DEFENCE AND DIPLOMACY

IN PURSUIT OF NATIONAL SECURITY

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EDITOR'S NOTE

To begin with, let me thank our readership for the enthusiastic response to our inaugural issue. This strengthens our confidence, incentive and the goal to move forward with dedication.

After all, the major aim of starting this journal was to create an opportunity to write, discuss and debate issues concerning national security which incidentally require synergy between defence and diplomacy. The idea to move forward along this line was triggered by the realisation that national security, as a discipline, is not taught at any of our nearly 400 official, private and "deemed" universities which churn out an average of over 4,000 doctorates, 35,000 post-graduates, and 2.46 million graduates every year, besides 300,000 engineers, and nearly 150,000 Information Technology (IT) professionals --- almost all of them without any formal education on national security, national values and/or national interests, thus, promoting parochialism and regionalism. On the other side of the globe, there is no major university in the United States that does not have a two-year course (or at least two term papers) on national security. In other words, understanding, protecting and promoting national security in India has become a private enterprise where individuals seek to try and understand the core issues and interests by acquiring knowledge and thinking through it to do the best for their country.

We need to reflect on this issue in its widest terms and see if something needs to be done, and how.

Jasjit Singh
Director, Centre for Air Power Studies, New Delhi

THE KUDANKULAM CONUNDRUM: NEED FOR DEEPER ANALYSIS

MANPREET SETHI

The first of the two 1,000 MW nuclear power plants under construction for the last decade[1] at Kudankulam was due to become operational before the end of this year. What it stares at instead is a delayed future after the Tamil Nadu Cabinet passed a resolution in September 2011 to suspend work on the nuclear reactor. Chief Minister Jayalalitha claimed to have been compelled to do so in response to the public protests against the nuclear plant, and she certainly had an eye on the local elections that were due less than a month before the protests broke out.[2]

The elections are now long over and the dust that was kicked up around Kudankulam appears to be settling down. However, there are several issues that have far-reaching implications and which urgently demand a wider debate in order to minimise such incidents in the future. This article is an attempt to highlight four specific issues of national relevance that merit a national debate: one, do we need large amounts of

* Dr **Manpreet Sethi** is Project Leader, Nuclear Security at the Centre for Air Power Studies, New Delhi.

1. Though the first agreement on the Kudankulam plant was signed between the Soviet President, Mikhail Gorbachev, and Indian Prime Minister Rajiv Gandhi in 1988, the actual construction of the first reactor started only on March 31, 2002.
2. It may be recalled that Ms Jayalalitha was Chief Minister (CM) of Tamil Nadu in 2002 when the construction of the first reactor actually began. During her tenure as CM then, from 2002-06, no opposition to the Kudankulam plant surfaced.

electricity? Two, what are the limitations of the current electricity mix? Three, does nuclear energy have a role to play in meeting the increasing electricity demand? And, four, is it a safe source of energy?

It is imperative that an extensive and informed national debate on these issues is seriously undertaken. This could best be done through a considered and coherent expression of views that explores all aspects of the complex and multi-dimensional subject. Such a discussion is necessary for a clear understanding and informed opinion-making on such a sensitive issue of national import. Just as there is a consensus, or at least a majority view on several aspects of national security, a similar approach is necessary on the country's energy policy so that the basic premise on which the national nuclear ambitions are built can be undertaken as a national enterprise on which there is no scope for play of politics. This is even more essential since coalition governments appear to be the future of Indian democracy. A broad-based consensus amongst major political parties on the basic issue that a national nuclear power programme is necessary and needs to be pursued would not only help raise the confidence in nuclear power of the people at home and provide clear direction and motivation to the national nuclear establishment, but also provide the right signals to the investor abroad.

LINKAGE BETWEEN ELECTRICITY AND DEVELOPMENT

The first question that must be addressed is whether India needs large amounts of electricity. Is there a connection between availability of stable, reliable electricity and economic growth and development? While one can argue that there is plenty that is amiss with the current model of economic development, the truth is that in this path that we have chosen for ourselves as a nation, our agriculture, manufacturing and service industries, health and financial systems, communication and transportation sectors, or our societies in entirety, are electricity driven. The British scientist, P. M. S. Blackett who was closely related to the British atomic energy programme, had presciently stated in 1948, "It is not always recognised how very intimately a modern nation's industrial strength, and so both its standard of life and its military potential depend on the availability of power."[3]

3. P.M.S. Blackett, *Military and Political Consequences of Atomic Energy* (London: Jurnstile Press, 1948), p. 90.

Countries that are unable to meet the national electricity demand, shortchange their citizens from growth and development prospects. While it is true that the benefits of this development may not be equally available to all, that is a problem traversing many other domains, including quality of governance, and it should not be confused with the basic demand for electricity in order to power economic growth.

Within India, it is a proven fact that states that have the least per capita availability of electricity (Bihar, Assam, Manipur) are also the ones that suffer the most from social strife and economic deprivation. At the same time, it is equally empirically true that greater economic investments flow into areas that provide, among other parameters, the promise of reliable and stable electricity supply. The cases of Gujarat, Haryana and Punjab prove that cheap, reliable electricity makes a state a preferred destination for manufacturing even if it suffers from other handicaps such as higher wages, etc.

India's present per capita power availability is at 778 kWh which compares miserably with the global statistics of 17,053 kWh in Canada, 13,647 kWh in the USA or 5,656 kWh in Italy. Even China, with a population size that is similar to India's, can assure 2,471 kWh to its citizens. It would be a legitimate aspiration of India to at least be able to provide per capita electricity availability that is commensurate with that of middle income nations at about 5,000 kWh. In fact, the Human Development Index has established 4,000 kWh per capita availability as the line that divides a developing from a developed nation. In order to move into that bracket, India would need to expand its electricity generation capacity from the current 180 GWe to at least four times this figure by 2032.[4]

The inability to meet this target, or to do so with energy sources that heighten national vulnerabilities by increasing dependence on unreliable and unstable supplier nations, or that cause environmental pollution and thereby negate development benefits by increasing costs on health and environment mitigation efforts, would have a direct and indirect impact on the overall economic growth potential and national development index.

4. Letter written by Nalinish Nagaich, Executive Director, NPCIL, in response to "Communication in respect of KKAPP" by Rev David Thirumery, October 5, 2011. Available at http://www.npcil.in/pdf/news.

LIMITATIONS OF CURRENT INDIAN ELECTRICITY MIX

It can hardly be disputed that the national energy demand must be met through safe, reliable, secure and environmentally sustainable fuel sources. The current Indian energy basket must be subjected to analysis on the basis of these parameters.

- **Coal:** Nearly 55 per cent of the current electricity generation is undertaken in coal-run thermal power plants. While India is now the third largest producer of coal in the world, the quality of this coal is low grade, with a low calorific (heat generating) value and a high ash content. This not only compromises the efficiency of the power plant but also causes more pollution. Also, the coal deposits are concentrated in select pockets of the country that necessitates haulage of coal over long distances, raises costs and ties down the transportation network. Even so, the domestic coal production is grossly inadequate for the currently operational thermal plants owing to hurdles of environmental clearances, land acquisition problems and low investments. The country already imports no less than 80 million tons of coal and this figure is likely to jump to 142 million tons in 2011-12.[5] If nuclear energy was to be ruled out from the national electricity mix, coal imports for the thermal power plants that would have to be set up to meet the burgeoning energy demand would be no less than 1.6 billion tons by 2050.[6] The enormity of these figures and their impact on India's energy security hardly needs to be elaborated.
- **Oil and Natural Gas:** India's oil-based thermal plants produce only 1,200 MW or 0.67 percent of the total installed capacity. Much of the oil is used up by the transportation sector and yet in 2006, India was the seventh largest net importer of oil in the world, hauling in nearly 68 percent of its oil consumption from other countries. Natural gas-based thermal plants currently provide for 10 percent of the total installed electricity production capacity, but while it provides for a cheap source of electricity, India has limited natural gas reserves of its own. Neither has New Delhi been adept at its energy diplomacy with the gas-rich countries in

5. "Coal Imports to Jump 70% Next Fiscal: Government," *Economic Times*, February 4, 2011.
6. As estimated by Dr Anil Kakodkar, "Uranium Import Can Stave Off Looming Energy Crisis: Kakodkar," *Hindu Business Line*, July 5, 2008.

its neighbourhood like Bangladesh and Myanmar. And, where India has acquired some gas fields in the Central Asian Republics, there are transportation problems of land-based pipelines that would have to run across the conflict prone Afghanistan and the politically unstable and hostile Pakistan. Therefore, there are severe limitations to using natural gas, at least in the foreseeable future.

- **Hydroelectricity:** Nearly 22 percent of the current total electricity generation is from water. However, this appears to have plateaued after having experienced its share of displacement and rehabilitation disputes that have delayed projects and raised costs. Most of the potential of this sector is now seen in small projects meant to cater for local needs, rather than for generation of electricity for larger grids.
- **Renewables:** India is already the fourth largest producer of wind electricity and it contributes 6 percent to the total installed capacity. However, it has its limitations in terms of energy intensity and all-time and all-weather availability. Meanwhile, research and development in solar electricity continues to improve its commercial viability as a large scale and reliable electricity source, but storage technologies are still less than perfect. It is nevertheless a great potential source of electricity, but the technology is yet to mature.

As is evident from the above, India currently imports traditional fossil fuels in large quantities to meet its energy demand, thereby increasing its vulnerabilities to global mood swings. For a large and rapidly developing country like India, bulk imports of fuel are neither affordable nor strategically prudent.

ROLE OF NUCLEAR ENERGY

Let us now look at nuclear energy and examine the role it could play in India's energy future. Twenty-one operational nuclear power plants today provide about 3 percent to India's electricity grid. This is a mere drop in the ocean, but the silver lining here is that India managed to reach even this figure not only through indigenous research and development of a pioneering technology, but also during a period when the country was under sanctions and technology denials.

This, of course, resulted in time delays and cost overruns of existing projects. For instance, installed nuclear generation capacity rose from 600 MWe in 1979-80 to only 950 MWe by 1987. In fact, after 1973, when the Rajasthan Atomic Power Station (RAPS) 1 went on line until 1981 when RAPS 2 became operational, there was a long gap. And, even thereafter, only the Madras Atomic Power Station (MAPS) 1 and 2 became critical in the 1980s and the two Kakrapar plants came on line in the 1990s. Therefore, by the year 2000, the total nuclear electricity generation of India stood at 2,720 MWe after nearly five decades of the atomic pursuit. In the last one decade, however, this figure has climbed to nearly double the amount. This can be attributed to two essential factors – one, the maturity of the indigenous nuclear technology which is now poised for rapid replication. In fact, the Indian nuclear establishment has decided to standardise on 700 MWe nuclear power plants for the future, having earlier built a string of 220 MWe and then two 540 MWe plants; and two, as a result of the imports enabled by the opening up of India to international nuclear commerce. In fact, from 2000 onwards, the major constraint had been felt not in nuclear technology, expertise or financing, but in the availability of uranium to fuel the fast expanding programme of power reactors. This challenge and the desire of the Department of Atomic Energy (DAE) to rapidly enhance nuclear power production through induction of imported, larger capacity power reactors, persuaded the government of the day to explore options for international nuclear cooperation. This was achieved in 2008 with the grant of the waiver by the Nuclear Suppliers Group (NSG) and thereafter India has concluded a number of nuclear cooperation agreements with many countries that are at present in different levels of implementation.

Kudankulam, which actually predates the waiver process, was to be the first large capacity, imported reactor that was due to come on line and the straight addition of 2,000 MW would have brought about a huge jump to the state's installed capacity. While this is unlikely to happen as scheduled, the fact that nuclear energy has the potential of being a major contributor to India's energy basket cannot be dismissed. Nuclear technology is a mature one that is currently in use in nearly 40 countries. In developed nations like France, Japan, the US and UK, its contribution to national electricity grids is in high

double digits. Its environmental benefits – directly in terms of the low carbon footprint and indirectly by reducing Green House Gas (GHG) emissions that would arise from thermal plants – are well known.

Given that India has to install new capacities for electricity generation, it is only prudent that it does so from sources that do not raise environmental and health costs. The country today has more than 300 reactors years of cumulative, safe commercial nuclear operations. It would be completely wasteful and counter-productive not to capitalise on the international opportunity that has presented itself after the NSG waiver, as also the domestically available experience and expertise in the area.

SAFETY OF NUCLEAR POWER PLANTS

The most important criterion for use of nuclear power has to be nuclear safety. Obviously, Fukushima has shaken public confidence in the safety of nuclear power generation. However, the general public has mostly superimposed the events at Fukushima onto the nuclear plants that they know about without understanding the peculiar and unique specificities of the Japanese nuclear incident that cannot transpire in nuclear plants in India. Even more disturbing is the distortion of perceptions by an inadequately informed media. For instance, since people have seen the pictures of the explosion at the Fukushima plant and heard news of evacuations, there is a general tendency to assume huge radiation exposure and deaths. But, the fact that is little known is that there has been not a single radiation fatality at Fukushima. A few workers who died at the plant were victims of the tsunami that claimed thousands of lives. In fact, the World Nuclear Association asserts that apart from Chernobyl, it is "not aware of a single radiation fatality that has occurred in the entire history of nuclear power, spanning some 14,500 reactor-years of nuclear electricity generation in some 30 nations worldwide".[7]

Public perception of nuclear safety, however, tends to assume otherwise. Not surprisingly, therefore, the efforts of governments and the nuclear establishments worldwide since the Fukushima incident have centred on measures to restore public confidence in the safety of nuclear power production. Every single country that has a

7. World Nuclear Association, http://www.wna.org, accessed on October 19, 2011.

nuclear power programme has carried out safety reviews, stress tests and brought about changes in the national regulatory mechanisms to further reinforce safety. In India too, the Prime Minister had immediately called for a technical safety review, and reports of the task forces have since been presented and redundancy measures enhanced at all existing nuclear power plants.

Kudankulam appears to have become a victim of the post-Fukushima nuclear scepticism. While the concerns of the people living in the area are perfectly understandable and the onus lies on the state and central governments to allay those fears through the help of the local nuclear and municipal authorities, the worrisome aspect of the issue is the use of the public apprehensions for petty politics and to whip up public frenzy on subjects extraneous to this issue. A similar trend was seen in Jaitapur when the public protests over land acquisition and the compensation package were hijacked into an anti-nuclear campaign.

It is for this reason that this paper makes a strong case for a considered understanding of India's need for nuclear energy. Given India's huge socio-economic growth and development requirements, it cannot afford the luxury of banking on only one or two fuel sources to power its future. The country has to opt for a diversified energy basket, including energy efficiency and conservation strategies. And in this, nuclear energy has a critical role to play. To abandon nuclear power would deprive the nation of a mature and environmentally friendly energy source.

Once it is accepted that nuclear power has a contribution to make to the national electricity grid, then the energies of the government can be rightly focussed on resolving issues that impact the lives and livelihoods of the people affected by the plant, and to optimising nuclear safety. On the other hand, frequent political attacks on the national nuclear enterprise result in confusion at home and abroad and do no good to the nation.

PLA NAVY IN THE 21ST CENTURY: DEVELOPMENTS AND IMPLICATIONS

RAKESH KAUL

Those who have been observing China have little doubt that China has put in substantial effort in modernising her naval forces, especially in the last decade or so. The genesis of the maritime component of China's

Fig 1

Commander **Rakesh Kaul** is a Research Fellow at the Centre for Air Power Studies, New Delhi.

defence strategy lies in the People's Republic of China's (PRC's) 1982 Naval Maritime Plan, outlined by then Vice Chairman of the Military Commission, Liu Huaqing. This naval strategy defined three stages and goals for the People's Liberation Army (PLA) Navy. In the first stage, from 2000 to 2010, China was to establish control of waters within the first island chain that links Okinawa Prefecture, Taiwan and the Philippines. In the second stage, from 2010 to 2020, China would seek to establish control of waters within the second island chain that links the Ogasawara island chain, Guam and Indonesia. In the final stage, from 2020 until 2040, China would aim to put an end to US military dominance in the Pacific and Indian Oceans, using aircraft carriers as a key component of its military force. The current developments and the recent impetus on modernisation find alignment with this very datum.

China's Defence White Paper of 2010 lays down the following goals and tasks for China's national defence :

- Safeguarding national sovereignty, security and interests of national development. (including the task of opposing and containing the separatist forces that seek independence of Taiwan, Tibet and East Turkistan).
- Maintaining social harmony and stability.
- Accelerating the modernisation of national defence and the armed forces. Bearing in mind the primary goal of accomplishing mechanisation and attaining major progress in informationisation by 2020, the PLA perseveres with mechanisation as the foundation and informationisation as the driving force.
- Maintaining world peace and stability (including effective disarmament, arms control and maintaining global strategic security).

The same White Paper, specifically focussing on the naval modernisation plan, also declares,"… the PLA Navy (PLAN) endeavors to accelerate the modernization of its integrated combat forces, enhances its capabilities in strategic deterrence and counterattack, and develops its capabilities in conducting operations in distant waters and in countering non-traditional security th***reats...***

By organizing naval vessels for drills in distant waters, it develops training models for MOOTW (Maritime Operations Other Than War) missions. New types of submarines, frigates, aircraft and large support vessels have been deployed as planned..."

The beginning of China's recent naval modernisation effort can be traced back to the 1990s,[1] although the design work on some of China's newer ship classes appears to have begun in the later 1980s.[2] However, it probably was the incident popularly known as the Third Taiwan Strait Crisis or the 1996 Taiwan Strait Crisis[3] which made China clearly see the impact a strong naval force can exercise, and could have well accelerated her own plans of naval modernisation. In pursuance of the strategy with respect to the three island chains, many analysts believe that the PLA Navy has developed and is still focussing on 'sea-denial' or 'anti-access' capabilities so as to establish its dominance over the seas around China. Whilst this may be so, it may not be all that the PLA Navy is focussing on. Almost all modern navies in the world have been, and are still, primarily interested in developing strategies, tactics and weaponry to 'affect the battle on land' and the PLA Navy is no exception. Also, a study of the Defence White Papers, especially since 2008, emphatically brings out the PLA Navy's ambition to extensively and effectively undertake sustained operations away from its own shores. For a long time, it was believed that most PLA Navy plans and developments were aimed at, or were related to, the Taiwan

1. China ordered its first four Russian-made Kilo class submarines in 1993, and its four Russian-made Sovremenny class destroyers in 1996. China laid the keel on its first Song (Type 039) class submarine in 1991, its first Luhu (Type 052) class destroyer in 1990, its Luhai (Type 051B) class destroyer in 1996, and its first Jiangwei I (Type 053 H2G) class frigate in 1990.
2. First-in-class ships whose keels were laid down in 1990 or 1991 reflect design work done in the latter 1980s.
3. The Third Taiwan Strait Crisis, also called the 1996 Taiwan Strait Crisis, was the effect of a series of missile tests conducted by the People's Republic of China (PRC) in the waters surrounding Taiwan, including the Taiwan Strait, from July 21, 1995 to March 23, 1996. The first set of missiles fired in mid to late 1995 were allegedly intended to send a strong signal to the Republic of China (ROC) government under Lee Teng-hui, who had been seen as moving the ROC's foreign policy away from the One-China policy. The second set of missiles was fired in early 1996, allegedly intending to intimidate the Taiwanese electorate in the run-up to the 1996 presidential elections. The US government responded by staging the biggest display of American military might in Asia since the Vietnam War. President Clinton ordered ships, including the USS *Nimitz*, into the Taiwan Strait in March 1996. This was a clear signal by the US that it was willing and ready to defend Taiwan in the face of PLA military action.

contingency. This, as the saying goes, may now well be, history.

The PLA Navy today has an impressive arsenal of 09 (+02) nuclear (05 ballistic missile and 04 attack) submarines; 48 conventional (01 ballistic missile and 47 attack) submarines; 29 destroyers; 51 frigates; and over 350 patrol vessels and fast attack craft. Much has been discussed in myriad writings and papers of the various developments and advancements in the maritime arena of China, with the primary focus being military hardware, in terms of warships, weapons and systems. There is little left to discuss insofar as the inventory of the PLA Navy is concerned. However, certain critical force multipliers, the development of which directly impacts achieving the PLA Navy's stated and intended goals, mandate reiteration.

AIRCRAFT CARRIER PROGRAMME

The PLA Navy started to study the possibility of building a light aircraft carrier of around 15,000 to 20,000 tonnes displacement in the early 1980s. In 1992, China reportedly approached the Ukrainian government to purchase the unfinished Soviet Kuznetsov-class carrier *Varyag*. However, not much progress was reported, and moreover the Ukrainian government denied that any discussions had taken place.[4] The *Varyag* was bought by the Chong Lot Tourist and

Fig 2

'*Varyag*' (*Shi-Lang*) in Dalian Shipyard in May 2009

4. "Ukraine Denies Talks on Carrier," *South China Morning Post*, February 01, 1993.

Amusement Agency for $20 million,[5] in September 2001, and it finally arrived at the Chinese port of Dalian in March 2002. By 2005, it was clear that the *Varyag* would be part of the PLA Navy and in June 2006, it emerged from the dry dock in PLA Navy colours. In a December 2008 photograph, it is clear that the flight deck of the ship has been cut, possibly to accommodate machinery, weapons and sensors. By end August 2009, the Chinese began modification of the "island" structure of the *Varyag*. In February 2007, news articles brought out that Russia planned to sell up to 50 Su-33 fighter aircraft to China in a $2.5 billion deal.[6] However, the deal collapsed in March 2009 over concerns that Beijing could reverse engineer and produce a cheaper version of the aircraft.[7] China is also believed to be developing a suitable multi-role fighter, probably the J-15, which is a derivative of the J-11B (essentially, the reverse engineered Su-33), for its aircraft carrier. The *Varyag* has recently been rechristened *Shi-Lang* and is reportedly ready to go to sea by end August 2011. China, reportedly, has another 70,000-tonne carrier under construction at the Jiangnan Shipyard which is likely to be completed by 2016. Given that the PLA Navy operates three fleets, it stands to reason that China is looking for at least three carrier strike groups by 2020.

The induction of aircraft carriers in the PLA Navy would, undoubtedly, provide China with true blue-water capability, which is an essential requirement to meet the goals laid with respect to the island chains. Whilst the complete integration of the carriers within the PLA Navy may take a considerable period of time, the sheer reach and control of air space at extended ranges that the presence of carriers will accord demands cognisance.

ANTI-SHIP BALLISTIC MISSILE

The Anti-Ship Ballistic Missile (ASBM), is a medium range ballistic missile (approximately 1,700 km range) equipped with Manoeuvrable Re-entry Vehicles (MaRVs) designed to hit moving ships at sea. The ASBM is referred to as the DF-21D, and is believed to be a new variant

5. "No Connection to Naval Ship, Says Embassy," *South China Morning Post*, April 04, 1998. It is also widely reported that $20 million is three times the price of the scrap value. Further, a sum of another $30 million was spent in towing it.
6. *Kommersant Online Daily Newspaper*, dated October 24, 2006.
7. RIA Novosti Report, dated March 10, 2009.

of China's existing DF-21 (aka CSS-5) road-mobile Medium-Range Ballistic Missile (MRBM). In December 2010 and January 2011, the US Department of Defence (DoD) indicated that the missile may have achieved the equivalent of, what for a US weapon would be called, Initial Operational Capability (IOC).[8]

Although the ASBM is still in some stage of development and there are numerous questions regarding how it actually works, as on date, it is probably the only weapon in China's arsenal that baffles even the USA. Being touted as the "carrier killer," the ASBM is designed to engage moving targets at sea. Whilst there are no inputs about an "over-water" test yet and the missile is reportedly yet to complete

Fig 3

a battery of tests before it claims full operational capability, the threat such a weapon poses is certainly unparalleled. The PLA rarely discusses openly the development of major new weapon systems, but the ASBM appears to be an exception. In an annual academic conference sponsored by the Second Artillery Engineering College, the proceedings clearly state that "...in order to pierce the armour of a carrier . . . China is developing a new boost-glide ballistic missile . . . equipped with terminal guidance systems." This startlingly direct admission reveals the level of commitment to the programme within

8. Press Report based on interview of Admiral Robert F. Willard, Commander, US PACOM.

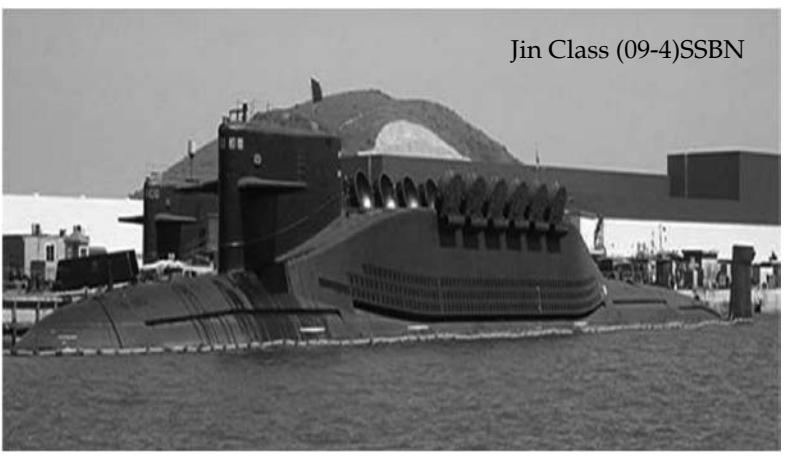
the military branch primarily developing it.[9] Notwithstanding the above, the ASBM is, as called by many, a "game-changer" and its deployment, or the threat of the same, will have an indelible affect on the tactics of forces operating within its reach.

NUCLEAR SUBMARINES

The origins of China's nuclear submarine programme (codenamed Project 09) can be traced back to the twelve-year plan formulated in 1956 for development of science and technology. The plan accorded priority to the construction of a nuclear power plant for submarines. Project 09 includes development of submarines like the Han class SSN(09-1), Xia Class SSBN (09-2), Shang class SSN(09-3) and Jin class SSBN(09-4). China is likely to construct another SSN (09-5) with displacement ranging from 7,000 to 11,000 tonnes, as also another SSBN(09-6) which could have length of 150 m and displacement of 12,000 tonnes or above.

