Missile (ATBM) system unlike the S-300 which is primarily an anti-aircraft system. In the Nineties, there was the problem of U.S approval as it was a joint programme between the US and Israel. However, India acquired the technology of the Israeli Green pine Long Range Tracking Radar (LRTR) and adopted the technology for the Indian BMD system along with a Thales built fire control and battle management radar. The purely indigenous components in the Indian system are the two interceptors: one endo-atmospheric and other, exo-atmospheric.

A total of eight tests was conducted, out of which seven were successful. Only the fourth test was a failure because of the target missile malfunction. The interceptors are based on the Prithvi and Akash air defence system with a radio-proximity fuse. In all the tests, the target missile was a Prithvi missile with its trajectory modified to simulate the trajectory of a 600 km range missile. Defence Research and Development Organisation (DRDO) scientists claim that the system is ready for deployment and they propose Delhi and Mumbai, the national capital and the commercial capital respectively, to be the first sites to be protected. However, the deployment decision would be political. Is the system actually ready for deployment? A technical analysis of the tests shows that the system will not be effective at the present stage and is not ready for deployment. All the tests have been conducted under highly scripted and controlled conditions. Despite all these shortcomings, it is still a major achievement considering the fact that the programme was started from scratch, without even the technological base to develop such a complex weapon system. Though technology was bought from foreign sources, it gives the Indian scientists the knowhow and experience in building and integrating the components of the system.

38. Ibid.

With this as the foundation, India should focus on attaining the capability to develop core technologies that will lay the foundation for better innovation and mastering of better system design and development. The knowhow created out of indigenous Research and Development (R&D) would help in developing future systems and also in improving the existing system.

Reactions from Across the Border

Pakistan has reacted by going for an increase in its nuclear arsenal citing the Indian BMD project. The chances of Pakistan responding by initiating the development of a BMD system of its own is out of the question, in view of its far inferior technology base, and the fact that no country except China would be ready to provide it with the technology required to build such systems. The question of Pakistan procuring the system off the shelf is not practical given the state of its economy, as the cost of the system would be enormous. Besides that, China is the only country that could provide Pakistan with such a system, most probably its re-engineered version of the S-300: the HQ-9 system which is claimed to have the capability to shoot down SRBMs. Across the northern border there seems to be not much reaction from the Chinese government on the Indian efforts to acquire BMD capability. However, according to Dr. Lora Saalman, a significant number of Chinese articles in academic and strategic journals since 2005 have focussed on India's missile defence developments, independently from their traditional competitor, the United States. There has been a shift in the Chinese academic community's interest from the technical developments in India's missile defence programme to its strategic implications in regional politics.[39]

The Indian capability in BMD is not mature enough and at best can be described as baby steps. India has a long way to go in acquiring true BMD capability. It would be beneficial for India to go for deeper collaboration in this area with Israel and the United States. The Indian government should invest more money in R&D to indigenously develop the capability to design

39. "Chinese Views on India's Ballistic Missile Defense.", http://www.csc.iitm.ac.in/?q=node/313, April 25, 2013.

and manufacture core components required for the system. It is to be noted that the present BMD project is funded by the Indian Air Force.

CONCLUSION

The effectiveness of ballistic missile defence systems is a subject of a major debate internationally. Offence has an upper hand at present as slight modifications and additions to the ballistic missiles, which are relatively easy to achieve, can defeat any defence system. This has made defence against ballistic missile much more complicated. Most of the missile defence tests the world over were conducted under heavily managed conditions which is evident from the various independent technical analyses of the declared test details. However, though there are doubts, the progress of technology in this area has been quite impressive, given the complex nature of the technology requirements. In Asia, Israel, in collaboration with the United States, is leading in this area, followed by Japan, China and India. The encouraging factor is that these countries believe in missile defence technology to protect against ballistic missile attacks. One primary reason for this is that other options do not guarantee complete protection against ballistic missile attacks. Missile defence too does not offer complete protection at present. However, as technology evolves, it can be expected to become more effective in the future. One other factor to be noted is that, in Asia, none of the countries that are pursuing BMD technology, except China, perceives a threat of ICBM strikes. Japan, South Korea, Taiwan, India and Israel are facing threats from SRBMs, MRBMs and IRBMs and their BMD pursuits are expected to be restricted to defend against these threats. Another reality is thats the United States will continue to have its presence with heavy involvement in the missile defence efforts in collaboration with allies and friends in the Asian continent.

UNITED STATES AND PAKISTAN: NUCLEAR SECURITY ISSUES

DR. STUTI BANERJEE

INTRODUCTION

Political instability, economic volatility, the rise of the right-wing political leadership and an increase in the number of terrorist organisations operating from Pakistan and gaining the support of the Pakistani establishment have nations concerned about the safety of the nuclear assets within Pakistan. Adding to the problem is the well documented proliferation network that has supplied nuclear technology to North Korea, Libya and Iran with Pakistan at its centre. These actions have increased the problems and challenges that nuclear proliferation poses. The proliferation of nuclear weapons technology, associated technology and/or nuclear material to any state or non-state actor, not recognised to receive such technology or material is one of the most serious dangers to the international security environment. This contributes to not just regional instability and global proliferation, but also increases the risk of violent non-state groups' obtaining a nuclear weapon, with a number of violent extremist groups opposed to India operating from Pakistan. These issues have raised concerns among the international community about the security of Pakistani nuclear weapons.

For the United States, Pakistan poses a serious dilemma. Pakistan has been an 'ally' of the Unites States during the Cold War and continues to

Dr. **Stuti Banerjee** is a Research Fellow at the Indian Council of World Affairs, New Delhi. Views expressed are personal.

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be essential for its fight against the Taliban and other extremist forces in Afghanistan. The United States is also aware of the belligerent nature of relations between Pakistan and India. Given its own changing threat perceptions, the United States is reevaluating its approach to the region in general and to India in particular.[1] Ties between India and America have flourished over the past decade. The United States is currently promoting its 'rebalancing' policy for Asia in which India plays an important role as an emerging international player with a stable economy and a thriving political system. India's success with democracy is also viewed by the United States as critical to its interests and helps promote stability in the region.

This paper aims to examine the safety and security concerns arising from Pakistan's nuclear programme. It is an attempt to understand the apprehensions of the United States vis a vis Pakistan's nuclear assets. The United States is apprehensive about the safety and security of nuclear weapons and nuclear installations in Pakistan. A nuclear Pakistan is not in the best interest of the United States as Pakistan is politically fragile and economically unstable. Moreover, its relationship with its nuclear neighbour is acrimonious and it has unfriendly relations with the other neighbouring countries. The paper concludes by addressing some of the related concerns of India.

PAKISTAN'S NUCLEAR PROGRAMME: SAFETY & SECURITY CONCERNS

Bruce Riedel, a career South Asia expert and co-chair of the Obama Administration's Afghanistan-Pakistan strategy review, captured global anxieties about Pakistan in a concise sentence, "It has more terrorists per square mile than any place else on earth, and it has a nuclear weapons

1. Bhumitra Chakma, "South Asia's Nuclear Deterrence and the USA", in Bhumitra Chakma, ed., *The Politics of Nuclear Weapons in South Asia* (Surrey: Ashgate, 2011), p.113.

programme that is growing faster than any place else on earth."According to Graham Allison, Harvard professor, "When you map (weapons of mass destruction) and terrorism, all roads intersect in Pakistan." Consciously or unconsciously, they have stated the fears of the international community. [2]

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Pakistan is also one of two nuclear weapons-possessing states—the other being North Korea—for which there is a non-negligible risk of state failure. [3]What might happen if the current Pakistani government is taken over by radicalised political forces sympathetic to the Taliban? Such a government, it is feared, might share Pakistan's nuclear weapons materials and knowhow with others, including terrorist organisations. Then there is the possibility that a more radical government might engage in a war again with India. Could Pakistan prevail against India's superior conventional forces without threatening to resort to nuclear arms? If not, what, if anything, might persuade Pakistan to stand its nuclear forces down? There are no good answers to these questions and even fewer near or mid-term fixes against such contingencies. This, in turn, encourages a kind of policy fatalism with regard to Pakistan. [4]

Pakistan's nuclear programme started with acquisition of civilian nuclear technology and manpower training in the 1960s, under the United States sponsored "Atoms for Peace" programme (1953). President Dwight D. Eisenhower presented this nuclear initiative as a way to change the way nuclear energy was viewed by the world. The aim of the programme was to direct nuclear research away from military use and towards more "peaceful and civilian use" to improve the socio-economic condition of humankind. In August 1954, the U.S. Atomic Energy Act was revised to allow nuclear

2. Christopher Clary, *Thinking about Pakistan's Nuclear Security in Peacetime, Crisis and War* (New Delhi,, IDSA, 2010), p.3.
3. Ibid.
4. Henry D Sokolski, "Pakistan's Nuclear Woes", in Henry D. Sokolski, ed., *Pakistan's Nuclear Future: Worries beyond War* (Carlisle; Strategic Studies Institution, 2008), p.1.

technology and material exports if the recipient country committed not to use these items to develop weapons. These exports were intended to maintain U.S. global leadership, reduce Soviet influence, and assure continued access to foreign uranium and thorium supplies.[5]

Pakistan's civilian nuclear programme began with its participation in the Atoms for Peace initiative. It allowed Pakistan to develop scientific collaborations with laboratories in the West. The defeat in the 1965 War with India deeply changed the nuclear perception in Pakistan. The Kashmir issue, instead of being resolved, remained a major irritant in India-Pakistan relations. India's military was far stronger and the United States despite being Pakistan's ally did not provide it assistance. These considerations along with the negotiations for the Nuclear Non-Proliferation Treaty (NPT) and China's nuclear activities after its first nuclear test in 1964 led Prime Minister Zulfiqar Ali Bhutto to the conclusion that India too would develop nuclear weapons to deter China. Extrapolating the impact of an Indian nuclear weapons capability on Pakistan, he stated in an interview to the *Manchester Guardian* in 1965, that if India built the bomb, "We will eat grass, even go hungry, but we will get one of our own. We have no other choice".[6] Pakistan concentrated its focus on the development of nuclear weapons after its defeat in the 1971 War with India and the nuclear test conducted by India in 1974.

Pakistan embarked on a clandestine nuclear weapons as its threat perception vis-a-vis Indian increased. As a result, in April 1979, President Jimmy Carter imposed unilateral military and economic sanctions against Pakistan after discovering that Pakistan was secretly constructing a facility to enrich uranium. The sanctions were imposed under the Symington Amendment to the Foreign Assistance Act of 1961, which called for ceasing economic assistance to non-nuclear weapon countries that imported uranium-enrichment technology. The sanctions, included denial of fuel and heavy water for an International Atomic Energy Agency (IAEA)

5. Peter R. Lavoy, "The Enduring Effects of Atoms for Peace", accessed on October 10,2013, URL- http://www.armscontrol.org/act/2003_12/Lavoy
6. Feroz Hassan Khan, *Eating Grass: The Making of the Pakistani Bomb*, (Stanford; Stanford University Press, 2012), p. 59

safeguarded nuclear power reactor at Karachi. Due to Pakistan's support to American war efforts in Afghanistan against the USSR, the sanctions were not effectively implemented and they were lifted by December 1979. However, the sanctions left a profound impact on the minds of Pakistanis who viewed these actions as "unfair and a betrayal of trust". This view was further deepened as the US hardened its position on nuclear weapons after the Soviet withdrawal from Afghanistan and the end of the Cold War. In 1990, President George W. Bush terminated assistance to Pakistan. Nonetheless, despite sanctions and export control regimes, Pakistan was able to develop its nuclear weapons programme.

According to the Stockholm International Peace Research Institute (SIPRI) *Yearbook 2013,* Pakistan has an inventory of 100-120 nuclear warheads and is increasing the size and sophistication of its nuclear arsenals. It is developing and deploying new types of nuclear-capable ballistic and cruise missiles such as the Hatf-2 and Shaheen missile and increasing its military fissile material production capabilities. In 2012, Pakistan conducted a series of missile trials, testing most of its nuclear-capable missiles that are currently in operational service or still under development. Pakistan is also expanding its main plutonium-production complex at Khushab, Punjab.[7] From the Pakistani perspective, it has invested heavily in nuclear weapons due to security threats from India, which, according to the same source, has a total inventory of 90-100 nuclear warheads. Claiming that India's arsenal is a threat, Pakistan has justified its own nuclear arsenal in that helps it to gain parity in conventional defence capabilities. Pakistan's nuclear arsenal is "India-specific" in the words of Pakistani officials. Pakistan seeks to leverage its nuclear weapons to limit India's ability to apply strategic pressure on Pakistan, be it direct or indirect. There are few indications in the public domain Pakistan has sized or oriented its arsenal to deal with a possible Iranian nuclear threat, nor does it appear to be overly focussed of the possibility of a United States counter-proliferation strike. Pakistan's nuclear planners are concerned primarily with inflicting unacceptable

7. SIPRI "SIPRI Yearbook 2013: Armament, Disarmament and International Security", Accessed on 30 Sept. 2013, URL- http://www.sipri.org/yearbook/2013/06

punishment against India.[8] According to a report published by the Landau Network-Centro Volta (LNCV) (Italy), in case deterrence fails, the nuclear weapons will be used if

- India attacks Pakistan and conquers a large part of its territory (space threshold)
- India destroys a large part either of its land or air force (military threshold)
- India proceeds to the economic strangling of Pakistan (economic threshold)[9]
- India pushes Pakistan into political destabilisation or creates a large scale internal subversion in Pakistan (domestic threshold)[10]

This justification for parity resonates not just within the armed forces of Pakistan but also the political class, as well as the man on the street. Most Pakistanis believe that nuclear weapons are necessary for the country and a guarantor of national sovereignty.[11] Thus, nuclear weapons in Pakistan are as much to deter an external threat as to appease the domestic constituents.

Chronic political instability in Pakistan and Islamabad's military efforts against the Taliban and Al-Qaeda have raised concerns about the security of Pakistan's nuclear stockpiles. Some observers fear that Pakistan's strategic nuclear assets could be appropriated by terrorists or used by rogue elements in the Pakistani government and military to build a 'dirty bomb'. A 'dirty bomb,' also known as a radiological weapon or a Radiological Dispersal Device (RDD), is a conventional explosive packaged with radioactive materials. Such a device does not require much expertise to build.

Since 2007, Taliban-linked groups have successfully attacked tightly guarded government and military targets in the country. Militants carried

8. Clary, n. 2, p. 6.
9. Economic strangling would include a naval blockade and the stopping of the waters of the Indus river.
10. Political destabilisation and internal subversion are considered possibilities that need to be managed, given the past experience.
11. References from George Perkovich, "The Non-Unitary Model And Deterrence Stability In South Asia", Accessed on September 16, 2013, URL- http://www.stimson.org/images/uploads/research-pdfs/George_Perkovich_-_The_Non_Unitary_Model_and_Deterrence_Stability_in_South_Asia.pdf

out small-scale attacks outside the Minhas (Kamra) Air Force Base in 2007, 2008, and 2009, and gained access to the site during a two-hour gunfight in August 2012. Pakistani officials have repeatedly denied claims that the base, which houses the Pakistan Aeronautical Complex, is also used to store nuclear weapons. Other incidents include an attack on the nuclear missile storage facility at Sargodha on November 01, 2007, and the August 20,, 2008 attack when Pakistani Taliban suicide bombers blew up several entry points to one of the armament complexes at the Wah cantonment, considered one of Pakistan's main nuclear weapons assembly areas. Several Pakistani nuclear facilities, including the Khushab facility and the Gadwal uranium enrichment plant are in proximity to areas under attack from the Taliban. [12] As of now, there are no reports of the attackers being able to destroy or steal any material from any of these facilities. The secrecy surrounding Pakistan's nuclear storage sites makes it very uncertain to an attacker (or an analyst) whether any given location actually contains nuclear material or technology. Pakistan has maintained that the attacks were repulsed from the outer periphery of all facilities, which is proof of Pakistan's ability to safeguards its nuclear assets. The frequency of such attacks on Pakistani strategic and nuclear installations has increased the vulnerability of its nuclear assets, and become a concern for the international community.

Additionally, there have been attempts to kidnap officials and technicians working at nuclear sites in western Pakistan. Further, most of Pakistan's nuclear weapons infrastructures, with a few exceptions, are located in the north and west of the country and the region around Islamabad and Rawalpindi at sites such as Wah, Fatehjang, Golra Sharif, Kahuta, Sihala, Isa Khel Charma, Tarwanah, and Taxila. These are close to or even within areas dominated by the Pakistani Taliban militants and Al-Qaida.

Aware of the increasing doubts on its ability to protect its nuclear assets, Islamabad has tried to assure the international community that it is in control of the weapons and weapons facilities. It established the National

12. Chidanand Rajghatta, "Jihadis Thrice Attacked Pakistan Nuclear Sites", *The Times of India,* August 11, 2009, accessed on September 30, 2013, URL- http://articles.timesofindia.indiatimes.com/2009-08-11/pakistan/28160861_1_shaun-gregory-pakistan-nuclear-sites-nuclear-weapons

XXX Command Authority (NCA) in 2000 to ensure the protection of nuclear weapons from accidental or unauthorised use. The NCA is composed of political and military leaders, a supporting secretariat, and specialised strategic forces. Pakistan asserts that it has established a "robust set of measures to assure the security of its nuclear weapons." As far as the physical security of Pakistan's nuclear weapons and infrastructure is concerned, it adheres to the United State's practices, procedures, technologies, which comprise: (a) physical security; (b) personnel reliability programmes; (c) technical and procedural safeguards; and (d) deception and secrecy.[13] It has a multi-layered system of security over the nuclear installations. Pakistan operates a layered concept of concentric tiers of armed forces personnel to guard the nuclear weapons facilities, the use of physical barriers and intrusion detectors to secure the physical separation of warhead cores from their detonation components, and the storage of the components in protected underground sites. The Pakistan Army is in charge of the section of the personnel who protect these sites. The composition of the Special Plans Division (SPD) which controls use of nuclear devices is also military.[14] The SPD has four primary directorates as well as a security division. The security division is composed of 9,000-10,000 personnel reporting to a serving two-star general. By far, the largest component of SPD, the security division, provides internal and external security for nuclear-related sites. The remaining directorates are: the Operations and Planning Directorate; the C4I2SR (Computerised Command, Control, Communications, Information, Intelligence, and Surveillance) Directorate; the Strategic Weapons Development Directorate, which interfaces with and provides budgetary oversight for the nuclear weapons research and development organisations; and the Arms Control and Disarmament Affairs Directorate, which provides

13. Shaun Gregory, "The Security of Nuclear Weapons in Pakistan", Pakistan Security Research Unit (PSRU) Brief Number 22, Accessed on September 30, 2013, URL-https://www.dur.ac.uk/resources/psru/briefings/archive/Brief_22finalised.pdf
14. Ibid.

military advice on arms control and non-proliferation negotiations.[15] During peace-time, the SPD is responsible for protecting Pakistan's strategic programmes from insider and outsider threats, most importantly from theft or loss of nuclear material and against infiltration of the strategic organisations by ill-intentioned actors. It does so through a combination of secrecy, physical security, counter-intelligence teams, personnel screening programmes, procedural controls, and technical controls.[16]

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The fear of non-state actors gaining access to nuclear material becomes a serious threat if one takes into consideration the possibility of collusion. It is no secret that many within the Pakistan military, intelligence agencies and civilian establishment are anti-West, especially anti-America, and there exists similarly a section that is pro-Islamists. Thus, many feel that the connection between Pakistan and the risk of nuclear technology being sold in the black market is a reality and should be taken into account when discussing the safety of nuclear materials in Pakistan. Analysts have focussed primarily on the broader radicalisation in Pakistani society. Pakistani physicist Pervez Hoodbhoy argues, "Pakistan's 'urban Taliban,' rather than illiterate tribal fighters, pose a nuclear risk. There are fears that there are a few scientists and engineers in the Pakistani nuclear establishment who might be sympathetic to certain extreme religious views." Also, the Pakistan Army has typically recruited heavily in northern Punjab and the Northwest Frontier Province (NWFP), including some areas that suffer from fierce insurgencies today. Military personnel sympathetic to insurgents cannot be discounted.[17] There could be other reasons for of the terrorist organisations to launch attacks on nuclear sites, apart from acquiring nuclear material. They are symbols of national pride and attacking them could be extract specific concessions from the government. It should be pointed out that most terrorist organisations

15. Clary, n. 2, pp. 12-13.
16. Ibid., p.13.
17. Ibid., p. 22.

active in Pakistan have not yet been successful in their aim.

Fresh tensions for Pakistan could come from the likelihood of Iran developing nuclear weapons. As stated earlier, Pakistan's nuclear capabilities are not yet focussed on Iran. While Iran has time and again claimed that its nuclear research is for peaceful use, if it does decide to declare itself a nuclear weapons state, then Pakistan is looking at the prospect of two nuclear neighbours and the possibility of a nuclear crisis in the Middle East. Iran's nuclear ambitions have led to a war of words with Israel and statements by other countries of the region expressing concern. In response, the governments of Gulf states like Saudi Arabia have responded that they too would seek a nuclear capability, thereby adding to the failure of the global non-proliferation regime.

While international concern has been largely about Pakistan's military programme, the risks are not limited to it. The civilian nuclear infrastructure faces similar threats, thought till date, there have been no reports of attacks by any terrorist organisation on the civilian nuclear facilities. Pakistan's civil nuclear assets include three nuclear power plants that are operating in Karachi and Chasma (the Karachi Nuclear Power Plant, KANUPP, and the Chasma Nuclear Power Plant, CHASNUPP-1 and CHASNUPP-2 respectively). All three plants operate under International Atomic Energy Agency (IAEA) safeguards. Unlike its military facilities, Pakistan civilian nuclear power plants are known and need more security from potential attackers. The Pakistan Nuclear Regulatory Authority (PNRA), established in 2001, regulates all aspects of civilian nuclear energy which include licences for imports and exports, to create necessary legislations and regulations, and to ensure the physical protection of nuclear installation and nuclear material, including waste.[18]

Pakistan will be rapidly expanding its civilian nuclear power infrastructure in the coming years. An increase in the number of nuclear power plants would also need an increase in staff to not just oversee licensing and plant siting but also to supervise safe day-to-day operation of the plants. The need

18. Pakistan Nuclear Regulatory Authority, "Pakistan Nuclear Regulatory Authority Vision", accessed on September 30, 2013, URL- http://www.pnra.org/

to hire and train a large work force of regulators, scientists, and station staff and support personnel, all with adequate knowledge of how to respond to emergencies, is not possible over a short period of time. The consequences of having inadequately trained staff would be significant.

Nuclear plant operation, with relatively inexperienced staff might increase the chance of an accident. While nuclear power plants are built with a relatively large margin for safety, an inexperienced staff could quickly overcome this margin, especially if the nuclear capacity expansion plans gets into high gear and new nuclear units are commissioned at relatively high rates which outpace the rate of new operator training and maturation.[19] All this at present is being done without any change in the oversight of nuclear power plants already operating. Such vulnerabilities might lead to safety related or security threats. With respect to Pakistan, it is important to also note that safety related issues might cause severe social and economic implications on their own, and precipitate further national security related actions by the government or attacks by terrorists trying to capitalise on the general unrest created by a safety event.

One of the problems with the expansion plan that Pakistan has envisaged for itself is the large amounts of spent fuel that would be generated as a result. Nuclear waste management is an integral part of any nuclear expansion plan. The large amount of spent fuel in the nuclear power plants of Pakistan could become a target of terrorist and non-state actors, who would like to cause harm to the Pakistani state or other states. Apart from spent fuel, other radioactive substances such as cobalt irradiation sources and neutron sources could be used by saboteurs with technical education for the productions of Radioactive Dispersion Devices (RDDs).[20] Each power plant has to keep a stock of fresh fuel to be loaded into reactors. Each reactor is loaded with fresh fuel at a different time so as to prevent significant loss to the supply grid. Each reactor also has a supply of fresh fuel available at the plant at any given point of time. Scenarios of terrorist

19. Braun Chaim, "Security Issues Related to Pakistan's Future Nuclear Power Program", in Henry D. Sokolski (edited) *Pakistan's Nuclear Future: Worries Beyond War* (Pennsylvania; Strategic Studies Institute, 2008), pp. 299-305.
20. Ibid., p. 320.

groups attempting to take over a nuclear power plant for purposes ranging from political attention to diverting nuclear material to causing harm to the plant itself cannot be ruled out. If the terrorists are able to inflict damage to even one unit of the power plant, it would be effectively lost. This is a risk that has to be kept in mind given the politically unstable environment of Pakistan.

RESPONSES FROM THE UNITED STATES

For the United States, Pakistan's nuclear capabilities present at least four challenges:

- There is a small but real possibility of the next India-Pakistan crisis escalating to the nuclear level.
- Pakistan may decide, as a matter of state policy, to extend a nuclear umbrella (or engage in nuclear sharing) with one or more Middle East (West Asia) States, especially if Iran acquires a nuclear weapon.
- There is a hard-to-quantify risk of nuclear theft. Pakistan has a home-grown personnel reliability programme, but even this could be circumvented in a determined conspiracy.
- There is some small chance that should Pakistan unravel, its nuclear assets will be seized by remnant elements of the army for political, strategic, or personal purposes."[21]

While the possibility has been debated for a number of years, Pakistan has not collapsed as a State. Thus, it is necessary to work with the other facts that are currently available to India and the United States.

The United States is aware of the sensitive nature of the issue when she is discussing nuclear weapons with Pakistan. Nuclear weapons for the United States are weapon of deterrence, however, for Pakistan they are linked to the question of its sovereignty and pride, while being weapons of destruction. The United States has generally expressed confidence in the Pakistani government's ability to secure its nuclear arsenal. This was noted

21. Stephen Cohen, "The US Pakistan Strategic Relationship and Nuclear Safety/Security", accessed on June 11, 2013, URL-http://www.brookings.edu/research/testimony/2008/06/12-pakistan-cohen.

by President Obama when he addressed this issue in an April 29, 2009, press conference, stating, "I'm confident that we can make sure that Pakistan's nuclear arsenal is secure, primarily, initially, because the Pakistani Army, I think, recognizes the hazards of those weapons falling into the wrong hands. We've got strong military-to-military consultation and cooperation."[22] Similar sentiments were echoed by Department of State spokesperson Mark Toner when he stated on November 9, 2011, that the United States "continue(s) to have confidence in the government of Pakistan that they both understand the threat to their nuclear arsenal, the varied threats to their nuclear arsenal, that they're taking appropriate steps to safeguard them."[23] The United States intelligence community has also articulated similar sentiments.

If Pakistan is keeping its nuclear weapons safe, then why is there such a concern for their safety? It is because the United States recognises that there are vulnerabilities in Pakistan's security apparatus, as discussed earlier. Also the United States' knowledge of Pakistan's arsenal is limited; further reliable information on the operational status of the nuclear arsenal and capabilities, as it is not party to the NPT, is difficult to determine and authenticate.

The attacks on Pakistan's nuclear facilities brought the matter to the forefront. Pakistani nuclear technology faces threats from outsiders attempting to penetrate security and seize sensitive nuclear materials or technology or insiders that seek to steal such items. As stated earlier, various terrorist groups have shown their intent to target secure installations, including nuclear-related facilities and personnel. Many of these complexes are primarily conventional weapons stations, thus, it is impossible to discern whether they have been targeted because of their conventional role or because of their possible nuclear one. Nonetheless, in either situation, it is a disturbing trend because it shows the determination as well as the ability of the terrorists to elude security in high security installations to achieve

22. The White House, "News Conference By The President", accessed on September 30, 2013, URL- http://www.whitehouse.gov/the-press-office/news-conference-president-4292009
23. Department of State, "State Department Daily Press Briefing", accessed on September 30, 2013, URL- http://translations.state.gov/st/english/texttrans/2011/11/20111109164446su0.8302663.html#axzz2gMMGlWZE

XXX their targets

While the threat from terrorist organisations is pertinent, it is the collapse of the Pakistani government that is viewed as the most likely scenario against which the United States has contingency plans. During former Secretary of State Condoleezza Rice's confirmation hearing in January 2005, in response to a question from Senator John Kerry about what would happen to Pakistan's nuclear weapons in the event of a radical Islamic coup in Islamabad, Secretary Rice answered, "(W)e have noted this problem, and we are prepared to try to deal with it." The issue of the United States' contingency plans to take over Pakistani strategic assets was raised again in the press following Benazir Bhutto's assassination.[24]The United States has since then denied its intention or desire to take control of Pakistan's nuclear weapons.

The United States has repeatedly offered to help Pakistan secure its nuclear weapons and keep them safe. This assistance complies with the provisions of the NPT and is within the limits of its domestic laws. It includes best practices and technical proficiency applied by the United States, to protect its nuclear weapons from unauthorised and accident use, physical security of facilities and reliability checks of personnel. According to officials from the United States the programmes have improved security. The United States government has also reportedly offered assistance to secure or destroy radioactive materials that could be used to make a radioactive dispersal device, and to ship highly enriched uranium used in the Pakistani civilian nuclear sector out of the country.[25] Pakistan's response to these proposals is as yet unclear. Pakistan is sensitive to the assertion that any assistance from the United States might restrict Pakistan's freedom of action to use its assets during an extreme crisis. It is worth noting that,

24. Paul K. Kerr and Mary Beth Nikitin, "Pakistan's Nuclear Weapons: Proliferation and Security Issues", Congressional Research Service Report, March 19, 2013 (Washington DC: Congressional Research Service, 2013), p.19.
25. Ibid., p.14.

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according to some observers, spent fuel from Pakistan's Karachi and Chasma nuclear power plants could be vulnerable to theft or attack. However, Pakistani officials have expressed confidence in the security of its facilities and have said that Islamabad has no plans to transport spent fuel from either reactor.[26] There is a trust deficit in the bilateral relationship which has complicated efforts in this area. Most Pakistanis believe that their facilities are vulnerable not to the Taliban or Al Qaeda forces but they suspect the United States of the same. The precedent of a foreign military attacking nuclear installations has been established; in 2007, Israel attacked what it viewed to be a nuclear installation in Syria. The attacks on Iraqi and Iranian nuclear installations sites are also well known.

Proliferation is another facet of nuclear security. The proliferation network as espoused by Pakistani scientist Dr. A. Q Khan brought forward the threat of terrorist organisations obtaining nuclear material or expertise related to nuclear weapons from Pakistan. The network was initially used to clandestinely obtain nuclear technology for Pakistan. Thereafter, it was used to supply nuclear technology, design and enriched uranium for profit to Libya, North Korea and Iran. While the current status of this network is unclear, the United States' intelligence and other agencies are of the opinion that the network has been not operational. Nonetheless, most analysts have come to the conclusion that Pakistan as a state cannot be trusted. The United States Department of Energy and Department of Homeland Security have provided Pakistan with assistance to improve its export control processes.

Apart from the concerns about Pakistan's military nuclear programme, its civil nuclear programme is also being closely monitored by the international community. It should be noted here that Pakistan has been operating its nuclear plants, civilian and military, research and reprocessing units and uranium enrichment plants since 1972 without any incidents. There have

26. Ibid., p.21.

been no known sources of diversion of material from any of these facilities. The IAEA also does not have any record of any incident to have occurred of diversion from any of the plants which are under safeguard obligations. However, the proliferation record that Pakistan has in dispersing nuclear technology mean that future diversions are viewed as possible.

In the civil nuclear domain, Pakistan has been critical of the India-US civil nuclear agreement. It has demanded a similar deal from the United States, which has so far been denied. Pakistan has also sought negotiations for the same with France and UK, meeting with similar results. To mitigate these setbacks it has increased its civil nuclear cooperation with China, which as a member of the Nuclear Suppliers Group (NSG), has argued that the current agreement for cooperation with Pakistan predates its becoming a member of the NSG.[27] Nonetheless, it has been cautioned against future cooperation. As non- signatory to the NPT, Pakistan wants India and Pakistan to be treated as equals. Pakistan's demands for equal treatment with India are based on the fact that all its commercial nuclear power plants, unlike India's, have always been under IAEA safeguards. Pakistan further claims that she has put the 'Khan Affair" behind, conducted adequate investigation of the affair, punished Dr. Khan and his collaborators, strengthened its institutional control over its entire nuclear complex and coordinated its export controls policies with the NSG as well as the United Nations (UN) Resolution 1540 committee[28]. Since 2008, Pakistan has been demanding criteria based exemption in the NSG rules, which would allow it to develop nuclear cooperation with the countries of the NSG. This is different from the country based exception that has been made for India, which benefits only India.

Internationally, there is limited support to grant Pakistan an NSG exemption as enjoyed by India. The United States Congress is also not in

27. Carl Paddock, *India US Nuclear Deal: Prospects and Implications* (New Delhi: Epitome Books, 2009), pp. 140-141.
28. On April 28, 2004, the UNSC unanimously adopted Resolution 1540 (2004) which affirms that the proliferation of nuclear, chemical and biological weapons and their means of delivery constitutes a threat to international peace and security. The resolution obliges States, inter alia, to refrain from supporting by any means non-state actors from developing, acquiring, manufacturing, possessing, transporting, transferring or using nuclear, chemical or biological weapons and their delivery systems.

favour of such a deal. In addition, Pakistan has a poor proliferation record and its economy inspires no confidence that a sustainable and profitable nuclear market will develop. The huge political and financial risks involved would deter major suppliers from building nuclear projects in Pakistan, particularly amid persistent domestic terrorism.

CONCLUSION

While the safety and security of nuclear weapons and material is not the sole basis of the relationship between the United States and Pakistan, they comprise a major area of concern. The two countries have a long standing partnership but it would seem that the relationship is being reviewed and revised by both. For Pakistan, the United States would work with it when needed and thereafter put pressure through economic and military assistance. The view in Pakistan is that as the United States withdraws from Afghanistan, like in 1989, Pakistan would once again have to face the consequences. The apprehension within Pakistan after the Abbottabad raid is that the United States could in future conduct similar 'unilateral military action' to target its nuclear assets. On the other hand, the United States has not taken kindly to the rise in anti-America feelings and the radicalisation of Pakistani society. Questions have been raised within the Congress about continuing with the various aid and assistance programmes if the government is unable to curb such feelings. Pakistan's support to terrorism and terrorist organisations is another reason for the Congress now scrutinising assistance to Pakistan.

For the United States, South Asia and the Asia-Pacific region have gained importance. The United States has been promoting its 're-balancing' strategy in the region and has emphasised on its relations with India. The United States is investing in a long-term strategic partnership with India to support its ability to serve as a regional economic anchor and provider of security in the broader Indian Ocean region.[29] The United States is well aware of the relations between Pakistan and China. Given the nature of

29. Department of Defence, "Sustaining US Global Leadership: Priorities for 21st Century Defence", accessed on October 17, 2013, URL-http://www.defense.gov/news/defense_strategic_guidance.pdf, p.2.

animosity between India and Pakistan, the United States is apprehensive at the possibility of the 'next war' escalating to a nuclear confrontation.

For the United States, the security threat from a nuclear Pakistan is largely in the domain of terrorist organisations using nuclear technology and/or material against the United States or its allies or its interests anywhere in the world. There is no threat of the Pakistani state using nuclear weapons against the United States.

For India, the threat from a nuclear Pakistan is two-fold: Pakistan as a state is hostile to India and the militaries have fought four wars while skirmishes on the borders between the two continue unabated. The political class has time and again used rhetoric on the use of nuclear weapons against India as a means to build support. The Pakistan military has also issued veiled nuclear threat. The military is used to being the dominant force in the country and it has invoked the population to view it as an essential pillar of the country. Therefore any statement issued or supported by the military in Pakistan needs to scrutinised. Two crises, the Kargil confrontation in 1999 and the 2001-02 Indo-Pakistani military standoff, ensured that the United States employed all diplomatic means to end a possible escalation. Although official documents are unavailable that can shed light on the Pakistani assessment of the nuclear implications of the operation, it is reasonable to infer that the 'Kargil planners' must have given careful thought to New Delhi's reaction and the nuclear risk that it carried.[30] Nonetheless, it can be said that Pakistan's willingness to provoke India has shown a growth with its expansion in its nuclear acquisitions.

The other threat that emanates from Pakistan is in the form of terrorism. There is a number of terrorist organisations that are openly operating in Pakistan who are hostile to India. Some such organisations have State support, with evidence to prove their links with the Inter-Service Intelligence (ISI), Pakistan's premier intelligence agency. These organisations have carried out acts of terror against India on numerous occasions. India has time and again provided Pakistan with evidence about the involvement of individuals and organisations in acts of terror in India, but operating

30. Bhumitra, n.1., p. 116 & pp. 134-135.

from Pakistan. For example, New Delhi has given Islamabad a dossier with evidence to prove that the terrorists who masterminded the Mumbai attacks (2008) are residing in Pakistan. India has repeatedly called on Pakistan to take action against Hafiz Saeed, the man blamed for masterminding the Mumbai attacks. None of these efforts has made much progress. In his meeting with his counterpart in New York (September 2013), Prime Ministers Manmohan Singh reiterated India's demand for justice and cooperation from Pakistan on these issues. Given Pakistan's proliferation record, the hostility of terrorist organisations towards India and the attacks on nuclear sites by them in Pakistan, it is natural for India to be concerned about the safety of nuclear devices in Pakistan. In such a situation, if any of these groups is able to obtain a nuclear device or nuclear material, with just rudimentary knowledge to assemble a dirty bomb, it would prove to be disastrous for the international community and, particularly, for India.

India, the United States and the international community would like to avoid such a situation. Washington and Islamabad have been cooperating on Pakistan's nuclear arsenal since 2001. Nuclear security for Pakistan cannot be confined to better safeguards. The United States has to encourage Pakistan through technology to secure its arsenal and limit it as well. While a nuclear deal similar to that will India has been denied to Pakistan, the United States has to engage itself with the civil nuclear programme. Pakistan has taken significant steps to ensure the security of its nuclear assets from threats both domestic and international. Political and economic instability is the source of the nuclear risk in Pakistan. The United States has to abandon its short term engagement policy towards Pakistan and ensure that its engagements with Pakistan are with a goal to achieve regional stability and allay proliferation fears.

UNDERSTANDING THE CRIMEAN EPISODE

AMARJIT SINGH

UNDERSTANDING RUSSIA:WHY RUSSIA EXPANDED IN THE 19TH CENTURY

Before anyone comments on Russia's actions in Crimea one way or the other, Russia's history must be understood, and it must be realised that Russia's reasons for expansionism in the 19th century and afterwards go back 800 years, to the day that Chengiz Khan's hordes invaded *Rus* in what was a full-scale campaign from 1237-1240. Having crossed the Volga River in 1236 and taking a year to defeat the Volga Bulgarians,Batu Khan demanded the surrender of Yuri III of Vladmir. Receiving none, Batu Khan completely annihilated the city of Ryazan, squarely defeating Yuri's sons in an ensuing battle, and followed this up by burning Kolomna and Moscow. Within days, he burned the capital of Vladimir, where Yuri III and the royal family perished in the fire.[1]

The rapacious hordes consequently ransacked 14 cities of Russia in lightning raids, merciless and successful in every attack. In 1238, they invaded Crimea, and Kiev in Ukraine was stormed in 1240, utterly devastating Kiev so badly that it would take centuries to rebuild. Having reached the Black Sea, or the "Great Sea", as the Mongols believed, the

Dr. **Amarjit Singh** is Professor of Construction and Engineering Management at the University of Hawaii at Manoa, Honolulu.

1. Boris Rybakov, *Kievan Rus' and Russian Princedoms in 12th and 13th Centuries*,(Moscow: Nauka, 1993. ISBN 5-02-009795-0).

XXX Mongols were quite content not to go further west than Eastern Europe. They now ruled from the Pacific Ocean to the Great Sea. The Mongols set up their headquarters in the city of Sarai at the Volga river, near Azov on the Black Sea, brutally extracting tribute from Russian states for three centuries, subjugating them completely, and ruling oppressively as lords and masters over every individual, further taking for marriage or pleasure any woman they desired, with beautiful women being part of their booty in every war.[2] In addition, vassal kings usually resorted to brutal oppression of their own people to collect the tribute for their Mongolian masters, thereby creating a deeper wound in the Russian psyche.[3]

RUSSIA'S LIBERATION FROM MONGOL RULE

In a fit of rage, it is said, Ivan the Great of Muscovy in 1480 trampled on a portrait of Ahmed Khan, leader of the Great Mongol Empire in Europe. Insulted and infuriated, Ahmed Khan marched his army upon Moscow, determined to teach the rebellious vassal a lesson he would never forget.[4] To his utter stupefaction, he found a large and well-equipped Russian force awaiting him at the river Ugra. Hesitant to confront an army equal to or more than theirs, both sides lost nerve and turned around – the ingloriousness of the Russians matched only by the shame of the Mongols, no longer the dreaded horde. Clearly, the Great Horde had lost its stomach for war. Nevertheless, this event still left Kazan, Astrakhan, and Crimea in the latter's grip.[5]

It was left to Ivan the Terrible to storm Kazan in 1553. With thirstful

2. It is not without reason that a large proportion of those living today in the area covered by Genghis Khan's vast empire from the Pacific Ocean to the Black Sea share Mongolian genes – and that includes many people in northern India, Pakistan, Tibet, and Afghanistan. See John Man (2004) below.
3. John Man, *Genghis Khan: Life, Death and Insurrection,* (Bantam Books, 2004).
4. Sounds like the phrase the Chinese used against India in 1962, Vietnam in 1978, and are now using against Japan.
5. Peter Hopkirk, *The Great Game,* (Kodansha International, 1992).

vengeance, his forces slaughtered the defenders of Kazan like the Mongols had done centuries earlier. Astrakhan met a similar fate two years later, and the capital of the Golden Horde, New Sarai, in the Astrakhan province, was completely destroyed in 1556, thus, forever ending the Mongol sway over Russia. Only Crimea survived because it was by then protected by the Ottomans. Thus, the Mongol yoke over *Rus* ended 300 years after it had started. Vowing to never let their land be occupied again, Russia swooped upon the remaining parts of the erstwhile Mongol Empire, starting with Siberia. Now, Russia had the empire from the Urals to the Pacific Ocean that the Mongols had. But not Crimea – and not the Black Sea – both of which would come later.[6]

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RUSSIAN EXPANSIONISM

Peter the Great, ruling from 1692 to 1725, was the monarch who transformed Russia into a great empire. Worried that the Ottomans controlled the Black Sea while the Swedes controlled the Baltic, he needed control over both to implement Russia's power as a great force. The first was action against Crimea. As part of an agreement with Poland, Kiev was ceded to Russia. But, as a result, Peter was compelled to go to war against the Crimean Khan and the Khan's overlord, the Ottoman Sultan, otherwise control of Kiev would be imperilled. His first objective was to capture Azov, at the northeastern end of the Black Sea, but his first attempt was unsuccessful. So Peter redirected his attention to building ships, being a great carpenter and strong man of great height. Within three years, he had manufactured 30 ships, mobilised them for war, and captured Azov in 1698.[7]

On the northern front, the Swedish Emperor, Charles II, an aggressive and warring king, sought to march upon Moscow in 1708, but was forced

6. Dustin Hosseini, "The Effects of the Mongol Empire on Russia, *The Journal of Russian and Asian Studies,* December 12, 2005.
7. Compared to an India that is presently making only about 45 ships in a span of six years. Even 300 years ago, Russia could build naval ships faster than India can do now.

to abandon that idea after losing the battle of Riga in modern day Latvia. However, instead of withdrawing, his ego pushed him on to invade Ukraine that had come under the influence of Russia. But,overstretched due to the distance between Sweden and Ukraine, Russia was able to deprive him of supplies and, thus, defeated his army. Thereupon, Charles II escaped and sought exile with the Ottomans, giving Russia an excuse to invade the Ottoman Empire in 1710. The effort and purpose notwithstanding, the invasion was a disaster for Peter, and he was forced to pull back to Azov[8]. Significantly, this cemented the seeds of animosity between the Ottomans and the Russians that ultimately led to the Crimean War of 1854-56.