China's White Paper on National Defence in 2006, stated one of the PLA Navy's aims as "*..enhancing its capabilities in integrated maritime operations and nuclear counterattacks*." This not only highlights the intent of the PLA Navy but also signifies the importance accorded to the nuclear submarine force, which remains the primary arm of

Fig 4



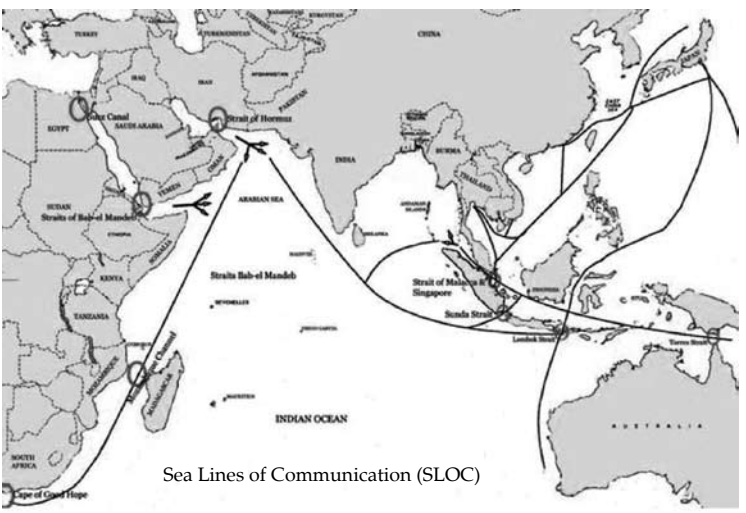
9. *US Naval War College Review*, authored by Eric Hagt and Matthew Durnin. Eric Hagt is the director of the China Programme at the World Security Institute in Washington, D.C., and Chief Editor of *China Security*.

the PLA Navy with "second strike capability." Whilst the nuclear submarine fleet of the PLA Navy is not very large, with a total of just 09(+02) boats (04 Han class SSNs, 02[+02]) Shang class SSNs, 01 Xia class SSBN and 04 Jin class SSBNs)[10] and just 05 of them having the capability to launch nuclear missiles, the threat they pose is potent and real. With the development of the JL-II Submarine Launched Ballistic Missile (SLBM) (reportedly with a range of over 8,000 km) that can be launched from the Jin class SSBNs, the PLA Navy has added another dimension to the reach of this potent force. Many analysts may have been dismissive of the PLA Navy's nuclear submarine force, primary due to the lack of sophisticated technology and the inferiority in numbers, but what mandates cognisance is the fact that China is diligently and rigorously pursuing its nuclear submarine programme, and if one is to take a lesson from history, then it is just a matter of time before the PLA Navy will have a strong and sophisticated nuclear submarine fleet that will certainly impact the balance of military power in the region.

IMPLICATIONS FOR INDIA

China has serious concerns over its energy security and, hence, needs to control the Sea Lines of Communication (SLOCs), especially those

Fig 5



10. *Jane's Fighting Ships* 2010-2011.

emanating from the Persian Gulf and Africa, and traversing the Indian Ocean to China. To do this, China needs a strong and capable maritime force that is capable of undertaking sustained operations away from its own shores. This has been one of the primary drivers behind the rapid and consistent modernisation of the PLA Navy in the recent years. Some observers believe that China may want to eventually build a series of naval and other military bases in the Indian Ocean—a so-called "string of pearls"—to support Chinese naval operations along the SLOCs linking China to Persian Gulf oil sources.[11] China's contribution in building/ capacity-enhancement of various ports in India's neighbourhood, viz. Gwadar in Pakistan, Colombo and Hambantota in Sri Lanka, Chittagong in Bangladesh and some possible ports in Myanmar, is one of the developments that the Indian Navy has watched closely for some time now, and with obvious concern. **These substantial infrastructure investments made by China in our neighbourhood would inevitably, at some point in time, mandate deployment of protective forces. To this end, increased deployments of the PLA Navy in the Indian Ocean are but a matter of time**.

Although the deployments of the PLA Navy in the Indian Ocean, in the recent past have been limited to a few goodwill visits and anti-piracy missions in the Gulf of Aden, this must not be construed as its deployment pattern in the years to come. In December 2010, China announced the commencement of a 376-day global trip to be undertaken by the Chinese scientific research ship *Dayang Yihao*, or *Ocean One*, that will take it across the Pacific, Atlantic and Indian Oceans. The vessel is scheduled to conduct research on hot liquid sulphides and deep-sea biological diversity.[12] Notwithstanding the stated mission of the vessel, it could well be utilised to gather/ disseminate other information which could be of interest to China,

11. One press report in 2005 stated that China is building up military forces and setting up bases along sea lanes from the Middle East to project its power overseas and protect its oil shipments, according to a previously undisclosed internal report prepared for Defence Secretary Donald H. Rumsfeld. "China is building strategic relationships along the sea lanes from the Middle East to the South China Sea in ways that suggest defensive and offensive positioning to protect China's energy interests, but also to serve broad security objectives," said the report, sponsored by the Director, Net Assessment, who headed Mr. Rumsfeld's office on future-oriented strategies.
12. Xinhua News Agency Report, December 08, 2010.

specifically the PLA Navy. The recent award of seabed mining rights, to a 10,000 sq km area in the southwest Indian Ocean, to China, by the International Seabed Authority[13] will only lead to increased PLA Navy presence in the Indian Ocean.

If it is to be accepted that the foray of the PLA Navy into the Indian Ocean is just a matter of time and eventually inevitable, then India needs to prepare itself for the challenges such proceedings will pose. In recent times, the Indian Ocean has become considerably crowded, with navies of almost all the developed nations operating in this critical maritime arena, either individually or as part of a coalition task force. The security of the heavily oil laden SLOCs, or as some analyst like to call them, energy lines of communication, being one of the primary drivers behind their presence. Going by the prevailing trends, military traffic in the Indian Ocean is only likely to increase. Some of the primary roles of the Indian Navy, like effective surveillance of our Exclusive Economic Zone (EEZ) and credible forward defence of our island territories, are also its primary challenges. The advent of activities of the PLA Navy in the Indian Ocean will add a whole new dimension to these challenges.

Whilst the question: does one see a full scale conflict between the Indian Navy and the PLA Navy? may find an answer in the negative, the fact that the PLA Navy poses a potent and credible threat to India being the regional power it wants to be is very real. The mere nomenclature of the ocean is certainly not enough for India to control the Indian Ocean. Consequently, at the risk of stating the obvious, it is imperative for India and specifically the Indian Navy to develop/ enhance certain new / existing capabilities to meet the challenges of the future. A few important ones are elucidated below :

- The need for surveillance of our expansive EEZ of nearly 2.2 million square miles needs no debate. If the MV *Pavit*[14] incident is anything to go by, then there is sufficient evidence of certain lacunae in our maritime surveillance. Complete awareness of our maritime domain, with the number of vessels, big and small, registered and unregistered, commercial and military, is an enormously daunting

13. Xinhua News Agency Report, August 03, 2011.
14. MV *Pavit*, a Panama flagged 1,000-tonne merchant ship ran aground on Juhu beach, Mumbai on July 31, 2011. The ship was reportedly abandoned off Oman by its owners and eventually drifted to run aground at Mumbai undetected.

task, and to keep a track of each and every vessel in our waters is practically impossible. However, this does not, in any way, diminish the need for total Maritime Domain Awareness (MDA). Whether the platforms employed are surface, aerial, electronic or space, and whether the effort is singular or through a coalition of various agencies, the Indian Navy needs to have the complete picture. The establishment of the National Maritime Domain Awareness (NMDA) Grid, being spearheaded by the Indian Navy, is certainly a step in the right direction and needs to be pursued vigorously.

- Whilst numerous projects are underway to add to the surface, sub-surface and maritime aviation fleets of the Indian Navy, a mere numerical comparison of the major combatants of the PLA Navy and Indian Navy would explain how dire the Indian Navy's need is.[15] If we are to secure our SLOCs on both the seaboards and exercise effective sea control (limited in time and space), we require a minimum of one carrier strike group on each seaboard supported by an adequate number of cruisers, destroyers, frigates and replenishment vessels with a superior strike, Anti-Submarine Warfare (ASW) and Maritime Domain Awareness (MDA) capability. The Indian Navy, though headed in that direction, still has some way to go and there is a need to accelerate the process.
- Forward defence of India's outlying island territories viz. the Andaman and Nicobar (A&D) Islands and the Lakshadweep group of islands also needs to be bolstered. Especially in the Bay of Bengal, as this would probably be one of the first segments of the ocean to witness enhanced PLA Navy activity. As on date, many analysts perceive that it would take at least a decade for the PLA Navy's nuclear submarines to foray in the Bay of Bengal. Even if that were the case, the Indian Navy would need to commence preparations to counter the same at the earliest. Also, the possibility of an amphibious landing at one of the islands in the A&N group has plagued the minds of Indian naval strategists for some time now, and whilst the current PLA Navy's amphibious

15. Comparison of numbers of ships does not always serve as the correct reference to compare the strength of any two navies since the capabilities of ships may differ and a smaller number of ships, which are technologically superior, may outweigh a higher number of ships in combat. However, in this case, even if one was to consider the technologies of the platforms being compared, the PLA Navy would be at least at par, if not better.

capability may not be enough to undertake such a mission, the future could be a completely different ballgame.

- The addition of weapons and systems like the ASBM in the PLA's arsenal mandates careful and conscientious consideration. Classical theatre ballistic missile defence systems, towards which the Indian defence establishment is leaning, may not be the right answer for such a weapon. This is a challenge that would probably require the national Research and Development (R&D) establishments to come up with a counter to. Import of a weapon system to counter the ASBM could also be considered; however, since it is evident that the US DoD is still struggling for answers, the likelihood of getting a counter weapon from abroad in the near future is rather doubtful.

Those who observe and study China are aware of the fact that this is a nation that believes in setting and achieving long-term goals and has done so successfully in the past. **The investments made by China, which are primarily infrastructural and ostensibly for social/ commercial capacity enhancements, in various countries of the Indian Ocean Region (IOR) and Africa run into billions of dollars**. Benign as they may seem, it would be extremely myopic to view these investments as acts of charity aimed at better relations with other nations, since **most of these developments could plausibly serve a dual purpose**. For the PLA Navy to have a fleet specifically designated to operate in the Indian Ocean is not difficult to perceive and would probably be a reality in a decade or so, if not sooner. **What comes out clearly from the arguments above is the inevitability of increased PLA Navy activity in our neighbourhood**. **Agreeable or not, the PLA Navy's foray in the Indian Ocean is near certain and will pose a challenge that India will have to contend with in the very near future**. Hence, it is imperative for the Indian defence and policy-making establishments to not only remain abreast of the myriad developments in the PLA Navy but to also initiate processes that would ensure that we secure our interests in the Indian Ocean towards claiming and protecting our rightful place as a regional power.

BEYOND THE ACQUISITION OF C-130Js AND C-17s

ASHOK K. CHORDIA

Strategically, time and space are relative, and as the history of war has shown again and again, a handful of men, at a certain spot, at a certain hour, is frequently a far more powerful instrument of war than ten times the number on the same spot twenty-four hours later.

— J.F.C. Fuller

Infiltration, skirmishes and wars on the borders, terrorist attacks in cities, the Naxalite menace, natural calamities, major accidents, evacuation of expatriates from troubled foreign countries, humanitarian aid to foreign countries, reconstruction and development in war-torn friendly countries – the response to all these situations and many more, demands large-scale movement of men and material. Often, secrecy is essential; always, time is of the essence. Reliable airlift capability and prompt action is the lifeblood of such missions. A timely airlift of troops by the Indian Air Force (IAF) to the Maldives frustrated the designs of a band of terrorists and averted a *coup d'état* in November 1988. Operation Cactus was a shot in the arm for Indian diplomacy. In some ways, India continues to gain from the stature thus attained. Airlift capability is a powerful tool for pursuing foreign policy objectives through employment of resources and capabilities. It has the power to change attitudes and build perceptions.

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The AN-32s and IL-76s were inducted in the IAF in the 1980s. They have addressed the airlift needs of the country for over a quarter of a century. At the present rate of use, it may be possible to fly them for another decade with diminishing returns due to ageing. The Government of India has signed an agreement with the US government to acquire ten Boeing C-17 Globemaster III. India will take delivery of the airlifters in 2013 and 2014.[1] Earlier, in February 2011, the IAF began induction of the C-130J 'Super Hercules' transport plane, augmenting its special operations capability. An initial purchase of ten C-130Js is likely to be followed up by six more aircraft.

Induction of C-17s Globemaster III and C-130Js Super Hercules at this juncture is a well timed action to maintain the airlift capability, nay elevate it to a desirable higher level – moving more men and material, faster and more efficiently – meeting more aspirations – projecting greater capability and power. The new inductions aim at augmenting the capacity and capability of the IAF in accordance with the current and emerging security situation in the region. They will also supplement the existing capability to handle relief operations during natural disasters and a variety of crisis situations that necessitate prompt airlift.

The C-17 shall fulfil India's needs for military and humanitarian airlift with its tactical and strategic capabilities. The aircraft's ability to transport large payloads across vast ranges, land on short, austere runways, and operate in extremely hot and cold climates makes it ideal for military operations and humanitarian assistance in the region. In a year and a half from now, the mighty aircraft will start arriving in India. The C-17 was subjected to field evaluation trials in India in June 2010 and met the laid down criteria. A tactical and strategic airlifter, the C-17 can land combat-ready troops in remote locations or airdrop them directly where needed. The C-17's ability to back up allows it to operate on narrow taxiways and congested ramps. With a maximum payload of 164,900 pounds (74,797 kg), the C-17 can take off and land in 3,000 feet (915 m).[2] The Hercules family, on the other hand, has the

1. "Boeing to Build 10 C-17 Airlifters for Indian Air Force, "*New Delhi, India*, June 15, 2011, Boeing News Release, available at http:// www .boeing .co .in/ ViewContent .do? id= 64623 & Year= 2011, accessed July 22, 2011.
2. Paul Jackson, FRAeS, *Boeing C-17 Globemaster III, Jane's All the World's Aircraft 2011-2012* (Surrey, UK, 2011), p.659.

longest continuous production run of any military aircraft in history. During more than 50 years of service, it has participated in military, civilian, and humanitarian aid operations. The C-130Js, the latest version of the Hercules, with four powerful engines, will enhance India's rapid reaction capabilities since the rugged aircraft can land on unprepared and short airfields as well.

All over the world, the C-17s and C-130Js are known for daunting and spectacular airlifts and daring special operations. They have been involved in numerous contingency operations, including flying troops and equipment to Operation Joint Endeavour to support peace-keeping in Bosnia, Operation Allied Force in Kosovo, Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom. They have supported humanitarian causes all over the world. Many pages in the airlift saga have been devoted to these awesome flying machines. In March 2003, American ground forces were held up in Turkish ports waiting to establish a northern front in support of Operation Iraqi Freedom. The Turkish government had denied them passage through Turkey. On the night of March 26, 2003, 15 C-17 aircraft delivered 20 heavy platforms and 959 paratroopers of the 173rd Airborne Brigade onto Bashur Drop Zone in Iraq and established the Coalition's northern front.[3] A formidable airlift capability got the American forces past the imbroglio. The Entebbe Raid is a copybook example of a special operation exploiting the potential of an airlift. Four Hercules aircraft positioned a team of Israeli commandos at Entebbe airport in Uganda and rescued nearly 100 hostages held captive by the Palestinian guerrillas. The awe-inspiring special operation has set a benchmark difficult to attain.

The C-130J has started soaring in the Indian skies. In a matter of time, the C-17 will make its presence felt too. Then, India will have the largest fleet of Globemasters, second only to that of the US. The mere thought of possession of these assets conveys the idea that it will enhance India's leadership to a still higher level in the region. These perceptions give rise to apparently naïve but pertinent questions: "Considering the number of aircraft being inducted, will the Indian fleet of C-17s also be the second most potent fleet of Globemasters in

3. "Moving the Herd" available at http://www.jamesdietz.com/gallery/merchant.ihtml?pid=126&step=4, accessed July 30, 2011.

the world?" and "With the induction of the Super Hercules, will India be capable of audacious special operations; the likes of Operation Eiche, the Entebbe Raid or Operation Neptune Spear?"

Discussed here are some of the many issues that will determine judicious utilisation of the assets and optimum returns on investment.

Both the C-130J and C-17 are versatile aircraft with phenomenal capabilities. But then, they are just machines, a means to an end and not the end in themselves. Possession of assets is one thing, achieving marvels using them, is another. Initially, India will start with a handicap. Not having toed the American line on the three military pacts – Logistics Sharing Agreement (LSA), Communication Interoperability and Security Memorandum of Agreement (CISMOA) and Basic Exchange and Cooperation Agreement (BECA) for Geo-spatial Cooperation – India could face initial difficulties with operations. The difficulties include encryption, secure communication and non-availability of sensors for low flying. Going along with the US government or adhering to the prompts of the manufacturers at this point in time will guarantee fast progress in a particular direction, not necessarily to our advantage in the long run. Self-reliance, on the other hand, will confirm slow progress in the direction of choice and, may be, more useful distance covered in the long run. Equally important is the fact that it will lower the possibility of diplomatic coercion in times of dire need.

The Super Hercules has an illustrious past not only because it is an extraordinary flying machine but also because of the innovative men who have operated it, and the manner in which the capabilities of the aircraft have been exploited. The US successfully test-landed a Hercules aircraft on the deck of their aircraft carrier, the USS *Forrestal* in 1963, to devise means to supply aircraft carriers with critically required arms, ammunition and spares, and to transfer men on the high seas. From the test data, it was concluded that with the C-130 Hercules, it was possible to lift 25,000 pounds of cargo 2,500 miles and land it on a carrier.[4] In desperate times, the aircraft has been put to ultimate tests. The 1980 Iran hostage crisis was a crucial time for the

4. "C-130 Hercules Lands on USS *Forrestal*," *The Aviation Zone,* available at http:// www .theaviationzone .com/ factsheets/ c130_forrestal .asp, accessed on August 01, 2011.

US after the failure of Operation Eagle Claw in the Iranian desert. Less known is a second rescue attempt initiated with radical modifications to the Hercules aircraft. Rockets were fitted at different points on the fuselage of the aircraft to enable vertical take-off and landing[5]. There were lift rockets slanting downward, slowdown rockets facing forward, missile motors facing backward, and still more rockets to stabilise the plane as it touched down to enable the aircraft to land and take off vertically. The aim was to land a rescue team in a soccer stadium in Tehran to extricate the hostages. One of the modified aircraft crashed during a test flight; the other one was never used as the hostages were released before the mission could be launched. The point is, both, the C-17s and the C-130Js, will give phenomenal range and the ability to operate globally but it is the innovative use of these aircraft that will deliver the punch. Imagination must determine the use of these aircraft; ossification of tactical and technical thinking must be consciously avoided. The aim must be to exploit the assets to the limits of their stated capabilities, and beyond, if possible.

The contract for the C-130J includes training of aircrew and maintenance technicians, spares, ground support and test equipment, servicing carts, forklifts, loading vehicles, cargo pallets and a team of technical specialists who will be based in India during a three-year initial support period. The IAF, along with Lockheed Martin, has modernised the home base of the C-130Js and created infrastructure for housing 12 such aircraft, along with creating servicing and operations facilities for the aircraft.[6] Such *ideal* operating conditions will not be available on all airfields. It shall not be physically possible and economically viable to replicate infrastructure and position the specialist ground equipment and the material handling equipment on air bases all over the country. Absence of ideal operating conditions will be felt with greater intensity if and when the aircraft operate from unprepared surfaces. Besides, especially qualified personnel will not be available everywhere to load/offload the aircraft. Yet time will always be at a premium. Lower turnaround times will contribute immensely to the success of operations. Towards this end,

5. "Crash Landing," *Popular Science,* Vol. 251, July 1997 (Canada: Bonnier Corporation, 1997), p.32.
6. "IAF Inducts 'Super Hercules' Transport Aircraft," available at http://www .bharat-rakshak .com/ NEWS/ newsrf .php? newsid=14330, accessed August 01, 2011.

education and training of personnel (read "minds") across all trades and branches will be of great significance.

Availability of a runway of appropriate dimensions is an elementary requirement for aircraft operation. A runway or an airfield not being available due to bad weather, a natural calamity or an accident or, in an extreme case, due to terrorist action, is a possibility that cannot be wished away. Non-availability of a specific airfield to launch an operation or a diversion en route can spell failure. In hilly terrain or when an airlift is meant for an island, a diversion can lead to unaffordable delays of many days. Availability of a large number of runways or austere airstrips to be used as mounting bases, or as en route or destination airfields, will give much sought flexibility to operations. Besides, special operations can maintain higher levels of secrecy and surprise when launched from obscure, unused airfields. A database of possible landing zones, in addition to the established runways (in use or abandoned) will provide more options during planning. Availability of similar data on options across the border will encourage daring planning. A Hercules on a special mission will be received with a volley of bullets and missiles on the enemy's established airfields. But it may get away quietly with a well-planned landing at a gliderdrome or a large parade ground. Going a step further, a standing capability to construct or repair an austere airstrip or a proper runway in a short span of time can accrue strategic gains, particularly in the remote corners of the country not easily accessible by road or on the island territories[7].

Infrastructure development is a continuous process. Various state and national road construction projects are in progress at all times. The Pradhan Mantri Gram Sadak Yojana is one such ambitious ongoing project. Strategic thought and far-sightedness can enable planning and construction of roads which could be used as runways when the need arises. The logic is simple: if an aircraft can take off from an unprepared surface, it can very well operate from

7. The allusion here is to the construction of six 8,500 ft runways at the rate of one runway per 53 days; over 18 km of taxiways; hard-standing to accommodate over 400 bombers, and accommodation for 50,000 personnel and office complexes, on the islands of Tinian and Saipan by the American Seabees in a record time of less than a year during World War II. Tinian became the largest single, and the busiest airport in the world in midsummer 1945. Nearly 19,000 combat missions were launched from these islands, including, the sorties that dropped atomic bombs on Nagasaki and Hiroshima.

a deliberately prepared surface. To get an idea of the dividends of such preparedness, imagine a C-17 landing runway rehabilitation equipment on a road in the vicinity of an airfield rendered non-operational due to an earthquake; the runway being repaired using the equipment; and then, the repaired runway being used to move in humanitarian aid for the victims of the earthquake. The spinoffs of such assets for special operations could be mind-boggling.

Taking the argument further in the same direction, another requirement for effective airlift operations is the ready availability of the deliverables – the personnel, equipment and supplies. Every minute saved in positioning the men and material at the aircraft improves the probability of success. Nearly six hours elapsed between the first troops arriving at the No. 44 Squadron tarmac and the ILs taking off for the Maldives (Operation Cactus, November 1988). The aircraft landed at Hulule airport at 10:00 pm and the operation continued into the wee hours of the next day.[8] Troops and aircrew would be in the better state of combat readiness if this time gap between the decision to launch an airlift operation and the final delivery is reduced to the bare minimum. A part of the solution lies in removing congestion from the approaches to the airfields. At present, these approaches are narrow in some cases; encroached in most places; and are frequently fraught with traffic woes. The passage of over-dimensional consignments or convoys of troops through the traffic on the way to the airfields is an issue that deserves much attention. There is a strong case for improving the accessibility, by road, of the air bases that are likely to be used as mounting bases. Collocation of elements of Special Forces and the aircraft assets, wherever feasible, is a possibility. Use of rotary-wing aircraft to position men and equipment at the mounting bases could be an alternative when the equipment to be airlifted is not unwieldy. Lastly, the sports/ parade grounds at the site of these formations could be maintained in a way that they could be used as temporary runways in an extreme emergency. Meaningful communication and an integrated approach by the civil administration and the armed forces shall ensure smooth conduct of operations. Modules containing special equipment to deal

8. Author's observation as a parachute jump instructor on board the first IL-76 that landed at Hulule on November 03, 1988.

with different types of emergency situations—natural calamities, accidents and terror strikes, etc.—could be kept in readiness at different Air Force bases and could be airlifted at short notice.

In conclusion, today's environment demands literal omnipresence of the security forces. Possession of the C-130Js and C-17s can bestow that divine power on the force using them. The Government of India realises the importance of possessing a formidable airlift capability and has approved the acquisitions. The euphoria over the purchase of the C-130Js and the C-17s is natural; so are the high expectations of the stakeholders. Perceptions are based on the proven capabilities and the glorious past of the aircraft. To begin with, at a whopping $ 5^{+} billion, their acquisition will give India only the licence to use them and the right to boast; the effect will depend on how well the potential of those machines is harnessed. Self-reliance, innovativeness, education and training of all agencies, and an integrated open-minded approach shall accrue appropriate returns from the investment made in the massive airlift capability. A clear vision and a conscientious approach shall enable us to look beyond the reach and range of these mighty machines. It is time to get past the excitement of mere acquisition. A lot of ground is to be covered before the machines take to the air to deliver the expected returns.

A GUIDING TOOL FOR INDIA'S FOREIGN POLICY

ASIF SHUJA

For the continuity of India's rise as a great power, it is necessary for us to have a clear perspective on our foreign policy goals and the methodology to achieve them. Additionally, it is also imperative to have a broad consensus on the set of principles that should guide our thoughts and actions in the realm of international relations. Since the dynamic nature of international issues demands that our decisions be not merely right but also fast, a lack of clear perspective on our foreign policy would make us prone to opt for the wrong choices in our international dealings. Since due to this lacuna we don't merely lose in terms of opportunity cost, but also waste a great deal of energy and resources that our nation can ill afford, an attempt has been made in this article to develop a guiding tool for India's foreign policy.

This tool adopts an integrated approach to not only enable us to determine our foreign policy goals and their guiding principles, but also devise a sound methodology to achieve them. This tool will be helpful not only to those who are responsible for formulating and implementing our foreign policy, but also to those who assess and analyse the merit of such policies in retrospect. Effectively, this tool would serve as a useful guide to our political leaders, diplomats, strategists, security experts and opinion builders as well as those concerned citizens who wish to contribute in India's grand ascendance to power.

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This tool consists of a set of five 'guiding lenses' and five 'spheres of actions.' While the lenses have been developed to determine our foreign policy goals along with their guiding principles, the spheres of actions have been identified for the attainment of these goals. Being country specific, this integrated approach of thought and action, constituting our guiding tool, may be termed the Indian way to foreign policy. If used properly, this tool would ensure our success in the realm of international relations.

THE GUIDING LENSES

The five lenses that should duly guide the formulation of our foreign policy include: (1) The Indian Ideal; (2) National Security and National Interest; (3) Experience Gained since Independence; (4) Strategic and Economic Imperatives; and (5) Future Vision and International Obligations. It is recommended that these lenses should be applied successively in their given order for the optimum results.

The Indian Ideal

The Indian ideal constitutes the set of values traditionally upheld by our nation that have withstood the test of time and have the effect of defining the personality of our state. These values, serving as the main guiding principles of our foreign policy goals, have been enshrined in our Constitution. The Indian Constitution has not only prescribed the laws and rules for domestic consumption, but has also expressed the Indian perspectives on the foreign policy process by dedicated reference under the Directive Principles of State Policy.

Article 51, under the Directive Principles of State Policy, contains certain principles of foreign policy that should be followed by India. The Article says: "The State shall endeavour to – (a) promote international peace and security; (b) maintain just and honourable relations between nations; (c) foster respect for international law and treaty obligations in the dealings of organised peoples with one another; and (d) encourage settlement of international disputes by arbitration."

These values serve as broad principles that should guide us in the determination of our foreign policy goals. Nevertheless, we should be cautioned here that the formulation of these principles

was based on the contemporary wisdom of our forefathers and if the same wisdom so demands, there is no reason why these principles should not be changed. That is precisely why there is a provision for amendment of the Constitution. However, there appears to be no reason for any change in these principles, at least in the foreseeable future.

The same logic applies to the traditional Indian foreign policy stances such as non-alignment, foreign policy independence or Third World solidarity, which are the derivatives of these broad principles. If contemporary wisdom so dictates, there should be no qualms in reviewing, if not completely abandoning, them.

National Security and National Interest

Having armed ourselves with the guiding lens of the Indian ideal to judge our actions as right or wrong, we can now find it easier to attend to what has traditionally been considered as the core of the foreign policy process – national security and national interest. However, in order to determine if any action or policy decision is in accordance with our national security and national interest, we first need to be crystal clear on the meaning of these terms.

The term 'national security' encompasses the security of the territory of the nation from internal and external threats while, at the same time, ensuring peace, so that overall growth of the nation in the economic, technological, military and intellectual fields is ensured. Since the citizens of a country are mainly responsible for steering this growth, national security also entails the security and well-being of every individual of the country. Therefore, a clear understanding could be possible only by dividing the whole concept of national security into macro and micro levels respectively.

At the macro level, it would involve ensuring economic growth, military development, intellectual accumulation and technological development. At the micro level, this would involve the growth of living standards, improvement of the literacy rate, improvement of health, and alleviation of poverty. For instance, if we talk about energy security as a contributor of aggregate economic growth and don't take into account the number of people devoid of electricity in their households, we do not actually talk about national security.

In the same vein, great strides in the technological and military fields do not ensure national security if a huge chunk of the population lives in sub-standard conditions, prone to diseases and fatalities that accompany poverty. In essence, national security does not involve only security from external enemies but also attending to, and alleviating, those causes that may result in internal unrest and disturbances. A good example is the current Naxal movement in many parts of the country where the economic disparity has caused an internal threat, subjecting the national security to risk.

Since national security is an integral element of national interest, and the national interest is subjective in nature, national security often turns out to be subjective. For the holders of different ideology and vested interests, national interest might mean different things. Consequently, the notion of national security itself falls on shifting land. Therefore, in order to save our nation from this trap, it is essential that the national interest should be considered rationally rather than ideologically.

Experience Gained Since Independence

Much like an individual, a nation too learns from its past experiences. A clearly discernible shift in India's foreign policy from idealism to pragmatism is mainly due to the lessons learnt since independence. The most important departing point of our foreign policy has been the war with China in 1962, despite the much-publicised Panchsheel Agreement. This event taught India the lesson that the values cherished by her may be in danger in the absence of a proper defence mechanism since other nations might not cherish similar values and this might make India vulnerable to external attacks. Therefore, a degree of pragmatism was driven home in terms of foreign policy, which later tilted towards realism with India's decision to go nuclear.

The fact that India had decided to opt for nuclear weapons, despite being a champion of universal nuclear disarmament, illustrates how difficult it may sometimes become to preserve the core principles and why it does not help to be rigid in foreign policy approaches. Consequently, it should be remembered that although history is the primary constituting factor shaping a country's foreign policy –

apart from its culture, geography and economy—too much emphasis on it, adopting a backward looking approach, has the potential of constricting the growth of a country. Foreign policy is a dynamic concept, which changes according to the changed international conditions. Therefore, one should strive to keep pace with time and constantly keep on evaluating the basic principles and goals under the light of contemporary wisdom gained through new experiences.

Strategic and Economic Imperatives

Before the beginning of economic liberalisation, India's foreign policy calculations were mainly guided by its strategic calculations, with little emphasis on economics. However, since the end of the Cold War, the onset of globalisation and consequent liberalisation of the Indian economy in the early 1990s, our country has clubbed together its strategic and economic imperatives in its foreign policy calculations. Since the process of globalisation has ushered in an era of increased interdependence in the field of commerce, the twin approach of strategy and economics should be applied to make sound political alliances with other countries.

Strategy, in turn, requires an integrated approach to foreign policy, taking into account the domestic compulsions, international conditions and anticipation of possible future scenarios. This requires a deep understanding of the international system, the aspirations and actions of other nations and rapid changes in the field of geo-politics. Once such insight is built, our foreign policy formulators can chalk out a suitable strategy to deal with any issue of international importance. Similarly, a clear understanding of our economic goals would enable us to streamline our resources in forging fruitful alliances. Ultimately, the synergy of economy and politics would lead us to the desired direction.

Future Vision and International Obligations

India's international obligations stem from its traditional values as expressed in its Constitution and its vision expressing its aspirations in the future. While the past experiences play a role in shaping this vision, a clear understanding of our foreign policy goals would enable us to determine our international obligations. In a situation where

our international obligation conflicts with our national interest, we can take guidance from the principles enumerated under the guiding lens of the Indian ideal.

The age of globalisation and interdependence may pose us the challenge wherein we are compelled to choose between strategic autonomy and fruitful alliances. The Indo-US nuclear deal may be cited as a classic example of that situation. Further, a country aspiring to rise in stature cannot afford to sit on the periphery, but has to accept some of the international obligations. This is a primary condition of becoming a great power. Therefore, we cannot afford to sit idle and shy away from taking positions on the teasing international issues such as the Iranian nuclear programme or the Arab Spring. When we face such challenges, only a clear national vision would ensure the maintenance of a balance in our international obligations and national interest.

It is notable that the lack of direction in determining our international obligations is mainly due to the absence of a grand strategy. Since any foreign policy devoid of future vision is destined to fail, India's vision in terms of its regional and global role and status should be clear. Simultaneously, we should be aware of similar visions of other states. This would help us in assessing their positive and negative effects on our own aspirations. This is specially so in the case of competing nations. A grand strategy would help India to streamline all other factors of its foreign policy. Until the time that grand strategy is evolved, these guiding lenses would help us in the formulation and assessment of our foreign policy.

THE SPHERES OF ACTIONS

Having armed ourselves with the guiding lenses to determine our foreign policy principles and goals, the next step would be to identify the spheres of actions where these goals can be achieved. Five such spheres of actions can be identified which include: (1) Cabinet Decisions; (2) Broad Domestic Political Consensus; (3) Bilateral Relations; (4) Multilateral Negotiations; and (5) Indian Nationalist Opinion Building. As in case of the guiding lenses, these spheres of actions should also be given priority in the given order. By carefully

using these spheres of actions, we can steer our international relations in the desired direction through effective implementation of our foreign policy.

Cabinet Decisions

The Union Cabinet, led by the Prime Minister, serves as the first point of action either in case of domestic issues or matters related to international relations and foreign policy. India's response to any issue of international significance can be quick and right only if the Cabinet has an effective mechanism in place to act in this sphere. This requires a synergy between the concerned ministries, including the Ministry of External Affairs, the Ministry of Defence, the Ministry of Home Affairs and the Ministry of Finance. Actions or inactions of any of these ministries or their respective departments have a bearing on our success or failure in the field of international relations.

With the help of this effective mechanism, the Prime Minister, as the leader of the Cabinet, would find it expedient to steer the course of the nation in the desired direction. Having the backing of his Cabinet colleagues and an effective mechanism of action in place, he would also find it easy to streamline his energy while interacting on various international platforms. This way, he can optimally mobilise all the resources at his disposal to achieve India's foreign policy goals.

Broad Domestic Political Consensus

Since India is a multi-party democracy, achieving a broad consensus on international issues among various political parties is important for attaining our foreign policy goals. The Parliament is one platform where this effort can be made along with the other sideline meetings and media interactions by the concerned ministries. It is important to highlight here that although it is difficult to convince everyone on the merit of a particular decision, such debates do have the benefit of refining the idea and making the judgment of the decision-makers better.

Taking up the international issues in the Parliament also promotes transparency and reduces the chances of errors in judgement. In the current era of coalition politics, it is increasingly important to take this approach, since, in the absence of such

an approach, every decision of significant importance would be delayed by getting caught in the domestic politics, which our nation can ill afford due to the requirement of quick response to international issues.

Bilateral Relations

Once we are clear in our foreign policy goals and an effective methodology is in place to implement them at the apex level, we can move on to forge fruitful political, economic and strategic alliances with other countries by doing cost-benefit analyses. In the current era of globalisation, with decreased emphasis on boundaries and increased role of state interactions, careful alliances can provide us the mechanism to leverage our national resources.

However, a situation may arise where due to the mutual antagonism of our two respective friends, it becomes difficult for us to strike a balance in our relationships with them. Our tight-rope walk with Iran in the backdrop of our recent closeness with the US serves as a suitable illustration of such a situation. In such cases, all efforts should be made to strike a balance. Still, if despite our best efforts we face the eventuality of choosing one at the cost of other, then the only way out is the mini-max approach which involves minimisation of the losses and maximisation of the gains through a particular decision.

Multilateral Negotiations

Issues of critical international relevance are often discussed and taken up at the international multilateral organisations such as the United Nations, World Trade Organisation and International Atomic Energy Agency. These are platforms where the respective national interests and foreign policy agendas of interested countries are promoted under the garb of wider interest such as global peace, democracy, human rights and mutual coexistence. India should be aware of such politics being played by the powerful nations on such international multilateral platforms. A clear understanding of its foreign policy goals and future vision would save India from confusions created by other countries and help it in directing its energy to the points where India gains.

Such politics notwithstanding, India should be ready to commit itself for responsibilities of international significance. So far, India has offered help in the United Nations Peace-Keeping Operations. While such offers should be continued, India may also consider taking up further responsibilities to emerge as a global power. In the case of international conflicts, at the least, India can offer its good offices to mediate between the conflicting parties.

The Indian Nationalist Opinion Building

If a careful analysis of the communication channels between various spheres of actions is undertaken, it would be revealed that the actions at all of them are influenced by the Indian nationalist opinion builders. This sphere includes the media, information agencies, academia and political consultants. Therefore, the work of all these sections should be devoid of any prejudices to the objective truth affected by the vested interests of international actors. Once the objective truth is found out, based on the Indian foreign policy goals, appropriate opinions could be generated.

In the end, it is important to emphasise that the guiding tool of India's foreign policy that has been developed here, can be most effective in the case of the belief that globalisation is a reality, implying that a nation can no longer rise in its power status in isolation. Therefore, a sound foreign policy, having the effect of successful international relations, is an essential element of a country's strategy to graduate in terms of power.

LIBYA'S ARAB SPRING – 2011

VIKRAM PEREIRA

In the 15th and the 16th centuries, the Barbary coast, a strip of North Africa, known because of the Berbers, came under the scanner of the two principal players in the Mediterranean at that time: namely, Spain in the west and Turkey in the east. This rivalry lasted for much of the 16th century but was subtly won in a fairly unorthodox manner by the Turks who allowed Turkish pirates or corsairs to establish themselves along the coast; the territories seized by the corsairs were then given a formal status as protectorates of the Ottoman Empire. The first such pirate established himself on the coast of modern-day Algeria in 1512, followed by others (in what is today's Libya) in 1551; Khair-ed-Din (popularly known as Barbarossa took over Tunisia, very briefly in 1534, but the territories were recovered for Spain in 1535 and finally brought under Ottoman control in 1574. Piracy remained the chief purpose and main source of income for all these Turkish settlements along the coast until the French intervention in Algeria – which, in any case, was based on dubious reasons. Algiers was occupied by the French in 1830, but it was not until 1847 that the French conquest of Algeria was complete, after prolonged resistance from the Berbers, who had never been effectively controlled by the Turks, despite their best efforts. It was in the European interest to act as the regional policeman in this troubled region: in 1881, Tunisia became a French protectorate, followed by Morocco in 1912. Not to

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be left behind, Italy took parts of Libya from the Turks following the Italo-Turkish War of 1911-12; in fact, Turkish control over what is generally known as modern-day Libya had been less than total during much of the Ottoman period, since the western region of Tripolitania was ruled by descendants of an Ottoman Governor and the eastern region of Cyrenaica was presided over by the Senussi, followers of a 19th century religious leader who preached a creed of a strict, simple Sunni life that proved extremely popular with the Bedouin tribesmen. Italy, in its guise of the new imperial power, soon occupied Fezzan, a region in the southwest under Sennusi control and with this annexation, the contours of modern-day Libya began to take shape.

The Italian colony of Libya had a relatively short existence but was exposed to two World Wars and the rise of Fascism, all of which had profound and differing effects in the region. The ground realities of World War I caused the withdrawal of Italian troops from most parts of the region until they could only safely hold the coastal towns. After the war, the Senussi leader, Mohammed Idris, arrived at a compromise with the Italians by acknowledging their sovereignty over the coastal area of Cyrenaica and, in return, he was granted the title of Emir; however, this uneasy relationship disintegrated with the onset of Fascism which resulted in Idris fleeing to Egypt in 1923, whilst the Fascist authorities in Libya introduced repressive measures such as concentration camps to subdue any resistance in Tripolitania and Cyrenaica; these two regions were united in 1934 to form the colony of Libya. During World War II, the Senussi found themselves in the winning side: as enemies of Italy they were natural allies of the USA and Great Britain and played an important role in driving the Germans and Italians out of North Africa in 1942-43. The last stages of World War II and the immediate post-war years saw Tripolitania and Cyrenaica administered by the British, with Fezzan under the control of the French; but it was agreed that the future of Libya would be referred to the UN, resulting in a resolution for Libyan independence and in December 1950, a national assembly representing all three provinces, elected Mohammed Idris to be King; Idris I of Libya, then declared the independence of the new state on December 24, 1951. King Idris I ruled till 1969, as a monarch with scant

regard for any so-called democratic ideals, overseeing a subsistence economy boosted only by minimum revenues from US and British air bases and some international aid. This situation was dramatically transformed in 1959 by the discovery of major oil reserves, resulting in King Idris I asserting Libyan power and negotiating to secure the withdrawal of foreign troops from Libya; but this ended as he was deposed in a bloodless coup in 1969 whilst on a visit to Turkey. The leader of this coup was none other than the 27-year-old–Captain Muammar Gaddafi, who immediately bacome Commander-in-Chief of the armed forces and Chairman of the Revolutionary Command Council governing Libya; later, from 1979, he was known as "Leader of the Revolution" and ruled with an iron grip, ensuring that Libya's policies were essentially his own. He soon gained a reputation as one of the world's more eccentric and unpredictable dictators; basing his political philosophy on Islam, Arab nationalism and some elements of socialism, this was condensed into his so-called personal manifesto – the Green Book. Libya was also renamed as the "People's Socialist Libyan Arab Jamahiriya," the term Jamahiriya meaning government through the masses, implying that power lay in some 1,500 local committees; however, the reality was that power was exercised as a personal rule by Gaddafi himself.

As far as the international stage was concerned, Gaddafi used Libya's oil wealth to influence affairs in other nations, and closer home, he tried to influence activities in Egypt and Chad; it is also no secret that he used funds to eliminate opponents of his regime who were living abroad, and also funded and equipped terrorist activities across the world, ranging from diverse groups such as the Black Panthers, Nation of Islam (USA), extremist Palestinian groups, as well as the Irish Republican Army in Northern Ireland. With this as the backdrop, President Ronald Reagan of the USA authorised air strikes against so-called terrorist targets in Tripoli and Benghazi, taking the form of sorties originating from the UK to carry out the attacks and reportedly various members of Gaddafi's family were either killed or wounded, the most prominent one being a girl child for whom a shrine was found in Gaddafi's compound after his overthrow; he himself narrowly escaped this attack. Under the rule of Gaddafi, Libya become increasingly isolated in the international

arena and acquired a 'pariah' like status which was exacerbated by the involvement of Libyan intelligence operatives in the fatal sabotage of a PAN AM airliner that exploded over Lockerbie, Scotland, killing all 259 on board, and 11 on the ground. Available evidence at the time suggested that two Libyans could have been responsible for planting the bomb on board. This aspect will find mention subsequently in the article; suffice it to say that the truth about this incident is not as it seems, one of black and white, or even shades of grey. In the 1990s, Libya was a country increasingly isolated due to the vagaries of one individual who was by then one of the modern world's longest ruling dictators. But, this isolation began to end after Gaddafi allowed the suspects in the PAN AM Lockerbie bombings to stand trial in the Netherlands. UN sanctions were suspended and the wily Gaddafi used money, oil, gas and well timed diplomatic overtures to worm his way into the West's good graces; with Bush, Blair and Berlusconi giving the brutal and repressive dictator a veneer of respectability by allowing him to once again prance on the stage of international relations. Prance, he did with an 'in your face' attitude that was deemed megalomaniac by many observers but was strangely tolerated by some of the Western powers that had earlier sought to condemn and isolate him. As recently as July 2009, when he visited Italy for the Group of 8 industrialised nations meeting, he was welcomed as a 'brother' by Italian Prime Minister Berlusconi and was allowed to pitch his trademark Bedouin style tent in a public park in Rome as his living quarters, surrounded by his stunning but ever so capable female bodyguards and nurses.

One could easily be forgiven for wondering how this came about, but going back into history, it was the discovery of major oil reserves in 1959 by the then Esso Company that was the major game changer. For it was not just any crude oil that lay in the sands beneath Libya – it was what is termed in oil industry jargon as "light sweet crude." Sweet crude oil is one which contains less that 0.5 percent sulphur as compared to higher levels in "sour crude." It also contains small amounts of hydrogen sulphide and carbon dioxide—such high quality crude oil is commonly used for processing into gasoline and is in great demand, especially in the industrialised nations. The term "sweet" originated because the low level of sulphur endowed the oil

with a mildly sweet taste and pleasant smell; these attributes were greatly relied upon by 19th century prospectors who would often taste and smell small samples of oil to determine their quality. In February 2011, Libya exported 1.3 million barrels of oil per day, and whilst this is just about 2 percent of world crude oil production, there are only a few other countries that can supply equivalent grades of "light sweet crude" that many of the world's leading refineries and, by extension, their economies, rely on. The Italian oil company ENI, British BP, French Total, Spanish Repsol YPF and Austrian OMV all have major stakes in the Libyan oil industry and, by extension, their own countries' national interests.

In December 2010, Mohammed Bouazzi, a hawker of vegetables in the town of Sidi Bouzid, Tunisia, had his wares and cart confiscated by a municipal inspector. The inspector was Fedia Hamidi, a woman who allegedly slapped the hawker; she later claimed that would be impossible "because although he became angry and grabbed my hand, hurting my finger, I would never have hit him, it is impossible because I am a woman, first of all, and I live in a traditionally Arab community which bans a woman from hitting a man." The hawker was allegedly incensed by the treatment meted out to him and later doused himself in petrol and set himself ablaze; he did not die immediately but lingered on till January 04, 2011, during which time, the long simmering frustrations over poverty, injustice and the greed of the political elite spilled over into protests and widespread civil disobedience which were brutally subdued by Zine El Abidine Ben Ali who had ruled Tunisa with an iron fist for 24 years. After nearly four weeks of protests and increasing public anger over the very violent response of the security forces, senior Generals told the ruler that his position was untenable; and he, along with his wife, the much hated Leila Trabelsi, fled the country, allegedly taking much of the national bank gold reserves with them.

Thus, was born the movement termed as the "Arab Spring" that in today's world was, and is, being accelerated by better connectivity and social networking sites. This movement has proved to be a harbinger of the 'kiss of death, if not exile' for many of the despotic regimes that rule the oil rich Middle East. This contagion soon spread to one of the important countries in the region, an ancient civilisation,

a popular tourist destination and one which all the US influenced countries have sought to pacify in favour of the "Israel driven agenda' – Egypt. Hosni Mubarak had ruled Egypt for 30 years until protests sparked by those in Tunisia cause thousands of citizens to gather in Tahrir Square; hundreds were allegedly killed by the security forces until the all powerful Egyptian military high command intervened and urged Mubarak to step down in February 2011. Mubarak and his sons are now just prisoners in Egypt, identified merely by numbers and Mubarak is wheeled into a court on a stretcher for hearings for which he is placed in a special barred enclosure. Bahrain had its tryst with the "Arab Spring" in March 2011 but the unrest was promptly quelled by the prompt assistance of Saudi Arabia and other Gulf states which sent in troops to prop up the Sunni Al Khalifa monarchy after an attempted uprising by the long subjugated Shia majority. Syria and Yemen also suffered from the people's uprisings and Yemini President Ali Abdullah Saleh was seriously wounded in a bomb attack on his palace in the capital, Sana'a; he was evacuated to Saudi Arabia for treatment. In Syria, President Bashar Al Assad continues to mount heavy-handed crackdowns on protestors; hundreds have been killed till date and there is talk of some kind of settlement brokered by some Arab League members but that could at best be termed as 'work in progress.'

The 'kiss of death' to the Gaddafi regime and ultimately to its leader was bestowed approximately on the afternoon of February 15, 2011, when a Libyan lawyer was arrested by members of the Libyan Interior Security Force or Amn-al-Dakhlii. Mr. Fathi Tarbal, a 41-year-old Libyan lawyer, had worked with many Non-Governmental Organisations (NGOs) that exposed human rights violations in Libya and had also been communicating the same to the United Nations Human Rights Commission through various channels. Subsequent to his arrest, protests erupted in the eastern parts of Libya, and these turned violent after the Gaddafi regime responded with massive force; surprisingly, a ragtag band of rebels soon took control of Libya's second largest city of Benghazi and there was large scale defection of Libyan officials and military personnel. A very significant event took, place when the United Nations Security Council Resolution 1973 was adopted on March 17, 2011—the resolution was proposed by France,

Lebanon and the UK; ten Security Council members voted in the affirmative whilst five members (Brazil, Germany, India, China and Russia) abstained, with none opposed. This resolution formed the legal basis for military intervention by the international community, specifically to establish a "no-fly zone" over Libya and use all means necessary, short of foreign occupation to "protect civilians." The resolution was adopted under Chapter VII of the United Nations Charter and its salient features are as under :

- demands the immediate establishment of a ceasefire and a complete end to violence and all attacks against, and abuses of, civilians;
- imposes a no-fly zone over Libya;
- authorises all necessary means to protect civilians and civilian-populated areas, except for a "foreign occupation force;"
- strengthens the arms embargo and particularly action against mercenaries, by allowing for forcible inspections of ships and planes;
- imposes a ban on all Libyan-designated flights;
- imposes a freeze on assets owned by the Libyan authorities, and reaffirms that such assets should be used for the benefit of the Libyan people;
- extends the travel ban and assets freeze of United Nations Security Council Resolution 1970 to a number of additional individuals and Libyan entities;
- establishes a panel of experts to monitor and promote sanctions implementation.

It must be noted that the phrase "all necessary means to protect civilians" would give a semblance of legality to arming anti-Gaddafi forces; which, in fact, the Western powers did through both overt and covert means. On March 18, 2011, Gaddafi's government announced that it would comply with the resolution and implement a temporary ceasefire. But this was a ruse that both sides exploited; Gaddafi warned the opposition that "we are coming tonight and there will be no mercy."

NATO action against Libya was primarily from the air and the first strikes were on March 19, 2011, to halt the advance of Gaddafi's forces

on Benghazi and to take out Libya's antiquated, Soviet era air defence systems – both offensive and defensive—which were completely neutralised by March 21, 2011; in fact, by March 23, 2011, all elements of the Libyan Air Force had been rendered largely ineffective, allowing the North Atlantic Treaty Organisation (NATO) led air force coalition to operate with total impunity. In addition to the air action, NATO began enforcing a naval blockade of Libya, using both ships and aircraft to effectively interdict supplies of arms, ammunition and movement of mercenaries; yet, at the same time, allowing legitimate private and commercial shipping operations to continue. This also marked the start of "Operation Unified Protector" which was aimed to enforce United Nations Security Council Resolutions 1970 and 1973; by March 31, 2011, NATO also formally took total control of the "no-fly zone" ending the US coordinated Operation Odyssey Dawn (at least, for naive public consumption). However, it is inconceivable that NATO could undertake effective air operations without active US support in the form of reconnaissance, aerial refuelling, targeting information and communication support. It is also an open secret that the US' Central Intelligence Agency (CIA) and Britain's MI-6 put operatives on the ground in Libya to gather intelligence and, more importantly, to provide real-time targeting inputs that broke the back of Gaddafi's armed forces. Interestingly, it is now an acknowledged fact that some small Arab states such as Qatar and the UAE provided active assistance to the NATO led operation; even though key NATO countries such as Germany and Poland actively abstained from participation in the operations. According to Sir Glen Torpy, former Chief of the Royal Air Force (RAF), in his estimate, almost 100 percent of the offensive weapons employed in the Libyan campaign were 'Precision Guided Munitions' or PGMs which were aimed at precise/fleeting targets in an attempt to avoid any collateral/ secondary damage. Enter 'Brimstone,' an air launched anti-armour missile system with a range of about 10 km—the system consists of three missiles on a three rail launcher, the missiles are fully 'fire and forget' and can be launched before a visual acquisition of the armour under attack. The UK Ministry of Defence announced the first use of this missile in Libya on March 25, 2011, when they were fired from RAF Tornado GR4s against Libyan armour that was threatening the

population of Ajdabiya. NATO continued its air strikes as the rebel forces made very slow but continuous progress until the battle for Tripoli, when on August 20, 2011, rebel elements in Tripoli supported by NATO, launched a general uprising against Gaddafi's forces. Initially, the rebels suffered heavy losses, but supported by NATO air strikes, they were able to drive Gaddafi out and seized his compound in Bab-Al-Aziza on August 23, 2011; his wife and three children fled to Algeria. The National Transitional Council which acted as the political face of the revolution under Mustafa Abdul Jalil, was now in control of most of Libya, and Gaddafi retreated to his home city of Sirte.