Peter the Great was also the first to wish to capture all the remaining parts in Central Asia that belonged to the erstwhile Mongol Empire, which had come under the control of internal warlords. The Khanate city of Khiva first sought Peter's support against unruly neighbouring tribes, but Khiva at that time apparently had no idea of what happens once you let the fox enter the henhouse, or if it did, it apprehended greater peril from the unruly tribes. Peter's expansionist eyes had also turned towards the gold of India, which he knew was being taken by the shipload by the European traders and looters – supported fully by their respective emperors and kings. Peter also realised that Khiva was about halfway between Russia and India. It seemed ideal for him to slowly erode and eventually take control of the Central Asian states in an attempt to reach India.[9]

Thus, first against the Mongol barbarism, and then for a share in the wealth of India with the Western powers[10], Russia sought to protect its citizens and gain wealth. This was a sentiment absolutely no different to that of people anywhere else, including England and France. In the case of Russia, the desire for self-preservation had been sharpened by the brutal Mongolian suppression, and it would never allow that to be repeated. So, much like the USA waiting to keep wars away from its homeland by

8. Nicholas, Riasanovsky, *A History of Russia,* 6th edition, (Oxford University Press, 2000).
9. Hopkirk, n.4
10. If Britain, France, Netherlands, and Portugal could come to India from so far away and take away the riches of India, why couldn't Russia do so, as well, when it was much closer to India and had a much closer overland route to India?

maintaining frontlines in Europe and East Asia, Russia wishes to keep its Russian people secure by maintaining the borders from Siberia to the Black Sea. In this regard, the USA must not think that Russia is hypocritical or unreasonable.

THE TATARS OF CRIMEA

The Tatars are the original inhabitants of Crimea. They are originally a Turkic ethnic group. But soon after Mongolian rule started there, they converted to Islam. Through seduction, rape and inter-marriage at the hands of the Mongols, many of the descendants of Crimea carry Mongolian blood, thus, becoming a Turkic-Mongol ethnic group[11]. The Crimean Tatars emerged as an independent nation during the reign of the Crimean Khanate, born out of Mongolian rule. It was a centre of the Islamic civilisation in the 15th century, having as many as 1,600 mosques and religious schools. Ingloriously though, the Khanate's main source of income and claim to fame and notoriety was the flourish of their slave trade. They mostly raided Ukraine and Russia to capture and sell slaves to the Turks and Middle East[12, 13]. Note that Russian slaves were also held in Central Asia by Khiva and Bokhara.[14] This entire matter of capture and bondage of Russian citizens as slaves was repulsive and abhorrent to Russians. While it was a direct excuse for the Russians to invade Khiva and Bokhara, it played a role in the attacks and annexations of Crimea. No right-minded nation can logically be expected to tolerate insult to its citizens, for which remedial action and avenging the insult are justified moral actions.

After Russia defeated the Ottomans in the Russo-Turkish War of 1768-1774, and under the ensuing *Treaty of Kucuk*in 1774, Crimea ceased to be an Ottoman protectorate and became independent. But after a period of political unrest in Crimea, Russia violated the treaty, interfered in the civil war there, and annexed the Crimean Khanate in 1783, under the leadership

11. A common Russian proverb goes, "Scratch a Russian, and You will Find a Tatar," implying that the ominous force of the Tatars was upon every Russian.
12. Mikhail Kizilov. *Slave Trade in the Early Modern Crimea From the Perspective of Christian, Muslim, and Jewish Sources, (*Oxford University, 2007).
13. Raids were also made into Belarus and Poland.
14. Hopkirk, n.4.

of Queen Catherine the Great[15,16]. Under the pressure of Slavic and Cossack colonisation that followed, the Tatars began to emigrate from their homes in Crimea in increasing waves of emigration. But, there is more to the Tatar story.

SACKING OF MOSCOW BY THE TATARS, 1571

In May 1571, a 120,000-strong Crimean and Turkish Army led by the Khan of Crimea crossed the Ugra river and surprised a 6,000-man Russian Army. Unable to stop the invasion, the Russian Army retreated to Moscow, hoping they would be safe there. But the Crimean Tatars pursued them, and they looted and burned the suburbs of Moscow. The fire spread by a strong wind, and within three hours Moscow was razed.[17]

The Crimeans, apparently satisfied with their loot -- which included 150,000 Russian captives taken into slavery – returned home.[18]But, emboldened by this victory, the Crimean Khan planned a full invasion of Russia the next year. Still, he was nothing compared to his ancestors -- the violent Mongolian Hordes -- who had conquered Russia with only 35,000 soldiers. This time his120,000-strong army was roundly defeated by the Russians.

History shows that after Genghis Khan, a foreign nation can attempt to seize Moscow and win against the Russians to start with, but is always unable to press home its advantage. The Russian bear – and the Russian winters – are apparently no match for any invading army.

CRIMEAN WAR, 1854-56

In 1854, British, French, and Turkish troops landed in Crimea to battle Russia. At the centre of the dispute was the issue of who would administer the churches in the Holy Land controlled by Turkey – the Orthodox Christians or Catholic Christians? The former had the support of Russia and

15. Alan Fisher, *Russian Annexation of the Crimea: 1772-1783.* (Cambridge University Press, 2008).
16. However, Catherine failed to add either Constantinople or India to her empire, as was her dream.
17. Alan W. Fisher, *The Crimean Tatars,* (Hoover Press Publication, 1987).
18. Robert N. Bain, "Slavonic Europe: Apolitical History of Poland and Russia from 1447 to 1796."

the latter the support of France. To help the Ottomans take a decision, the French Emperor, Napoleon III, sent a French naval ship, *Charlemagne*, into the Black Sea as a show of force. The *Charlemagne* could travel at 8.5 knots and was superior to everything the Ottomans had in their naval arsenal. Quickly getting the message from the use of the *Charlemagne* as a military diplomacy tool, and understanding that a France on their side against Russia sounded more favorable than a Russia on their side against France, the Ottomans declared the churches in favour of Catholic Christians.[19] This was unacceptable to Russia, which promptly invaded Moldavia and Wallachia (modern-day Romania), and destroyed the Turkish naval fleet in the battle of Sinope in 1853.[20] Britain promptly sided with France to protect their interests in the Near East.[21]

Another reason for the Russians to invade the Ottomans was to gain control the Black Sea in its entirety, and, hence, the Mediterranean and Suez through which British ships sailed to India. If Russsia could block the Suez, they would weaken Britain's supply lines to India and increase the cost of operations for the British.

A small victory in the Battle of Alma in Crimea in the autumn of 1854, after amazing blunders by both sides, gave the Allies some confidence, given that planning and logistics had been disastrous throughout the campaign. Moving into the Battle of Balaklava, a reserved and wavering British Field Mshl Lord Raglan supposedly ordered 700 cavalrymen of a light brigade into a suicidal charge against well positioned Russian guns. Only 195 were reported to return, and 500 horses were lost – a dismal failure; the overall

19. Amarjit Singh, "The Fall of Crimea," CLAWS Website, Article No.1176, April 5, 2014.
20. "What the Original Crimean War was all About," *The Economist*, March 18, 2014.
21. Hopkirk, n.4.

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battle was a draw.[22,23]

However, while the Allies eventually captured Sevastopol a year later, with peace declared a little later in February 1856, the Allies had lost more soldiers to disease than to action. Lord Raglan himself died in the Crimea at the age of 67. A total of about 220,000 Allied soldiers died—80,000 to action, 40,000 to wounds, and 100,000 to diseases such as diarrhea and cholera. Thus, it was that Florence Nightingale gained fame in Crimea serving the ailing and injured soldiers.

Despite such a loss, the Crimean War is hailed as the beginning of modernism and reform in militaries. The sale of commissions came under scrutiny, and was subsequently abolished in Great Britain and the USA; the concept of staff colleges was promoted; medical and supply services were improved; army welfare, education, sports, recreation, and physical training came into being as a result. It was the evolution of the modern, professional army, with various regimental arms of multiple areas of expertise, the Crimean War paved the way for journalists to report from the front.[24] The Victoria Cross was established as a result of sentiments after the war.

The Crimean War was the first in which the telegraph was used, and journalists were allowed to report from the front

The peace *Treaty of Paris*, March 1856, restored areas conquered by both sides, with Sevastopol and Balaklava returned to Russia, although Russia was allowed no naval presence in the Black Sea. Moldavia and Wallachia

22. But the commander of the charge, Maj Gen James Brudenall, Earl of Cardigan, became a national hero and darling of England. He returned to England for celebrations and speeches, his picture in every shop window and biography in every noteworthy newspaper. Merchants sold a woollen jacket such as he wore, naming it the "cardigan", which remains synonymous to the sweater to this day . Lord Alfred Tennyson immortalised the charge of the light brigade in a poem by that name, the words "half a league, half a league, half a league onward" reverberating hypnotically the single-minded gallop of thundering hoofs against an entrenched enemy, passionately inspiring generations of youngsters with courage, emotional heroism, sense of duty, and patriotism.
23. Cecil Woodham Smith, *The Reason Why,* (Smithmark, 1953).
24. Ibid.

became autonomous under Ottoman rule. Russia landed so heavily in debt due to the war that it sold Alaska to the USA in 1867 to raise money. However, the treaty stood only until 1871 when Prussia defeated France. Supported then by Otto von Bismarck, the iron-fisted chancellor of Germany, Russia renounced the treaty and declared war on the Ottoman Empire in 1877, following from which Romania, Bulgaria, and Serbia were freed.[25]

CRIMEA AND THE SOVIET UNION

So profound was the impact of Stalin's policies on Crimea that it deserves a section of its own. During World War II, the Crimean Tatars sided with Nazi Germany, hoping that by so doing, they could free themselves of Soviet hegemony. A Tartar legion served in the Nazi Army, and Crimean religious and political leaders collaborated with Germany. This provided an excuse for the Soviets to accuse all Tatars of collaboration against Soviet Russia.[26,27]

However, the Crimean Tatars were aggrieved by the Soviet policies which led to widespread starvation in 1921. It was reported that more than 100,000 Crimean nationals starved to death, while tens of thousands of Tatars emigrated to Turkey or Romania. Again, Russian oppression did not stop there, and thousands more were deported and slaughtered during the collectivisation in 1928–29. These government campaigns were followed by another famine in 1931–33. No other Soviet nationality suffered the type

25. Let us not outright condemn all wars: with wars comes liberation in many cases. World War II resulted in the freedom of many colonised countries around the world, including India.
26. AurélieCampana, Sürgün: "The Crimean Tatars' Deportation and Exile," Online Encyclopedia of Mass Violence", June 16, 2008.
27. This was actually not as bad as the USA accusing all people of Japanese origin in Hawaii and mainland USA of collaborating with the Japanese enemy in World War II, thereby interning many of them in camps. But, after the Pearl Harbor attack, a Japanese pilot who crash-landed his airplane on Niihau was helped and assisted by Japanese workers. A Hawaiian home was burned by the pilot and his accomplices. In due course, there were gunshots, death of the pilot and one Japanese accomplice, and two injured Hawaiians. This triggered the internment of all Japanese-Americans. Details are given in "Niihau Incident," Wikipedia.

of hardships imposed on the Crimean Tatars; between 1917 and 1933 nearly half the Crimean Tatar population had been killed or deported.[28,29]

In 1944, after the Soviets retook Crimea from the Nazis, Stalin deported the Crimeans in the tens of thousands to other parts of Russia to work as slave labour in the Gulag as a form of collective punishment, many of them simply dying en route.[30] This echoes the relocation of native American tribes in the USA during the Trail of Tears, when an estimated 33-50 percent of Cherokee, Chickasaw, Seminoles, Choctaw, and Muscogee Creek died in transit.[31] To fill the vacancy in Crimea, Stalin brought in Russian-speaking people to Crimea, to till the land, establish businesses, and make a living. This mass movement of ethnic communities would be illegal today under United Nations resolutions, but as a *fait accompli* is grandfathered from those clauses. Today, there are 1.45 million Russians in Crimea, as opposed to 245,000 Tatars.[32] The bigger question is: what is one to do with the situation at hand today?[33]

THE IMPORTANCE OF CRIMEA TO RUSSIA

Russia subsequently restarted the build-up of its Black Sea Fleet, with its headquarters in Sevastopol. A naval fleet in the Black Sea is essential for Russia to monitor the sea lanes east and west of the Suez, through which a sizeable portion of world trade flows. Even the Nazis occupied Sevastopol in World War II, understanding the great damage a Black Sea Russian Fleet could cause its bases in the Mediterranean.

While the USA would naturally wish to deprive Russia of access to the Crimea, Russia has played hardball before. It has been at the receiving end of international opprobrium many times in the past 200 years and has

28. n.26.
29. Orest, Subtelny, *Ukraine: A History*, (University of Toronto Press, 2000).
30. The Russians dropped the charges against the Crimean Tatars in 1967, followed much later by the USA in 1988 that granted reparations for the internment of Japanese Americans.
31. Gloria Jahoda. *Trail of Tears: The Story of the American Indian Removal 1813-1855.* (ISBN 978-0-517-14677-4).
32 All Ukrainian Population Census 2001, http://2001.ukrcensus.gov.ua/eng/results/general/nationality/, accessed April 2014.
33. In 1954, Nikita Khrushchev allowed Crimea to be placed under the Ukrainian SSR in what was supposedly a gesture of goodwill; but, some report this action had to do with Khrushchev's somewhat Ukrainian roots.

developed a thick skin. Through the 19th century it played the "Great Game" with Great Britain, where Russia slowly but systematically swallowed one Central Asian nation after the other in its march to India, while diplomatically throwing dust in Great Britain's eyes time after time.

HOW RUSSIA ATEUP CENTRAL ASIA ONE BITE AT A TIME

Every sultanate and khanate in Central Asia was won by Russia using virtually the same tactic or excuse: that it was sending troops temporarily to restore order, often at the invitation of a sultan, and would stay there only as long as needed. The British Foreign Office watched Russia's creeping imperialism without being able to do anything except complain diplomatically, for all the Central Asian lands were far too distant for British troops and military intelligence. From Turkestan to Khiva to Khokand to Bokhara to Tashkent to Samarkand or Merv, Russia used the same diplomatic lines and lies over and over again. Each time, there would be an exchange of letters between the British Foreign Office, and reassurances by the Russians that this intrusion was temporary, thus appeasing the British who could do nothing militarily. Fortunately for the Russians, they knew where to stop. For Britain, there were two major red lines: Constantinople and Afghanistan. If these bastions were to fall, Britain would go to war against Russia. Short of these, Britain was content with diplomatic pressure and demarches only. The Viceroy of India, Sir John Lawrence, had advised that the Russians should be warned not to interfere in Afghanistan or any other state sharing a frontier with India. Further, it was to be made clear to St. Petersburg that "an advance towards India, beyond a certain point, would entail her in war, in all parts of the world, with England."[34] Lord Clarendon, the British foreign secretary, proposed to Prince Gorchakov, his Russian counterpart, that they should establish a permanent neutral zone between their two expanding empires. Gorchakov immediately suggested that Afghanistan would serve that purpose. And, thus, it remained for a century.

And on the western front, Queen Victoria had herself laid down the red

34. Hopkirk, n.4.

line as Constantinople: she had written to Disraeli: "[I]f the Russians reach Constantinople, the Queen would be so humiliated that she thinks she would abdicate at once."[35] Hence, any time Russia came close to Constantinople, Britain was ready to take action. However, Russian double-talk – and British acquiescence – had started way back in 1844. Tsar Nicholas had himself told the British Foreign Secretary, Lord Aberdeen, during a visit to England that "he only wanted peace, and that he had no further imperial ambitions in Asia, and none whatsoever towards India."[36]

After swallowing the Khanate of Khokand, Russian Foreign Minister Prince Gorchakov sent a sermon to his British counterpart claiming the moral imperative of civilised states to intervene in the affairs of half-savage nomads -- but that having consolidated the frontier with Khokand, Russia did not intend to advance any further. Within a few months, however, they were advancing into Tashkent.[37]

Upon the fall of Tashkent, Russia braced itself for Britain's inevitable protests. To soften Britain's language, Russia declared in St. Petersburg's newspapers that the occupation of Tashkent was temporary, and insisted that it had been undertaken to protect Tashkent from Bokharan annexation. Once the danger was to pass, Tashkent would be restored to its own Khan. The protest of Britain came as expected, claiming that Tashkent lay far beyond the frontier of Russia's southern limits that Russia had itself once laid down. But, as usual, no one was going to take these protests seriously. Without a serious military threat, words carry little weight. And Russia was not going to stick by its statements. Count Milyutin wrote in classical style:

> [I]t is unnecessary for us to beg the forgiveness of ministers of the English Crown for each advance we make. They do not hasten to confer with us when they conquer whole kingdoms and occupy foreign cities and islands. Nor do we ask them to justify what they do.

Soon, the British became accustomed to similar Russian placations. In

35. Ibid.
36. Ibid.
37. Ibid.

the summer of 1871, Russia launched an expedition against Ili, a Muslim principality northeast of Kashgar. The principality had only recently shaken off Chinese rule, but the Russian commander annexed it "in perpetuity" on behalf of St. Petersburg. But soon, St. Petersburg corrected that language to declare that the occupation was merely temporary.[38]

And so the drama – and great game – continued decade after decade. Each time, Russia put up a smoke screen to hide its real intentions. Each time, Britain, the superpower at that time, could do little.

CRIMEAN EPISODE TODAY

This brings us to the current Crimean episode, where Russia has purposefully and intentionally annexed Crimea on the grounds that Russian Crimeans, and the sovereign Crimean republic, requested it. Fearing no military retaliation by the West, this opportunity was too easy to pass up. Besides, the legal build-up to the annexation can hardly be considered illegal.

What was surely illegal, which the Western powers have failed to admit, is the overthrow of Victor Yanukovych, the duly elected president of the Ukraine, by a militant mob. Whereas it can be conceded that his decision to fire upon and subsequently kill 88 Ukrainian protestors was immoral and dictatorial, his removal was definitely unconstitutional under the democratic Constitution of the Ukraine.[39] In any event, that's what most revolutions do – they go against the law and the status quo by declaring the law itself illegal. Even Russia had its own revolution, and so did the USA against Britain's laws on search and seizure of weapons.

Though the current crisis was precipitated by the decision of Yanukovych not to sign an association agreement with the European Union, the tug-of-war between Russia and the USA for the soul of Ukraine had been ongoing in the presidential terms of Victor Yanukovych and his predecessor, Victor Yushchenko, oscillating from leaning towards Russia and the West, respectively. Yushchenko belonged to the Ukrainian-speaking majority, while Yanukovych belonged to the Russian-speaking groups. In addition, the

38. Ibid.
39. Daisy,Sindelar, "Was Yanukovych's Ouster Constitutional?," Radio Free Europe, Radio Liberty, February 23, 2014.

XXX election of Yuschenko in 2010 was not without its troubles: Yuschenko won in a runoff vote that had to be repeated due to excessive election fraud by Yanukovych—which led to the *Orange Revolution*, where the citizens of Ukraine demanded justice through civil resistance[40]. Earlier, in 2004, there had been an assassination attempt on Yushchenko; and later his political party claimed that their opponents had tried to poison Yushchenko with dioxins, a setback that he survived, though it caused his facial disfigurement. The tactics of Yanukovych and the Russians were never moral, even stooping to uncivilised methods to gain power.

In the 1994 *Treaty of Budapest*, which was more a memorandum rather than a treaty, Ukraine agreed to give up its nuclear weapons in exchange for guarantees that Russia, the United Kingdom, and the United States would never threaten or use force against the territorial integrity or political independence of Ukraine, and nor would they use economic coercion to subdue Ukraine.[41] For Ukraine – at that time a fledgling nation more intent on securing its sovereignty than becoming the battleground of the superpowers – this was a great memorandum. Yet this was simply the best it could do in the wake of superpower pressures.

Clearly, Putin has carried out his annexation perfectly. He outperformed his adversaries by making the Russian citizens of Crimea ask for annexation. Meanwhile, it is not quite clear that he violated the 1994 *Treaty of Budapest*. The Russian Crimeans have acted knowingly and willfully—there is no evidence they have been coerced. That 97.4 percent of the votes were cast in favour of merging with Russia is quite true and quite likely, because the Ukrainians and Tatars boycotted the vote. There has been no evidence of vote rigging. Moreover, few can deny that there is a moral justification for

40. Andrew Wilson, "Ukraine's 'Orange Revolution' of 2004: The Paradoxes of Negotiation", in Adam Roberts and Timothy Garton Ash, eds., *Civil Resistance and Power Politics: The Experience of Non-violent Action from Gandhi to the Present*, (Oxford University Press, 2009), pp. 295–316.

41. Ron Synovitz, "Explainer: The Budapest Memorandum and its Relevance to Crimea," Radio Free Europe Radio Liberty, February 28, 2014.

a nation to come to the assistance of people who claim to be part of it but are not presently so, such as with the Crimean Russians.