The last chapter in Gaddafi's life story started in mid-October 2011 when revolutionary forces gained control of Bani Walid that opened up the road to Sirte where Gaddafi was holed up. His location was narrowed down to an area called "neighbourhood two" and the final assault on this area began on the morning of October 20, 2011. At this stage, a large convoy of vehicles attempted to flee the area but was picked up by aerial surveillance which also detected what NATO termed "command and control activity" emanating from the convoy; deeming it a high value target, a US Predator drone strike was called in, followed by French fighter aircraft. The convoy was largely destroyed, but Gaddafi managed to escape. He got back into the city and took shelter in a storm drain from where he was captured and shot dead. The persons who killed Gaddafi are reported to have come from Misrata which was subjected to a weeks-long brutal siege by Gaddafi's forces during the revolution. The country was formally declared liberated three days later, setting in motion the process of creating a new Constitution and holding of elections. On October 31, 2011, Dr Aburrahim Khaled Addulhafiz El-Keib, a professor of electrical engineering and a leading Libyan politician from the city of Sabratha, was named as interim Prime Minister by the country's National Transitional Council, following the resignation of Mahmoud Jibril on October 23, 2011. As per a NATO press release 26,000 missions were flown since it took total charge of operations in Libya, out of which 9,600 were strike sorties, destroying more than 1,000 tanks, vehicles and Gaddafi's command and control network. NATO Secretary General Anders Fogh Rasmussen announced a

formal end to operations with effect from midnight of October 31, 2011, and declared that Operation Unified Protector in Libya was one of the "most successful in NATO history," adding, "We created the conditions for the people of Libya to determine their own future." Gaddafi's killing was a more than convenient end for most of the Western powers though there have been some muted rumblings of subverted human rights and flouting of international justice provisions. It has saved them the prolonged spectacle of a Milosovic type trial at The Hague and could explain the rationale for Osama Bin Laden being "buried at sea;" in any case, Gaddafi alive would have brought up uncomfortable questions of the close links between the Western powers and his supposedly repressive regime. Specifically, questions about renditions of Gaddafi's opponents by the UK and USA, the actual reasons for Scotland freeing Megrahi (the convicted Lockerbie bomber) on compassionate grounds and, of course, the favourable contracts for oil and gas awarded to Western energy corporate entities. But the last and final question that would need attention as time goes by is: what is the future of Libya – will it become some kind of democracy or will it descend into chaos at the hands of tribal and religious extremist elements? Other countries in the region as well as Libya could perhaps be staring at a harsh bleak winter rather than a rejuvenating spring.

CHINA'S CONCEPT OF SPACE WARFARE

J. V. SINGH

China's national interests are expanding and the country has entered the age of space. The Party and the people have given us a historic mission. After thorough consideration, we decided to change. The air force will extend its reach from the sky to space, from defense of Chinese territory to attack as well.
— *South China Morning Post*, November 3, 2009.

Space warfare will be an integrated part of battle planning by the Chinese People's Liberation Army (PLA) in any future conflict. One of the major proponents of integrated space power for the PLA, Maj Gen Cai Fengzhen, believes that control of portions of outer space is a natural extension of other forms of territorial control, such as sea or air control. China's contemplation of the military use of space has focussed on two broad areas, namely, how to use space in military operations to increase its offensive capability, and how to use space in military operations to deny space capabilities to adversaries.

CHINA'S SPACE WARFARE DOCTRINE

We should not be surprised that the Chinese military is developing a doctrine for warfare in space. Military theory evolves in response

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to changes in technology. It is a normal activity for strategists and war planners in any military to consider how advances in weapons and technology affect warfare and to explore how to adapt to these changes. The moves by the PLA are serious and bear watching. The PLA's development of a space warfare doctrine is not a self-made phenomenon. Rather, the PLA has carefully absorbed and is reacting to what the US military has published on space warfare and counter-space operations.[1] The PLA has also studied Soviet era and contemporary Russian thinking on space operations, using these studies to guide its own evolving doctrine.[2] China's neighbours are also developing the sort of space warfare capabilities that the United States and the Soviet Union considered decades ago. Former Air Chief, Air Chief Mshl S. P. Tyagi advocated establishing a jointly manned "Aerospace Command" for India to use the missile, satellite, and communications capabilities of the Indian armed forces effectively.[3]

The PLA has also made rapid advances in this area. The most senior and widely published author in the Chinese military on space warfare and aerospace doctrine, Cai Fengzhen, borrows most of his terminology and concepts from the US military doctrine. Indeed, Cai credits US Lt Gen Daniel O. Graham and his book *High Frontier* with developing the original concept. Cai traces the concept of expanding one's borders directly into space to Graham and his "high frontier" theory. Cai opines that space control is a natural extension of other forms of territorial control, such as sea control or the control of a nation's air space.[4]

Other Chinese security literature reflects the interpretation that the intent of American missile defence in space is to extend national air space control. An article on weapons in space by Huang Zhicheng says that "the United States is trying to build a strategic external border in space" with its ballistic missile defence plans.[5] Huang

1. Secretary of the Air Force, *Air Force Doctrine Document 2-2, Space Operation* (Washington, DC: Department of Defence, November 27, 2006).
2. *Zhuangbei Zhihui, Jishu,, Xueyuan Xuebao* (Journal of the Academy of Equipment Command and Technology) 16, No. 6, 2005, pp. 70–75.
3. Dipindra Nalan Chakravarthi, "Future Aerospace Power," *New Delhi Force*, September 1, 2007, in Open Source Centre (OSC) SAP20070912342003.
4. Cai Fengzhen, Tian Anping, et al., *The Aerospace Battlefield and China's Air Force* (Beijing: PLA Press, 2004).
5. Huang Zhicheng, "The Weaponisation of Space and Space Threats," *Studies in International Technology and Economy*, Vol 9, No. 1, January 2006, p. 27.

quotes President John F. Kennedy as saying, "Whoever controls space, can control the earth" reflecting China's deep unease about US intentions.[6] Maj Gen Liu Jixian of the PLA Academy of Military Science states that whoever controls the universe, controls our world; whoever controls space, controls initiative in war.

The PLA has reacted to what its officers observed in the military operations in the Balkans, the Gulf War, Afghanistan, and Iraq, where joint operations and command were so effective because of space assets. The PLA fully expects any future conflict to include forms of war in space integrated with other military operations and the PLA's terminology often flows from what its officers read in the US doctrine.[7] What is impressive and bears close watching is how rapidly the PLA has developed advanced capabilities to engage in warfare in space.

SPACE WARFARE AND MILITARY OPERATIONS

Space operations and warfare in space are components of what the PLA calls information age warfare. In general, PLA strategists are convinced that space will be one of the natural domains of war and that war in space will be an integral part of other military operations. Moreover, PLA authors are convinced that future enemy military forces will depend heavily on information systems in military operations. Therefore, they believe, China needs to break through the technological barriers and develop information system counter-measures in space. Two authors writing in *China Military Science*, the PLA's premier military theory journal, believe that "it is in space that information age warfare will come to its more intensive points. Future war must combine information, firepower, and mobility."[8] They believe that future latent military threats will primarily come in aerospace. Like these authors, other military theorists are convinced that the atmosphere and space will become the primary battlefields in a high technology war, and the dividing line between them will be blurred. Some are convinced that in future wars, space will be used to carry out war between space platforms and to attack strategic

6. Ibid.
7. US space warfare documents are available at www.fas.org and www.dtic.mil/doctrine/
8. *Zhongguo, Junshi Kexue, China Military Science*, January 18, 2005, p. 41.

surface and air targets. In order to conduct warfare in space, attack targets in space, or conduct surface or air attacks from space, theorists in the PLA and other Chinese research institutes advocate research into forms of laser weapons, particle beam weapons, and other forms of directed energy and electromagnetic systems. And not all of this research is limited to military theory. There are also PLA organisations conducting basic and applied research into space to ground kinetic weapon systems. PLA thinkers argue that space supremacy must be an integral part of other forms of supremacy over the battlefield. They see this as a necessary and logical extension of other forms of military conflict. The bottom line is that the PLA sees war in space as an integrated part of military operations and that offensive and defensive operations are blending.[9]

LEGAL CONSIDERATIONS

Justifying China's actions in international law and establishing positions in domestic law are increasingly important for the PLA as its strategists and planners think about space warfare. Some officers in the PLA's General Political Department are setting out positions that China could use to justify attacks on space bodies such as satellites and other installations, while other scholars and military thinkers deal with the nuances, and limits, of national sovereignty. The Communist Party's senior leadership sees achieving a leading position in space as key to becoming a military and economic power with global impact. China's 2006 White Paper on Space Activities sets out China's space power priorities.[10] In PLA doctrinal books, however, senior PLA officers make it clear that they see the ability to control space during any conflict as controlling the high ground of future warfare.

SPACE AND SOVEREIGNTY CONTROL

PLA military and legal thinkers see the control of outer space as a natural extension of a nation's control of its territory. PLA officers believe that space control today is the way to guarantee the control

9. Liu Jixian and Liu Zheng, eds., *The New Revolution in Military Affairs and Building a Military Legal System* (Beijing: PLA Press, 2005).
10. *China's Defense White Paper*, 2006, published by the Information Office of the State Council of the People's Republic of China, December 2006, p. 9.

of air space and is an absolute necessity for conducting modern informationalised warfare. When satellite images of China's new Jin class submarine appeared on Google Earth on July 5, 2007, the revelation in the international press sent shockwaves through portions of the PLA. But the military had already been thinking about the implications of the open availability of space imaging before this happened. Some researchers suggest passive, defensive responses to these threats: "The PLA needs better camouflage and concealment to counter imaging from space, and better computer network security to keep secrets."[11] Others have suggested decoys, space-based alarms to warn of imaging, and multi spectrum stealth camouflage systems to mask China's activities. Thus, there is a range of defensive measures under consideration in China to respond to space-based imaging and intelligence collection.

Some PLA officers have sought to improve security by suggesting active, offensive measures and not the passive, defensive counter-intelligence programmes. There is a debate in China focussed on concerns about the freedom of other nations to undertake military activities in, or over, sovereign Chinese territory. Some researchers at PLA academies argue that modern technology is driving the main battlefield for future informationalised warfare into outer space. To meet that challenge, they believe that the Chinese military must rapidly build up its military space power.

Military thinkers in China are also debating how sovereignty affects warfare in space. Legal scholar Gao Qingjun summarises Beijing's sensitivity to reconnaissance and military activities in its Exclusive Economic Zone (EEZ) and its adjacent air space this way: "Freedom of navigation and overflight does not include the freedom to conduct military and reconnaissance activities. These activities amount to forms of military deterrence and intelligence gathering for battlefield preparation." [12] There is ambiguity, even disagreement among thinkers in the PLA over the extent to which a nation is free from the restrictions imposed on military operations

11. Li Yong, Wang Xiao, Yi Ming, and Wang Long, "Threats to Space-Borne Optoelectronic Imaging and Telemetry Systems and Countermeasures Technology," *Infrared and Laser Engineering*, No. 6, December 2005, pp. 631-635.
12. Gao Qingjun, "Characteristics and Limitations of Space Reconnaissance in High-Tech Local War," *Journal of the Academy of Command and Technology*, February 1, 2005, pp. 52-56,

by international borders. The United States has refused to define the upward extent of air space or otherwise differentiate air space from outer space.[13] Although some commentators on the subject have suggested that the end of the atmosphere, about 100 km or 62 miles up, a zone known as the Kármán Line, ought to be the ceiling of sovereignty.

The dominant argument in China seems to be that even though outer space is undivided and the common domain of all mankind, space security is a necessary part of a nation's security and it is necessary to develop defensive mechanisms over one's territory. The air space over territorial waters and territorial land is protected, but there is no clear standard in international law as to the altitude to which territorial air space extends. The bottom line, however, is that a nation can defend itself and seek to control space as far, or more correctly, as high, as its weapons can reach..

Space control is the capability of one belligerent in a state of war, in a specified period of time, in a defined area of space, to carry out its own operations with freedom, while hindering or preventing an enemy from carrying out its operations or using space. Gen Zheng Shenxia, Commandant of the PLA Academy of Military Science recommends that, to preserve China's own national interests, Beijing must be capable of controlling the electromagnetic spectrum as well as traditional sovereignty control, including the land territory, the maritime domain, air space, and space. Based on the preponderance of policy positions advocated by senior PLA officers, it is likely that Beijing will develop capabilities to control or act in space up to the limits of its technical capabilities.

PLA'S TOOLS OF SPACE WARFARE

The PLA is exploring a variety of space weapons through theoretical, basic, and applied research. These include:

- Satellite jamming technology.
- Collisions between space bodies.
- Kinetic energy weapons.
- Space-to-ground attack weapons.

13. Michel Bourbonniere, *National Security Law in Outer Space: The Interface of Exploration and Security*, 70 J. Air L. & Com. No. 1, p. 62 (2005).

- Space planes that can transit and fight "up or down" in the upper atmosphere or space.
- High power laser weapons.
- High power microwave weapon systems.
- Particle beam weapons.
- Electromagnetic pulse.

The PLA has done well at various forms of jamming and on the concept of colliding space bodies, indicating that it is serious about space warfare. Moreover, the destruction of its own weather satellite and the blinding of a US satellite mean it is achieving some success. In general, PLA theorists think internal lines of communication and support are most favourable for successful military operations, whether offensive, defensive, or logistical. They see internal lines as superior to external ones. Thus, they see their regional position in Asia as superior to that of the United States because the latter has to fight, communicate, and resupply along extended external lines, while China enjoys internal lines of communication within the range of its aircraft, missiles, and submarine fleet. This means that in a conflict, they would probably use their jamming and anti-satellite systems to disrupt enemy lines of communication, command and control, situational awareness, and efforts at military coordination.

One of the most disruptive things the PLA could do would be to neutralise the adversary's ability to use tracking and data relay satellites, which provide global, real-time sensor and communications capabilities for networked operations. The PLA believes that the United States is heavily dependent on its satellite systems, at least, more dependent than the PLA is on its own. But that is changing. As the PLA modernises its own Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems, it is becoming as dependent on space and information systems. Therefore, its policies of space control and space deterrence for military purposes are no longer forms of asymmetric warfare. Rather, the contest will be over which force can most effectively disrupt the other's military operations. Space warfare may well become an integral part of traditional conflict.

SPACE DETERRENCE

Space power theorists like Cai Fengzhen advocate the ability to control parts of space for limited periods and develop the concept further, advocating a regime of space deterrence to counter American space superiority. He defines this as the use of strong aerospace power to create or demonstrate a threat to an opponent's space power to deter that opponent in a practical way. The goal of this deterrence is to increase the PLA's power in weapon systems, information gathering, and command and control to improve national warning systems in China, create fear in an adversary, and degrade the adversary's power.

The key to achieving this level of deterrence is to concentrate one's own economic, military, and science and technology power to ruin an opponent's economy and ability to function in space. The intention behind the December 2006 blinding of a US satellite by a Chinese laser and the January 11, 2007 destruction of a Chinese weather satellite by the PLA's own direct ascent vehicle is clear when interpreted as "space deterrence." For a deterrent to be credible, one must demonstrate the capability to carry it out.

In the future, we may see other examples of space deterrence intended to let other countries know that they do not have free rein in space over China. We may see the PLA demonstrate various forms of jamming. In doing so, the PLA would conduct operational tests of the work being done on jamming synthetic aperture radar satellites. Much of the work in Chinese journals discusses manoeuvring space bodies to intersect in orbit. This type of manoeuvring lends itself to accidental collisions between space bodies. China could then deny the hostile intent of such accidents, but they would still have a space deterrent capability.

CONCLUSION

In the event of a conflict with China, we can expect to see military operations carried out across all the domains of war: land, sea, air, space, and the electromagnetic spectrum that is, information warfare and cyber warfare. Any military operations in space will be part of a more coordinated attack on an enemy's knowledge and command systems. The PLA will seek to exercise space control in a limited area

of conflict, and it will probably observe the internationally accepted definitions of the commons in space above the Kármán Line in peacetime and during periods of tension. If conflict breaks out, however, altitude limits on space control will be off, and systems carrying the adversaries' military traffic or signals will probably be fair game for the PLA.

The concern over how China will engage in military operations in space is really about intentions. Many of China's activities and policy positions make it hard to interpret Beijing's intent. Among these are:

- China's expansive territorial claims, combined with periodic incidents of the use of force to reinforce these claims.
- Justification for extending the territorial claims of China into the reaches of outer space.
- The shaping of the space battlefield with legal arguments that would justify China's actions to prevent space observation over its territory

Although we do not know China's intentions, we can infer them from Beijing's actions: the attack on a US satellite with a laser and the destruction of its own weather satellite, as a demonstration of capability. By observing the military capabilities China is acquiring and reading its literature, we know that the PLA is preparing the space battlefield in advance with legal arguments, just as called for in its doctrine.

India is pushing ahead with its ambitious space programme while casting an envious eye at neighbouring China. The two Asian giants have taken their traditional rivalry into space; India, which fought a border war with China in 1962, may be behind in terms of space technology, but is eager to catch up.

The Chinese Anti-Satellite (ASAT) test threatens our own expanding civilian space assets, undermines the credibility of our nuclear deterrent, and exposes the lack of a military space strategy. The Indian armed forces are slowly moving towards exploitation of space for purposes like real-time military communications and reconnaissance missions, apart from aiming at ballistic missile defence and delivery of precision guided munitions through satellite signals. With the launch of the Cartosat-2 satellite atop the PSLV, India's

Satellite-Based Surveillance (SBS) and reconnaissance programme is now finally heading towards completion. It will allow India to keep closer tabs on troop movements, missile silos, military installations and air bases of neighbouring countries, as well as augment surveillance over Indian air space.

INDIA'S AFGHANISTAN POLICY: REASSESSING INDIA'S ROLE IN AFGHANISTAN

K. N. TENNYSON

We have had historic links and relations with Afghanistan. It is our desire to see Afghanistan prosperous and strong...We will try to strengthen and support democracy and economic growth in all possible ways.

— Prime Minister Dr. Manmohan Singh,
Address to the Nation on August 15, 2005
(Independence Day speech)

Afghanistan is India's most important neighbouring country, with which India has shared strategic, economic and political interests for centuries. However, India-Afghanistan relations officially began only after India's independence, more specifically after the signing of the Treaty of Friendship between the two countries on January 4, 1950. As early as March 22, 1949, Jawaharlal Nehru, the first Prime Minister of India, emphasising the geo-political importance of India's neighbouring countries (including Afghanistan) for India's foreign policy, remarked during his lecture at the Indian Council of World Affairs (ICWA), New Delhi, "[T]he nearby countries always have a special interest in

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one another and India must, inevitably, think in terms of her relations with the countries bordering her by land and sea…I would also include Afghanistan, although it does not touch India's borders; Tibet and China, Nepal, Burma, Malaya, Indonesia and Ceylon [Sri Lanka]."[1] Since then, successive Indian leaders have taken great interest in the political developments in Afghanistan and its neighbouring countries, because a political crisis in the region, directly or indirectly, spills over to India and affects its strategic and security interests.

In January 1982, former Indian Prime Minister Mrs. Indira Gandhi reiterated the need for India to play a more active role in Afghanistan. Mrs. Gandhi reportedly told the then Indian Ambassador to Afghanistan, J.N. Dixit, that India "must try and increase Indian presence and influence in Afghanistan. If not all over the country, in Kabul, at least in selected fields of activities: health, education, rural development, [and] minor irrigation works."[2] Today, Indian assistance projects are spread not only in Kabul but every part of the country. However, it is not only India that seeks Afghanistan's friendship, Afghanistan too, has sought India's friendship and endeavoured to have diplomatic relations with it right from the time of the partition of the Indian subcontinent, mainly because Afghanistan-Pakistan relations, like India-Pakistan relations, began on a bitter note as a result of the border issue. Thus, though Afghanistan and Pakistan have been described as "conjoined twins" by Afghan President Karzai, most of the Afghan leaders, except the Taliban, have been closer to New Delhi than to Islamabad.

AFGHANISTAN, AN INDISPENSABLE NEIGHBOUR FOR INDIA

Afghanistan is of economic, political and strategic importance for India. Economically, India needs Afghanistan to interact with the Central Asian Republics (CARs) as India does not have a direct geographical access to the energy-rich region. Politically, too, India needs to have Afghanistan on its side to contain Pakistan's uncongenial policies of manoeuvring allies among the Muslim countries to gain support

1. Jawaharlal Nehru, *India's Foreign Policy: Selected Speeches, September 1946-April 1961* (Publications Division: Ministry of Information and Broadcasting Government of India, 2004), p. 42.
2. J.N. Dixit, *An Afghan Diary: Zahir Shah to Taliban* (Delhi: Konark Publishers, 2000), p. 32.

for Pakistan's stand on Kashmir, and to thwart the use of Afghan soil against India by Pakistan-based [Inter-Services Intelligence (ISI)-trained and supported] terrorist organisations. Besides, there are about 4,000 Indian nationals engaged in various reconstruction projects in Afghanistan, and as many as 3,000 persons of Indian origin belonging to the Sikh and Hindu communities permanently settled in Afghanistan, in various provinces like Kabul, Ghazni, Khost, Kandahar, Helmand, Jalalabad and Parwan.[3]

As a result of these indispensable socio-economic and political needs, India highly values its relations with Afghanistan. Thus, with the dethronement of the Taliban regime from Afghanistan, India actively participated in all the international meetings and conferences held on working out programmes for the reconstruction of Afghanistan and invested heavily in the rehabilitation and reconstruction projects in the country. India's assistance programme in Afghanistan ranges from construction of roads to that of the Parliament building, agriculture to hydro-electric power projects and training for the educational development of the Afghan diplomats and police force, which have significantly impacted the lives of the Afghans. For example, Afghanistan faced a severe power (electricity) problem in almost every part of the country, including Kabul, as the availability of secure energy supplies in Afghanistan was disrupted in the ongoing war. Since the country's power generation, transmission, and distribution infrastructures were destroyed,[4] Kabul, was known as the "capital of darkness." However, the Indian government's initiatives have helped to turn Kabul from darkness to light with the successful completion of the 220 KV double circuit transmission line (202 km) from Pul-e-Khumri to Kabul and a 220/110/20 KV sub-station at Chimtala near Kabul.[5] To give another example, in 2001, only about a million children were recorded to have gone to school in Afghanistan, with no female students. Today, around 6.3 million Afghan children are in school, with 36.3 percent being girls,

3. "Basic Facts About Afghanistan," at http://www.mea.gov.in/foreignrelations/09fr01.pdf, accessed April 26, 2010.
4. Bureau of South and Central Asian Affairs, "Background Note: Afghanistan," December 6, 2010, at http://www.state.gov/r/pa/ei/bgn/5380.htm, accessed March 22, 2011.
5. Ministry of External Affairs, *India and Afghanistan A Development Partnership* (Government of India: External Publicity Division, 2008) at http://meaindia.nic.in/staticfile/Report.pdf, accessed May 12, 2010.

which is a six-fold enrollment growth since 2001.[6] The increase in the number of students in Afghanistan is mainly the outcome of the grand success of the "Back to School" campaign (school feeding programme) initiated by the Indian government in collaboration with the World Food Programme (WFP).[7]

The splendid use of India's soft power (in healthcare, education, finance, technology, machinery assistance and training of Afghan technicians, diplomats, police officials and army personnel, etc) is greatly appreciated and acknowledged all over the world today, including by the Afghans. But, the challenges remain. Pakistan considers Afghanistan as its legitimate sphere of influence and has actively campaigned with the world community to "stonewall" India's involvement in the politics of Afghanistan, because it fears that India's proactive role in Afghanistan would be detrimental to its own strategic and security interests. The deliberate exclusion of India from the Istanbul Regional Conference on Afghanistan (January 26, 2010) and Pakistan's clandestine action of trying to minimise India's role at the London Conference (January 28, 2010) are two such classic examples. There were also news report which stated that even on the eve of the recent November 2, 2011, Istanbul Conference on Afghanistan, Pakistan was "blocking the establishment of a regional monitoring group to oversee cooperation on Afghanistan's economic and security future," mainly because it does not want to have "so many countries – primarily India – enjoy similar status [with Pakistan] in the contact group on Afghanistan."[8] Another disturbing factor for India is that the Taliban has regrouped and reequipped, and is actively involved in destabilising the Afghan state. The resurgence of the Taliban and other militant groups in Afghanistan and Pakistan's policy of trying to thwart India's relations with Afghanistan pose a serious challenge to India's Afghanistan policy.

THE NEED FOR STRATEGIC CHANGE IN INDIA'S AFGHANISTAN POLICY

The US and North Atlantic Treaty Organisation (NATO) forces have been in Afghanistan for about a decade, but they do not seem to have succeeded

6. n. 4.
7. n. 5.
8. Indrani Bagchi, "Pak Resists Regional Solution in AF," *The Times of India* (New Delhi), October 30, 2011.

much, except for the fact that the Taliban regime in Afghanistan has been dethroned and Osama bin Laden killed. What is disturbing is the fact that several high profile attacks on the Afghan leaders and external forces continue unceasingly, but the US and its Coalition partners (the NATO forces) have expressed willingness to withdraw their troops from Afghanistan by 2014. This reminds one of what Maj Gen Y. K. Gera (Retd) wrote, "It would be prudent to realise that whether Mullah Omar and Osama bin Laden live or perish, their legacy will live on until sustained international efforts are made to address the problems faced by Afghanistan, which continues to bear the brunt of the last great battle of the Cold War era."[9] Today, Afghanistan is one of the poorest countries in the world, with its basic infrastructure such as communication, transportation, health services, and education at the world's lowest standing. Decades of political crisis have seriously challenged peace, stability and socio-economic development in Afghanistan, thereby, creating "widespread insecurity resulting from conflict, with resulting displacement and reduced humanitarian access, limited institutional capabilities."[10] The ranking of Afghanistan at 181 position, just above Niger at 182, in all measures of human welfare in the 2009 Human Development Index is a manifestation of this.[11]

The above facts call for an urgent need on the part of the Afghan government to restructure its policy and improve the socio-economic conditions of the people of the country. It would be suicidal on the part of the Afghan government and external powers to only focus on exterminating the militant groups (Taliban and Al Qaeda) without tackling the core socio-economic problems of the country. The United Nations, in its publication *Basic Facts About the United Nations*, clearly pointed out that "creation of lasting peace can only be achieved by helping countries to foster economic development, social justice, respect for human rights, good government and democratic process."[12] Voicing a similar opinion, two eminent scholars on Afghanistan, Barnett

9. Maj Gen Y. K. Gera (Retd), "The Situation in Afghanistan and the Way Ahead," *USI, Journal*, Vol. CXXXVIII, No. 574, October-December 2008, p. 540.
10. WFP, Executive Board First Regular Session Rome, February 8-11, 2010, *Projects for Executive Board Approval*, Agenda Item 9, at http://one.wfp.org/operationals/current_operations/project_docs200063.pdf, accessed May 19, 2010.
11. *Human Development Report 2009* (New York: United Nations Development Programme, 2009), p. 170.
12. Department of Public Information, *Basic Facts About the United Nations* (New York: United Nations, 2004), p. 68.