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PUNISHMENTS AND SANCTIONS

The economic sanctions imposed by the West on Russian ministers are less than a slap on the wristfor a great nation like Russia. The ejection of Russia from the G-8, which had no formal membership body, is meaningless from any economic perspective. Yet one can claim that Obama and Putin have both done what they should have. Obama cannot meaningfully go to war or push the Russians to despair; and neither can Putin ignore the opportunity to grab Crimea that is militarily necessary for its global defence. Giving up Crimea is similar to the Indians deciding to give up Siachen Glacier in Kashmir. Similarly, giving up the Haji Pir Pass on two occasions has come under tremendous criticism in India.

On the contrary, Russia holds the trump cards in Europe with its supply of gas. Putin, however, does not wish to use gas as a weapon because it will push the Europeans – and Germans in particular – to despair. Much like the series of protests by the British during the 19th century, the West has to protest in some way or the other, otherwise they would fail the ego test. Similarly, to avoid the shame of being dubbed as toothless, the West has to impose mild sanctions. On the other hand, the West and Russia have to stop short of driving each other to despair, or else the situation can escalate out of control.

Nevertheless, the West cannot afford to stay silent, as that may simply embolden Russia more to intervene in Eastern Ukraine, Eastern Belarus, and Eastern Moldavia, which too have a sizeable Russian population. Still, it must be realised that Russia acts in its interests, and worries little about threats or unrelated consequences. In this respect, the formation of an Eastern Economic Union that could be threatened by actions in East Europe is far from the mind of Putin. If Russia does not focus on the task at hand,

it could lose both the present and future tasks.

Attempting to impose stricter sanctions on Russia will simply backfire on the Europeans, because Russia can turn off the gas supply virtually overnight. While Russia, with its vast resources, could survive an economic war with the West, Europe would not easily survive the denial of gas that warms their houses and cooks their food. In other words, Russia could starve Europe into capitulation.

Hence, the present war of words is where the West wants to leave it. Words are cheap and no lives are lost. Consequently, Obama has sought to belittle Russia by calling it a "regional power." Right or wrong, these words fall off Russia like water on a duck's back.

POPULARITY OF OBAMA AND PUTIN

Putin is a third-term president, and it is amazing that his popularity in Russia stood at 71 percent on the eve of the annexation. The present Crimean crisis increased his popularity at home, and after the annexation, it was reported that his popularity was at 80 percent[42]. This is altogether expected, for whenever the leader of any nation wins in war or battle, his or her popularity increases. This is evident in every part of the world, from the beginning of time. The Russian Lower House of Parliament, the Duma, authorised the annexation of Crimea by a thumping majority, 443-1. All over Russia, citizens are happy with the actions taken by Putin.

In contrast, Obama's popularity stands between 40-49 percent, depending on which poll you choose. His popularity fell markedly after the Crimean crisis, and was at about 41 percent as of March 15, 2014.[43] While the Republicans thought Obama was being soft, independent voters also felt that US strength had been compromised. Even though Obama probably took the most optimal and reasoned action under the circumstances, it did not stop his popularity from falling.

In fact, Russia under Putin has excelled economically in the past 15 years, unlike the USA. Though many will not agree with Putin's methods,

42. National Public Radio (NPR), Honolulu, April 4, 2014
43. "Obama Job Approval," Huffpost Pollster, http://elections.huffingtonpost.com/pollster/obama-job-approval.

strategies, and tactics, consider:

> [I]n his first ten years in office, real incomes rose 2½ times, unemployment and poverty more than halved, the Russian economy rose for eight straight years, GDP increased six-fold, a flat income tax of 13% was introduced, there were large-scale police and military reforms, the automotive industry has boomed as a result of foreign investment, new land and legal codes were introduced, and Russia is now affirmed as an energy superpower. His [Putin's] approval rating is very high within Russia and he is considered to be a cultural icon.[44].

Such leaders don't show up regularly in the timeline of nations. Thus, Putin has something special going for him. The action in Crimea was approved by 90 percent of Russians, with 86 percent believing that Crimea is part of Russia.[45] Putin would be foolish to ignore such sentiments. If a leader will not deliver what the people want, how can that leader succeed in his country, let alone be called great? Putin has delivered for the Russians -- for now at least.

US PRESIDENTS AND NATO

Russia has played hardball many times before. And each time, future events have repaired or changed the feelings. Britain and Russia were face-to-face with daggers drawn before World War II, but Hitler's aggressions united them. Russia invaded Hungary in 1956 to set right the student-led revolt against the Russian-backed government, but neither President Eisenhower nor the North Atlantic Treaty Organisation (NATO) responded militarily to that invasion, even though NATO was strong in Europe at that time. Legally, Russia was simply sending troops to its own backyard, as the Eastern Europe nations were considered then after World War II. In 1968, Russia sent troops under the Warsaw Pact into Czechoslovakia to suppress the reforms led by Alexander Dubcek, leader of Czechoslovakia.

44. Malvin Artley, The Pisces Festival 2014, March 17, 2014.
45. Anna Arutunyan, "Putin's Move on Crimea Bolsters Popularity Back Home," Special for USA Today, March 19, 2014.

But Lyndon Johnson, US president at the time, was busy in Vietnam, and did nothing except shoot off a series of protests against Russia. Neither could any sanctions of any type, including the 1980 boycott of the Moscow Olympics by Jimmy Carter, deter Russia from the invasion of Afghanistan. It was only when Ronald Reagan armed the Mujahiddeen in Afghanistan that Russia was given a shake. Yet, despite all these events, the West drew close to Russia upon the collapse of the Soviet Union.

Later, George Bush II could do nothing to deter the Russian invasion of Georgia, when South Ossetia and Abkhazia broke away from Georgia with Russian help, and Russia promptly recognised South Ossetia and Abkhazia as independent countries. These examples go to show that Russia takes measured steps, as it did in the 19th century in Central Asia, by acting only when it is sure that its adversaries can do nothing.

The USA has sought to mock Russia, by alleging that Russia is using 19th century tactics in a 21st century world, but these are only the words of losers. Power has been the rule of the world in perpetuity, and there is certainly no indication that this is going to change in this, or any, century.

CLOSURE

While Russia has extracted its pound of flesh from both Georgia and Ukraine, the West and Ukraine need to count their blessings. Whereas, a full-fledged annexation of Ukraine by Russia is highly unlikely, the West and Ukraine can now be thankful that they have a large chunk of their territory that can become a democratic country and one day join the European Union. Ukraine can afford to let Russia have Crimea, though there is definite danger that Russia may one day creep into Eastern Ukraine and Eastern Belarus to "help" its Russian-speaking people there. It is easy to understand that Russia is more likely to invade Eastern Ukraine if the hostilities and rhetoric escalate. Even then, there is nothing to stop the Russians from entering Eastern Ukraine at a later date.[46] After all, we saw how conveniently Russia broke the *Treaty of Paris*.

46. A Russian leader before the 19th century said words to the effect "The Russian flag must be raised wherever it has once flown." (Hopkirk, n.4). *Chauvinistic words, indeed*!

However, Ukraine claims to be a democratic country that respects the will of its people, so why would itwant to keep the Crimean Russians against their will as a part of Ukraine? It sounds immensely hypocritical for the West to claim that that the will of people is uppermost, but yet deny the will of the people in Crimea, only because Crimea voted to go into the arms of its adversary, Russia.

On the other hand, why would any sovereign country not wish to stop the social fragmentation of its society into independent areas based upon their ethnicities? Because that is what sovereign countries have to do to retain their sovereign integrity. One should realise, however, that hypocrisy is standard operating practice in diplomacy and international relations, and might even be the secret of success for nations. The vote in Kosovo, for instance, was hailed by the West as representing the will of the people when such a vote was not constitutional. Some nations do not allow votes to decide if a province wishes to secede. India, for instance, does not allow secession of any state; and, therefore, a vote on Kashmir is unconstitutional under Indian law. Nevertheless, a vote for freedom is a strong signal, and carries immense moral respect.

Thus, a wise decision at this time for Ukraine and the Western world might be to accept a partitioned but free Ukraine that can in due course join the European Union, in exchange for a much smaller Crimea that wants to be a part of Russia. Ukraine has since been promised a much needed $19 billion in aid, while it is $145 billion in debt. Ukraine probably needs all the financial help it can get at this stage. A more than fair bargain is always a great deal. This can be a simple win-win situation for both sides that can retain the peace for time to come.There are bigger fish to fry.

THE IRONY OF CHINA-JAPAN RELATIONS: WHY DO THEY 'COOPERATE' DESPITE THE 'CONFLICT'?

PRERNA GANDHI

INTRODUCTION

It is ironical that China and Japan despite sharing a history of two millennia as neighbours, are ranked as the number one hostile bilateral relationship in G-20[1]. Events since the end of 19th century have created a long baggage of historical memories that strongly defines their relations in the present day. However, the strong economic integration between the two countries has led to it becoming the third largest bilateral trade relationship in the world, amounting to $334 billion[2] (2012 figures) just behind the US-Canada and US-China bilateral relationship at $645 billion[3] and $536 billion[4] respectively. China surpassing Japan in 2010 to become the second-largest economy in

Prerna Gandhi is a Research Associate at the Centre for Air Power Studies, New Delhi.

1. Ian Bremmer, "The Top 10 Grudges in the G-20", March 7, 2013 at http://blogs.reuters.com/ian-bremmer/2013/03/07/the-top-10-grudges-in-the-g-20/.
2. Michael Schuman, "China and Japan May Not Like Each Other, but They Need Each Other", December 1, 2013, at http://world.time.com/2013/12/01/china-and-japan-may-not-like-each-other-but-they-need-each-other/.
3. Doug Lamborn, "Building Keystone Pipeline will Cement US-Canada Relations", June 3, 2013, at http://thehill.com/opinion/op-ed/286669-building-keystone-pipeline-will-cement-us-canada-relations.
4. Amy He, "Strong Business Ties US-China's Future", October 16, 2013, at http://thehill.com/opinion/op-ed/286669-building-keystone-pipeline-will-cement-us-canada-relations.

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the world following the US, created widespread ramifications not just for the global economy but even the international political system. Since both countries are intimately connected—economically and politically—with the United States, the implications of the China-Japan relationship have gone far beyond the purview of bilateral relations.While the world's largest and third-largest economies happen to be strong allies with a security treaty, the world's second-largest economy happens to be an adversary of both of the former largest and third economies at the moment. Hence, the way China and Japan relate to each other shapes not just their regional roles but also influences the security environment of the entire region.

Complicating the picture is that this is the first time that the region has seen both a powerful China and powerful Japan. As the former US National Security Council adviser Michael Green stated, "Japan and China are powerful now at the same time, essentially, for the first time in history. They both have somewhat different visions for the future of Asia. They both want to play a leadership role, and they are in competition[5]." Following the end of the Cold War, China with its double digit figures of both economic growth and military budgets contrasts sharply with the straight two decades of stagnation and apparent pacifism of Japan. Also the renewed tensions over the Senkaku/Diaoyu Islands since 2010 with China unilaterally declaring an Air Defence Identification Zone (ADIZ) over the islands in the East China Sea in late 2013, threatens to escalate the area into a potential war zone. However, what is truly interesting is that just two days after the ADIZ was declared and led to a widespread furore in the region, on November 25, China and Japan, along with South Korea, sat down to discuss a trilateral free-trade agreement covering a market of more than 1.5 billion people, with an estimated $690 billion in the annual

5. Paul J. Smith, "China Japan Relations and the Future Geopolitics of East Asia", *Asian Affairs: An American Review*, vol. 35, no. 4, August 07, 2010, pp 230-256 from http://dx.doi.org/10.3200/AAFS.35.4.230-256.

trade volume[6]. Hence, while increasing economic interdependence may be a deterrent for conflict, it nevertheless also seems to fall short of becoming a cause for peace.

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Barack Obama's shifting American military and diplomatic "pivot": or "US rebalancing strategy" to the Asia-Pacific puts the two regional neighbours into a greater international spotlight. The fact that after World War II, Japan was engaged in a security alliance with the United States, diminished Beijing's fears that, at least in the short to intermediate term, Japan might reassert its World War II era disposition toward militarism. However, Beijing now views the same alliance (and efforts to upgrade it) as the US and Japan's joint efforts to counter China's military power. Historical legacies that were negotiated in the 1980s and early 1990s to pursue economic development are now viewed as irreconcilable factors in the bilateral relations. The East China Sea conflict has become an excuse for both countries to pursue military growth as China and Japan emphasise each other as viable threats to their security. Manoeuvring between political priorities and economic necessity is increasingly becoming a thin line for both the countries. Also, with East Asia leading the world with its sustained economic growth for the past three decades, the centre of the international political economy has shifted from the Atlantic to the Pacific. Hence, the bilateral relationship between the second- and third- largest economies in the world has not just regional but also global implications because of the extensive production networks in which both economies are involved.

Studies have found that territorial disputes, conflicting political interactions and anticipated military conflicts are all associated with reduced trade flows, and states with similar political interests tend to trade more with

6. Michael Ivanovitvh, "China and Japan Trading Goods and War Threats", December 29, 2013, at http://www.cnbc.com/id/101300548.

each other than do other states[7]. ***So the hostile political relations between China and Japan beg the question of why extensive economic interactions exist, and in this paper, we will attempt to infer the answers to the above question and use their implications to conclude whether the recent flare-up of tensions is a sign of bigger conflict or will cool down with time.***

POLITICAL CONFLICT VS. ECONOMIC COOPERATION IN 2000S

The first decade of the new millennium began on an awkward note for China and Japan as a result of the 2001 tariff dispute. Seeing China's booming growth at a time when Japan still lingered in domestic economic stagnation, some Japanese began to view China as an economic challenger. The "China threat" theory reached its peak days before Koizumi occupied office in April 2001. The Japanese government imposed temporary safeguards to reduce the imports of leeks, shiitake mushrooms, and reed mats for tatami flooring. Because these items were mainly imported from China, Beijing retaliated in June by declaring 100 percent duties on the import of Japanese vehicles and other manufactured goods. Since the Japanese imports to China were higher in value (almost 8 times of Chinese imports) and threatened huge losses to the automobile sector, the Japanese government retracted the tariffs by the end of the year. With the resolution of the tariff dispute and prominent economic opinion in Japan echoing Koizumi' at the first Boao Forum, it was accepted that the flourishing Chinese market would be highly important for Japanese businesses, if not essential for rescuing Japan from its economic recession[8].

China was seen as the rationally optimal location for Japanese manufacturers to establish production facilities in the lowest value-added midstream section of the value chain [between the upstream Research and Development (R&D) and downstream marketing sections]. Japanese businesses began recognising that final assembly in China was no threat

7. Scott L. Kastner, "When Do Conflicting Political Relations Affect International Trade?", *The Journal of Conflict Resolution,* vol. 51, no. August 4, 2007, pp 664-688 from http://www.jstor.org/stable/27638570.
8. Scott Wilbur, "The Political Influence of Economic Dependence in Japan's China Policy since the Koizumi Administration" at http://aacs.ccny.cuny.edu/2011conference/Papers/Wilbur,%20Scott.pdf.

to Japan's prosperity, so long as it used Japanese standards, with Japanese designed parts, on Japanese production equipment built in Japan with key technological innovation left to Japan. With China joining the World Trade Organisation (WTO) on December 11th 2001[9], and further establishment of the China-Japan Economic Partnership Consultation in April 2002 as a formal dialogue to manage trade issues, China's economic threat was rarely discussed in the Japanese press by 2003, and that year, the country became the second-largest destination for Japanese Foreign Direct Investment (FDI) after the US[10]. After a mustard gas leak in the northeast Chinese city of Qiqihar in August 2003 (that left one person dead and 43 injured) was traced to Japanese chemical weapons abandoned in the area after World War II, the Japanese government rapidly offered 300 million Japanese yen (about US$2.4 million) to the Chinese government for the management of the aftermath more than a month after the poisoning incident occurred. In a lawsuit that followed, the Tokyo court also ruled that Japan must remove the estimated 762,000 weapons still left in China before the year 2012 under the terms of the 1997 Chemical Weapons Convention[11]. About two months after the Qiqihar incident, 13 Chinese victims, who were injured by deserted chemical weapons in the span from 1974 to 1995, also finally won a lawsuit that had been dragging for eight years from 1998[12].

Over the past decade, Chinese victims of the Japanese invasion filed more than 20 compensation lawsuits to Japanese courts, but few got a favourable ruling and only the 1998 chemical weapon injury lawsuit recovered losses. Though the Japanese government admits that its invasion army left chemical weapons in China, so far, Japan has not yet provided the Chinese government with any documents on the making, use and desertion of chemical weapons which makes it impossible for China to spot these hidden

9. "Member Information China and the WTO" at http://www.wto.org/english/thewto_e/countries_e/china_e.htm.
10. Scott Wilbur, "The Political Influence of Economic Dependence in Japan's China Policy since the Koizumi Administration" at http://aacs.ccny.cuny.edu/2011conference/Papers/Wilbur,%20Scott.pdf.
11. "Japan to Pay 300 mn for Qiqihar Incident", October 19, 2013, at http://www.chinadaily.com.cn/en/doc/2003-10/19/content_273362.htm.
12. "Chemical Weapons Victims Claim Compensation, Apology from Japan", at http://www.humanrights.cn/zt/magazine/2004020051215153418.htm

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dangers. Also, with North Korea withdrawing from the Nuclear Non- Proliferation Treaty (NPT) in 2003, Japan in late 2003, announced its decision to build missile defence strength joint-efforts with the US and introduce the Aegis Ballistic Missile Defence(BMD) system of sea-based mid-course defence as an upper-tier capability, and the Patriot PAC-3 for lower-tier ground-based terminal defence[13]. It drew tremendous criticism from China and Russia with the huge spending on its "self-defence". The International Peace Cooperation Law's (IPCL's) amendment to enable Japan's participation in combat roles along with non-combat roles in international peace-keeping forces with the Anti-Terrorism Special Measures Law passed in 2001 had broadened the definition of Japan's self-defense and allowed Japan to support the US military on foreign territory. Further initiatives post 2000 indicated a marked change from Japan's passivity as a partner in the US-Japan security alliance as indicated by the Iraq Reconstruction Assistance Special Measures Law passed in 2003 with its 2004 dispatch of ground troops for the first time since World War II to a country in which fighting was still going on[14]. Hence, the very security alliance that had China approved was slowly becoming a possible threat to China, with Japan attempting to define a stronger role for itself in world affairs.

CHINA'S INCREASING DEMAND FOR OIL AND REVIVAL OF ISLAND DISPUTE

China surpassing Japan to become world's second largest consumer of oil in 2003[15] was almost an indication that the long-buried hatchet over the Senkaku/Diaoyu Islands would become a major source of controversy.

13. Hideaki Kaneda, "Japan's Missile Defense Diplomatic and Security Policies: In a Changing Strategic Environment", at http://www2.jiia.or.jp/en/pdf/polcy_report/pr200703-jmd.pdf.
14. Takeshi Yuzawa, *Japan's Security Policy and the Asean Regional Forum: The Search for Multilateral Security in the Asia Pacific* (Routledge, 2007).
15. "Economy of China, Economic Reforms" at http://www.educationabroadnetwork.org/?id=4329.

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Evidence pointing to potentially abundant oil and natural gas deposits has made the sea surrounding the islands a source of contention between Japan and China, the two largest energy consumers in Asia. The sea has a total area of approximately 482,000 square miles, consisting mostly of the continental shelf and the Okinawa/Xihu trough; a back-arc basin formed about 300 miles southeast of Shanghai between the two countries. Though barren, the Senkaku/Diaoyu islands become important for strategic and political reasons, as ownership can be used to bolster claims to the surrounding sea and its resources under the United Nations Convention on the Law of the Sea. A United Nations Economic Commission for Asia and the Far East (ECAFE) report in 1969[16] had identified potential oil and gas reserves in the vicinity of the islands. China began exploration activities in the East China Sea in the 1980s, discovering the Pinghu oil and gas field in 1983. Japan co-financed two oil and gas pipelines running from the Pinghu field to Shanghai and the Ningbo onshore terminal on the Chinese mainland through the Asian Development Bank (ADB) and its own Japanese Bank of International Cooperation (JBIC). Only the Pinghu field, operational since 1998, has produced oil in significant quantities to date but has been steadily declining in recent years. Chinese companies also discovered a large oil and gas field group in 1995 in the Xihu/Okinawa trough. Shirabaka/Chunxiao is the largest gas field in this group and is used on occasion to reference all fields in the area. China began producing at the contested Tianwaitian/Kashi field in 2006, claiming it as part of its Exclusive Economic Zone (EEZ). China has not released production data from the Shirabaka/Chunxiao field, citing concerns about the regional dispute[17].

Foreign companies have had an erratic presence in the East China Sea. In the 1990s, several foreign companies drilled a series of dry holes

16. "Senkaku Islands Dispute" at http://en.wikipedia.org/wiki/Senkaku_Islands_dispute.
17.. EIA; *East China Sea Analysis Briefs* at http://www.eia.gov/countries/regions-topics.cfm?fips=ecs.

in uncontested waters. In 2003, Unocal and Royal Dutch Shell announced a joint venture with CNOOC and Sinopec to explore gas reserves in the Okinawa/Xihu trough. However, Unocal and Shell withdrew from the exploration projects in late 2004, citing doubts over the commercial viability of developing energy resources in the disputed area[18]. In August 2012, CNOOC opened up three new offshore blocks for joint development with foreign companies in the East China Sea but has not awarded any contracts to date. What's even more interesting is that while Chinese sources predict as high as 160 billion barrels of oil and 250 trillion cubic feet of gas, the US Energy Information Administration (EIA) estimates between 60 and 100 million barrels of proven/probable oil reserves, and currently 1-2 trillion cubic feet of natural gas with some potential for further gas discoveries. From a Chinese perspective, the East China Sea does not have the deep water and logistical distance issues, making the development of any hydrocarbon resources discovered more likely. However, from a Japanese perspective, there are significant logistical hurdles for development; having to build gas pipeline infrastructure to cross the Okinawa trough would be expensive and difficult, with the gas more likely to be pumped to mainland China for processing[19].

In August 2003, CNOOC signed an agreement with international energy companies Shell and Unocal to develop several gas fields in the Xihu Trough. Japanese leaders first publicly protested this agreement when a gas production facility was detected at the Chunxiao gas field in May 2004. Following rumours that production had begun at the Tianwaitian field, in addition to the high profile sighting of a Han class submarine in Japanese waters in 2004, a flotilla of the People's Liberation Army Navy (PLAN) vessels, including a Sovremenny class destroyer, was sighted near the Chunxiao field in 2005[20]. The year, 2004 however, saw

18 Ibid.

19 Lloyd Thrall, "The Relationship between Natural Resources and Tensions in China's Maritime Periphery", April 2013, at http://www.rand.org/content/dam/rand/pubs/testimonies/CT300/CT385/RAND_CT385.pdf.

20. James Manicom, "Sino-Japanese Cooperation in the East China Sea: Limitations and Prospects", *Contemporary Southeast Asia*, vol. 30, no. 3, December 2008, pp 455-47 from http://www.jstor.org/stable/41220523

the beginnings of both the East China Sea conflict and the rapid ascent of the China-Japan bilateral trade relationship. In 2004 China with Hong Kong became Japan's largest trading partner; 2005 began on a bad note when Tokyo and Washington's Two-Plus-Two meeting in February 2005 issued a joint security statement that placed the Taiwan Strait under Japan-US joint defence, suggesting that Japan might intervene in a future cross-strait scenario and thus interfere in what China deemed a domestic matter. The next month, UN Secretary General Kofi Annan declared his support for adding Japan to the permanent members of the UN Security Council, which triggered a Chinese internet petition movement that opposed Japan's membership because of its alleged failure to acknowledge its wartime offences. Additional anger that the Japanese Ministry of Education had approved a supposedly nationalist textbook which glossed over Japan's war record led to the largest anti- Japanese demonstrations in China since the two countries normalised diplomatic relations in 1972[21].

HISTORICAL MEMORY: EDUCATION AND THE NEW CHINESE AND JAPANESE GENERATIONS

> *Who controls the past controls the future. Who controls the present controls the past.*
>
> — George Orwell, Nineteen Eighty-Four

Historical memory manifests itself strongly in the conduct of bilateral relations between China and Japan. In East Asia, history has been the primary raw material for construction of a distinct ethnicity as the collective memory of the past serves to bind a group more strongly. In China especially, the past lives in the present to a degree unmatched in most other countries. After the Tiananmen incident in 1989, many predicted that the regime in Beijing would not last long as the official socialist ideology had lost credibility and democracy would follow. However, it was astonishing to see the Chinese Communist Party (CCP) not only recover its mandate, but also gain loyalty

21. June Tuefel Dreyer, "Sino-Japanese Rivalry and Its Implications for Developing Nations", *Asian Survey*, vol. 46, no. 4, July/August 2006, pp 538-557 from http://www.jstor.org/stable/10.1525/as.2006.46.4.538.

of the citizenry at a time when China was rapidly opening up to the West. Though the Chinese economy grew at more than 10 percent annually in the 1990s, only economic growth cannot answer the rapid conversion of China's popular social movements from the internal-oriented, anti-corruption, and anti-dictatorship democratic movements in the 1980s to the rise of external-oriented, anti-Western nationalism in the 1990s[22]. Also in stark contrast to the Generation X of the Chinese youth, the Generation Y was unwilling to criticise the Party, not in for fear of being seen as traitors but being seen as unpatriotic. As living standards in China rose and it took a greater role in international affairs, the Chinese youngsters became more or less proud of the Chinese form of government.

What we find is that shortly after the suppression of the Tiananmen demonstration, the Chinese leader Deng Xiaoping concluded that the CCP's biggest mistake in the 1980s was that the Party did not focus enough attention on ideological education. The ''Patriotic Education Campaign,'' which began in 1991, was a massive attempt by the party at ideological reeducation. The campaign was a nationwide mobilisation effort targeted mainly at the Chinese youth. As a central part of the campaign, Beijing called upon the entire nation to study China's humiliating modern history and how much the country has been changed by the Communist revolution. The CCP drastically revised the history textbooks. In the new textbooks, a patriotic narrative replaced the old class-struggle narrative. The official Maoist ''victor narrative'' (China won national independence) was superseded by a new ''victimization narrative,'' which blamed the ''West'' for China's suffering. The narrative of the Second Sino-Japanese War was entirely revised. The emphasis was placed on the international conflict and ethnic clashes between China and Japan highlighting all of the Japanese brutalities at the time, rather than the original narrative internal and class conflict between the CCP and KMT[23](Kuomitang).

At the same time when an entire generation of Chinese was being

22. Zheng Wang, "National Humiliation, History Education, and the Politics of Historical Memory: Patriotic Education Campaign in China", *International Studies Quarterly*, vol. 52, 2008, pp 783-806, from http://www.cctr.ust.ust.hk/materials/library/isq_Zheng_Wang_12-08.pdf.
23. Ibid.

brought up with the "century of humiliation" narrative, with its worst years attributed to the Japanese invasion of China, the new Japanese generation was brought up with almost no knowledge or a milder version of the events in World War II history. Hence post-Cold War, when the Chinese International Relations (IR) tradition opined that Japan had never really compensated, or even apologised, for its atrocious war conduct, the Japanese were embarked on their quest to move beyond an apologetic nation and achieve normalcy in their conduct of international affairs. They desired to instill the long lost sense of patriotism in the next generation and revised their own history textbooks. While the "Three Alls Strategy of Kill All, Loot All, Destroy All[24]" used by Japanese Imperialists in China was never accepted, words like "invade" was replaced by "advance," the "Unit 731[25]" deleted, and the "Nanjing massacre" changed to the milder expression of "Nanjing Incident[26]." Hence, while accepting the Nanjing massacre and comfort women as historical facts, the language in the history books when narrating Japan's war-time past was toned down, with the insistence that the Chinese estimated horrendous figure of the death of 300,000 people in the Nanjing massacre was an exaggerated figure[27].

What is truly interesting was that when across China, businesses with connections to Japan, billboards advertising Japanese goods, and stores stocking Japanese made products were vandalised by protesters, the same year Japan became the largest overseas supplier of products to China with $79.9 billion in exports. China's displacement of the United States as the largest destination for Japanese exports highlighted the growing

24. "Three Alls Strategy" at http://en.wikipedia.org/wiki/Three_Alls_Policy. The strategy came to light when former Japanese soldiers released from the Fushun war crime internment center wrote a book called *The Three Alls: Japanese Confessions of War Crimes in China* in 1957.

25 ***Unit 731*** *was a covert biological and chemical warfare research and development unit of the Imperial Japanese Army that undertook lethal human experimentation during the Second Sino-Japanese War (1937–1945). It was responsible for some of the most notorious war crimes carried out by Japanese personnel.*

26. ***Nanjing Massacre*** *also known as the Rape of Nanking, was an episode of mass murder and mass rape committed by Japanese troops against Nanking during the Second Sino-Japanese War. The massacre occurred during a six-week period starting December 13, 1937.*

27. Weilu Tan, "The Forgotten History: Textbook Controversy and Sino-Japanese Relations", BPhil Thesis, University of Pittsburg at http://d-scholarship.pitt.edu/7824/1/Tan_Weilu_BPhil.pdf.

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dependence of the world economy on China as it helped to keep the then world's second-largest economy from falling back into recession. Also by the end of 2005, Japan's accumulated investment in China had reached over US$70 billion to make it the main source of foreign investment in China. On April 15, 2005, the beating up of a Chinese student at Beijing by Japanese foreign exchange students sparked mass demonstrations, and three days later, on Monday, April 18, the Tokyo Stock Exchange recorded a sharp plunge, sparking fears in the financial industry. Japanese Prime Minister Koizumi promptly expressed his "deep remorse and heartfelt apology" for the suffering that Japan had caused other Asian nations during World War II at the Asia-Africa Conference in Jakarta, Indonesia, on April 22. However, the moment was ruined since 81 Diet members visited Yasukuni Shrine just hours before the conference, causing even more controversy[28].

KOIZUMI AND THE YASUKUNI CONTROVERSY

During the 1990s, the Yasukuni controversy subsided, only to be revived by Prime Minister Koizumi who visited the shrine annually during his tenure from 2001-06. Koizumi began his visits to Yasukuni at the behest of the Izokukai, the trust foundation that manages the shrine and which was a major backer of his ruling Liberal Democratic Party[29]. He became the second prime ministe after Nakasone to visit the Yasukuni Shrine on the anniversary of the surrender by Japan in 2006. During Koizumi's tenure, relations between Japan and its primary neighbours deteriorated to the point that there were no mutual visits between Chinese and Japanese leaders from October 2001, and between South Korean and Japanese leaders

28. Scott Wilbur, "The Political Influence of Economic Dependence in Japan's China Policy since the Koizumi Administration" at http://aacs.ccny.cuny.edu/2011conference/Papers/Wilbur,%20Scott.pdf.
29. Yew Mang Lai, *Nationalism and Power Politics in Japan's Relations with China: A Neo-Classical Realist Interpretation* (Routledge, 2013)

from June 2005. The standstill ended when the next Prime Minister Abe visited China and South Korea in October 2006. China and Korea view the Yasukuni Shrine as disregarding the various war crimes Japan committed against them during World War II due to the enshrinement of multiple war criminals at the site. Japan on its part considers the Yasukuni Shrine as a domestic matter of paying respects to its war dead, regardless of of any outside concerns.

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The Shinto Shrine has been at centre of international controversy since 1978 when 14 Class A war criminals were enshrined there. Founded in 1869 by Emperor Meiji, the Yasukuni Shrine located in Chiyoda in central Tokyo commemorates about 2.5 million war dead who died on behalf of Japan in wars from 1867-1951. Following separation of State Shinto and the Japanese government in 1945, the Yasukuni Shrine is strictly a religious affair, housing the souls of the dead spirits or *kami,* with the government having no say in who is enshrined. The Yasukuni controversy arises almost every year on August 15 and also on the Annual Spring and Autumn Festivals in April and October respectively when large group of Japanese officials visit the Shinto shrine eliciting strong condemnation from Japan's neighbours. The Japanese government answers by saying that the very separation of state and religion under Article 20, guaranteeing freedom of religion, does not allow for anyone to be prohibited from visiting and praying at the shrine. Though Shinzo Abe did not visit to the Yasukuni Shrine in his first term, he visited it in his second term on December 26th, 2013, the first anniversary of his taking office[30]. The visit only added fire to the already strong tensions between China and Japan on the ADIZ in the East China Sea declared by China on November 23, 2013

THAWING OF BILATERAL RELATIONS AND THE GLOBAL

30. "Japanese Prime Minister Shinzo Abe Visits Controversial Yasukuni Shrine for War Dead", December 26, 2013, at http://articles.timesofindia.indiatimes.com/2013-12-26/rest-of-world/45592024_1_yasukuni-visit-yasukuni-shrine-2-5-million-war

FINANCIAL CRISES

In the first half of 2006, during Koizumi's last months in office, Japan's investment in China rose to almost 17 percent of its total outflow and eclipsed Japan's investment in the US. In September 2006, Japan's trade with China continued to increase, reaching 15 percent of Japan's exports and 20 percent of its imports in 2007. The same year, China's trade with Japan accounted for 8 percent of China's exports and 13 percent of its imports, indicating that Japan's reliance on the Chinese market had become greater than China's reliance on the Japanese market, and that commercial exchange with Japan had become a relatively less significant part of China's overall trade portfolio than previously. Moreover, in 2007, Japan's total exports and imports with China (minus Hong Kong) eclipsed its total with the US, signalling that China had become Japan's leading trade partner. On the investment side, in 2007, 12 percent of Japan's total investment occurred in China, while Chinese investment in Japan made up only one percent of the FDI in Japan, proving that China was still a negligible force in investing in Japan. Most Japanese investment in China took place in the manufacturing sector and was directed at the coastal provinces, while Japanese outlays in the service sector were more evenly divided between China and India[31].

A sixth round of bilateral talks to deal with the East China Sea conflict in July 2006 witnessed the establishment of three technical working groups on Confidence-Building Measures (CBMs) in legal matters, a hotline agreement and resource exploitation. These developments occurred despite the fact that bilateral relations remained tense. Following the election of Abe as prime minister, and his vocal commitment to repair the relationship with China, the CBMs began to bear fruit. In July 2007, the Japan Coast Guard (JCG) and the Chinese State Oceanic Administration met in an effort to establish a hotline between the Ministry of Economy, Trade and Industry (METI's) Agency for Natural Resources and the Chinese Economic Reform and Development Commission ostensibly in charge of China's oil

31. Wilbur, n.10.

companies[32]. The most interesting fact here is that the seeds for these CBMs were planted prior to Abe's election, indicating a willingness somewhere in the Chinese policy-making apparatus to see past Beijing's refusal to deal with Koizumi in order to handle the island dispute issue pragmatically[33]. Unlike 2003, in 2007, the Tokyo High Court upheld a lower court ruling and rejected the compensation claims of four Chinese people who were injured and one who's relative died due to exposure to chemical weapons abandoned by Japan in China at the end of the war. The court said the state was not obligated to conduct a search or to pay damages "because it cannot be said that the defendants could have prevented the outcome," with the presiding judge stating that the Japanese government was not liable for death or injury from the weapons, as it could not have conducted a proper search for weapons in another country[34]. In 2008, further, the Japanese company responsible for removing the chemical weapons abandoned by the Japanese forces, *Abandoned Chemical Weapons Disposal Corp. (ACWDC)* was faced with a corruption scandal, forcing its closure and delaying the clean-up indefinitely[35].

From February 2002 to October 2007, Japan's unprecedented upward trend of 69 months was halted by the collapse of Lehman Brothers in October 2008. In the second quarter of 2008, the Japanese economy shrank 0.6 percent. US sub-prime loan crisis and surging oil prices dragged the global economy to the verge of stagnation. The global financial crisis of 2007–08, also was considered by many economists the worst financial crisis since the Great Depression of the 1930s. The slow growth of Japanese exports was mainly due to the weakened demand of the US. According to the Japan External Trade Organisation (JETRO), Japanese exports to China still grew rapidly. In the first five months of 2008, Japanese exports to China grew 24.5% compared with the year before. In April and May 2008, Japanese

32. James Manicom, "Sino-Japanese Cooperation in the East China Sea: Limitations and Prospects", *Contemporary Southeast Asia,* vol. 30, no. 3, December 2008, pp 455-47 from http://www.jstor.org/stable/41220523
33. Ibid.
34. Jun Hongo, "Japan off Hook for China Gas Weapons Ills: Court", March 14, 2007, at http://archive.is/1qdB
35. Andrew Monahan, "Japan's China Weapons Cleanup Hits a Snag", March 31, 2008 at http://content.time.com/time/world/article/0,8599,1726529,00.html.

exports to China grew 33.8 and 29.1 percent respectively. Hence, the external demand from China was crucial to preventing the Japanese economy from slumping into another recession[36]. The sustained economic growth of China remains a reliable growth engine for [37]the Japanese economy. However as the situation recovered in 2009, there was the Tohoku earthquake in 2011 which dislocated the entire situation as supply chains were disrupted and power supplies were in shortage after the nuclear disaster.

To add further insult, Japan was surpassed by China as the world's second largest economy in last quarter of 2010. It had been world's second largest economy for 42 years after it had surpassed former West Germany in 1960. Japan's exports to China posted double-digit negative growth (year-on-year) for 10 consecutive months, from November 2008 to August 2009. This slowdown reflects a decline in Japan's exports of electronic parts and raw materials to China, as Chinese exports of finished goods to markets in Japan, the US and Europe slowed. The Chinese government announced an economic stimulus worth RMB4 trillion (US$586 billion) in 2008, which helped China and a good part of the East Asian economy sail through the global financial crisis, but ended in overcapacity in some areas of infrastructure, and brought with it significant fiscal risks due to reckless local government borrowing, inflation, asset bubbles and the threat of bad debt following the huge credit expansion[38]. Hence, while Japan was criticised for the 1997 Asian financial crisis, China was considered as driving the region out of economic stagnation a decade later. Also by 2008, we see the coastal region playing an even more dominant role in shaping China's manufacturing sector. In 1998, it employed more than 55 per cent of workers in the whole country, accumulated nearly two-thirds of assets and produced more than 70 per cent of output. By 2008, its shares of employment, asset and output values had all risen to more than 70 per cent[39].

36. Xing Yuqing, "Japan's Unique Economic Relations with China: Economic Integration with Political Uncertainty", Oct 23, 2008, at http://www.eai.nus.edu.sg/BB410.pdf.
37. "Japan-China Trade in 2009 Declines for the First Time in 11 years", February 16, 2010 at http://www.jetro.go.jp/en/news/releases/20100217809-news.
38. Peter Drysdale, "Likonomics and China's New Economic Strategy," July 8, 2013 at http://www.eastasiaforum.org/2013/07/08/likonomics-and-chinas-new-economic-strategy/.
39. Yue Qu and Cai Fang, "Flying geese in China", Nov 22, 2013 at http://eastasiaforum.org/2012/11/22/flying-geese-in-china/

THE EAST CHINA SEA DISPUTE: DETERIORATING BILATERAL RELATIONS AND EMERGENCE AS A 'FLASHPOINT'

As the Democratic Party of Japan (DPJ) was engaged in a vehement conflict in 2010 with the US to move the United States' Futenma military base, unpopular with many locals, from Okinawa, China was soon to become a saving factor in the weakening alliance .In September 2010, Japan seized a Chinese trawler and its crew after it collided with two coast guard vessels near the islands, sparking a serious diplomatic row. Small anti-Japanese protests were held in several cities in China. In the end, Japan released the trawler's crew. In the aftermath of the boat collision incident near the Senkaku/Diaoyu) Islands, Chinese customs officials reportedly stopped shipments of rare earth minerals to Japan. China's halt on rare earth exports lead METI chief Kaieda Banri to criticise China's actions as a *de facto* ban and declared that it could have a very big impact on Japan's economy. ‖ Japan was China's largest purchaser of the minerals, which have a wide variety of applications in high-tech machinery, especially in clean energy and military technologies. Therefore, the drop in rare earth shipments, which reportedly lasted until the end of November 2010 and then resumed at less than previous amounts, was keenly felt in Japan's high tech industry. Sanctions are, thus, a believable signal of resolve, and provide economically integrated countries with an alternative, peaceful way to show their commitment to national objectives[40].

In August 2012, the Japanese government's purchase of three of the disputed islands from a private landowner in order to preempt their sale to Tokyo's nationalist Governor Shintaro Ishihara sparked massive Chinese protests and a marked drop in Sino-Japanese trade. This led to military escalation In the East China Sea by both countries, leading to scrambling of fighter jets, locking of radars followed by undue display of naval warships which further precipitated suspicion rather than calming the conflict. On November 23, 2013, Chinese Air Force spokesperson, Shen Jinke announced that, "any aircraft flying through the newly designated

40. Scott Wilbur, "The Political Influence of Economic Dependence in Japan's China Policy since the Koizumi Administration" at http://aacs.ccny.cuny.edu/2011conference/Papers/Wilbur,%20Scott.pdf.

XXX East China Sea Air Defense Identification Zone must seek prior permission from the Chinese authorities in advance and follow instructions from its air-traffic controllers". He further stated, "China's armed forces will adopt 'defensive emergency measures' to respond to the aircrafts that do not cooperate in the identification or refuse to follow the instructions[41]". With this proclamation, the East China Sea dispute has again come into the limelight.

This sudden declaration from the Chinese side has been vehemently opposed by the US, which is a proponent of freedom of navigation in the international skies, and its security protectorate, Japan. While Japan's Prime Minister Shinzo Abe expressed his discontent by terming China's action to create a new ADIZ over the disputed islands as dangerous, US President Barack Obama also responded swiftly by sending two unarmed B-52 bombers as a "routine exercise" to fly over the new ADIZ without informing China, on November 26, 2013.The US and Japan planned to step-up air surveillance in the East China Sea, with Japan stationing E-2C airborne early warning aircraft at the Naha base in the Okinawa region and expanding the use of unmanned Global Hawk aircraft[42]. US Defence Secretary Chuck Hagel also criticised China's ADIZ openly by calling it a "destabilizing attempt to alter the status quo in the region". South Korea and Australia too have joined hands with the US and Japan in criticising China. The United States is bound by the US-Japan Security Treaty to protect "the territories under the Administration of Japan" and has asserted that Japan administers the Senkakus (Diaoyu Islands). Though Japan is assured of US help through the treaty, its anxiety remains over Washington's commitment to defend Japanese territory if it risks going to war with China.

41. "Announcement of the Aircraft Identification Rules for the East China Sea Air Defense Identification Zone of the PRC", November 23, 2013, at http://news.xinhuanet.com/english/china/2013-11/23/c_132911634.htm.
42. David Lerman, "U.S. Said Making Daily Flights into China's Air Zone", November 30, 2013, at http://www.bloomberg.com/news/2013-11-29/u-s-said-making-daily-flights-into-china-s-air-zone.html

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The islands conflict in the East China Sea goes beyond mere questions of territorial sovereignty of three uninhabitable islands and five rocks (which, in total, amount to only 2.7 square miles in the East China Sea); clashing EEZs and continental shelves based on an inconclusive United Nations Comission or the Law of the Seas, UNCLOS, fisheries, shipping routes and logistics, uncertainty of the exact scope scale of resources in the East China Sea after the last exploration in 1968, and a derisive desire to perpetuate the conflict as a nationalist agenda building up on historical wounds and memories by both countries. China's increasing demand for energy has prompted intense interest in resource extraction from the continental shelf that runs under the East China Sea. Also the strategic shipping routes for China in the YSEB (Yellow Sea Economic Basin) catering to 57 percent of China's trade[43], north of the East China Sea lead to more reasons for the Chinese to want controlling interests in the islands. For Japan, its stake to those islands assumes even greater strategic importance beyond the oil and the fish as they form its first line of defence and are a mere 410 km or 220 nautical miles (nm) away from Okinawa which holds critical importance for both Japan and US.