R. Rubin and Ahmed Rashid too wrote, "Advancing reconstruction, development, good government, and counternarcotics efforts and building effective police and justice systems in Afghanistan will require many years of relative peace and security."[13]

However, to create a viable economy and provide (human) security to thousands of displaced and homeless Afghans will be a daunting task for the Government of Afghanistan, because it is economically weak, politically unstable and its armed forces are not up to the task of coping with the resurgent militants (the Taliban). Today, the most serious soft underbelly of Afghanistan lies in the security domain. What India can do in these circumstances is help the Afghan government in building strong and competent security forces to defend their country. Without strong and competent national security forces, the country will remain weak and unstable, which, in turn, would impede peace, a prerequisite for the socio-economic development of the country. Therefore, India's policy-makers need to restructure its policies and engage more aggressively in Afghanistan if India genuinely wants to help in rebuilding and stabilising Afghanistan. The signing of the "strategic partnership" agreement between Indian and Afghanistan on October 4, 2011, in which India agreed "to train, equip and build capacity for the Afghan forces, including the army"[14] is a big leap forward in the two countries' bilateral relations.

Mere use of soft power (materials and economic help) alone will not suffice. India has to start engaging more aggressively through the use of hard power (by providing logistic and military help, training of the Afghan National Army and police forces, etc) along with humanitarian, financial and project assistance, because if Afghanistan and Pakistan are in turmoil, India cannot remain unaffected. Indian Prime Minister, Manmohan Singh on the eve (May 11, 2011) of his

13. Barnett R. Rubin and Ahmed Rashid, "From Great Game to Grand Bargain: Ending Chaos in Afghanistan and Pakistan," *Foreign Affairs*, November/December 2008, Vol. 27, No. 6, p. 31; Rachel Stohl urged that since "the needs of the Afghanistan are so vast, any post-war effort in Afghanistan will have to address the military, political, economic and social needs of the country, which are great and varied." See Rachel Stohl, "What to do With Afghanistan: Prospects for Stability," November 5, 2001, at http://www.cdi.org/terrerism/afghhanistan.cfm, accessed September 12, 2010.
14. Amitabh Pashupati Revi, "India Agrees to Train, Equip Afghan Army: Sources," NDTV, October 5, 2011, at http://www.ndtv.com/article/india/india-agrees-to-train-equip-afghan-army-sources-138649, accessed October 28, 2011.

visit to Afghanistan, frankly stated that "India cannot be immune to instability in Afghanistan as it will affect our progress, development and security."[15] The Prime Minister's observation is supported by the fact that peace and development of the people of the Southern Asian region are inextricably intertwined with those of their neighbours, and no country can live in isolation. Ironically, despite Pakistan's military intelligence (ISI) being actively involved in carrying out covert subversive activities to destabilise Afghanistan, Pakistan's President Asif Ali Zardari too has expressed the view that peace cannot be expected in the Southern Asian region "if we don't have peace in Afghanistan."[16]

However, India should not deploy its military forces in the war-torn country as historical evidence proves that the Afghans have always resisted the external powers interfering in the political affairs of their country. This holds true to this day and is perhaps the reason why Pakistan and the US are looked upon with suspicion and hatred by the Afghans, though Afghan President Karzai has often described the Pakistanis as the Afghans' brothers. India should act cautiously and take serious note of the Afghans' sensitiveness towards external powers' intervention in the political affairs of their country, while formulating its plans and policies on Afghanistan. At the same time, Indian policy-makers also need to be aware that achieving peace and stability in Afghanistan cannot be done by the central (Kabul) authority alone. It would be unwise on the part of the Indian government to solely depend on a consistently pro-India leadership in Afghanistan. It is a fact that unlike other countries in the region, in Afghanistan, ethnic, linguistic, religious and tribal identities and regional affinities always precede the central authority. Therefore, taking into consideration the unique social, cultural and political conditions of the Afghans, the Indian government should include every section of the Afghan society, including the Taliban, while formulating its policy on Afghanistan. The reality is that India cannot afford to simply disregard the Taliban. The Taliban cannot be simply written-off from Afghan politics, they have a long-term objective and

15. Sandeep Dikshit, "Indo-Afghan Ties to Reach a New Level: Manmohan," *The Hindu* (New Delhi), May 12, 2011.
16. "Pakistan President Zardari Meets Afghanistan's Karzai," June 10, 2011, at http://www.bbc.co.uk/news/world- south-asia-13723251, accessed July 8, 2011.

certainly want to come to power – they are there to stay. India's plans and policies in Afghanistan will remain fragile unless India adopts a more inclusive policy and takes into confidence all sections of the Afghan population. Hamid Ansari, Indian Vice President's statement, "A stable regime in Afghanistan and one that is friendly to India is clearly in India's interest"[17] speaks volumes. India cannot afford to have another anti-India government in Afghanistan. Thus, the Indian policy should be to win over all sections of the Afghan society, and India should be willing to deal with whichever government is in effective power in Afghanistan. This is important due to the fact that the past experience of the Indian government in dealing with the Taliban was not good for India's strategic and security interests.

THE ROAD AHEAD

India's role in rebuilding Afghanistan is critical. Despite Pakistan's jealous attitude towards India, the international community has repeatedly urged India to participate in the Afghan nation-building process; the US has even urged India to help in training the Afghan armed forces. Nicholas Burns, former US Under Secretary of State for Political Affairs, once emphatically stated that the international community can't "afford to turn down assistance from great countries like India. India has a major role to play in Afghanistan." Appreciating the positive role being played by India in Afghanistan, he said, "I don't think we're in a position to say this country cannot participate in rebuilding of Afghanistan because of differences between Pakistan and India,"[18] In June 2011, in an interview to the state-run PTV, during his visit to Islamabad, Afghan President Hamid Karzai, too, acknowledged India's help and said that "Pakistan should feel happy that Afghanistan is being helped [in the reconstruction] by another neighbour [India]."[19] What is ironical is the fact that despite the Taliban's continuous attacks

17. Hamid Ansari, "India's Strategic Neighbourhood (i) Setback in Afghanistan, Ambivalence in Iran," in Satish Kumar, ed., *India's National Security Annual Review 2007* (New Delhi: Knowledge World: 2007) p. 144.
18. "India's Role in Afghanistan Crucial, says Burns," May 11, 2009, at http://www.thaindian.com /newsportal /world - news /indias-role-in-afghanistan-crucial-says-burns_100190776 .html, accessed March 21, 2010.
19. Rezaul H. Laskar, "Indian Present Not Against Pak: Afghan President," *Hindustan Times* (New Delhi), June 13, 2011; and "Indian Presence Not Against Pakistan: Karzai," June 13, 2011, at http://outlookafghanistan.net/news?post_id=888, accessed July 2, 2011.

on Indians in Afghanistan, the Taliban spokesman, Zabiullah Mujahid in an interview with *The Times of India* in March 2010 commented, "The Taliban aren't in any direct conflict with India. India troops aren't part of NATO forces, they haven't occupied Afghanistan." He further added, "If the Taliban return to power, [Taliban] would like to maintain normal relations with countries, including India. It's possible for the Taliban and India to reconcile with each other."[20] Zabiullah Mujahid's statement is a welcome sign for India as it enhances India's stake to play a more active role in Afghanistan.

Now that most of the countries of the world are asking India to play a greater role in Afghanistan. India needs to reassess its plans and policies in Afghanistan and engage more vigorously with other regional powers (especially Iran and the Central Asian countries) to help in building a strong competent and efficient Afghan government and strong security forces. The political crisis in Afghanistan is a complex issue; therefore, India needs the help and cooperation of all the countries of the region – alone, it cannot bring about any sustainable change in Afghanistan. Developing closer relations with Iran and the Central Asian countries will enable India to bring different Afghan ethnic groups onto a common political platform. At the same time, it can also help in counter-balancing Pakistan's uncongenial policies of manoeuvring allies among the Muslim countries on the Kashmir issue and in trying to thwart India's role in Afghanistan. J. N. Dixit very aptly said that India cannot afford to make another mistake of not trying "to forge an effective link on the Afghan question with Iran [and the Central Asian countries] to develop a joint strategy to resist the forces of ethnic and religious extremism in Afghanistan."[21]But, the problems remain: India-Iran relations have never reached maturity—the two countries' relations often swing with the changes in the international and regional politics. The dethronement of the Taliban regime in Afghanistan once again provided a conducive environment for the two countries to cooperate, but of late, as India seeks to build a close partnership with the US, Iran has begun to divert its policy towards Pakistan, because

20. Quoted in "Taliban Not in Direct Conflict With India: Spokesman," *Dawn*, March 27, 2010, available at http://archives.dawn.com/archives/34483, accessed December 1, 2010.
21. J. N. Dixit, *India's Foreign Policy 1947-2003* (New Delhi: Picus Books, 2003), p. 364.

Iran and Pakistan are opposed to the US policy in the region. What is worrying for India is that though India is actively involved in the reconstruction of Afghanistan, the President of Afghanistan, Hamid Karzai categorically stated, "Anybody [including India] that attacks Pakistan, Afghanistan will stand with Pakistan. Afghanistan will be a brother of Pakistan. Afghanistan will never betray a brother."[22] This brings us to the conclusion that India needs to seriously reconsider its policy with its neighbouring countries as developing hostile relations with any of its neighbours will seriously undermine India's economic, political, security and strategic interests.

Hedayat Amin Arsala, former Vice President and senior adviser to the President of Afghanistan has clearly pointed out that "[T] here is little doubt that Afghanistan's [geo-strategic] location will [cease] to have a significant influence on the [Asian] country's future political and economic prospects."[23] Amin Arsala's statement clearly indicated that without peace and stability in Afghanistan, there can never be substantial peace and stability in the region. At the same time, it also reveals that without the active support and cooperation of the neighbouring countries, mainly India, Iran, Pakistan, China and the Central Asian countries, there can never be long-term peace and stability in Afghanistan. Therefore, the only solution to the present socio-economic and political problems and crises of the region is to join hands and improve the security and economy (well-being) of the Afghans. Today, what the Afghans need are not bullets but bread, butter and security. An early amicable political solution to the Afghan crisis is the only real guarantee for peace and security in the region. Until Afghanistan is stabilised and the Afghans are secured socially, economically and politically the region as a whole will be affected.

22. "Will Stand by Pakistan if it is Attacked by US or India: Karzai," NDTV, October 22, 2011 at http://www.ndtv.com/article/world/will-stand-by-pakistan-if-it-is-attacked-by-us-or-india-karzai-143504, accessed October 28, 2011.
23. Hedayat Amin Arsala, "Revitalizing Afghanistan's Economy: The Government's Plan," in Robert I. Rotbert, ed., *Building a New Afghanistan* (Massachusetts: World Peace Foundation, 2007), p. 134.

PROSPECTS OF THE SEOUL NUCLEAR SECURITY SUMMIT, 2012

YEON JUNG JI

Presently, the world seems to be facing a nuclear turning point.[1] Whereas certain optimists view the existence of nuclear weapons as, to some extent, likely to stabilise international security, nuclear security has emerged as one of the most fearful threats to global security. The growing accuracy and predictable use of nuclear weapons is now, more than ever, creating a need for world leaders to control and eliminate the dangers posed by the acquisition of such weapons by aspiring parties and nations. In the meantime, though the Fukushima nuclear disaster in Japan threatens to disrupt nuclear energy programmes in the world, it is undeniable that the demand for nuclear energy is increasing in many countries, thus, making it imperative that we earnestly contemplate the many ramifications of these developments. At this point, while it is difficult to separate the military and civilian uses of nuclear technology, there is a need for legitimised and organisational action to work against illegal nuclear proliferation on a global level, which will require much goodwill and cooperation among nations. Hence, the Nuclear Security Summit in Seoul in 2012 will look ahead to strengthen the global consensus to

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1. Bates Gill (2010). "Good Nuclear Governance and Nuclear Security Challenges, Implications, and Responses," *IFANS Review*, 18(2): 2.

pursue the objectives fixed in the preceding summit in Washington, DC.

RETROSPECT OF WASHINGTON NUCLEAR SECURITY SUMMIT, 2010

The Washington Nuclear Security Summit held in 2010 was a solid starting point, even though it did not aim at launching a new programme. Following US President Obama's speech at Prague in April 2009, emphasis was put on the terms of securing nuclear materials, preventing nuclear terrorism, maintaining the current non-proliferation regime and moving forward to establish a comprehensive agenda for the summit.[2] The summit included three steps: establishing the directions of the amplifying nuclear threat, reducing the quantities of nuclear weapons, and strengthening the nuclear Non-Proliferation Treaty (NPT). By agreeing to these steps, world leaders from 47 states sounded the alarm for the nuclear threat in order to open a discussion to the world. The summit is viewed as having been successful in designing a framework and building a consensus on containing chances of nuclear terrorism by securing nuclear materials. Therefore, the summit highlighted the importance of the Convention on the Physical Protection of Nuclear Material and the International Convention for the Suppression of Acts of Nuclear Terrorism.[3]

By discussing nuclear security at the highest level, the urgency of the need to take steps to encourage a number of necessary actions on the global stage was underlined. Simultaneously, leaders directly presided over their subordinates to meticulously present the issue of nuclear security in an authentic manner.[4] By doing so, the summit created a tangible foundation on the basis of 12 points of cooperative actions in the hope of reducing the global nuclear threat within a four-year timeframe. All the parties highlighted a national commitment to keep up the concrete effort at the summit, during which 29 countries

2. Office of the Press Secretary, Key Facts about the Nuclear Security Summit, April 13, 2010, The White House, Washington, USA.
3. Kenneth N. Luongo (2010). "The Nuclear Security Summit: Achievements and Agenda for Action," Testimony before the Committee on Foreign Affairs, US House of Representatives, April 21, 2010.
4. William Tobey (2011), "Planning for Success at the 2012 Seoul Nuclear Security Summit," Policy Analysis Brief, June 2011, The Stanley Foundation, http://www.stanleyfoundation.org/publications/pab/TobeyPAB611.pdf

gave country-specific commitments to an individually set-up goal known as a "house gift."[5] For example, Ukraine promised to remove all highly enriched uranium by the 2012 Seoul Summit and Chile claimed that it had dismantled 18 kg of highly enriched uranium in March 2010. Other countries, including India, China, Japan and South Korea announced the establishment of a nuclear energy partnership in a phased manner to strengthen the solemn collaboration of each country with the international community.[6]

On the other hand, in spite of a wake-up call for the participation of the leaders in acknowledgement of the nuclear threat, the lack of a specific plan binding member states to action was evidence of an existing limitation that stipulates the need for further efforts in the next summit. An analysis of the communiqué indicates that, in spite of discussions on the areas of nuclear materials and technology, it was non-binding and demanded no commitment from state-parties—rather it provided a commitment escape clause.[7] For instance, although the issues of preventing the dissemination of hazardous nuclear material leading to the capability of making nuclear bombs and obtaining dirty bombs through illicit trade of nuclear material were raised, the leaders could not succeed in suggesting specific standards for taking preventive action. As the third point of the communiqué stated, "We recognize that highly enriched uranium and separated plutonium require special precautions and agree to promote measures to secure, account for, and consolidate these materials... and minimization of use of highly enriched uranium...," all of which merely asked for reaffirmation of the necessity of nuclear security.[8]

As regards the talks on nuclear terrorism, another limitation, for example, is that no practical approach was engendered, nor was information shared on this threat. In addition, the summit failed to supplement the genuine acceptance of a need to harmonise the germane end result of weapons-grade usable nuclear material. Different political environments create a collision of national interests,

5. Alexandra I. Toma (2011), "The Ethics of the Nuclear Security Summit", Conference Paper, June 2, 2011, Carnegie Council, http://www.carnegiecouncil.org/resources/articles_papers_reports/0101.html
6. Office of the Press Secretary, Highlights of the National Commitments made at the Nuclear Security Summit, April 13, 2010, The White House, Washington, USA.
7. Tobey, n.4.
8. n.2.

and it is difficult to establish an international consensus. Soon after the summit, in response to President Obama's plea for the goodwill of nations to make voluntary initiatives against terrorism, Pakistan and Argentina agreed to take action against nuclear smuggling, yet achieving this goal has proved difficult in the case of Pakistan.[9] Thus, several common points were put forward as necessary to move towards effective action, in anticipation of the next summit.

EXPECTATIONS FROM THE SEOUL NUCLEAR SECURITY SUMMIT

Pursuing a new context of global security, the Seoul Nuclear Security Summit is indispensable to offer suitable solutions combined with an assessment of the changing situation after the Washington Nuclear Summit. Most of all, considering the gravity of the nuclear disaster at Fukushima, it is expected that all the participants will be willing to agree on the issue of nuclear safety as an emerging topic. Second, the disastrous consequence of nuclear terrorism linked to secret networks, which was considered in depth during the Washington Summit, is likely to be further thrashed out. Third, the widely spreading instability in the Middle East and North Africa is also regarded as a significant factor in hampering nuclear security due to the possible unstable management of nuclear reactors, devices and materials. For that reason, to ensure that appropriate attention is paid to the issues in the field of nuclear security, the summit needs to fully address the significant current issues as well as prior agendas embedded in the previous summit. Furthermore, in preparation to enforce more viable mechanisms, there is a need to set up two paths, as follows: to set achievable agendas, and to establish stronger organisational mechanisms.

Focussing on the principal agendas, it appears that the Seoul Summit will underline the following three issues as the priority: global cooperation against nuclear terrorism, securing nuclear materials and facilities, and fortification of the storage sites of radiological materials.[10] In line with the changing situation, a

9. Limitation of Nuclear Security Summit's Achievement, Antinuclear, April 16, 2010, http://antinuclear.net/2010/04/16/limitations-of-nuclear-security-Summits-achiievement/
10. Official 2012 Seoul Nuclear Security Summit Brochure, Seoul, Republic of Korea, http://www.thenuclearsecuritySummit.org/eng_media/press/press_view.jsp?oCmd=6&b_code=1&idx=65&rnum=1&f_gubun=0

meeting of Sherpas and Sous-Sherpas is scheduled to proceed to establish key constituents of the agendas at the forthcoming summit. While it was founded on a number of loopholes in the earlier summit communiqué, and it is doubtful if the summit will be able to elicit the embodied security perspectives from all the participants, it is hoped that all the contributors would entail and facilitate a political understanding following any reasonable measure that is adopted.

Most important, the Nuclear Security Summit is a key forum to ensure the fight against nuclear terrorism, particularly the need to secure nuclear materials.[11] As for the growing concern over illicit nuclear trade of nuclear weapons-usable materials, each state has to concentrate on practical issues. Over the last several decades, there has been a reported failure to control the spread of nuclear materials. In fact, a number of nuclear experts have claimed that hundreds of medical and industrial radioactive devices each year escape effective security controls.[12] According to them, it is assumed that some terrorist groups may have capitalised on malevolent intentions with stolen or lost materials, and they warn against the deficiency of possible safety systems. Some other specialists assert the existence of a gap in the calculation between the actual possibility of acquiring fissile materials, such as highly enriched uranium and plutonium, and their use; however, considering the predictable public disturbance and economic loss caused by any nuclear terror event, there is a need to address, and design, an appropriate plan to defuse public panic. Edwin Lyman, a senior scientist with the Union of Concerned Scientists (UCS), has urged the international community to seek real progress, even though "the solutions conflict with other strategic and commercial goals."[13] To combine a progressive outlook on nuclear terrorism, his analysis is relevant in terms of adjusting the views of reviewers among all the member states.

11. Tobey, n.4.
12. Joby Warrick (2002), "NRC Warns of Missing Radioactive Materials," Saturday, May 4 2002, A13, *The Washington Post*. See also, Abc News, "Hundreds of Radioactive Devices Missing," http://abcnews.go.com/WNT/story?id=130398&page=1#.TrgeWPSF8n8
13. Union of Concerned Scientists, "The Nuclear Security Summit and Preventing Nuclear Terrorism: Getting to the Hard Issues," April 9, 2010, http://www.ucsusa.org/news/media_alerts/the-nuclear-security-summit-0374.html

Despite the fact that all the leaders in the summit are willing to discuss the significance of the proliferation risk, all nations face the problem of building up adequate international standards for weapons-usable materials, by which verifiable principles can be enforced. The Washington Nuclear Security Summit amply demonstrated a required vision; for instance, in the case of the International Convention on Physical Protection through the guidance of the International Atomic Energy Agency (IAEA). As the nuclear threat has increased enormously in recent years, particularly after the events of 9/11, there is a great need for the summit to adopt adequate measures to supplement non-binding international mechanisms, in collaboration with the IAEA's advisory role. Pursuing the current vulnerability of protecting and tracing fissile materials, a need exists for further talks on safeguards, resolutions and agreements in the new Nuclear Security Summit. In this process, according to Alexander I. Toma of the Carnegie Council, the forthcoming security summit is called to take the next step of an organisational mechanism to resolve a few issues, which should not become mired in political gamesmanship, but accentuate and accept the divergence of world views on these subjects and include non-governmental working groups.[14]

Besides, bearing the Fukushima Daiichi reactor disaster in mind, it is necessary to establish nuclear safety as an urgent issue at the centre of the meeting. Ascertaining the topics brought up in previous summits, nuclear safety can be discussed in a wider range of human security in terms of the entire concerns regarding nuclear security. While some countries have announced that they would not proceed further in developing nuclear energy owing to a lack of safety assurances, it is still vital to discuss safety management and advanced technology in collaboration with international scrutiny of their nuclear facilities in the summit.[15]

SEOUL AS THE HOST

In preparation for the summit, the authorities in Seoul seem to hope for a substantial opportunity to focus discussion of the nuclear issue

14. Toma, n.5.
15. Doyeon Kim (2011), "Fukushima and the Seoul 2012 Nuclear Security Summit," *Bulletin of the Atomic Scientists,* March 18, 2011, http://www.thebulletin.org/web-edition/op-eds/fukushima-and-the-seoul-2012-nuclear-security-summit

on the Korean peninsula, with the eventual aim of denuclearising the Democratic People's Republic of Korea (DPRK) in due course.[16] While the international community is highly unlikely to legitimise Pyongyang's de facto nuclear status, Kim Bong-hyeon, Sherpa of the summit, illustrated the significance of hosting the Nuclear Security Summit in Seoul in this regard. As the Korean peninsula is one of the symbolic places to contend with regarding the nuclear issue, in shaping its responsible stance on these issues, Seoul expects to play a leading role in eliminating Pyongyang's nuclear threat.[17]

Since 2010, Seoul and Pyongyang have been involved in a series of up-and-down interactions, which include the nuclear issue as well as regional skirmishes. In March 2010, Seoul and Pyongyang engaged in a regional stand-off in the wake of the sinking of the corvette *Cheonan*, which sparked off extreme disagreement between the two governments. South Korean President Lee Myung-bak, in the meantime, has called for "proactive deterrence," keeping away from "passive" deterrence, which has not had any noticeable impact on the DPRK's hostility toward the South.[18] During the months after the confrontation between the two Koreas, the Korean Central News Agency (KCNA) published a report on the memorandum of the Foreign Ministry of DPRK on the rationale of nuclear weapons.

In the memorandum, Pyongyang claimed: "The DPRK has a willingness to join the international effort for nuclear non-proliferation and on nuclear material security on an equal footing with other nuclear weapons states."[19] It also mentioned, "The mission of the nuclear armed forces of the DPRK is to deter and repulse aggression… The DPRK has invariably maintained the policy not to use nuclear weapons against non-nuclear states…, "[20] The report, illuminates two aspects of Pyongyang's

16. Kenneth N. Loungo (2011), "Using the Seoul Nuclear Security Summit to Denuclearize the DPRK: A Dialogue on Radiological Source Security," *38 North*, May 12, 2011, http://38north.org/2011/05/luongo051111/
17. Korea Policy Research Centre 'Korea Policy' Contribution, "The Significance of Hosting the 2012 Seoul Nuclear Security Summit," Reference, Seoul Nuclear Security Summit, Republic of Korea, http://www.thenuclearsecuritysummit.org/eng_media/speeches/speeches_list.jsp
18. Michael McDevitt (2011), "Deterring North Korean Provocation," Brookings Northeast Asia Commentary, No. 46, February, 2011, Brookings, http://www.brookings.edu/papers/2011/02_north_korea_mcdevitt.aspx
19. Loungo, n.16.
20. McDevitt, n.18.

nuclear understanding, which might reduce any uncertainty about the necessity to deter Pyongyang from acts of aggression as well as the difficulty of proposing any agreement with the DPRK which apparently conflicts with the state's nuclear status. As evidence in support of this analysis, in November 2010, Pyongyang unleashed another act of aggression in the wake of the earlier unresolved situation of the *Cheonan*, at Yeonpyeong Island. Subsequently, the media repeatedly expressed alarm at a probable third nuclear test in early 2011, speculating that North Korea is almost ready for the launch of a sophisticated intercontinental ballistic missile from the DPRK-China border.[21] The DPRK is estimated to possess weapons-grade plutonium sufficient for the production of approximately 5–8 bombs for its nuclear stockpile.[22]

On September 2011, envoys from two Koreas had met at Beijing to discuss steps for peaceful coexistence, and the concerns about North Korea's nuclear capability. While these talks between the two Koreas did not produce any comprehensive steps, they shed light on the need to generate further bilateral and multilateral talks. In addition, Seoul apparently proposed a welcome to North Korea leader Kim Jung-il at the Nuclear Security Summit. In dealing with the issue of the DPRK's nuclear ambitions, according to the South Korean perspective, there are two concerns: Pyongyang's nuclear weapons and delivery systems; and the country's illicit nuclear trade. To steer clear of the nuclear threat from North Korea, Seoul seems likely to aim at placing the nuclear material security dialogue on the table.[23]

If Pyongyang accepts the offer from Seoul, South Korea can bring North Korea into the step-by-step nuclear dialogue, appealing to the international community, and resume the Six-Party Talks. Even if Pyongyang does not agree to be present at the summit, Seoul still can hold discussions on security measures for the control of plutonium or highly enriched uranium as a responsible country, in contrast to its neighbour. Thus, Seoul needs to frame the categories of radiological materials and their utilisation in collaboration with the relevant international agencies and the world community. In this regard,

21. Reuters, "North Korean Nuclear Test 'Possible' in New Year," December 24, 2010, http://www.reuters.com/article/2010/12/24/us-korea-north-idUSTOE6BG05Y20101224
22. Loungo n.16.
23. Ibid.

South Korea can suggest a more verifiable agenda and demonstrate specific progress on the issue of addressing global concerns. Hence, it is imperative to streamline the inter-Korean problems, including the nuclear issue, with the greater concerns, in an effort to channelise the mutual willingness to deescalate the probable risks.

CONCLUSION

As for the eagerness to seek an international commitment that encompasses all nuclear issues, it is pertinent to encourage and engage all the participants at the summit level. While planning for a successful event, the Seoul Summit is required to find the way forward to foster specific actions toward mutually agreeable solutions to the issue of nuclear security and non-proliferation. Therefore, various pledges from all continents need to allow flexible views and a practical approach to achieve substantial enhancement. With the aim of continual improvement of the Nuclear Security Summit, the leaders need to reach a consensus to establish the baseline for sharing information, and set targeted programmes to encourage countries to move from highly-enriched uranium to low-enriched uranium. To achieve these goals, it would be helpful to launch an effective regulatory system through a future summit. Nonetheless, it is undeniable that the current talk about the summit contains criticism regarding the chances of a successful meeting in terms of the composition of the participants. Eventually, one of the core missions for the summit will be to encourage the excluded countries to participate afterwards in the arrangements for international cooperation.

SAFETY AND SECURITY OF INDIA'S NUCLEAR INSTALLATIONS

SITAKANTA MISHRA

In retrospect, nuclear technology has brought forth a mixture of rational and not-so-rational views, well-founded concerns as well as baseless fears.[1] On the one hand, the three nuclear disasters – Three Mile Island, Chernobyl and Fukushima Daiichi – have made the study of safety and security of high-technological systems like nuclear, contentious. In addition, the spectre of 9/11 has raised the fear of terrorists targeting nuclear infrastructure. On the other hand, over 14,000 cumulative reactor years of commercial nuclear operation in 32 countries suggest that the danger from nuclear activity is minimal and nuclear energy can be harnessed in a safe and secure manner.[2]

As a case in point, India has more than 335 reactor years of experience;[3] its nuclear plants have survived tsunamis and

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1. A. Gopalakrishnan, "Nuclear Safety: Public Concerns," in Vinod Gaur, ed., *Nuclear Energy and Public Safety* (Indian National Trust for Art and Culture Heritage, December 1996), p. 3.
2. "Safety of Nuclear Power Reactors," World Nuclear Association, January 2011, http://www.world-nuclear.org/info/inf06.html
3. Srikumar Banerjee, "We are for an Independent Nuclear Safety Body, We Have Nothing to Hide," *The Tribune Interview* by Raj Chengappa, http://tribuneindia.com/2011/20110619/main7.htm.

earthquakes.[4] However, incidents of fire, construction mismanagement, radiation scare, nuclear material smuggling and terrorism have also been reported, thereby, questions are often raised about how safe and secure India's nuclear facilities are and about the strategies that India has devised to meet such challenges.

ALL IS NOT WELL

India currently operates 20 reactors, six more are under construction and around three dozen more have been proposed. Moreover, radioactive materials used for industrial and medical applications are estimated at over 12,000 units.[5] Concern for nuclear security, in fact, includes the security or safe-keep of all these applications.

Apprehensions have been raised regarding the safety of the oldest Tarapur plants, and, currently, of the proposed Jaitapur facility. There is fear of nuclear materials falling into terrorist hands and of sabotage of nuclear facilities. Incidents like the contamination of drinking water at the Kaiga plant in November 2009, the radiation scare in the Mayapuri (New Delhi) scrap market in April 2010, and the recent allegation about the death of 197 Indian nuclear scientists between 1995 and 2011[6] bring the layman an impression that all is not well in India's nuclear establishment. However, a careful scrutiny would reveal that these incidents are not symptomatic of a lack in India's regulatory or technological competence; rather, a lack of coherence in its technological expertise, the magnitude of the challenges on the ground, and the lopsided nuclear information management in the country are the causes.

Undoubtedly, there exist credible threats to nuclear materials, technology and facilities in all countries, including India. As increasing

4. The Tarapur plant was not impacted by the Latur earthquake in 1993; operations continued in the Kakrapar plant after the Bhuj earthquake in 2001; power generation was stopped for a week only after the 2004 tsunami. But no permanent damage happened to the Kalpakkam reactor.
5. "Application of Radiation in Medicine, Industry and Research," http://www.aerb.gov.in/T/sj/book/chapter9.pdf, p. 146.
6. The Shiv Sena member, Dr Deepak Sawant, on July 29, 2011, demanded in the Maharashtra legislative council a probe into the spate of suicides among scientists at the Bhabha Atomic Research Centre (BARC). He claimed that 197 scientists working at BARC centres in the country had ended their lives in the last 15 years. Of these, 57 suicides were from BARC in Mumbai. "Shiv Sena Wants Probe into BARC Suicides," *The Times of India*, July 30, 2011.

nuclear activities have been planned worldwide, the chances of their misuse cannot be overruled. However, awareness about the safety and security of nuclear installations is growing. In a way, the 9/11 incident seems to have accomplished the job in the 'nuclear security' domain in the coming decades, like the Chernobyl disaster did for the 'nuclear safety' regime.[7]

AN INTEGRAL APPROACH

A security-heightened approach, though necessary, would not suffice to address all safety threats. Similarly, a culture of nuclear safety practice is necessary, but that alone cannot protect people or the environment from malicious acts. As nuclear safety and security have common objectives – the protection of people and the environment – this can be better achieved through integration of both approaches. An in-depth and integrated approach to nuclear safety and security involving three levels – strategic, operational and cultural—is required.[8] The 'strategic level' deals with actions that governments, regulators and organisations can take. The 'operational level' deals with actions that must be taken to deliver integration. The 'cultural level' deals with actions to change an organisation and public thinking in a sustained manner.

For last 27 years, the Atomic Energy Regulatory Board (AERB), with great social responsibility, has strived to ensure that nuclear activity does not cause harm to the workers, the public or the environment. At the same time, the Bhabha Atomic Research Centre (BARC) has developed many types of equipment and mechanisms to effectively monitor security and safety related issues in coordination with the disaster management wings. The Central Industrial Security Force (CISF) is equipped and has devised strategies to secure nuclear facilities in coordination with, and with inputs from, other agencies. A concerted approach is in place, based on two overriding principles: building "defence by design and beyond" while evolving a "nuclear safety culture" to address probable concerns.

7. Trevor Findlay, "The Future of Nuclear Energy to 2030 and its Implications for Safety, Security and Nonproliferation," URL: http://www2.carleton.ca/cctc/ccms/wp-content/ccms-files/nef_part3.pdf, p. 14.
8. *An Integrated Approach to Nuclear Safety and Nuclear Security*, World Institute for Nuclear Security, 2010, p. 5, 10.

Defence by Design and Beyond

Indian nuclear plants in themselves are characterised by a high level of built-in safety, which makes them relatively less vulnerable to sabotage.[9] The large-volume, low-pressure, low-temperature moderator surrounding the pressure tubes keeps the risk of a fuel meltdown low. The steam generators are positioned well above the core, which promotes natural thermosyphoning (heat movement) in case shutdown cooling is lost. In addition, the CANDU plants are enclosed by heavy concrete walls, including a reactor vault of a minimum four feet thickness surrounding the nuclear core itself.[10]

Reactors like the Kaiga-1 and 2, Rajasthan-3 and 4 and Tarapur-3 and 4 are housed in double-domed structures. The domes of these Pressurised Heavy Water Reactors (PHWRs) are constructed using the microsilica-based high performance concrete. They have also other added safety features like the automatic, quick acting poison injection system to shut down the reactor in an emergency, and micro processor-based systems for reactor protection and control.[11] The physical protection of India's nuclear facilities is structured like a layered protective envelope on the basis of the nuclear threat assessment, of both design basis and beyond design basis threats.

Inbuilt Security: Each facility is equipped with certain inbuilt security systems that can withstand eventualities without any outside intervention. The Indian PHWRs are designed with double containment domes. The primary inner containment is designed to withstand the design basis accidents due to postulated loss of coolant accidents and main stream line break along with the earthquake load. The secondary containment barrier envelops the primary containment, and the annulus between the two containment walls is maintained under vacuum, with a provision of continuous monitoring for any accidental release of radioactivity.[12]

9. Rajesh M. Basrur and Friedrich Steinhäusler, "Nuclear and Radiological Terrorism Threats for India: Risk Potential and Countermeasures," http://jps.anl.gov/vol1_iss1/3-Threats_for_India.pdf, p.7.
10. Ibid.
11. Department of Atomic Energy, *Nuclear India*, July-August 2000, http://www.dae.gov.in/ni/niju100/niju100.htm
12. Mukesh Kukreja, et al., "Damage Evaluation of 500 MWe Indian Pressurized Heavy Water Reactor Nuclear Containment for Aircraft Impact," Paper # J03-2, Transactions of the 17th International Conference on Structural Mechanics in Reactor Technology (SMiRT 17) Prague, Czech Republic, August 17–22, 2003, p. 1.

A study conducted by Mukesh Kukreja, R.K. Singh, K.K. Vaze and H.S. Kushwaha of the Reactor Safety Division, BARC, on the damage evaluation of the 500 MWe PHWR's containment for aircraft impact concludes that this kind of event would cause "local deformation" but the double containment is "capable of absorbing the full impulsive load."[13] Also, the "Status Report 74 – Indian 220 MWe PHWR (IPHWR-220)" enumerates numerous physical-technical modifications undertaken in the old atomic power stations.[14] Major modifications have been introduced in the Narora Atomic Power Station (NAPS)-1&2 including diverse and fast acting shutdown systems, water filled Calandria vault, end shield assembly, zircaloy-2 pressure tube, etc.

Perimeter Security*:* Security and safety begin right from the site selection stage and then all through the design stage of nuclear facilities. In the siting of a Nuclear Power Plant (NPP), the zoning concept is followed that helps in enforcing emergency preparedness as well as periodic exercises. The innermost Exclusion Zone (EZ) surrounds the plant and defines an area directly under the control of the plant. The annulus around the EZ defines the Sterilised Zone (SZ) where the growth of habitation is restricted. The Emergency Planning Zone (EPZ), extending up to 16 km, specifies the distance to a high population centre where constant monitoring is undertaken for security and emergency planning purposes. The Indian siting code[15] defines an exclusion area of at least 1.5 km radius around the plant. All NPP sites have an exclusion boundary of a radius of 1.6 km, except the Kaiga site, where the radius is 2.3 km.

The CISF has developed the necessary ability to deploy specially-trained teams in case of a nuclear emergency. Four companies of the CISF have been stationed with specialised training in four locations as first responders: the Ghaziabad unit to cater to Delhi and other northern areas, the Ranchi unit to cater to the eastern areas, the Kota unit for the western; and, the Chennai unit for the southern part.

13. Ibid.
14. "Status Report 74 - Indian 220 MWe PHWR (IPHWR-220)," http://aris.iaea.org/ARIS/download.cgi?requested_doc=report&doc_id=74&type_of_output=pdf, April 4, 2011.
15. AERB, "Site Considerations of Nuclear Power Plants for Off-site Emergency Preparedness," AERB Safety Guide No. AERB/NPP/SG/S-8, October 2005, http://www.aerb.gov.in/T/PUBLICATIONS/CODESGUIDES/S-8.PDF

Personnel Reliability, Code of Ethics and Conduct: The AERB has developed a formal code of professional ethical values for the employees to adhere to.[16] Accordingly, officials shall be guided by the principle to (1) maintain a high level of professional competence; (2) maintain a high level of honesty and integrity and be principled and consistent in application of regulations. Similarly, the Nuclear Power Corporation of India Limited (NPCIL), which runs the nuclear power plants, has mandated a "Code of Ethics and Conduct" asking "commitment for ethical professional conduct from every director and senior employee".[17]

Material Protection Control and Accounting*:* India has devised a comprehensive material protection control and accounting programme comprising (1) the legislative and regulatory framework; (2) an integrated physical protection programme for facilities and materials; and (3) a comprehensive "Nuclear Material Accounting and Control System" (NUMAC).[18] While all the facilities are covered by a multi-layered security system, the facility-specific NUMAC arrangements are in place under an Officer in Charge to oversee them. The Inventory Information and Control and Data Management Section and a control laboratory compile and preserve the information. The activities of all NUMAC facilities are coordinated through the central NUMAC cell at the Department of Atomic Energy (DAE). At the top, the Senior Coordination Committee reviews the NUMAC reports to initiate action, if needed.

Transportation Security: Beside the UN Convention on the Physical Protection of Nuclear Material (INFCIRC/225/Rev.1) to which India is a party, the AERB has stipulated a Safety Guide on security of radioactive material during transport (AERB/NRF-TS/SG-10) that prescribes the rules, regulations and standard procedures to be followed in the packaging, shipment and protective measures

16. AERB, "Code of Ethics," http://www.aerb.gov.in/t/publications/ethics.pdf
17. NPCIL, "Code of Ethics and Conduct," http://www.npcil.nic.in/main/CodeofEthics.aspx
18. K. Raghuraman (DAE), presentation in an international workshop on "Protection, Control, and Accounting of Nuclear Materials: International Challenges and National Programs" at the National Academy of Sciences, Washington, DC; Christopher Eldridge, "Domestic MPC&A Program," in *Protection Control and Accounting of Nuclear Materials*, National Academy of Sciences, Washington, DC, http://books.nap.edu/openbook.php?record_id=11343&page=39, pp. 39-40.

to be arranged for ensuring safety in the movement of radioactive material through the public domain.[19] Different security levels are specified for different materials (Category I to 5) depending upon their degree of fissile characteristics and the danger involved. This includes, amongst others, prior approval for the shipment, special vehicles, security locks, appropriate training of personnel involved, additional security and escort by armed guards, secure communication support and on line tracking system, etc.[20]

Air Defence: Within a month after 9/11, India promulgated no-fly zone restrictions around nuclear power plants. Requisition for additional anti-aircraft guns was made for deployment to the NAPS in Rajasthan and for two atomic power plants in southern India.[21] Taking no chances with its security following the Mumbai terror attacks, the Directorate General of Civil Aviation (DGCA) has declared a no-fly zone around the Kalpakkam nuclear plant in Tamil Nadu.[22] The civil aviation agency has issued notices prohibiting any air activities up to 10,000 ft above Kalpakkam.

Nuclear Safety Culture

India practices a 'nuclear security culture' comprising a long-term policy, clear-cut organisation and personnel attitude at each level. It imbibes the principles of 'zero tolerance', 'defence in-depth', 'redundancy' and 'diversity,' with sustained and coordinated efforts by different organs of the nuclear establishment.[23] At the outset, systematic approaches using well-defined principles are practised in the design of the NPPs. From the operational and maintenance point of view, Indian NPPs follow two broad strategies: design basis safety and operational nuclear safety.

To ensure design basis safety of the NPPs, certain design safety

19. AERB, "Security of Radioactive Material During Transport," *AERB Safety Guide No. AERB/NRF-TS/SG-10*, January 2008, http://www.aerb.gov.in/T/PUBLICATIONS/CODESGUIDES/sg-10.pdf
20. Ibid., pp. 13-16.
21. Ibid.
22. "India Declares Kalpakkam Nuclear Plant no-fly Zone," December 17, 2008, http://www.brahmand.com/news/India-declares-Kalpakkam-nuclear-plant-no-fly-zone/821/1/12.html; Vinay Kumar, "Kalpakkam Nuclear Plant no-fly Zone," *The Hindu*, December 17, 2008.
23. A.R. Sundarajan, K.S. Parthasarathy, S. Sinha, "Atomic Energy Regulatory Board: 25 Years of Safety Regulation," Government of India, AERB, November 2008.

principles and procedures are practised. First, the defence-in-depth principle consists of several successive levels like surveillance, protection and safeguard regarding the three fundamental safety functions of safe shutdown, heat removal from the core and confinement of radioactivity.[24] This is ensured through high-quality design and construction of equipment, comprehensive monitoring and regular testing to detect equipment or operator failures, redundant and diverse systems to control damage to the fuel and prevent significant radioactive releases, and provision to confine the effects of severe fuel damage to the plant itself.

Second, all safety systems installed are ensured with adequate redundancy and diversity to achieve specified reliability.

Third, many "passive" safety features are built into the reactors that depend only on physical phenomena such as convection, gravity or resistance to high temperatures, not on functioning of engineered components.

Fourth, to avoid unexpected and uncontrolled reactions among complex systems, beside placing redundant systems, all components are physically segregated by distance or barriers.

Fifth, in the event of a plant failure, the design of the plant would ensure that the plant which fails to operate goes into the safe mode (fail-to-safe), thus, not hindering the performance of the safety function.

Sixth, comprehensive safety analysis by a rigorous deterministic and complementary probabilistic method is followed for building scenarios for hypothetical accidents that might result in severe core damage and to estimate the frequency of such accidents. This method assesses potential hazards that might be encountered despite the measures taken.[25]

Last, the AERB Code of Practice on 'Quality Assurance for Safety in Nuclear Power Plants' establishes the requirements for the management principles and objectives to be met in all activities in NPPs. In 2006, the NPCIL, in consultation with the AERB, revised the Topical Quality Assurance document in line with International Atomic Energy Agency (IAEA) Safety Standard GS-G-3.1 on "Application of

24. DAE, *National Report* to the Convention on Nuclear Safety, September 2007, http://www.dae.gov.in/press/cnsrpt.pdf, p. 159.
25. "Probabilistic Safety Assessment," http://nuce.boun.edu.tr/psaover.html. p.3.

Management System for Facilities and Activities".

The operational nuclear safety practice of Indian NPPs rests on internationally recognised principles and practices. First, the dose limits on radiation exposure for normal plant operation are specified and observed in line with the International Commission on Radiological Protection (ICRP) recommendations. For occupational workers, the AERB has prescribed 20 mSv averaged over five consecutive years and a maximum of 30 mSv in any year. For the public at the exclusion zone distance, the AERB has prescribed effective dose of 1 mSv per year.[26]

Second, only qualified and licensed staff operate the plants and all activities in the NPPs are carried out as per the operating procedures (AERB/SC/O) laid down by the AERB.

Third, all equipment and instruments are subject to periodic surveillance and in-service inspections. NPPs are also subject to corporate safety audit, regulatory inspections and peer reviews.

Fourth, all plants are designed with multiple safety barriers and control zones to manage incidental release of radioactivity. They include the ceramic fuel pellet of UO2, fuel cladding of Zircalloy-2, primary system pressure boundary, primary containment and secondary containment. All these are surrounded by the perimeter security, with three security rings.

Fifth, for all significant events, root cause analysis is carried out. The Station Operation Safety Committees (SORC) at each of the NPPs reviews the safety issues. The Quality Assurance group stationed at the facility and the Audit Engineer are the channels of feedback on the maintenance and operation of the plants.

Sixth, emergency preparedness plans for both on-site and off-site emergencies have been drawn up at all NPPs and are subject to periodic drills. The 18 Emergency Response Centres, with quick response teams, are located in various parts of the country to contain any nuclear disaster promptly.

'INCIDENTS' AND 'ANOMALIES'

Though India's nuclear safety framework sounds robust, instances of 'anomalies' and 'incidents' related to nuclear activities have occurred,

26. Ibid., pp. 130, 133.

resulting in public criticism of the technical and regulatory systems in place. However, no serious radiation hazard has taken place yet. The AERB maintains yearly records of events on the basis of the Significant Event Reports (SER) from the operating NPPs. The events are divided into two categories: (1) events; and (2) significant events, considering the gravity of the situation. They are also rated on the International Nuclear and Radiological Event Scale (INES).[27] So far, in India, one 'Level-3' event in 1993 (the Narora fire incident) and three 'Level-2' events during 1998-2004 have taken place. Out of the total reported events, a majority are in the 'Level-0' event category.[28]

The Narora turbine fire incident in March 1993 was neither "played down as a minor incident" nor "allowed to be forgotten."[29] There was no radiological impact of the incident but it was an eye-opener that brought a paradigm shift in India's nuclear safety considerations and review procedure. Prior to the NAPS-1 fire incident, there was no systematic programme for carrying out regulatory inspection of facilities by AERB. The Civil Engineering Safety Committee for Operating Plants (CESCOP) was constituted to look after the civil and structural engineering issues of operating plants.

Both the AERB and the NPCIL investigated the Kaiga dome collapse in 1994 and found that nearly 40 percent of the surface area, that amounted 130 tons, fell down due to excessive loading and tensioning during the pre-stressing operation.[30] The test results indicated that the materials were of acceptable quality and the indentations were not due to the weakness of the concrete in bond strength but due to the effect of split tension.[31]

With the unfolding of the Fukushima nuclear disaster, concerns regarding safety and the question: "How safe is nuclear energy?" started to reverberate in India. Taking serous note, Prime Minister Manmohan Singh ordered a comprehensive safety evaluation of

27. "INES," http://www-ns.iaea.org/tech-areas/emergency/ines.asp
28. AERB *Annual Reports* during 2001 to 2010.
29. Buddhi Kota Subbarao, a former Captain of the Indian Navy and a nuclear scientist, viewed that the Narora incident was, "as usual, played down as a minor incident and within weeks of its occurrence, it was allowed to be forgotten". *Manushi*, No. 109, p. 24.
30. n. 24, pp. 40-41.
31. Prabir C. Basu, Vijay N. Gupchup, L.R. Bishnoi, "Containment Dome Delamination," http://www.iasmirt.org/SMiRT16/H1557.PDF, p. 4.

Indian NPPs. Six task forces have submitted their interim reports indicating "the existence of adequate provisions at Indian nuclear power plants" and also have recommended "to further augment the safety levels and improve defence in-depth" to handle situation blackouts.[32]

THE VICIOUS CIRCLE

Contrary to the critics' assertions, the safety issue involving India's nuclear energy drive is not about any negligence or a lackadaisical attitude of the concerned authorities. While the government and scientific community are keen to expand the nuclear industry, a section of the public is sceptical about anything nuclear. While the media exaggerate events, the gap between the scientific community and the public is wide, resulting in popular opposition for new nuclear plant sites. This lopsided 'nuclear information management' is the crux of the nuclear vicious circle in India which needs to be cracked and a holistic nuclear safety culture nourished. A deep-rooted nuclear safety culture involves the entire society where everyone is personally responsible, and does not mean just loading the responsibilities onto a few people and blaming them for any anomaly.

While striving for safe use of resources, one must keep in mind that no energy source is perfect. Everyone tends to forget that disasters take place in the oil industry as well. Accidents have happened, people have died, and pollution has spread. But the world has not abandoned oil; rather, there are efforts to study what went wrong, and try to fix it,[33]—in contrast complete to the case with nuclear disasters. It is now imperative that we learn the safe use of nuclear technology that promises our energy security while cooling down the political panic.

32. NPCIL, "Safety Evaluation of Indian Nuclear Power Plants Post Fukushima Incident (Interim Report), 2011, p. iii.
33. William Saletan, "Nuclear Overreactors," http://www.slate.com/id/2288212/, March 14, 2011.

DEFENCE DIPLOMACY AND CONFLICT PREVENTION

SOME LESSONS FROM THE WEST

SANJAY KULSHRESTHA

Although the 19th century "gunboat" and "parade ground" diplomacy is of historical interest, a convenient starting point can be 1964, when the British Secretary of State for Defence, Denis Healey, formulated the first cohesive defence diplomacy policy. With the withdrawal from East of Suez, Healey hoped to fill the void and maintain British influence by a low cost policy playing to perceived British strengths of military prowess and technological capability. Small training missions, defence attaches and sales of military hardware were the three main components of the plan, backed up by occasional military deployments, high level visits, and the opening up of the domestic defence establishments to allied military personnel.[1]

Other nations have also developed similar policies, including the US and India. The most active and successful have been those former Soviet bloc powers that later gained entry to the North Atlantic Treaty Organisation (NATO). The primary institutional innovation in defence diplomacy in the 1990s was the highly successful Partnership for Peace (PfP), whereby the signatories gained access to the very

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1. Garren Mulloy, "Japan's Defence Diplomacy and 'Cold Peace' in Asia," *Asia Journal of Global Studies* Feburary 19, 2007.

best of defence training and education available in both NATO and neutral countries, aimed mainly at improving capabilities for Peace-Keeping Operations (PKO). PfP enabled military professionals to forge relationships and standards, within a framework of civilian control. It allowed access to niche defence skills, with Denmark providing military police training, Canada bilingual defence education, and Sweden gender-based PKO training. It also provided military personnel the opportunity to be part of a wider professional community, where respect was accorded and experience appreciated, and helped to draw military officers into a democratic community of professionals under civilian control, and prepare the armed forces for service that would rehabilitate their positions within the civil society.

This programme paved the way for full NATO membership, which proved to be vital for European Union membership. It is somewhat doubtful whether, without PfP, the nations of Eastern Europe would have achieved full European membership as smoothly or as quickly as they did. This kind of military cooperation and understanding was unimaginable less than a decade earlier. Hence, defence diplomacy did pay rich dividends for both sides, helping unite Europe, both politically and economically. However, that such an approach does not guarantee success must be recognised, and Turkey provides the best example of how defence diplomacy can be limited by political, economic and cultural factors, though the basic problem for Turkey was its military and its unwillingness to submit to full civilian control within a liberal democratic state.[2]

The example of PfP is mainly one of the European success, but there are other successful defence diplomacy models too. If we analyse the India model, we can see that during the Cold War, India's relations with the US, China and Japan were strained due to India's non-aligned status, and close relations with the erstwhile Soviet Union. China had fought a war with India and Japan was not willing to have any security cooperation with a "nuclear India." But India articulated its defence diplomacy policy quite well in the late 1990s. With advancement in technology and India's military power, its liberal democracy and cooperation in PKO and anti-terrorism

2. Ibid.

operations made for an attractive partner. This was partly prompted by increasing fears of Chinese assertiveness.

DEFINING DEFENCE DIPLOMACY

If we have to define defence diplomacy, then it is important to understand the purpose of defence diplomacy. It is a process that would involve politicians, military personnel, police, coast guard and intelligence services; it may include people from the non-governmental organisations, think-tanks, and society at large. It may also include ad hoc or semi-formal contacts, formal institutional relationships, either as specialist defence diplomacy bodies or as adjuncts to existing security-related institutions, such as NATO or ASEAN (Association of Southeast Asian Nations).