SO WHY DO THEY 'COOPERATE' DESPITE THEIR 'CONFLICT'?

It is truly ironical that the Sino-Japanese bilateral relationship saw one of its best phases right after China's biggest modern day debacle, the Tiananmen tragedy. Though Japan did eventually go along with other Western members and signed the G-7 joint statement issued at the July 1989 Paris Summit condemning the Tiananmen tragedy, Japan only selectively adopted sanctions implemented by other Western powers, especially the US, and worked laboriously to persuade other Western countries not to isolate China. Soon after the Paris Summit, Japan resumed its non-governmental

43. "The Yellow Sea Economic Basin- A Sea of Stars", at http://nederland.ipe.com/asia/the-yellow-sea-economic-basin-a-sea-of-stars_30583.php?articlepage=2

interaction with China. Japan officially reaffirmed its third yen loan package to China at the 1990 G-7 Summit in Houston, and started to implement it in November of the same year[44]. Prime Minister Takashi Kaifu was the first G-7 leader to visit Beijing. On his visit on August 10-13, 1991, Kaifu expressed his sympathy with the Chinese views on human rights and was quoted as saying, "Clothing and food are the basis and starting point of human rights. It is an enormous progress that China can solve its problems of clothing, food, housing, and transportation *(Yi shi zhu xing)*. Each country has its own cultural background, and outsiders are not in a position to judge others with their own standards. "China Announcing its decision to sign the NPT on the day Kaifu arrived in Beijing was symbolic of the importance that China attached to Japan-Chinese relations. In April 1992, Jiang Zemin returned a visit to Japan and extended his invitation for the Japanese emperor to visit China and promised that on his visit to China, the emperor would not be confronted with contentious issues such as the Senkaku Islands dispute and war reparation claims. Emperor Akihito's visit in October 1992 was the first time that Japanese emperor visited China during the two thousand-year history of the monarchy.[45]

The 1972 Joint Declaration and the 1978 Peace and Friendship Treaty are the two pillars of the basic structure of the Sino- Japanese relations today[46]. But the politicians who served important roles in the normalisation of diplomatic relations with China in the 1970s and in the resolution of later bilateral problems, such as Ito Masayoshi, Takeshita Noboru, Gotoda Masaharu, Nonaka Hiromu, and Kato Koichi, had either passed away or lost influence by the beginning of Koizumi's term, weakening Japan's ability at Track II and private forums to manage security issues with China[47]. The 'history quarrel' has exacerbated a mutual perception of intention and provoked domestic opposition to accommodative foreign

44. Yong Deng, "Chinese Relations with Japan: Implications for Asia-Pacific Regionalism", *Pacific Affairs*, vol. 70, no.3, Autumn 1997, pp 373-391 from http://www.jstor.org/stable/2761028
45. Ibid.
46. OH Seunghee, "Formation of International Relations Theory in East Asia: Finding the Diplomatic Strategy of Sino-Japanese Relations in the Cold War Era", at http://wpsa.research.pdx.edu/papers/docs/WPSA_ohseunghee.pdf.
47. Wilbur, n.10.

policies. Revisions in history education stimulated the rise of nationalism and this rise of nationalism further prompted the demand for a bigger market for nationalistic agendas. We also see issues of future resource and territorial security, further prompting history to be used as a political tool to secure one's interests. However, with the possible exception of a global thermonuclear war, international politics is characterised by the expectation of future interaction. Being geographical neighbours (and also economically interdependent) China and Japan will have to *continue dealing with each other*.

Also, since both China and Japan are *intimately connected*—economically and politically—with the *United States*, the implications of the China-Japan relationship have gone far beyond the purview of bilateral relations. Any bilateral conflict between them will involve the entire globe. Further the Senkaku/Diaoyu Islands region in East Asia where important *Chinese interests and America's security obligations to Japan overlap* is a potential flashpoint that could lead to conflict between Washington and Beijing which may not be in anyone's interests at the moment. If the Asia-Pacific is the world's emerging geopolitical cockpit, the *Yellow Sea north to the East China Sea is the captain's chair.* The economic centre of gravity in the Yellow Sea Rim has, since 1990, shifted from Kobe to Pusan, and then from Pusan to Shanghai and China's northeast coast. Six of China's 10 largest commercial ports can be accessed only via the East China Sea. *China will not want to risk aggravating war so close to its economic heartland.* Barack Obama's shifting American military and diplomatic "pivot" or *"US rebalancing strategy"* to the Asia-Pacific puts China into a greater international spotlight. At this critical juncture, China would not want its any action against Japan to be seen as *threatening and disrupting the region unilaterally*, leading to further strengthening of the US camp.

China and Japan may be big powers competing in the region, but their toughest challenges are themselves. Both face *numerous domestic challenges*: be they problems of demography, political dissension, economic, environmental issues, etc. 'Economic growth' is a major source of legitimacy for governments in East Asia. East Asia is world's most populous region (1/5th of the world's

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total population) and contributes to 25 percent of world Gross Domestic Product (GDP). For the CCP to continue on with its mandate-to-rule, it needs to keep the momentum of growth going in China at all costs. Rapid economic growth is essential for both Chinese domestic stability and its international standing. In the case of Japan that has yet to recover from its long-standing economic stagnation, Shinzo Abe also needs to deliver on his economic promises to remain in office. Also, in deciding between peace and war in the China-Japan relationship, we cannot only refer to economic interdependence. It's not the expected value of trade at a particular moment in time, but the ***expectations of trade levels to be high in the future***, that has led them to assign a higher premium on trade, making war the less appealing option. *Mutually assured production*, the economic version of mutual deterrence, has led China and Japan to be accommodating on their points of conflict despite the historical baggage, especially since the beginning of the new millennium. In 2008, when the US sub-prime crisis and surging oil prices dragged the global economy to the verge of stagnation, the Chinese government announced an economic stimulus worth RMB 4 trillion (US $586 billion) which helped China and a good part of the East Asian economy to sail through the global financial crisis[48]. While demand from the US slowed, Japanese exports to China still grew rapidly. External demand from China was crucial to preventing the Japanese economy from slumping into another recession.

China and Japan are the world's second- and third-largest economies. Not only are they both *economically interdependent* on each other with both being major export-destinations for each other, but are *heavily intertwined in the East Asian regional production networks*. For most countries in the region, trade in components and parts accounts for well over half of total network exports (imports). Japanese businesses have extremely high stakes in China

48. "Chinese Economic Stimulus Program" at http://en.wikipedia.org/wiki/Chinese_economic_stimulus_program

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and, hence, expect to continue to work there despite antagonistic moves by both governments. In the words of Hori Toshio, general manager of the Tokyo-Mitsubishi Bank branch in Shanghai, "The relationship is too big for withdrawal already". Aside from the marginal sway of Keidanren on Koizumi's 2005 Yasukuni visit and the fruitless overture by the Doyukai in 2006, there is little evidence of the Japanese business community attempting to moderate the behaviour of Japan's political leaders, either during or after Koizumi's term. The few other attempts at limitation that appeared in the Koizumi years seem to be aimed only at Koizumi's Yasukuni visits, not at other aspects of Japanese policy that related to China and were met with strong domestic resistance, sometimes of a nationalistic character. For example, when Fuji Xerox Chairman Kobayashi Yotaro declared in September 2004 that Koizumi's Yasukuni visits were hurting Japan's business in China, he was pilloried by right-wing groups and sent an intimidating letter containing live bullets. Days after Koizumi's final trip to the shrine in August 2006, the Japan-China Friendship Association President and LDP House of Representatives member Kato Koichi had his house burned down by a nationalist extremist who disagreed with Kato's criticism of Koizumi's shrine visit.

In 2010, foreign companies and joint foreign-Chinese ventures accounted for more than 25 percent of China's entire industrial output, 39 ercentp of its apparel exports, and 99 percent of its computer exports. And these companies rely on imports from Japan. China cannot single out Japanese products without damaging and alienating the network of multinational companies that are fuelling China's march up the value chain and toward higher living standards. Around 60-70 percent of the goods China imports from Japan are the machinery and parts needed to make China's own products. China cannot cut off this flow, or risk disrupting it through conflict, without crippling its economy. Japanese firms know this, which explains why they are not fleeing despite the recent tensions. In a survey

conducted by JETRO in 2012, just after the spate of violence, only 6 percent of Japanese companies in China said they were going to leave or downsize, 52 percent planned on expand, and 42 percent indicated that they would keep their operations at the same level while monitoring the situation. Japan remains the largest source of foreign investment in China today. In 2012, a year in which global foreign direct investment in China fell by 3.7 percent, Japanese investment rose by 6.0 percent. According to Masaki Yamazaki of the Japan Centre for Economic Research, some Japanese firms are considering a "China plus one" strategy, a way of diversifying their risks and finding another large market to invest in and export from. But, he added, "It's unrealistic to think that all the Japanese companies will rush away from China." What is more, China's bulging middle-class market is too big to be ignored by Japanese companies that produce consumer products and are plagued by low growth at home[49].

"We can conclude with the thought that although money may be the root of all evil, maybe it will bring peace to East Asia."

49. Richard Katz, "Mutually Assured Production: Why Trade Will Limit Conflict Between China and Japan", *Foreign Affairs,* July/Aug 2013 from http://www.foreignaffairs.com/articles/139451/richard-katz/mutual-assured-production

OMAN'S STRATEGIC LOCATION, ITS FOREIGN POLICY AND AIR POWER CAPABILITIES

INDRANI TALUKDAR

Oman has emerged as a powerful small country in the international relations arena. With an independent and pragmatic foreign policy, Oman is maintaining a balanced relationship with all its neighbours, including Iran. In times of crisis, their policy will be an asset to the West, especially the US. It is against this backdrop that this article traces the strategic position of Oman, its foreign policy and its relationship with the US. It also focusses on Oman's defence forces, especially its air power. In doing so , the article analyses how India's position will be important for both Oman and the US. and vice versa.

OMAN'S STRATEGIC LOCATION

Oman is the third largest country in the Arabian peninsula. It has land borders with Yemen, Saudi Arabia and the United Arab Emirates (UAE). Its importance lies in the fact that it overlooks the three seas – the Persian Gulf, the Sea of Oman and the Arabian Sea. The coastlines extend from the

Indrani Talukdar is a Research Fellow, Indian Council of World Affairs, New Delhi

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Strait of Hormuz[1] in the north to the border with the Republic of Yemen in the south.[2] The strategic position of Oman is such that it is the meeting point of two continents—the Indian subcontinent and Africa. It falls between two economic powerhouses—Europe and the emerging industrialised Asian countries, entitling Oman to become a gateway for these regions. It provides an overwatch position for both the entrance to the Persian Gulf and the Indian Ocean. The deep-draft parts of the Strait of Hormuz that are essential for oil tankers are entirely in Omani territory.[3] It's nearly 2,000 km coastline on the Gulf of Oman and the Arabian Sea, and being the only member of the Gulf Cooperation Council (GCC) with significant ports on the Indian Ocean, offers relatively secure pipeline routes to the east that would bypass the chokepoint at the Strait of Hormuz.[4]

In fact, the position of the Strait of Hormuz and the countries surrounding it has increased the significance of West Asia, resulting in a complex web of conflicts and ambitions exacerbated by the increase in arms flow and the vested interest of other regions. The strait is a vital highway, through which consumable fuel of industrial world is supplied; however, this has led to the security vulnerability of the region. The vulnerability and importance of this region is also increasing, because, apart from the presence of oil and gas,

1. Iranian naval forces monitor and police the Strait of Hormuz along with the Sultanate of Oman via the Omani enclave of Musandam. Almost all entrances into the Persian Gulf are made through Iranian waters and most exits are through Omani waters. Mahdi Darius Nazemroaya, "The Geo-Politics of the Strait of Hormuz: Could the U.S. Navy be defeated by Iran in the Persian Gulf?" January 8, 2012, http://www.globalresearch.ca/the-geo-politics-of-the-strait-of-hormuz-could-the-u-s-navy-be-defeated-by-iran-in-the-persian-gulf/28516, accessed on January 29, 2013.
2. *Oman's News Agency*, http://www.omannews.gov.om/ona/english/Geographic_Location.jsp, accessed on January 29, 2013.
3. Robert D. Kaplan, "Oman's Renaissance Man", *Foreign Policy*, March1, 2011, http://www.foreignpolicy.com/articles/2011/03/01/omans_renaissance_man, accessed on January 9, 2013.
4. Anthony H. Cordesman, Khalid R. Al-Rodhan, *Gulf Military Forces In An Era Of Asymmetric Wars: Vol I* (New York: Greenwood Publishing Group, 2007), p.119.

of the placement of strategic islands which are of military importance[5] to the West Asian countries and the US. Hence, in the game of power between countries and regions, Oman's location is vital for Oman itself as well as for the rest of the interested countries in this region.

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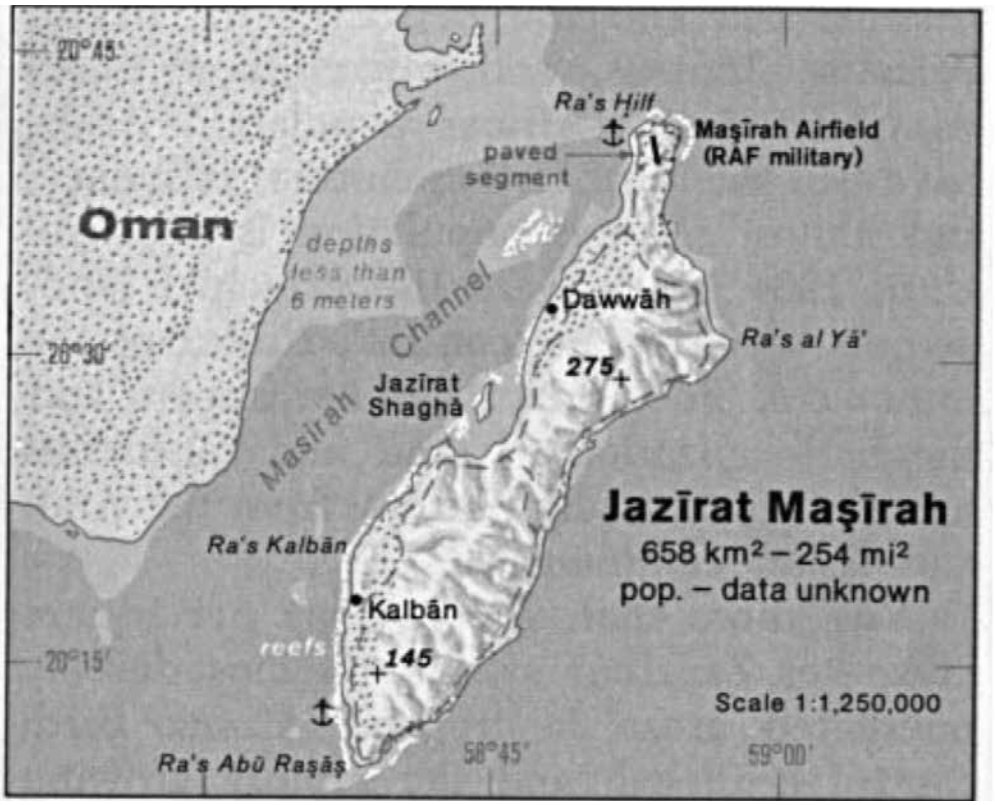
An important aspect of Oman's strategic location is that apart from its positioning in the strait, the country is consecrated by other vital locations. The top of the Jebel Harim mountain, which is in the interior of the peninsula, was, and can, continue to serve as a telecommunications/ intelligence station. This area has allowed Omanis to monitor activities throughout the Gulf region and out into the Indian Ocean.[6] Another location is the Masirah Island; stretching about 70 km, the island occupies a strategic position near the entry point to the Gulf of Oman from the Arabian Sea. It is approximately 200 miles south of the capital city of Muscat and 12 miles off of the central coast of Oman in the Arabian Sea.[7] Oman has one of its military air bases in this island. Apart from its own base (located on the north of the island), this island's strategically

5. "**Military Position of Persian Gulf",** Persian Gulf Studies Centre, http://www.persiangulfstudies.com/en/index.asp?p=pages&ID=218 accessed on January 29, 2012.
6. Jeffrey A. Lefebvre, "Oman's Foreign Policy in the 21st Century", *Middle East Policy Council*, February 15-18, 2009, http://www.mepc.org/journal/middle-east-policy-archives/omans-foreign-policy-twenty-first-century, accessed on January 18, 2013.
7. Raymond S. Rollings and Gary L. Anderton, "Base Course Aggregate Considerations at Masirah Airbase, Oman", http://pavement.wes.army.mil/papers/55/Paper55.PDF, accessed on February 5, 2013.

positioned military facilities have given access to the UK[8] and later to the US, in 1975. In 1980, an access agreement was signed between Oman and the U.S. use of the airfield, along with other military facilities. The air base on the north of island has its main runway 17/35, almost leading into the sea. The second runway, 07/25, crosses the main strip. It is the deployment site of the rapid reaction forces of the US. The significance of the base is that it has a 12,000-ft landing strip and an emergency landing strip, a vast ammunition depot and six airplane hangars. These make the base amongst one of the most important American bases in the Persian Gulf region.[9] In fact, this base is also known as Camp Justice[10] or "tent city"[11] and hosts anti-submarine patrol craft.[12]

The position of Masirah airfield is important for any country in order to enforce the strategic encircling of Iran and Pakistan with air and naval power. In fact, observing the growing security dilemma for the US, with its belligerent relationship with Iran and the subtle threat from China, this air base is strategically indispensable. And with the US "pivot of Asia" or the military-operational concept, 'Air-Sea Battle', this air base serves as a critical staging point to launch any air and naval campaign.

8. With the sultan's permission, Great Britain established a Royal Air Force (RAF) base on the island in the 1930s. The British first became interested in Masirah in 1929 when they established an unmanned staging post on the island which later expanded to an air base that was built by the RAF during World War II. Frank Noort, "Masirah Air Base", Airfighters.com, March 13, 2008, http://www.airfighters.com/page.php?id=70, accessed on January 29, 2013. Masirah used to be considered one of the less desirable RAF overseas postings: hot, humid, dusty. After the Iranian and other regional crises in the latter days of the Carter Administration, the US spent a lot of money on airfields in friendly countries in the Mid-East. That build-up proved essential to Desert Shield. But after the construction, Masirah is a thriving place with two full-length modern runways at right angles to each other, acres of concrete, modern housing and roads, and satellite television. It is an important staging post for the Far East for the U.S. and U.K. Tony Gale, "RAF Masirah", http://ukmamsoba.org/raf%20on%20masirah.htm, accessed on February 19, 2013.
9. Noort, "Masirah Air Base", Airfighters.com.
10. Camp Justice is the name of several American military bases. They are in Diego Garcia (Indian Ocean), Iraq and in Guantanamo. Quite Recently, the U.S. has renamed its base in the Masirah Island in Oman as Camp Justice. It shows the importance of this base for the U.S.
11. "Masirah, Oman", *Global Security.org*, http://www.globalsecurity.org/military/facility/masirah.htm, accessed on February 13, 2013.
12. https://maps.google.com/maps/ms?ie=UTF8&t=h&oe=UTF8&msa=0&msid=204401305100193944749.0004bd6c370c083cb7145 accessed on January 29, 2013.



Map source: http://en.wikipedia.org/wiki/File:Masirah_76.jpg

The other bases, apart from the Masirah Island base, which are strategically placed in Oman are the following: one, the Omolghanam base which is located at the mouth of the Strait of Hormuz in the Musanadam region and is significant from the fact that from that base one can supervise the Strait of Hormuz and maritime activities in the Persian Gulf. Two, the Musandam peninsula,[13]which makes Oman one of the guardians of the strait of Hormuz and, in turn, of Persian Gulf trade. Although Iran is situated 10 miles across the Strait to Hormuz, however the main deep water channels and shipping lanes in the strait lie in Omani waters.[14] Three, the Khazab

13. This peninsula is an exclave of Oman separated from the rest of the country by the United Arab Emirates but commanding the Strait of Hormuz, through which passes 20 percent of the Western world's oil. "Small Air Force with a Big Reputation", *Arabian Aerospace Online News Service*, December 21, 2011, http://www.arabianaerospace.aero/small-air-force-with-a-big-reputation.html accessed on February 19, 2013.
14. Lefebvre, n.6.

XXX naval base which is also located in the Musanadam region and is significant due to its being close to the Strait of Hormuz. In Khazab, there exists a 6,500-foot landing strip which is used by U.S. airplanes. Four, the Samarit base which is both a land and aerial base. This is located north of the Salalah city, though its entitlement is with the U.K. By virtue of the 1970 contract between England and Oman, the U.K. has developed the military airport of this base. The fifth is the Beitolfalaj base. Oman has permitted contol of this land base to the U.K.[15]Some of Oman's military forces are deployed in this base under the supervision of the U.K.[16] The sixth one is the northern base in Seeb which serves both as a military and civilian base. The seventh is under construction since 2010 at Adam, about 100 miles southwest of Muscat. This base is expected to host the first Eurofighter Typhoon Squadron.[17] This base is in Oman's interior part and is shielded from the Gulf approaches by mountains that will become natural sites for air defences. This excellently protected location can do air patrols along Oman's north and the strait.[18] The eighth base is Thumrait, which has an air base. The town of Thumrait is on the main road which links Dhofar to the rest of Oman.

These bases enhance Oman's position as a vital country in the new world order. However, this significance also exposes Oman to security vulnerabilities. Under Sultan Qaboos, the country is managing to protect itself from the threats and plays an important role in the region, especially owing to its unique foreign policy.