The famous military theorist, Carl von Clausewitz once spoke of "the continuation of policy by military means;" defence diplomacy might be seen as "the improvement of relations by other means," with combat precluded. In a sense, it can be diplomacy by stealth, the continuation of dialogue by other means. It aims to improve cooperation between militaries, diffuse tensions between allies or antagonists, maintain alliances and offer training opportunities with the possibility of lucrative defence sales. Such a policy is viewed favourably for both practitioners and national interests.

The doctrine developed by the British Ministry of Defence (MoD) as part of its Strategic Defence Review, is quite comprehensive. It says that defence diplomacy means, "to provide forces to meet the varied activities undertaken by the MoD to dispel hostility, build and maintain trust, and assist in the development of democratically accountable armed forces, thereby making a significant contribution to conflict prevention and resolution." In this British model, while the military nature of defence diplomacy is emphasised, many tasks are performed by civilians. In a way, it is the least military-centric, for it is usually closely coordinated with foreign aid policies.[3]

China also has massively increased its defence diplomacy profile and has integrated the same into an overall security doctrine model. Chinese priorities are clearly trade and resource focussed, emphasising

3. Ibid.

on stability, and defence diplomacy comfortably integrates within this.

There is a huge area of overlap, where traditional diplomacy, including the military forces, and defence diplomacy may seem to converge or clash. Typical examples could be preventive deployments, such as to West Africa, symbolic deployments, such as US forces off Taiwan, and the range of operations that come under the banner of PKOs. Defence diplomacy utilises defence resources for improved security short of "hot operations". Therefore, its development is worth considering.

As an instrument of military cooperation for prevention of conflicts with former or potential adversaries, defence diplomacy operates in a number of different ways and at a number of different levels, as follows:

- It can perform a political role acting as a symbol of willingness to pursue broader cooperation, mutual trust and commitment to work to overcome or manage differences.
- It can be a means of introducing transparency in defence relations, in particular with regard to states' intentions and capabilities. High level discussions of defence policy and military doctrine can show that a state does not have offensive intentions and that its armed forces are primarily defensive in character, thereby building confidence.
- It can be a means of building or reinforcing perceptions of common interests. Western efforts to engage Russia in practical cooperation in peace-keeping and counter-terrorism, for example, have been not simply about strengthening and reforming Russian capabilities in these areas, but also about reinforcing the perception that Russia and the West share common interests which should be addressed through international partnerships.

Military cooperation is also about changing the mindset of partner states' militaries. Much of the Western defence diplomacy towards Russia and China aims to alter the perception within these countries' armed forces of the US/the West as a threat, by explaining Western intentions and capabilities, emphasising the common interests and highlighting the shared challenges facing the military professionals. This process can be described as "the disarmament of the mind."

Military cooperation may be used to support specific, concrete reforms in the partner state. The West, for example, has put in considerable resources into supporting the rehousing of the Russian troops withdrawn from the former Soviet Empire and retraining demobilised soldiers.

It can also be used as an incentive to encourage partner states to cooperate in other areas. In the early 1990s, US defence assistance to Ukraine was linked to Kiev's denuclearisation.[4]

PROBLEMS AND DILEMMAS

The use of defence diplomacy and military cooperation to build confidence with a former or potential adversary raises a number of problems and dilemmas. These can be summarised as follows:

If the conflicts between states are due to mutual uncertainties about each other's intentions, the threatening potential of other states' military power or historically inherited mistrust, the military cooperation can be effective. And if the conflict is due to real and substantive political differences, whether over specific issues such as territory and borders or over the norms underpinning international politics or the international balance of power, the utility of military cooperation is likely to be limited.

The West's relations with Russia and China reflect these problems In both cases, military cooperation has the potential to generate trust and confidence and help to overcome historical mistrust, but there are political differences, such as the future of the former Soviet Republics or Taiwan, which cannot be easily overcome by defence diplomacy. Likewise, Indo-Pak tensions reflect not only the historic mistrust and mutual threat posed by each other's military, but also the unresolved status of Kashmir. Similarly, military cooperation might be able to reduce tensions between China and its Southeast Asian neighbours, but is unlikely to overcome their disputes over the Spratly and Paracel Islands.

The nature of defence diplomacy and the military profession poses an additional obstacle to the successful use of defence diplomacy as a means of building sustainable cooperation. The fundamental goal

4. Andrew Cottey and Anthony Forster, *Reshaping Defence Diplomacy* (Oxford University Press, 2004).

of defence policy is to defend the state against any attack, often preparing for worst case scenarios. Similarly, the main purpose of the military profession is to prepare for, and engage in, war-fighting. While military contacts and transparency can help to reduce mistrust and tensions, they are unlikely to reduce the tendency of military planners to prepare for the worst. Nor will contacts between professional soldiers necessarily prevent armed conflict if this is the direction in which political leaders wish to go.

Another dilemma revolves around the issue of conditionality. To what extent and how should military cooperation be linked to the partners' cooperation on other issues, their domestic behaviour or undertaking of specific reforms? For this purpose, the benefits of defence diplomacy should not be linked to short-term developments but are to be viewed as a long-term, gradual process in promoting the partners' perceptions and policies by engaging them.

One more important area is the issue of reciprocity in defence diplomacy. If the primary aim is to reassure or build assurance with a potential enemy, it may be argued that opening up one's defence and military can help to achieve this goal, regardless of the fact that the other state does likewise. If defence diplomacy is viewed as a mutual process, then reciprocity is important. Furthermore, unilateral concessions may be difficult to sustain domestically, and the transparency implicit in defence diplomacy may be vulnerable to exploitation. Defence diplomacy with potential adversaries involves striking a balance between offering reassurance and transparency, on the one hand, and building a reciprocal process, on the other.

The other condition can be the partner's domestic behaviour with regard to human rights and democracy. To the extent that the primary goal is to prevent conflict, then defence diplomacy should not be dependent on the improvement on human rights and democracy. Maintaining cooperation with authoritarian states, however, risks giving them implicit political and military support. In the early and mid-1990s, for example, Australia invested significant efforts in defence diplomacy as a means of improving relations with Indonesia, but this did little to improve the human rights situation in Indonesia, nor did it prevent the behaviour of Indonesia in East Timor in 1999. Hence, there is a difficult balance to strike between the strategic aim

of preventing conflict with a former or potential enemy, and concern for human rights and democracy.

Another crucial issue is: how far should defence diplomacy cooperation be linked to partner states' behaviour on wider issues, such as regional conflicts or efforts to prevent proliferation of weapons of mass destruction, beyond the direct bilateral relationship concerned?

Given that all these conditional dilemmas involve balancing competing objectives in diverse circumstances, they are likely to be a persistent feature of debates on the use of defence diplomacy, and cannot be resolved so easily.

WESTERN MILITARY COOPERATION WITH RUSSIA

The aim of Western diplomacy has been to prevent conflict with Russia and make the country a long-term partner of the West. This can be traced back to the confidence and security-building measures of the 1970s, which expanded during the Gorbachev era in the 1980s, and intensified significantly after the collapse of the Soviet Union in 1991. Western military cooperation with Russia has developed on two interrelated tracks viz. multilateral engagement with NATO, and bilateral links with individual Western states. It includes a wide range of activities such as:

Meetings of senior civil defence officials and defence personnel.

Discussions of defence policy and force structure.

Lower level military-to-military contacts.

Participation of Russian officers in training courses in the West.

Bilateral and multilateral military exercises.

Western support for Russia's efforts to reduce and secure control of its arsenal of nuclear, biological and chemical weapons and related infrastructure.

However, after a decade of military cooperation Russian political and military leaders have, to varying degrees, been wary of, and resistant to, defence cooperation with the West. Defence cooperation has also not been able to avert or overcome serious political differences over issues such as NATO enlargement and the Alliance's Balkan interventions. However, the September 2001 attacks on the US resulted in a significant improvement in the relations between

Russia and the West, especially the US. Russia supported the US in Afghanistan, had a restrained response to the US decision in 2001 to withdraw from the Anti-Ballistic Missile Treaty, and acquiesce to NATO's 2002 invitation to seven East European countries, including the three Baltic states, to join the Alliance and the establishment of the NATO-Russia Council.

Defence diplomacy is, thus, likely to remain an important, sometimes problematic, part of the efforts of the West to build a lasting partnership with Russia.

US MILITARY COOPERATION WITH CHINA

The US policy has been not only to contain China but also to engage it to build a cooperative relationship, and military cooperation has been one of the means in its attempt to engage with China. The Sino-US military cooperation since the 1990s has included:

High level political discussions.

High level military exchanges.

Professional exchanges between each other's military institutions.

Reciprocal port visits by warships.

Discussion of mutual approaches to humanitarian assistance and disaster relief.

Agreement on mutual observation of military exercises.

An agreement to detarget strategic nuclear missiles.

Compared with Russia, US military cooperation with China has been more limited in scale and less substantive in nature. Substantive political differences over the US military presence in Asia, Taiwan, and China's role as a weapon proliferator, have constrained the development of military cooperation. The Chinese military has also been a reluctant and passive partner, with the US frequently frustrated with the lack of reciprocity and transparency from Chinese counterparts.

Despite all these problems, US efforts at engaging China militarily over the last decade can claim some success. First, although the progress is limited and slow, the Chinese military is gradually opening itself up. The publication of the first Chinese Defence White

Paper in 1998 was a significant step in this direction. Also, keeping in mind the possible Cold War type confrontations, relations between the US and China could have become much worse since the 1990s, and America's defence diplomacy engagement has helped to forestall this. In this context, defence diplomacy is likely to remain one element of continuing US efforts to encourage China towards partnership, rather than competition.

ANALYSIS

The Russian and Chinese cases suggest that the success of defence diplomacy as a tool of conflict prevention is dependent on wide political relations between the states concerned. Where there are substantial political differences, defence diplomacy has its limitations. Successful defence diplomacy may also be partly dependent on the compatibility of the domestic political values of the states concerned, which helps to explain why it has progressed further between Russia and the West than between the US and China.

The Russian and Chinese cases also show that defence diplomacy should be viewed as a long-term—decades long—process, rather than an approach likely to produce quick results. Threat perceptions shaped by decades, and sometimes centuries, are difficult to alter and will change only slowly. Encouraging states to build armed forces that are transparent and non-threatening towards their neighbours is likely to be a long-term process. Given such time scales, the use of defence diplomacy as a means of conflict prevention, is likely to be a difficult process, with periodic setbacks. Generational change may, however, be a key factor; when political and military leaders who emerged during periods of conflict are replaced by younger counterparts, the prospects for new relationships may improve.

Thus, it can be argued that defence diplomacy can contribute to conflict prevention in a number of ways. The most prominent example are the Western efforts to develop military cooperation with Russia and China. Given the ambiguous nature of the West's relations with both countries, defence diplomacy is likely to remain an important part of wider Western efforts to build cooperative relations and prevent conflict.[5]

5. Ibid.

DEFENCE AND DIPLOMACY IN THE INDIAN CONTEXT

In India, the concept of defence diplomacy has received considerable attention. India has realised that it seeks to increase stability and security by changing attitudes and perceptions.[6]

Even though India has been undertaking the usual liaison visits with its neighbours as well its extended neighbourhood during the Cold War, defence diplomacy received its due attention only when India started taking active steps to dispel any notions relating to its hegemonistic intentions with regard to the interventions in Bangladesh, Sri Lanka and Maldives. During the mid-1980s, the Southeast Asain nations seemed worried about the potential threat to their security from India. India's role in Sri Lanka, the Maldives and even the stalemate with Nepal on trade, projected India as a bully in the region. Also India's plan to develop a major naval base in the Andaman and Nicobar Islands perturbed Indonesia and other littoral states about the ramifications of such a base close to their territorial waters. India's naval modernisations programme was also seen in the light of India's power projection capabilities in Southeast Asia. But India decided to go on a damage control exercise and adopted a more rational approach by offering to hold joint naval exercises with the ASEAN states such as Indonesia, Singapore and Malaysia. It was these initiatives that led to the changed bilateral scenario and acceptance of the benign stature of India, which had a direct bearing on the long-term stability of the region.

The enhanced Indian naval profile in Southeast Asia serves several objectives. One is to strengthen India's Look East policy that is also intended to balance China's influence in the Eastern Indian Ocean Region and in western Southeast Asia. The second is to familiarise the Indian Navy with a potential theatre of operations—the South China Sea – that probably would be important in any contingency involving a conflict with China. India's naval presence in this region is also intended to help stymie the flow of arms across the Bay of Bengal to insurgents in India's northeast. Strategically speaking, ties with Indonesia, Vietnam and Singapore have a Chinese containment

6. Pankaj Kumar Jha, "India's Defence Diplomacy in South-East Asia," *Journal of Defence Studies*, Vol 5. No.1. January 2011, pp.15-16.

strategy, but those with Malaysia and Myanmar are to keep Chinese influence to the bare minimum.

It is important for India to undertake not only military cooperation with its immediate neighbourhood, but also to explore its social and cultural links, which would provide the basis for peace and security in the region. India has to learn from the West so far as the positive outcomes of military cooperation are concerned, and engage in concrete defence diplomacy with Pakistan and China with the aim of preventing conflict in the region, and to sustain all round economic growth, prosperity and stability in the Asian region.

For India, there are some lessons to be learnt from the success of the Western model, and some lessons to avoid. But one important aspect is to realise the importance of defence diplomacy to resolve long pending disputes with both China and Pakistan. Though India has been actively pursuing defence diplomacy, it has not been as successful as expected because the disputes are still outstanding. Some of the areas that India can take into consideration for effective defence diplomacy to prevent conflict in the region can be:

Making defence diplomacy politically attractive. It means that our leaders have to take serious note of the benefits of defence diplomacy and utilise the same more frequently.

Defence diplomacy, to be successful, must take into account the support of the people; this can be possible by keeping things transparent and accountable. Though defence diplomacy is treated as solving problems by other means, there has to be a conscious effort to make the process more visible.

MILITARY INFRASTRUCTURE ALONG THE NORTHERN BORDER OF INDIA: CAUSES AND IMPLICATIONS

SANA HASHMI

It is often said, "Good fences make good neighbours"—an old dictum, which has rarely been proved wrong in the history of mankind. Countries across the continents have often got entangled in wars due to disputes arising out of conflicting territorial claims. Unsurprisingly, therefore, the boundary issue has a crucial role in defining the relationship between the two giants of Asia i.e. India and China.

Ever since the two Asian powers achieved independence, the border issue has been a major factor in their relationship. Considering the sensibilities attached to the issue, the policy-makers and the armed forces of the two countries keep an eye on the day-to-day developments along the border. In that context, India's northern border and the need for its infrastructural development are increasingly gaining prominence.

The northern region of India is an embryonic region with mountains and plateaus, making most of the region remote and isolated from the rest of the country. Keeping in mind the strategic importance of this region for India, a robust infrastructural upgradation is the need of the hour. A strong defence and industrial

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base is required in this region to boost the economy as well as to create a solid base for the military to defend the Indian territory and even launch an offensive, if required.

The importance of the infrastructure was felt during and after the 1962 Sino-Indian War. The war, imposed on India, took it by surprise, and due to lack of a proper network of transportation, the country suffered huge losses. The road network in the region of Arunachal Pradesh, from where China attacked India, was non-existent for military operations. The soldiers had to walk for miles to reach their posts, carrying huge burdens of supplies and rations with them. Even the air-dropped supplies were at far off locations as there were no airfields, leading to loss of crucial time, manpower and even the stores. Though India has taken a positive step towards developing a robust network of transport and communication in the region in the last couple of decades, it is beyond one's comprehension as to why it took India decades to realise the criticality of this aspect.

It is important to note that infrastructure means not only roads and other transport links with different parts of the country for movement during peace-time, but also defence infrastructure which is essential for swift deployment of troops and equipment in case of an emergency. The Indian side has a very weak defence infrastructure in the region as compared to the Chinese, owing to red-tapism and delays in sanctioning of projects. Over the years, China has built an enviable network of air, road and rail links along the border. This includes 40,000 km of roads and a 1,118-km rail link from Lhasa in the Tibetan Autonomous Region (TAR) to Golmo in Qinghai province of mainland China.[1] This transport network is meant not only for transportation and trade routes, but also as a transport corridor for the People's Liberation Army (PLA) and its equipment, as it can mobilise large contingents of troops by train, alongwith war logistics. Such infrastructure would allow the PLA an enhanced force application and sustenance capability in the TAR where it has an estimated 30-32 military divisions, including 5-6 rapid reaction divisions.[2] China has

1. "Chinks in the Armour," *The Times of India*, October 3, 2009, available at http://articles.timesofindia.indiatimes.com/2009-10-03/china/28108596_1_chinese-troops-gormo-in-qinghai-province-actual-control.
2. Rajeswari Pillai Rajagopalan and Kailash Prasad, ''Sino-Indian Border Infrastructure: Issues and Challenges,'' *ORF Issue Brief*, No. 23, August 2010.

also developed forward air bases and air strips in Tibet. However, on the Indian sides, the road network is in a hapless state, and the rail network is non-existent in the border region. Most of the roads in the Indian region end well short of the LAC (Line of Actual Control), thus, seriously hampering the movements of logistics and troops.

Moreover, China has also positioned a number of Intermediate Range Ballistic Missiles ((IRBMs) in and beyond the Tibetan region which are more than capable of striking crucial targets in the heart of India. China has also raised air mobile forces capable of being air-dropped into the Indian territory, equipped with small arms and light weapons, thereby enhancing the PLA's capability to engage in short and swift operations.[3] It has also set up major logistic centres in TAR, including one in Nagqu township of Nagqu county which is capable of handling 2.23 million tonnes of cargo by 2015 and 3.1 million tonnes by 2020.[4] These huge infrastructural endeavours will enable China to mobilise troops, and gear up for war quickly in case of an armed confrontation with India. The Chinese military modernisation and defence policy is an evolutionary one; with this policy, the PLA has evolved from being a revolutionary guerrilla force with the 'people's war' doctrine to a regular military force for national defence with Revolution in Military Affairs (RMA) equipped capabilities.[5] The extensive development of the logistics infrastructure in the TAR indicates the impetus being made available to the PLA's logistics capability, which, in turn, will enhance its operational capability in the TAR.[6]

There is a multitude of reasons for the lack of border infrastructure in India: lack of political consensus, fear of an international backlash for being aggressive, and simply the labyrinth of Indian bureaucratic red tape and web of different ministerial approvals required to sanction a project in the border regions. Surprisingly, in the recent past, the politicians, the bureaucracy and the military had been opposed to development/upgrading of the border infrastructure, arguing that it

3. Ibid.
4. Monika Chansoria, "Trend Lines in China's Infrastructure Development in Tibet'', *CLAWS Journal*, Summer 2010, p. 176.
5. "Asia's Rising Superpower, Spectrum," The *Tribune*, July 31, 2011, available at http://www.tribuneindia.com/2011/20110731/spectrum/book1.htm.
6. Chansoria, n. 4, p. 177.

would help the Chinese.[7] Though the lack of infrastructure has been, at times, blamed on lack of funds, the 2010 report of the Comptroller and Auditor General mentions that as much as 58 percent of the allocated amount for capital expenditure on development of infrastructure along the border and other security related spending has been left unspent, alongwith almost 97 percent of regular funds being left unused.[8] All these facts leave India on slippery ground in case of any armed conflict with China.

RECENT SHIFT IN THE INDIAN APPROACH

However, there has been a change in the Indian approach in the recent past. The government has recognised the importance of having a strong defence and transport infrastructure in the border areas adjoining China, and has sanctioned several projects in the region, including the construction of three railway lines in the northeastern state of Arunachal Pradesh, including one that will connect Tawang to the state of Assam. The list includes three "strategic railway lines" that have been proposed: Misamari (Assam) to Tawang, North Lakhimpur (Assam)-Along (Arunachal)-Silapathar (Assam), and Murkongselek (Assam)-Pasighat (Arunachal)-Rupai (Assam).[9] The rail link to Tawang will be a huge boost for the Indian security structure along the northeastern border regions neighbouring China, as it will enable fast and better connectivity for civilian and military transport to the disputed site. A trans-Arunachal Highway has also been proposed which will start from Tawang near the Sino-India border, passing through Seppa, Sagalee, Hoj, Ziro, Daporizo, Aalo, Pasighat, Roing, Khongsa and Changlang, with a link with Saikhowaghat in Assam.[10]

Moreover, a number of other security related infrastructure projects have been sanctioned in the regions of India bordering

7. Rajagopalan and Prasad, n. 2.
8. Pradeep Thakur, "97% of Funds for Building Roads along China Border Unspent: CAG," *The Times of India*, May 13, 2010, available at http://timesofindia.indiatimes.com/articleshow/5924123.cms.
9. ''Eye on China's Upgrade, Government Plans 3 Key Railway Lines, one to Tawang'', *Indian Express*, August 04, 2011, available at http://www.indianexpress.com/news/eye-on-chinas-upgrade-govt-plans-3-key-railway-lines-one-to-tawang/826950/1.
10. "Arunachal Highway Project Stalled Despite PM's Repeated Promises," *Daily India*, July 15, 2011, available at http://www.dailyindia.com/show/451002.php.

China. These include setting up of air strips, forward air bases and permanent military posts.

MAJOR INFRASTRUCTURE PROJECTS ON THE CHINESE SIDE

Systematically, steadily and stealthily, China has been working on the development of infrastructure along the Sino-India border, which is evident from the list of major highways built by China in the TAR:[11]

- The Western Highway for which black topping from Lhasa to Lhatse Dz (490 km) has been completed and black topping up to Parkha is in progress (510km).
- The Central Highway, Lhasa to Yangbajain (90 km), which is being developed as a four-lane highway.
- The Eastern Highway, Lhasa to Ngiti (400 km).

Apart from the vast road network, the rail network in the areas adjoining the Indian border is also way ahead of the rail network on the Indian side. The 1,118 km Golmud-Lhasa railway line has been completed. Additionally, there is a proposal to extend this rail line to Nyingchi, a major trading town north of Arunachal Pradesh, with further extension of this line to Dali in Yunnan province. This rail link, when completed, will allow the 14 Group of the Chinese Army, located at Kunming, with its divisions at Dali, Kaiyuanand and Kunming, to rapidly move westwards from Yunnan to TAR by rail.[12] The Qinghai-Tibet rail line has been completed and China also plans to establish four new air bases in Tibet.

INDIA'S POSITION

Although there is a huge gap in terms of infrastructure along the border on the Indian side as compared to China, the recent developments also indicate improving conditions on the Indian side of the LAC. These developments might not put India at par with China, but can provide a strategically vital response to China's aggressive policies. Currently, India's approach towards the Chinese policies is comparatively of the passive kind; and having a history of being a peaceful nation, it is highly unlikely that the Indian government will take an aggressive

11. Rajagopalan and Prasad, n. 2.
12. Shailender Arya, "The Train to Lhasa," *Journal of Defence Studies*, Vol. 2, No. 2, Winter 2008, available at http://www.idsa.in/system/files/jds_2_2_sarya.pdf.

approach. The need of the hour is an assertive methodology which will not only put across India's take on various impending issues and but also send a clear message to the Chinese that India is taking serious note of China's power projection and aggressive expansionist policies. The various projects that have been initiated in the border regions of northeastern India, especially Arunachal Pradesh, are a part of a fresh strategic approach of better connected borders. Good infrastructure will not only connect the people of the region in a much faster and better way and fuel economic growth but will also provide solid security measures against an aggressive neighbour. In response to the frantic pace of developmental projects in China, the Indian government has unveiled plans for economic development and major infrastructure projects (the building of 72 roads, three air strips and numerous bridges) in the border areas along the undefined LAC that would enable the Indian military to "swiftly move forces into the region and sustain them logistically in the event of any untoward trouble or emergency," as stated by Indian Defence Minister A. K. Antony in the Combined Commanders' Conference in July 2007. He added, "China has been building a lot of infrastructure—railways, airports and roads [along the Indian border]. We are also doing the same thing."[13]

However, till date, the state of affairs in Arunachal Pradesh has not been what it should ideally have been and there is a lot more to be done on the infrastructure front. The roads and other transport infrastructure are in a poor condition, which can be gauged by the fact that 3,860 villages of Arunachal Pradesh are yet to be connected by road and it has a road density of just 18.65 km per 100 sq. km, which is among the lowest in the country. The region being of very high strategic importance, such a hapless state of affairs is not good for India. It is not hard to imagine the effect such poor infrastructure will have in case of a conflict along the borders. There are so many agencies and authorities that manage the borders on the Indian side that most of the time it becomes highly confusing and time consuming to initiate and execute a project. The headquarters of different paramilitary forces, and the Indian Army, all are involved in managing the borders

13. Mohan Malik, ''India-China Competition Revealed in Ongoing Border Disputes'', *PINR Report*, October 9, 2007 available at http://www.gees.org/documentos/Documen-02608.pdf.

and this multi-authority situation leads to trouble in matters related to a project of infrastructural development. While on the Chinese side, there is only one commander in charge of the forces in the TAR. However, now the Border Roads Organisation (BRO) has taken on a more prominent role in the development of infrastructure along the northeastern region of India, as was evident from the statement of former Director General of the BRO, Lt. Gen. A.K.Nanda, that the BRO has changed its approach to a more modern one and it is building the infrastructure on modern equipment and workforce.[14] The BRO has been given the responsibility of developing various roads and highway projects in the state of Arunachal Pradesh along with the state Public Works Department (PWD). Under the Special Accelerated Road Development Programme in the North-Eastern Region, (SARDP-NE), the BRO and PWD have been given the responsibility of developing 12 roads with an aggregate length of 1,607 km, requiring upgradation or improvement of riding quality, with the objective of improving the connectivity to district headquarters which are yet to be linked directly by any National Highway (NH).[15] The recent realisation of the importance of Arunachal Pradesh by top Indian leaders has led to a number of developmental and security projects coming into effect. A number of rail-road-air connectivity projects have been initialised by the Indian government and plans have also been made to strengthen the Air Force and Army in the region. The Indian government has also sanctioned a new mountain strike corps of an additional 40,000 soldiers, to be permanently located in bases in northeast India, with an objective to retaliate against any major Chinese ingress into India by launching an offensive into Tibet.[16]

A few of the major developmental and military projects in Arunachal Pradesh announced recently are:

- 1,840 km trans-Arunachal Pradesh two-lane highway from Tawang to Mahadevpur.