15. Oman is essentially a British intelligence base, with Britain being its largest foreign investor. The U.K. also helped Omanis in developing its defence sector. British officers along with the Omanis had held high positions in the Omani military until the 1980s. Elliot Murphy, "Britain, Oman and "Our Kind of Guy", *Ceasefire Magazine*, February 1, 2012, http://ceasefiremagazine.co.uk/oman-our-kind-of-guy/ accessed on February 7, 2013.
16. Noort, "Masirah Air Base", *Airfighters.com*.
17. n.13.
18. "Oman's Air Force Upgrades: From Jaguars to F-16s & Eurofighters", *Defense Industry Daily*, December 24, 2012, http://www.defenseindustrydaily.com/Oman-Looks-to-Replace-Its-Jaguar-Jets-06503/ accessed on February 9, 2013.

OMAN'S FOREIGN POLICY **XXX**

The aspect of "good international citizenship"[19] along with a pragmatic foreign policy has helped Oman to maintain a peaceful existence with its volatile neighbours and also with the world. Its foreign policy follows a post-Cold War non-alignment strategy[20], wanting to be friends with every country. As a result, Oman has been able to project its uniqueness as well as independence in the region. In fact, it is observed that many Gulf and Arab states are quick to break diplomatic relations, and adopt a confrontational stance and grandstand to provoke countries which pose a threat or is not in line with their alliance structure. However, Oman, from 1970,[21] has explicitly adopted the policy of **adapting to changing circumstances, remaining non-aligned, not harbouring (at least, not visibly) hostile intentions, and avoiding confrontations.[22] This has actually helped Oman gain its important status in the international arena and in West Asia.**

Over the past three decades, the Sultanate of Oman has conducted this unique foreign policy, characterised by independence (maintaining freedom of action), pragmatism (demonstrating flexibility in reaching accommodation with regional and global powers), and moderation (eschewing extreme positions and supporting a stable regional political-military status quo). In fact, during Said bin Taimur's reign, Oman even followed an isolationist

19. This concept was coined by Gareth Evans, former Australian foreign minister. The core notion was that "being, and being seen to be, a good international citizen" should be seen not as the "foreign policy equivalent of boy-scout good deeds", but as a distinct component of any country's national interest, "quite distinct from the familiar duo of security and economic interests". http://en.wikipedia.org/wiki/Gareth_Evans_%28politician%29, accessed on January 21, 2013.
20. "Everyone's Friend: Oman in the Spotlight", Cominganarchy.com, http://cominganarchy.com/2010/09/16/oman-in-the-spotlight/, accessed on January 9, 2013.
21. Oman was taken over by Sultan Qaboos bin Said al Said in 1970 in a coup from his father Sultan Said bin Taimur.
22. "Oman's Unique Foreign Policy", Cominganarchy.com, http://cominganarchy.com/2010/03/23/omans-unique-foreign-policy/ accessed on January 9, 2013.

policy.[23] But slowly and steadily, observing the essentials of the region, Sultan Qaboos started to formulate the foreign policy of Oman in a more balanced manner.

His foresight for Oman can be observed during the 1980s. In 1981, Oman, along with Saudi Arabia, Kuwait, Bahrain, Qatar and the UAE, formed the Gulf Cooperation Council (GCC)[24] for two reasons. Firstly, it was in response to the perceived threat posed to the Persian Gulf security by the Iran-Iraq War (1980-88);[25] and, secondly, it was for Oman's own foundation as a country.[26] However, by 1974, Sultan Qaboos asked the states of the region to assume responsibility for their own collective security[27] which helped Oman in strengthening its foreign policy.

Oman initially wanted an umbrella of common and collective security with all the other Gulf countries, but with the Iranian Revolution of 1979 and the emergence of Saudi Arabia, it wanted to have an independent foreign and security policy without unbalancing the arrangement of its relationship with others. Oman could foresee the complexities in the region. For instance, it did not, and has not, regarded (at least openly) Iran as a danger for its own security as much as the other Arab Gulf states have and, during recurring conflicts, has argued, in principle, for neutrality and

23. Lefebvre, n.6.. This policy first began to take shape following the July 1970 palace coup in Muscat, when Qaboos bin Said, covertly assisted by British military advisers, seized the throne from his father, Said bin Taymur. The young sultan immediately moved to modernise Oman's economy, exploiting this country's relatively small but increasingly lucrative petroleum exports. He also set in motion the so-called "Omani renaissance" by undertaking social, educational and cultural reforms that continue to this day. Ibid.
24. The conflict between Iran and Iraq in the1980s and other area tensions had led to the culmination of Sultan Qaboos's long-time efforts to help form the Gulf Cooperation Council (GCC), which brought the six conservative Gulf countries together in what was the Arabian Peninsula's first jointly provided security effort. While participating in all regional security activities as part of the GCC, Oman did not take sides in the Iran-Iraq War, managing to retain all regional relationships and its security ties with the West. Joseph A. Kechichian, "Oman: A Unique Foreign Policy", *RAND*, http://www.rand.org/pubs/research_briefs/RB2501/index1.html, accessed on January 21, 2013.
25. For example, unlike Saudi Arabia and Kuwait, which had openly supported Iraq and opposed Iran, Oman maintained positive ties with both warring countries.
26. Lefebvre, n.6.
27. Steffen Wippel, "Economic Integration from a Country Perspective:Oman in the Gulf Cooperation Council", Panel "Gulf Economies in Transition", BRISMES Annual Conference 2012 Middle East Centre, London School of Economics and Political Science, March 27, 2012, pp1 and 4, http://brismes2012.files.wordpress.com/2012/02/steffen-wippel-economic-integration-from-a-country-perspective.pdf, accessed on January 10, 2013.

engagement, rather than confrontation.

Another example of Oman's independent position in foreign affairs within the GCC was the support for Yemen's accession as a member since the early 1990s.[28] Even though Yemen was extended membership in 2006, it is yet to become a member, [29] nevertheless, Oman's support for its membership came from the fact that it shares its borders with Yemen and the Salah[30] port which is near Yemen. Realising that instability within Yemen, along with militancy, will remain a threat to Omani security, Sultan Qaboos' exhibited the quality of adroit diplomacy by taking this position.

Along with adroitness, Oman has an unobtrusive diplomacy which could be witnessed during the release of American Sarah Shourd from Evin prison in Iran on September 14, 2010. Engaging Iran[31] by way of Omani diplomacy can, in the future allow the U.S. to quietly negotiate on issues without the bellicose rhetoric that has defined Iranian-US relations.[32] If this uniqueness can be maintained, even after Sultan Qaboos, it will help Oman to be in a strategic position. Sultan Qaboos has been awarded by many countries for his contribution towards positive and adroit diplomacy. Sultan

28. Ibid,, p.2. Oman counts among the small oil producers in the Gulf area, and for a long time its per capita income lagged behind its wealthier neighbours. Still today, according to many interlocutors, Oman pursues a development path more focussed on steadiness than the more glamorous Dubai model, which it regards as neither sustainable nor consistent with cultural values. Ibid, p.3.
29. For further studies, refer Edward Burke, "'One Blood and One Destiny'? Yemen's Relations with the Gulf Cooperation Council", Research Paper, Kuwait Programme on Development, Governance and Globalisation in the Gulf States, The Centre for European Reform, No.23, June 2012, http://www.cer.org.uk/sites/default/files/Yemen-and-the-GCC_burke_june12.pdf, accessed on January 17, 2013.
30. With the port of Salalah, Oman already has a maritime hub that leads the world in trans-shipping, with around 98 per cent of the goods that arrive departing for other destinations. "Oman's Growth Focuses on IOR Nations Rather Than GCC: Expert", *Muscat Daily.com*, January 25, 2012, http://www.muscatdaily.com/Archive/Oman/Oman-s-growth-focuses-on-IOR-nations-rather-than-GCC-Expert, accessed on January 28, 2013.
31. Iran's Weapons of mass destruction (WMD), missiles, and asymmetric Capabilities are Potential Threat to Oman and the other Gulf States. Cordesman, and R. Al-Rodhan, n.4. p.121. Islamic Revolution Guards Corps' (IRGC) surface and sub-surface systems as well as ground-to-sea missiles with very long ranges have the capability to cover the Persian Gulf and the Sea of Oman. "Persian Gulf and Sea of Oman under Iran Range", *Weapon and Technology*, http://weapons.technology.youngester.com/2011/01/persian-gulf-and-sea-of-oma-under-iran.html, accessed on January 28, 2013.
32. "Oman's Low-Key Diplomatic Strength", *Middle East Policy Council*, September 20, 2010, http://www.mepc.org/articles-commentary/commentary/oman-s-low-key-diplomatic-strength, accessed on January 10, 2013.

XXX of Oman has reaffirmed the country's policy of reliance on wisdom and the patient approach when addressing the development of new issues on the regional and international arenas.[33]

In this era of globalisation and new world order, countries are interdependent and also aspire to gain power. For countries like the US that want to maintain hegemony, relationship with Oman will remain significant since it will need to maintain strong ties with West Asia and the smaller states in that region for the smooth flow of oil and energy, and security and safeguarding of its power. Oman and other states like Qatar have highlighted the importance of small states in the international arena. In fact, in an increasingly multi-polar world, small states matter in the diplomatic domain for global governance.[34] Hence, with the current interconnectedness and security dilemma; countries of all sizes are interdependent on each other for their own national interest, growth, survivability and also the stability of the global system. In this context, the relationship between Oman and the US is critical for both.

OMAN-US. RELATIONS

The relationship between Oman and the US can be traced back to the friendship treaty of 1833. The treaty was one of the first of its kind with an Arab state. It was replaced by the Treaty of Amity, Economic Relations, and Consular Rights signed at Salalah on December 20, 1958. With this treaty, diplomatic communications started between the two countries.[35] This relationship was cemented further by having free trade between both

33. "Qaboos Reaffirms Omani Policy Fundamentals", *Khaleej Times*, January 8, 2013, http://www.khaleejtimes.com/kt-article-display-1.asp?section=middleeast&xfile=data/middleeast/2013/january/middleeast_january106.xml, accessed on January 10, 2013.
34. Andrew F. Cooper and Timothy M. Shaw, "The Diplomacies of Small States at the Start of the Twenty-first Century: How Vulnerable? How Resilient?" in Andrew F. Cooper and Timothy M. Shaw eds., *The Diplomacies of Small States: Between Vulnerability and Resilience* (New York: Palgrave Macmillan, 2012), p.2.
35. Kenneth Katzman, "Oman: Reform, Security, and U.S. Policy", Congressional Research Service, March1, 2011, p.1.

countries in 2006.[36] This relationship has helped the US in its own strategic planning and its hold over the region.The US has its Central Command (USCENTCOM)[37] located between the European and Pacific combatant commands. US Central Command's area of responsibility covers the "central" area of the globe and consists of 20 countries out of which Oman is one. The relationship between Oman and the US has been of mutuality. Oman has long permitted USCENTCOM to conduct exercises in Oman, and US Navy ships to use Omani facilities. Oman has provided data on tanker and other ship transits of the Strait of Hormuz to the US and U.K. from its base on Goat Island[38] since the early 1980s.[39]

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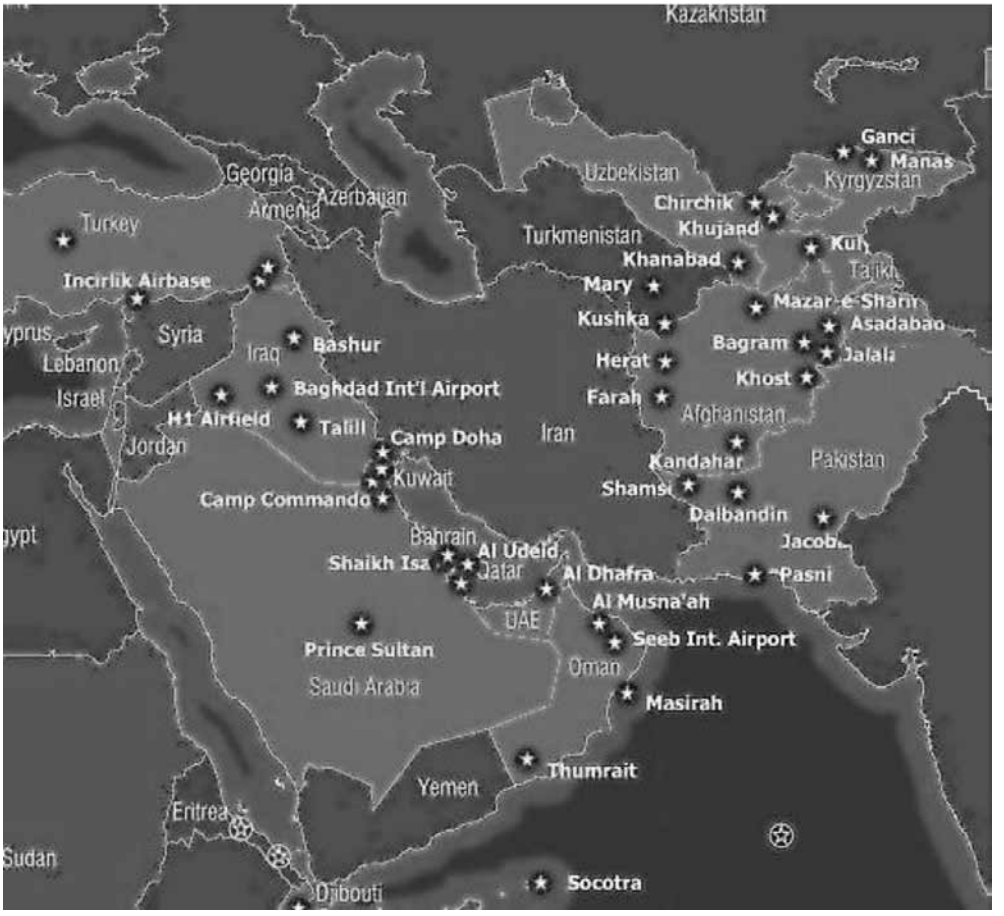
36. Wippel, n.27, p.4.
37. The USCentral Command (CENTCOM) is one of 10 combatant commands of the United States military. Six of these commands, including CENTCOM, have an Area of Responsibility (AOR), a specific geographic region of the world where the combatant commanders may plan and conduct operations as defined under the Unified Command Plan. It was established on January 1, 1983. When the hostage crisis in Iran and the Soviet invasion of Afghanistan underlined the need to strengthen US interests in the region, President Jimmy Carter established the Rapid Deployment Joint Task Force (RDJTF) in March 1980. To provide a stronger, more lasting solution in the region, President Ronald Reagan took steps to transform the RDJTF into a permanent unified command over a two-year period. The first step was to make the RDJTF independent of the US Readiness Command (read for presentation), followed by the activation of USCENTCOM in January 1983. http://www.centcom.mil/about-u-s-central-command-centcom, accessed on January 21, 2013.
38. This island base or Al-Ghanam island base is almost directly opposite Iran's base and port at Bandar Abbas. It is an Omani naval base.
39. Anthony H. Cordesman, "USCENTCOM and Its Area of Responsibility: Cooperation, Burden Sharing, Arms Sales, and Centcom's Analysis by Country and Subregion", Centre for Strategic and International Studies, April 1998, p.5, http://csis.org/files/media/csis/pubs/uscentcom2%5B1%5D.pdf ,accessed on January 29, 2013.



U.S. Military Bases in West Asia.[40]

Sultan Qaboos has long seen the US as the key security guarantor of the region and has consistently advocated expanded defence cooperation among the Gulf states. Oman was the first Gulf state to formalise defence relations with the US after the Persian Gulf region was shaken by Iran's 1979 Islamic revolution. The agreement between them allowed US forces to access Omani military facilities. In fact in April 1980, the US used Oman's Masirah Island air base to launch an attempt to rescue the US hostages. Under the US-Oman access agreement, which has been renewed in 1985, 1990,

40. John Glaser, "U.S. Military Bases in Middle East", December 6, 2011, http://antiwar.com/blog/2011/12/06/u-s-military-bases-in-the-middle-east/, accessed on February 5, 2013.

2000, and 2010, US the reportedly can use—with an advance notice and for specified purposes—Oman's military airfields in Seeb, Muscat, Thumrait, and Masirah Island. Also some U.S. Air Force equipment, including lethal munitions, have been stored at these bases.[41] The military access agreement between them provided U.S. access to building cantonments, hardened shelters, warehouses, and other facilities at Seeb, Muscat, Thumrait, Masirah and Khasabt air bases, and ports at Muscat and Salalah, in return for $320 million to build-up these facilities. The constructions of these bases was done keeping US interest in mind for any rapid deployment in a time of urgency in the Gulf region.[42]

The constructions in these areas include facilities for rear-area staging and forward deployment, with improved operations, personnel, storage, and maintenance facilities. The US Navy has developed an aircraft maintenance facility, ground support equipment shop, warehouse facility, and ammunition storage facility. The US Army has created a staging base at Masirah[43] to support the forward deployment of the US Army forces. Apart from building cantonments, hardened shelters, warehouses, the US helped provide dispersal and access pavements, warehouses which are environmentally controlled, transient billeting, and cantonment support areas at Seeb and Thumrait. Oman has allowed both the U.K. and U.S. to use it as a staging base.[44] For both these countries, Seeb is the main transport and logistic base, collocated with the international airport, while Masirah supports air defence, strike/interdiction and training. Both bases host airborne surveillance aircraft which cover the land and sea approaches.[45] Oman gives the U.S. Air Force access to its al-Seeb air base for maintenance of transport and refueling planes.[46] U.S. Air Force has made the Seeb Air

41. Katzman, n.35, pp.6-7.
42. Cordesman, n.35, p.5
43. The US has deployed B-1B bombers, C-130 air transports and AC-130 *air gunships at the Masira air base.* "U.S. Seeks to keep Oman Bases Despite Anxieties about Iran", World Tribune.com , February 27, 2007, http://www.worldtribune.com/worldtribune/07/front2454159.265972222.html accessed on January 29, 2013.
44. Cordesman, n.39,, pp.5-6.
45. Noort,
46. "Military Bases That U.S. Could Use", Military.com, September 26, 2001, http://www.military.com/Content/MoreContent?file=FL_militarybases_092601, accessed on January 30, 2013.

Base as the hub for distributing Avgas[47] to various locations throughout the theatre.[48] Oman allows the US military to use the Masirah air base, and the Thumrait naval air base for anti-submarine patrol planes. It has allowed, and worked with, the US Air Force to ensure that the base al-Masanah (Mussanah), northwest of Muscat is built to American standards and can be used by American warplanes. Oman has long been a strong supporter of the US military presence in the Gulf.[49] The air base at al-Mussanah will boost operating efficiency.[50]

In fact, the relationship between Oman and the US has been beneficial for both. If the US has helped Oman in its defence procurement[51], it has also benefitted from its strategic location and its balanced and pragmatic relationship with Iran. Not only has Oman rebuffed efforts by the other Gulf states to persuade it to distance itself from Iran politically, in 2010, it reportedly signed a security pact with Iran.[52] The pact reportedly commits the two to hold joint military exercises and war-games. In fact, in January 2013, the naval forces of both sides held joint rescue and relief drills in Iran's southern territorial waters.[53] On the occasion of the 34th anniversary of the Islamic Revolution of Iran on February 4, Ali Akbar Sibeveih, Iran's new ambassador to Oman, hailed the Oman-Iran relationship. He said that Oman has been playing a positive role in the West Asian region to strengthen the

47. Avgas (aviation gasoline) is an aviation fuel used to power piston-engine aircraft.
48. "US Predator Air Base in Oman", June 25, 2009, http://virtualglobetrotting.com/map/us-predator-air-base-in-oman/, accessed on February 5, 2013.
49. David Isenberg, "**The Ever-Growing US Military Footprint", Asia Times Online, June 10, 2003,** http://www.atimes.com/atimes/Middle_East/EF10Ak01.html ,accessed on January 29**, 2013.**
50. "Royal Air Force of Oman (RAFO) Royal Oman Air Force (ROAF)", Global Security.org, http://www.globalsecurity.org/military/world/gulf/oman-af.htm, accessed on January 12, 2013.
51 U.S. has strong strategic interest in ensuring that Southern Gulf arms purchases are standardised with the U.S., that military facilities and infrastructure are equipped to support US power projection capabilities. From a narrow commercial viewpoint, its has the same selfish interest in selling arms as everyone else. Cordesman, n.39, p.10.
52. Parliament Approves Iran-Oman Security Pact", *Fars News Agency*, December 19, 2010, http://english.farsnews.com/newstext.php?nn=8909281036, accessed on February 5, 2013.
53. "Iran, Oman hold Joint Naval Rescue and Relief Exercises", *Iran English Radio Services*, January 22, 2013, http://english.irib.ir/news/political4/item/105527-iran,-oman-hold-joint-naval-rescue-and-relief-exercises accessed on February 6, 2013.

stability and security of the region.[54] Interestingly, despite having a strong relationship with the US, Oman has been able to maintain its diplomatic independence unlike other countries like Saudi Arabia. Regarding the Iranian nuclear issue, Oman had warned the US and Europe of aggravating the issue. The sultanate has made it clear that it has no reason not to believe in Iran's assurances that its programme has purely civilian purposes.[55] This firmness on Sultan Qaboos's part needs to be taken seriously by the US as permission to use the air bases in Oman lies with the Omani authority.

The U.S. is facing problems regarding its military bases in other parts of the world. For instance, in early 2009, Kyrgyzstan ordered a US base in that country to close, allegedly because of Russian pressure, and US reluctance to meet the Kyrgyz requests for increased lease payments. An agreement on the US to continue use of the Manas transit centre[56] was reached in June 2009[57] with the rent amounting $60 million a year. However, in October 2011, Kyrgyz President Almazbek Atambayev, and on March 2012, Busurmankul Tabaldiev, the secretary of the country's Defense Council emphasised on seeking to close the base when the lease of the US runs out in July 2014. This creates a potential hurdle to American plans to withdraw from Afghanistan in 2014.[58] The reason for the closure of the Kyrgyz base may be different from any future such fissure with Oman, but the essential aspect is that the US needs to be careful about its dealing with these countries. Hence, the US will try not to disturb such arrangements as the repercussion will be

54. In fact, he hoped that other countries of the region would follow in Oman's friendly policy. "Oman Plays Positive Role in the Region, Iran Envoy", *The Iran Project*, February 6, 2013, http://theiranproject.com/blog/2013/02/06/oman-plays-positive-role-in-the-region-iran-envoy/ accessed on February 11, 2013.
55. Taylor Heyman, "The Sultan, Uncle Sam and the Ayatollah", April 10, 2012, http://www.catch21.co.uk/2012/04/the-sultan-uncle-sam-and-the-ayatollah, accessed on February 5, 2013.
56. The base is close to the Kyrgyz capital, Bishkek, and has been a vital hub for troops and matérial moving in and out of Afghanistan. It is the only such base that American forces have in Central Asia. Elisabeth Bumiller, "Kyrgyzstan Wants Military Role to End at U.S. Base", *The New York Times*, March 13, 2012, http://www.nytimes.com/2012/03/14/world/asia/panetta-meets-with-military-officials-in-kyrgyzstan.html?_r=0 accessed on March 21, 2013.
57. Jim Nichol, "Central Asia: Regional Developments and Implications for U.S. Interests", CRS Report for Congress, September 19, 2012, http://www.fas.org/sgp/crs/row/RL33458.pdf, accessed on January 30, 2013.
58. Bumiller, "Kyrgyzstan Wants Military Role", *The New York*.

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heavy on the US At the same time, Oman needs to be prudent in drawing its line of firmness as it depends on the US for its defence procurement and training[59] With the vulnerability of this region, Oman is trying to strengthen its defence system, including its air power.

OMAN'S AIR POWER

During the decade after the outbreak of the Iran-Iraq War, all the Gulf states set out to strengthen their armed forces by converting to the most modern weapons they could obtain and assimilate. By 1993, each state had at least a modest inventory of tanks and other armoured equipment, air defence missiles, combat aircraft, armed helicopters, and missile-armed naval craft with which to deter an intruder.[60] After the second Gulf War, Oman proposed an army of its own to reduce its dependence on Western forces.[61] It was initially dependent on the U.K. and later on the U.S. Even now, there is a level of dependency , but with the help of these two countries and others, it has managed to maintain a healthy defence system. It maintains the third largest armed force in the GCC states. Its force is widely considered to be one of the best trained, though it needs an upgrade in its equipment. Towards that end, Oman

59. Countries in the region have been taking more steps in their own defence, including buying American-made air defence systems and other weaponry. Thom Shanker, Eric Schmitt and David E.Sanger, "U.S. Adds Forces in Persian Gulf, a Signal to Iran", *The New York Times*, July 3, 2012, http://www.nytimes.com/2012/07/03/world/middleeast/us-adds-forces-in-persian-gulf-a-signal-to-iran.html?hp&pagewanted=print&_r=0 accessed on January 29, 2013. The Gulf states recognize that a lucky conventional missile could create havoc in some their states if it hit key oil-related infrastructure, or damaged the larger and more nebulous target of business confidence. "Gulf States Arming Against Iran Threat", *Weapon and Technology*, http://weapons.technology.youngester.com/2011/01/gulf-states-arming-against-iran-threat.html accessed on January 29, 2013.

60 Oman-Military Capabilities of the Persian Gulf States, http://www.mongabay.com/history/oman/oman-military_capabilities_of_the_persian_gulf_states.html accessed on January 28, 2013.

61. Wippel,n.27, p.2. Oman counts among the small oil producers in the Gulf area, and for a long time, its per capita income lagged behind its wealthier neighbours. Still today, according to many interlocutors, Oman pursues a development path more focussed on steadiness than the more glamorous Dubai model, which it regards as neither sustainable nor consistent with cultural values. Ibid, p.3.

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is taking steps to expand and, modernising with purchases, and technical and human resources support from the U.S, U.K., Europe, to an extent Russia, and recently, Singapore and China as well. In an effort to modernise its air force, in October 2001, Oman purchased U.S.-made F-16 C/D (single seat and two seat) aircraft.[62] In fact, along with associated weapons (Harpoon and AIM), a podded reconnaissance system, and training were added to the sale. The deliveries were completed in 2006. This purchase was made by Oman to keep up with its Gulf neighbors, including the UAE and Bahrain that had bought F-16s.

In July 2006, according to the Defence Security Cooperation Agency (DSCA), Oman bought the Javelin anti-tank system from the U.S. Regarding purchases from other countries, in the past four years, Oman has continued to buy some British equipment, including the Typhoon fighter aircraft and patrol boats. It has also bought some Chinese-made armoured personnel carriers and other gear.[63] Importance is been given to the air force of Oman.[64] The Jebel Akhdar campaign of 1958-59 had made the supremacy of air power obvious. Later on, the many clashes that took place between the West Asian countries, and also between the U.S. and Iraq, shown the

62. Oman's current air defence system does have a larger command and control network, backed by radars. It appears that the new system seems to involve layered defence. The new systems will be useful for protecting national infrastructure, as well as key military bases. "Oman Upgrading its Air Defenses", *Defense Industry Daily*, October 20, 2011, http://www.defenseindustrydaily.com/Oman-Upgrading-its-Air-Defenses-07161/ accessed on February 9, 2013.
63. Katzman, "Oman" ,*n.35,* p.8.
64. Oman, till the instability it faced did not rely on air power as a major combatant element. The new air arm which was established on 1959 was initially equipped with a variety of liaison and transport aircraft. But with the start of the Dhofar Rebellion in 1962 extensive use in the close air support role was used by Oman. In fact, through the construction of a modern Integrated Air Defence System (IADS) with the help of British Aerospace, the Sultanate of Oman Air Force (SOAF) was transformed into a modern air force. Airfields were linked together by a centrally-controlled communications system and an early warning radar control and reporting network was established. A new Control and Reporting Centre (CRC) was established and existing CRCs and sector operations centres were upgraded and improved. In 1990 SOAF was renamed as the Royal Air Force of Oman (RAFO). But increased tensions in the region saw Oman deciding to expand its fast jet force. The Omani F-16s also have a vital reconnaissance role, using the BAE Systems' Airborne Reconnaissance System (ARS). n.13.

vitality of air power. Nonetheless, Oman is trying to have a balanced form of defence system.[65] Although it is not starkly apparent, in view of the type of purchases being ordered and bought regarding aircraft, the importance being given to air power is evident. Apart from the purchases, Oman's selection of countries for both purchase and training also reveals the influence of its unique foreign policy. The very fact that it has diversified its purchase from various countries is sufficient proof of this.

Apart from the U.S, U.K. and Europe, Singapore Technologies Aerospace[66] has been awarded a contract to maintain and upgrade the C-130 Hercules transport aircraft fleetof the Royal Air Force of Oman (RAFO). The selection of Singapore was explained as brief based on the company's expertise regarding the aircraft and its designation as a one-stop centre for the C-130 Hercules. The company's ability to undertake depot level maintenance and cockpit modernisation simultaneously will prove advantageous to Oman, as it will minimise the downtime and improve the aircraft availability of the Omani fleet. Built by Lockheed Martin, the C-130[67] aircraft is a four-engine turboprop military transport aircraft designed to conduct airborne assault, search and rescue, scientific research support, weather reconnaissance, aerial refuelling, maritime patrol and aerial fire-fighting missions. The upgrade is expected to improve the aircraft's navigation ability through Communications, Navigation, Surveillance / Air Traffic Management (CNS/ATM)-regulated air-space worldwide, in addition to enhancing its operational readiness, despatch reliability and operational efficiency.[68]

65. The new system appears to involve layered defence, using mobile Avenger short-range systems, and medium-range SL-AMRAAM systems. "Oman Upgrading", *Defense Industry*.
66. Singapore Industries have earlier upgraded the Hunter FGA.73A/Bs with the Tracor AN/ ALE-40 chaff/flare dispensers, LORAN navigation equipment and extra wing pylons to allow carriage of the AIM-9P Sidewinder air-to-air missile. n.13
67. Oman on August 2012 successfully tested the upgraded new C-130J that would be used to support internal country operations. Its ability to operate out of remote austere airstrips would be invaluable for Oman. "Oman's new C-130J takes flight", Arabian Aerospace Online News Service, August 15, 2012, http://www.arabianaerospace.aero/oman-s-new-c-130j-Takes-Flight.html accessed on February 12, 2013. On September 2012 the first C-130J Super Hercules was formally accepted by Oman. "Oman accepts first Super Hercules", *Arabian Aerospace Online News Service*, September 7, 2012, http://www.arabianaerospace.aero/oman-accepts-first-super-hercules.html, accessed on February 12, 2013.
68. "Singapore Technologies Aerospace wins RAFO C130 Aircraft Contract", *Airforce Technology.* Com, January18 2013, http://www.airforce-technology.com/news/newssingapore-technologies-aerospace-c130-aircraft-contract/ accessed on January 31, 2013.

RAFO is equipped with advanced fighter, interceptor and other aircraft, as well as anti-aircraft missiles and modern radar, defence and weapons systems to ensure a high level of combat proficiency at all times and in all circumstances. In addition to its F-16 fighters[69], RAFO's combat capability was reinforced by a number of Hawk and Jaguar aircraft along with Super Lynx[70] and NH-90 helicopters, that have provided back-up for the Royal Navy of Oman in protecting the coastline as well as offering support services for members of the public in the mountain areas. To enhance their skills, expertise and also maintain their friendliness, they take part in exercises with the air forces of the GCC states[71] and other friendly countries[72] like the U.S., U.K., India and also Iran. On January 2013, Oman confirmed the order of Eurofighter Typhoons[73] and BAE Hawk Advanced Jet Trainers (AJTs) (whose delivery will begin from 2017). The order for the Typhoons and Hawks was placed in order to upgrade the air defence and offence system. The Typhoons will be replacing the aging Jaguar strike aircraft, while the Hawk AJTs will be supplementing or replacing the Hawk Mk103/203s. The Typhoons will be fitted with long range Active Electronically Scanned Airway (AESA) radar.[74] The RAFO also signed a deal for C-295 aircraft for

69. The F-16 Fighting Falcon is a multi-role jet fighter, designed initially as an air superiority day fighter, which later evolved into a successful all-weather multi-role aircraft. "Oman Requests F-16 A/C Weapon Sale from US", Airforce Technology.com, December 17, 2012, http://www.airforce-technology.com/news/newsoman-requests-f-16-ac-weapon-sale-from-us/ accessed on January 31, 2013.
70. Oman was the first customer in the Middle East for the new CTS800-engined Lynx, and was the first customer to operate the aircraft in a multi-role configuration, equipped for a wide range of overland and maritime roles including utility and troop transport as well as search and rescue and coastal patrol. "Small Air Force", *Arabian Aerospace*.
71. The Royal Navy of Oman (RNO) currently is participating in joint drill 'Tadhamun 15' and Peninsula Shield, being implemented by the GCC Naval Forces in the territorial waters of Kuwait. The drill lasts till February 28. Participation in the drill comes as part of RNO's training plans that aim at exchanging naval expertise, sustaining its fleet's level of readiness and implementing its national tasks. "Royal Navy of Oman takes part in GCC drill", Muscat Daily, February 9, 2013, http://military.einnews.com/article/136323842 accessed on February 11, 2013.
72. "RAFO", http://www.globalsecurity.org/military/world/gulf/oman-af.htm, accessed on January 29, 2013
73 Oman wants the Typhoons to become the country's high-end air superiority fighters, with a secondary strike role behind the more versatile Falcons. "Oman's Air Force Upgrades", *Defense Industry*.
74. Chris Pocock, "Oman Buys Typhoons and Hawks in $3.75 Billion Deal", AINOnline, January 4, 2013, http://military.einnews.com/article/130693151 accessed on February 11, 2013.

both tactical transport and maritime patrolling. The aircraft will enhance Oman´s ability to patrol its territorial waters and conduct missions against piracy, illegal immigration and smuggling.[75] The upgradation of Omani defence capabilities can be presumed as alertness for the future. The selection of aircraft and defence mechanisms will help Oman to thwart any threat from Iran or the volatility of Persian Gulf; for instance, the F-16 aircraft with its multi-role features is capable of protecting Oman's aerial and surface security whereas the C-295s are capable of protecting the maritime trade.

With the upcoming of Gwadar port in Pakistan, Oman's position for itself and also for the U.S., the West and China becomes critical. This port has the potential to sow the seed for the reemergence of a neo-Cold War, not between the U.S. and Russia, but the between U.S. and China.

GWADAR PORT

Interestingly, Gwadar was under the possession of the Omanis and was sold to Pakistan for $3 million on September 8, 1958. Gwadar is a former fishing village in the southwestern province of Balochistan whose 47-ft-deep warm-water port is the only one in Pakistan capable of handling big cargo ships.[76] Sitting at the entrance of the oil-rich Persian Gulf and the strategic Gulf of Oman, Gwadar[77] is Pakistan's alternate economic, military and strategic base to the already saturated Karachi and Bin Qasim ports, as well as an efficient alternative to the Iranian port of Chah Bahar – a port designed to capture the lucrative Central Asian trade corridor. Earlier, it was Soviet Union which was eyeing this area. Currently, it is China which has its eyes on it, though subtly. Control of the port of Gwadar will provide access

75. "Oman Orders Eight Airbus Military C-295 Aircraft", *Arabian Aerospace Online News Service*, May 21, 2012, http://www.arabianaerospace.aero/oman-orders-eight-airbus-military-c295-aircraft.html, accessed on February 13, 2013.
76. Jeremy Page, "Beijing Agrees to Operate a Key Port, Pakistan Say", *Pakistan for Peace*, http://pakistanisforpeace.wordpress.com/2011/05/20/beijing-agrees-to-operate-a-key-port-pakistan-say/, accessed on January 10, 2013.
77. An obscure fishing village a few years ago, Gwadar warm-water port's inaugural by the Chinese Vice-Premier Wu Bangguo on March 22, 2002, marked its entrance into the list of the world's most important economic and strategic locations in a big way. Gwadar port became functional on December 21, 2008, with the arrival of a large ship carrying fertiliser. " PNS Gwadar", Global Security.org, http://www.globalsecurity.org/military/world/pakistan/pns-gwadar.htm accessed on January 10, 2013.

to the warm waters of the Persian Gulf. It will also give a country access to the Arabian Sea ports, access to the Indian Ocean, and the opportunity to threaten the Persian Gulf oil supply routes.[78]

The port is only about 400 km away from the Strait of Hormuz. Hence, the recent development of handing over the charge of this port's management to China by Pakistan has to be seen from a strategic perspective. Management of Gwadar port, around 600km from Karachi and close to Pakistan's border with Iran, is being handed over to state-run Chinese Overseas Port Holdings after previously being managed by Singapore's PSA International. When complete, the port is seen as opening up an energy and trade corridor from the Gulf, across Pakistan to western China, and can also be used by the Chinese Navy.[79] However, Pakistan maintains that the port is for its own access and its own navy and clarifiesthat it has taken China's help because of its finanvial incapacity.[80]

The effect of this development, seen in the context of Oman, is interesting, The port will enhance Oman's importance for the U.S. and West, especially because of its Masirah Island. If a conflictual situation arises between the U.S. and China, and China uses the Gwadar port as its base, then Masirah air base will be crucial for the U.S. to launch its air campaigns. In such a scenario, Oman's security vulnerabilities will increase. However, seeing the upgradation of Oman's defence system, especially the choices it has made to strengthen its air and naval power, is evidence of Oman's alertness to handle any situation.

In these circumstances, the extent of the development of a bilateral

78. Ibid.

79. "Decision to Hand Over Gwadar Port to China Worries India", Dawn.com, February 7, 2013, http://dawn.com/2013/02/07/decision-to-hand-over-gwadar-port-to-china-worries-india/ accessed on February 8, 2013. China has also funded ports in Hambantota, Sri Lanka, and Chittagong in Bangladesh, both India's neighbours. The development of this port is more serious as explained by an Indian analyst because it gives China base facilities. Ibid.

80. Gwadar was developed by the Chinese government at a cost of $288 million which was later handed over to Singapore's PSA International under a 40-year agreement in 2007 for management, operations, maintenance and development. SPA and its partners could not fulfill contractual obligations including investment of $775 million due to some reasons. "Handing over Gwadar port to China best solution: PEW", *Pakistan Today*, September 11, 2012, http://www.pakistantoday.com.pk/2012/09/11/news/national/handing-over-gwadar-port-to-china-best-solution-pew/ accessed on February 1, 2013.

relationship between Oman and China is crucial. Will Oman carry on with its pragmatic foreign policy and extend a friendly hand to China? China will try to take advantage of this by extending both economic and military help to Oman. In all these developments, India's position remains vital.

OMAN-INDIA RELATIONSHIP

Oman and India have always maintained a close relationship, which has been strengthened by the 700,000-strong Indian diaspora, which has contributed to the development of Oman's economy and services, including health care. Also, in December 2005, the countries signed a Memorandum of Understanding (MOU) on defence cooperation, calling for an "exchange of expertise in military training and information technology, utilization of military and educational courses and programs, exchange of observers attending military exercises and exchange of formal visits."[81] The cooperation also focusses on anti-piracy operations. The defence relationship between both countries began in 1972 when a military protocol was signed. In fact, India and Oman hold air and naval exercises, as part of India's efforts to build strategic ties with Oman whose ports have been utilised by the Indian Navy frigates on anti-piracy duty off the Gulf of Aden. Meanwhile, Oman has stepped up its security arrangements with India, especially after 2008, due to the regional and security situations.[82]

India's peninsular dimension places it adjacent to one of the most vital sea lanes of the world stretching from the Suez Canal and the Persian Gulf to the Strait of Malacca through which 55,000 ships and much of the oil from the Gulf region transits each year. India's location at the base of continental Asia and the top of the Indian Ocean gives it a vantage point in relation to both Central Asia and the Indian Ocean Region (IOR). Additionally, India's size, strategic location, trade links and Exclusive Economic Zone (EEZ) links its security environment directly with the extended neighbourhood of Central Asia, Southeast Asia, the Gulf and the Indian Ocean. These strategic-

81. Lefebvre, n.6.
82. "Second India-Oman Joint Air Exercises End", *The Hindu*, October 22, 2011, http://www.thehindu.com/news/national/article2562726.ece accessed on February 18, 2013.

economic factors impose an increasingly larger responsibility on India.[83]

For India, Oman remains an important country not only for its trade and economy but also for the presence of the large number of Indian expatriates, and for the security of the sea lanes of communication in the Western Indian Ocean and the Persian Gulf. The relationship between the two countries is crucial for both in terms of strategic locations and security vulnerabilities. To contain India, Pakistan, with the upcoming Gwadar port, will try to block this route through China as it has done in north and northwest Siachen (if a conflicting scenario rises). If a scenario like this were to emerge, Oman's position will be crucial, especially for India. Will Oman allow India's air power to protect its maritime security by diverting the route via the Gulf of Oman and Masirah Island to the Arabian Sea?

Fig 3

83. "Annual Report 2011-2012", Ministry of Defence Government of India, pp.1-254, http://mod.nic.in/reports/AR-eng-2012.pdf, accessed on February 18, 2013.

In the past, Indian officials have expressed concern on China's plans to use Gwadar as a staging post for naval operations in the Indian Ocean, the Arabian Sea and beyond. Pakistani officials says that Gwadar will be a trade hub for Central Asia and a transit point for Chinese oil imports, most of which are now shipped via the Malacca Strait, making them vulnerable to piracy or naval blockades. China and Pakistan also have discussed plans to build an oil pipeline from Gwadar to northwestern China, and two new stretches of railway lines extending the Pakistani network to Gwadar at one end, and the Chinese border at the other. Some US and Indian military officials see Gwadar more as part of the so-called "string of pearls" naval strategy, wherein China has also funded construction or upgrades of ports in Sri Lanka, Bangladesh and Myanmar.[84]

CONCLUSION

Oman's position as a strategic country will remain significant as long the Strait of Hormuz and natural resources, specifically oil, remain vital for the world. It will be vital for the strategic interests of the US and the West as well as those of India, China and Pakistan in the East. Ironically though, Oman's strategic location also brings security vulnerabilities. Nonetheless, with the sultan's adroit diplomacy, Oman's position, till now, is safeguarded. The development and upgradation of Omani defence capabilities proves the faresightedness of Sultan Qaboos to handle the threat perceptions from Iran and neighbouring volatile states and countries.

With the upcoming Gwadar port, Oman needs to be alert and self sufficient in protecting itself. It may need to project its power in future skirmishes such as a standoff between the US and China near Gwadar port, since Oman's strategic location will play a vital role for both parties. The sultan has been trying to strengthen his country, keeping in mind the volatility of circumstances surrounding Oman. For example, the significance of Salalah port: the Omanis believe that in the future this port is destined to be one of the most important container terminals of the world. Large freighters coming from Europe or North America will offload their shipments at

84. Page, "Beijing Agrees to Operate".

Salalah, where these products will be processed, reassembled and loaded onto ships headed to various final destinations in the Indian Ocean and Persian Gulf.[85] Now with Gwadar port's construction, this Omani port will be of great significance. It will be interesting to see a strong bilateral or trilateral relationship among Oman, Pakistan and China, which may not go down well with the US India will try to bolster its bilateral relations with Oman and engage more to keep the route open for energy and trade transits.

Many academics and leading policy-makers give credit to the UAE and Qatar for their rising power as small states. However, the location of Oman and the role of its unique foreign policy in maintaining peace and stability in the region should not be overlooked.

85. Lefebvre, n.6.

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