14. "India Matching China in Border Infrastructure: Pallam Raju," *Economic Times*, September 30, 2008, available at http://economictimes.indiatimes.com/articleshow/3545223.cms.
15. "Arunachal Pradesh Government PWD Draft Proposal," available at http://www.arunachalpwd.org/pdf/Draft%20Proposal%20for%20JVC%20with%20IL&FS.pdf.
16. Ajai Shukla, ''New Strike Corps for China Border'', *Business Standard*, August 24, 2011, available at http://www.business-standard.com/india/news/new-strike-corps-for-china-border/446854/.

- 3,000-MW Dibang multi-purpose power project.
- Rail link between Harmuti (a small town in Assam, located 33 km south of Itanagar) and Itanagar.
- Deployment of its new 15,000-strong 56 Division in Arunachal Pradesh.
- Deployment of more potent Sukhoi-30 MKI combat fighters along the northeastern border. India has deployed two squadrons of Sukhoi-30 MKI fighters at Chabua and Tezpur air bases in Assam, to strengthen its air defences along the Chinese border.
- India has also tested the Agni-3 IRBM, which is capable of hitting targets inside China; furthermore, the Agni-5, which has a more enhanced range, is also being developed.

Most of these projects were initiated by the Indian government when Prime Minister Manmohan Singh visited Arunachal Pradesh after his China visit in 2008. India's overall response has been to maintain the general line of engagement, not a return to the era of confrontation. At the same time, India wants to protect its sovereignty and territoriality from being undermined.[17] Now it seems that the Indian government has realised that being soft and adopting a passive approach will do the country more harm than good.

CONCLUSION

It is beyond doubt that India understands the criticality of Tawang in the Sino-India boundary dispute. However, it is the action, and follow-up of strategically chalked out plans regarding Tawang that would be the game-changer. Proper infrastructure is imperative for making a strong statement and also for defending India's territorial integrity in case of any eventuality. The rail-road-air network in the northern border states needs to be developed not only to improve the connectivity of the region with the rest of the country but also to give a boost to the economic development and improve the logistic infrastructure for speedy mobilisation of the defence forces. The current network of transport is mainly a fair-weather system which shuts down or gets blocked during poor weather conditions,

17. Sujit Dutta, "Revisiting China's Territorial Claims on Arunachal", *Strategic Analysis*, Vol. 32, No. 4, July 2008, p. 572.

especially during the extreme winters in areas located at heights, such as Bum-la Pass at 15,000 ft height and Se-la Pass at over 13,000 ft**.** The lack of infrastructure and defence preparedness led to the debacle of 1962. If India is to effectively address the juggernaut of Chinese growth and its power projections, it will have to adopt a more realistic and assertive policy. A few policy recommendations for India are summed up as under:

- India needs to speed up the process of development of infrastructure along its side of the Sino-Indian border as an enhanced network of transport will reduce transportation costs and also provide a robust system for logistical transport.
- At the diplomatic level, India needs to maintain a flexible yet strong policy. It has to make it clear to China that the claims on Indian territory will not be taken lightly.
- The ongoing process of improved trade ties should continue to create opportunities for more confidence-building measures to come up.
- India should refrain from mentioning Tibet in the joint statements until China accepts and declares Arunachal Pradesh a part of India, to put diplomatic pressure on China. This is important because while India accepts Tibet as an autonomous region of China, the Chinese continue their claims on Arunachal Pradesh, which is an integral part of India, a state of the Union of India. Hence, the need to put diplomatic pressure on China is a must for Indian foreign policy.
- There is also a need for a people-centric approach to Arunachal Pradesh, especially Tawang, as people from this part of India feel alienated due to lack of infrastructure and basic amenities in the region.
- The central government needs to monitor closely the projects undertaken in the region, so that they are completed in time and the prevalent corruption does not affect the growth of the state.

As mentioned earlier, the determining factor will be the action taken on the intentions and not the intentions alone. India needs to realise that a soft policy and a passive approach will only lead it into the quicksand of trouble from which escape will be difficult.

The initiative shown by the Indian government on development of infrastructure in the border state of Arunachal Pradesh is a welcome step, but it needs to be backed by a fiercely strong will to complete the task at hand and secure the nation's borders against its potential adversaries, including China.

JIHAD IN PAKISTAN'S HEARTLAND

SHALINI CHAWLA

Pakistan has been in existence for more than six decades but the state has not been able to define its identity till date. Born as a result of the demand for a separate Muslim homeland, it eventually stood as the saviour of Islam and, in the process, the military led country has adopted policies based on religion which have had severe repercussions for the state. Religion has been used in Pakistan in roles ranging from nation-building to strategic security.

Pakistan has shared a varying relationship with Islam and presently is experiencing Islamist extremism in the most violent form. It has become the breeding ground for terrorism, and the extremist elements within Pakistan have become stronger than ever before, posing a threat to the very existence of the Pakistani state. The seige of Lal Masjid in 2007 demonstrated how radical Islamist elements have penetrated the very heartland of Pakistan and are ready to exercise their power against the state. The liberal thinking finds its survival extremely challenging, which is exemplified by the assassinations of the Punjab Governor Salman Taseer, who tried to oppose the blasphemy law, and *Asia Times* journalist Salman Shahzad, who tried to disclose the links between the terrorists and the military. But, the question that needs to be addressed is: did Pakistan fall prey to extremism only as the result of its involvement in the war on terror? The answer is

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clearly 'no.' Pakistan today, is actually facing the blowback of its own policies which it has believed in, and pursued, for the last five decades. Pakistan's reliance on terrorism as a foreign policy tool is indeed responsible for its drift into extremism. This paper attempts to study Pakistan's journey towards its present state of extremism, which the Pakistani leadership is unable to control, and which makes Pakistan today "the most dangerous place on earth."

BIRTH OF PAKISTAN AND JINNAH'S VISION

Pakistan was born as result of the demand for a separate homeland for Muslims by the All India Muslim League led by Muhammad Ali Jinnah which strongly argued that Muslims had a special identity which would not be able to survive in a Hindu dominated society, thus, a separate homeland for Muslims was the only solution. But Jinnah's dream was quite different from what Pakistan actually transformed into. Jinnah in his famous speech before the Constituent Assembly on August 11, 1947, outlined his secular vision:

> You are free; you are free to go your temples, you are free to go your mosques or to any other place of worship in this state of Pakistan. You may belong to any religion or caste or creed—that has nothing to do with the business of the state….We are starting with this fundamental principle that we are all citizens and equal citizens of one state….[1]

Jinnah's dream was a secular state where the Muslim culture and social norms could be promoted. But Pakistan, over the decades completely drifted away from Jinnah's spirit. In the years that followed, Pakistan was not the beneficiary of a committed and visionary leadership. Jinnah passed away on October 11, 1948, and this was indeed a deadly blow to the spirit of Pakistan—hardly anyone would dispute that his death altered the course of history.

Many of Pakistan's political elites were uncertain about the role of Islam in defining the nation's constitutional foundations. [2] It took the policy-makers close to a decade to formalise the Constitution of Pakistan which dissolved Jinnah's spirit of secular Islam. There was a

1. *Quaid-i-Azam Mohammad Ali Jinnah's Speeches as Governor-General of Pakistan1947-48*, (Karachi: Government of Pakistan, 1964.
2. Farzana Shaikh, *Making Sense of Pakistan* (London: Foundation books, 2009), p. 5.

clear lack of consensus on the meaning of Islam. Farzana Shaikh puts it very aptly:

> While Jinnah's political successors, plagued by uncertainty about the public role of religion, were content to acknowledge Islam as a fundamental component of the country's identity, religious parties pressed for Islam to be embodied in an Islamic state—although they were too notoriously vague about what that entailed.[3]

After independence, the most daunting task for the Pakistani leadership was to secure Pakistan from internal and external threats. Internally, Pakistan was fragmented and the two wings, West Pakistan and East Pakistan, which differed ethnically, culturally and economically, were separated by thousands of miles of Indian territory. Pakistan also had to cope with the Baluch insurgency which erupted in the 1940s. Added to these internal vulnerabilities was the perceived threat from India, which the Pakistanis suspected had hegemonic ambitions, and which, they felt, had been unfair in providing Pakistan with its due share of resources inherited from the British India.

THE BEGINNING OF THE IDEOLOGICAL DRIFT AND PAKISTAN'S WARS FOR KASHMIR

The factor of religion became a most critical one in Pakistan's strategic security.

Pakistan launched the first war for Kashmir in 1947-48 in the name of 'tribal revolt.' The Pakistan Army, with the consent of the political leadership, invoked the tribesmen and the retired and serving army officers in the name of *jihad*, to raid and seize Kashmir. Islam was leveraged in the very beginning of the state itself to respond to the Indian threat. The government in Pakistan called on religious scholars to issue supportive *fatwas* (religious decrees).[4] The importance of the 1947-48 aggression was that it laid the basic guidelines for the future aggressions by Pakistan. This was the beginning of the use of religion to forward the state polices and also conduct covert operations backed by the full-fledged support of the military.

3. Ibid., p. 5.
4. Ziad Haider, "Ideological Adrift," in Maleeha Lodhi, ed., *Pakistan Beyond the Crisis State* (New Delhi: Rupa Publications, 2011), p. 116.

Internally, Jinnah's dream of a pluralistic society was being challenged and in the early 1950s, there were street protests calling for a declaration that Ahmediyas were non-Muslims.[5] The protests were orchestrated, in part to destabilise the ruling polity, and the resignation of Pakistan's first Foreign Minister, Sir Zafarullah Khan, an Ahmediya, was demanded.[6] In 1974, the Ahmediyas were officially declared non-Muslims through a constitutional amendment. On similar lines, in 1965, opposition was raised against Fatima Jinnah, sister of Mohammad Ali Jinnah, for contesting for power and a *fatwa* was issued stating that Islam does not allow a female head of state. [7]

On the external front, the Pakistan Army's covert activities expanded in Jammu and Kashmir (J&K) after the 1962 India-China War. A close study of the covert activities indicates that the factor of religion started to gain momentum in the 1960s. Pakistan's covert activities in Kashmir were now gradually moving towards using religion as a driving force to gain support for the disintegration of India. Pakistan's entry into the Cold War alliance with the United States in the late 1950s added to its aggressive instincts to acquire Kashmir and gave the military great confidence to carry on its covert war in Kashmir.

In 1964, Pakistan developed a strategy that came to be known as Operation Gibraltar (covert operation) and Grand Slam, which is a landmark in the history of both nations. Pakistan's failure in 1965 to achieve its objectives increased the country's reliance on religion to implement its objectives in Kashmir. In the late 1960s, a new set of *jihadis* emerged, deriving their inspiration from left wing anti-imperialist struggles. The Pakistan military and political leaderships were more and more convinced about the indispensability of covert warfare in their religiously driven strategies towards Jammu and Kashmir.

1971: BREAK-UP OF PAKISTAN

In the late 1950s and early 1960s, Pakistan witnessed the rising image of the military in the eyes of the people. Gen Ayub's era, in fact, marked the beginning of military control in the political and civil systems of Pakistan. This was important as it eventually led to the

5. Ahmediyas are followers of an alleged 19th century messiah, Mirza Ghulam Ahmed.
6. Haider, n.4, p. 116.
7. Ibid., p. 117.

splitting up of Pakistan. Ayub's successor, Gen Yahya Khan, talked about the Islamic identity of Pakistan and utilised the intelligence agencies to motivate the Islamic parties to work against the two major political parties—the Awami League and the Pakistan's People's Party. These parties were accused of being unIslamic. The military regime had close ties with the Jamaat-e-Islami and also encouraged the mushrooming of other Islamic groups. [8]

In the 1960s, the military's role expanded and the political and ethnic tensions increased. Alienation in East Pakistan continued to grow due to the increasing disparities in growth and opportunities between the two wings, and the discriminating attitude of the West Pakistanis towards the Bengalis. Finally, the tensions resulted in an insurgency and Pakistan's third war with India. Like the earlier wars in 1947-48 and 1965, religion was used as the factor of motivation. During the war, Lt. Gen. Tikka Khan, drawing from Sir Mohammed Iqbal, recited to the troops:

> Allah exalts the *mujahid* whether he lives or dies. He is a *ghazi*(crusader) if he lives, and a *shaheed* (martyr) if he dies. The *mujahid* seeks Allah's grace. He does not covet wealth and property.[9]

After the 1971 War, Pakistan added an impetus on the expansion of territory eastward (to take Kashmir). This implied a rise in covert activities in J&K and added emphasis on radical Islam in the name of *jihad*. Thus, terrorism came to be adopted as a foreign policy tool.

BHUTTO'S ISLAMIC SOCIALISM

The 1970s and 1980s witnessed the reemergence of Islam as a potent global force, starting with the spread of the Saudi Wahhabi ideology. The Iranian revolution shattered the secular basis of nationalist thinking and expectations of modernisation and development theories. The revolution drew attention towards the significant changes that were taking place in many Muslim countries across the globe in the 1970s.

Bhutto's turning towards Islam has to be studied by taking into account the developments worldwide.

8. Ibid., p. 118.
9. Quoted in an unpublished manuscript, p.217, as cited in Stephen P. Cohen, *The Pakistan Army 1998 Edition* (Karachi: Oxford University Press, 1998), p. 87.

The idea of an Islamic Pakistan was pronounced by Bhutto and then, subsequently, nurtured and developed by Zia, who used religion aggressively in controlling the state. Bhutto took forward the idea of *Islamic Socialism* and, thus, enforced Islam as a major factor in statecraft. Bhutto's Islamic Socialism was considered insincere and was seen more as a move to establish the non-Indian identity of Pakistan.[10] Stephen Cohen points out, "If the Pakistan movement and the first twenty-five years of the history of Pakistan can be characterized as a struggle to turn Indian Muslims into Pakistanis, the years since 1972 have been an extension of the process; a struggle to turn Pakistanis into good Muslims."[11] In 1976, Bhutto, appointed Zia-ul-Haq as the new Army Chief and allocated him the responsibility to Islamise the Pakistan Army. It was during this period that "*Jihad*" was included as the motto for the Pakistan Army apart from "*Iman*" and "*Taqwa.*"

The Quranic Concept of War: Bhutto's active plan for the Islamisation of Pakistan was supported by the interpretations of the teachings of the Holy Quran. Eventually, the Quran came to be interpreted to develop Pakistan's doctrine and strategy of war through terrorism. The most comprehensive and precise study on the war doctrine and strategy in the context of the Holy Quran has been done by Brig S.K. Malik in his book, *The Quranic Concept of War*. Brig Malik interprets that "the Holy Quran has given a comprehensive treatment to its concept of war" and "determines all aspects of the use of 'force' in inter-state relations."[12]

Terror, according to the author and a majority of Pakistani military officers is central to the war strategy. Use of terror as an instrument to impose one's will and decisions on an enemy has been legitimised, citing examples from the Holy Quran and arriving at the conclusion that "when God wishes to impose His will upon his enemies, He chooses to do so by casting terror in their hearts."[13] Terror has been legitimised in the Islamic ideology, which has till today, shaped the military strategy of Pakistan.

10. See Stephen Cohen, *The Idea of Pakistan* (New York: Oxford University Press, 2005), p.170.
11. Stephen Cohen, *The Pakistan Army* (Karachi: Oxford University Press, 1998), p.89.
12. Brig S.K. Malik, *The Quaranic Concept of War* (New Delhi: Himalayan Books, 1986), p.1.
13. Ibid., p.57.

ISLAMISATION OF THE STATE, SOCIETY AND ARMY

Gen Zia systematically reinforced the *Islamisation of Pakistan* which was propagated by his predecessor, Zulfiqar Ali Bhutto. Zia's vision came out very clearly in his words:

> Pakistan, which was created in the name of Islam, will continue to survive only if it sticks to Islam. That is why I consider the introduction of the Islamic system as an essential prerequisite for the country.[14]

Zia introduced "Islamic reforms" in various aspects of the Pakistani society and economy. A number of banking and commercial practices based on Islam were introduced, a dress code in accordance with Islamic norms was stressed, new women's universities were proposed, and strict regulations were imposed on the sale and consumption of alcoholic beverages.[15] During Gen Zia's regime, Islamic practices in the day-to-day life were made mandatory by the state. The Pakistan Army in this period developed close links with various Islamists groups, and religion was increasingly used in strategic thinking; for example, Zia allowed the Tablighi Jama'at (an Islamic missionary society) to operate freely within the army.

Zia was entrusted with the task of Islamisation of the Pakistan Army when he took over as the Army Chief. His early steps to Islamise the army are identified by Lt Gen Jalan Dad Khan as Deputy Martial Law Administrator and Corps Commander:

> A devout Muslim, it was a matter of faith with him (Zia-ul–Haq) to propagate Islam wherever he could. Immediately after his appointment as COAS (Chief of the Army Staff), the motto he gave the troops was *Eman* (Faith), *Taqwa* (abstinence), *Jehad Fi Sabeelillah* (war in the way of, or for the sake of, God). He urged all ranks of the army, during his visits to troops as well as in written instructions, to offer their prayers, preferably led by the commanders themselves at various levels. Religious education was included in the training

14. "General Zia ul-Haq's Address to the Nation on July 5, 1977," quoted in Hasan Askari Rizvi, *The Military and Politics in Pakistan 1947-1986* (Lahore: Progressive Publishers, 1986), pp. 289-293.
15. Cohen, n. 11, p. 91.

program and mosques and prayer halls were organized in all army units.[16]

Zia, in his first speech as Chief Martial Law Administrator, described himself as a "Soldier of Islam" and declared his commitment to building a new political, economic and social order based on religion.[17] Adherence to the Islamic practices emerged as a major criterion for selection in the army.

The state under Zia was run on the values interpreted on the basis of religion. The number of mosques in the country increased. The education system was deeply influenced, and Islamiat and Pakistan studies became compulsory for the B.A, engineering, medical, commerce and law students. Zia encouraged the Islamist parties to counter the political forces. The Islamist parties received favourable treatment from the ruling militia, and members of the Jamaat-e-Islami were offered senior positions in the important ministries. The judicial system of the state was Islamised and a *Shariat Council* consisting of *ulema* was established to look into the constitutional and legal matters pertaining to the state, which were to be conducted in accordance with Islamic thought.

1980s*:* THE AFGHAN WAR AND THE JIHADI CULTURE

Following the Soviet invasion of Afghanistan, Pakistan became the frontline state for the United States in the fight against Communism. Pakistan offered its territory to the Americans and Zia's military regime undertook the responsibility of training the Mujahideen to carry out covert operations to fight the Soviets. The operations directed by the US CIA (Central Intelligence Agency) was one of the largest operations planned by the US and shaped a relationship between the CIA and the Pakistani intelligence agency ISI (Inter-Service Intelligence), as the two worked in coordination for about a decade.

Pakistan's alliance with the US in the 1980s led to the development of the following factors:

- The US war in Afghanistan led to structural and organisational

16. Lt Gen. Jalan Dad Khan, *Pakistan Leadership Challenges* (Karachi: Oxford University Press, 1999), p.158; Husain Haqqani, *Pakistan: Between Mosque and Military* (Lahore: Vanguard Books, 2005), p.113.
17. Haqqani, Ibid., p.127.

development of the factor of *religion in war*. The declaration of *jihad* in Afghanistan led to the legitimised structural development of the institutions preparing young fighters. It is reported that over a period of time, over 80,000 volunteers, who came not only from Pakistan and Afghanistan but also other Muslim countries like Sudan, Bangladesh, Algeria and Turkey, were trained for the war.[18]

- Pakistan became a training ground for the guerrilla fighters. The leadership agreed to support the guerrilla warfare with arms, ammunition, money, intelligence, training and operational advice and offered the border areas of the Northwest Frontier Province (NWFP) (now Khyber Pakhtunkhwa) as a secure base for the Mujahideen guerrilla fighters. In this process, Zia cultivated a venomous strain of Islamic ideology in Pakistan.
- The weapons pipeline sponsored by the CIA was under the control of the ISI which was actually responsible for deciding the recipient and the quantity of weapons. The ISI retained a majority of the weapons and equipment (reportedly 60 per cent) for its own covert war against India.
- The development of the narcotics trade on the frontier borders of Pakistan flourished with the CIA's assistance to fund the covert operations and, eventually, development of the drug economy. Opium production went up from 200 metric tonnes in 1980 to 1,200 metric tonnes in 1989.[19]

PAKISTAN'S NUCLEAR WEAPONS: SHIELD AGAINST JIHADI TERRORISM

Pakistan accelerated its nuclear programme in the 1980s under Zia. The military regime in Pakistan tried to exploit the India "threat" and acquisition of nuclear capability to acquire domestic legitimacy. It was under Zia's rule that Pakistan became a nuclear state and defined a coherent nuclear strategy. By 1987, it was believed that Pakistan could carry out a full nuclear explosion.

18. Brig Mohammad Yousaf and Maj Mark Adkin, *The Bear Trap* (Lahore: Jang Publishers, 1992), p.32.
19. T. Raghavan, "The Narcotics Trade in South West Asia: Geography and Production," *Security Research Review*, at http://www.bharat-rakshak.com/SRR/Volume14/raghvan.html.

The acquisition of nuclear capability enhanced Pakistan's capability to wage and escalate the covert war in Kashmir, as nuclear weapons were believed to deter India from responding with conventional military retaliation. This thought process seems to have grown with Pakistan's "first use doctrine." Pakistan's strategy has been to use the nuclear card for aggressive militancy in Kashmir and other parts of India. Policy-makers in Pakistan seem to be convinced that they will be able to carry on, or rather accelerate, their activities in Kashmir with the threat of using nuclear weapons, if required, and this would control India's strategic moves in the Valley. There is a clear correlation between the progress in acquisition of nuclear weapons and the launch of the covert war during the last 25 years.

1990s: EXPANDED TERRORISM AND SUPPORT TO TALIBAN

The democratic regimes between 1988 and 1999 were unstable and changed frequently. The ISI became an important centre of power on account of its role in the Afghan War and its involvement with the Americans. Although the fundamentalists and Islamists appeared to have lost in the elections, their influence continued to grow, especially, among the intelligence agencies, military officers and the emerging middle class in Pakistan.

On the external front, there were two developments in this decade. First, the leadership in Pakistan intensified its terrorist activities on Indian soil through their proxies, and anti-India terrorist organisations became much more active in the Valley and other parts of India. The largest state sponsored parties were the Lashkar-e-Taiyyeba (LeT), Jaish-e-Muhammad (JeM), Harkat-ul-Mujahideen (HuM) and Harkat-al-Jihad-al-Islami (HJI). Second, on the western front, Pakistan was keen to create strategic depth in Afghanistan and not have a hostile government there. The army and ISI, along with the political leadership, came together to support a new class of warriors – the Taliban. In 1994, Afghanistan saw the outbreak of the Taliban, which was composed of the younger generation of Pakistani-Afghans. The Taliban were mainly the Afghans who grew up in the Pakistani refugee camps and were products of *madrassas* which were encouraged during Zia's time and were funded by Saudi money. The Pakistani leadership extended full-fledged support to the Taliban and added to their strength from

Pakistani *madrassas*. The Taliban began to take over one province after another in Afghanistan and brought the whole of Afghanistan under their control in less than five years. [20]

POST 9/11

Pakistan under Gen Musharraf, once again witnessed a major strategic development and entered into a third alliance with the US post 9/11. Gen Musharraf attempted to project a path of moderation, and publicly announced on January 12, 2002, that Pakistani territory would not be used for (*jihadi*) terrorism. In 2004, he announced his plea for *Enlightened Moderation* which could provide an answer to Pakistan's identity and its relationship with Islam. Defining the enlightened moderation, he said:

> The strategy of enlightened moderation …….is a two-pronged strategy. One prong is to be delivered by the Muslim world itself by shunning militancy and extremism and adopting the path of socioeconomic uplift to achieve its own emancipation. The other prong is meant to be delivered by the West, and the United States in particular, to determinedly resolve with justice all political disputes in which Muslims are engaged and also assist in the socioeconomic betterment of the deprived Muslim world. [21]

Although, Musharraf talked about the moderate, secular path which included rejection of extremism, the actual strategies which the military pursued were certainly not in sync with the announced enlightened moderation.

The military regime came under immense pressure by the Bush Administration to act against the terrorist organisations. But, in the last ten years, the military's efforts to counter terrorism and insurgency in the tribal belt have failed to provide results and the popular consensus has been that the military's flawed approach towards the war on terror has been responsible for the rising extremism and flourishing insurgency on Pakistan's Frontier borders.

20. Hassan Abbas, *Pakistan's Drift Into Extremism: Allah, the Army and America's War on Terror* (New York: M.E. Sharpe, 2005), p.155.
21. Speech by Gen Musharraf, "OIC Challenge and Response: Enlightened Moderation," June 1, 2004, at http://presidentmusharraf.wordpress.com/2005/01/18/musharraf-oic-enlightened-moderation/.

The military is certainly not willing to touch the outfits it views as serving its strategic interests such as the LeT, JeM, and HuM. A significant number of Taliban leaders, being the prime targets of the war on terror, took refuge in the Federally Administered Tribal Areas (FATA), and Pakistan's tribal belt became the base for training camps, and for conducting action plans in Afghanistan and the Pakistani territory. Al Qaeda received an aggressive response from the military and the operations led to the arrests of hundreds of Al Qaeda operatives, but the top leader, Osama bin Laden, was not touched. [22] The operations forced the militants to disperse in the Frontier borders and also in the heartland of Pakistan, which provided them the modern facilities for communication and coordination.

In May 2011, Osama bin Laden was killed in an operation carried out by the US Navy SEALs from the US Special Operations Command. The killing of Osama has been a severe blow to the credibility of the army and has created a major rift in the US-Pak relationship. After almost a decade of blatant military operations, the Americans appear increasingly frustrated with the results of the operations. Not only has the number of the extremist acts escalated, but also the terrorists attacks are much more intense, better planned and persist with deadly regularity.

The biggest challenge for Pakistan is to counter the *Talibanisation*, which seems to be gripping the nation. The Taliban insurgency within Pakistan began as early as 2002 when Al Qaeda and the Afghan Taliban fighters were flushed out of Afghanistan by the US armed forces. In 2007, the Tehrik-e-Taliban Pakistan (TTP) emerged as an entity in the context of a series of military operations (that took place post 9/11)—Pakistani military operations in FATA as well as US Unmanned Aerial Vehicle (UAV) strikes in FATA. Until then, most of the component groups of the TTP were loosely organised, with ties to the Afghan Taliban. The TTP has adopted a strictly anti-state and specifically anti-military agenda, and has been conveying its message by consistently attacking the government/military offices. In other words, the TTP has organised itself as a true insurgency, ideologically as well as organisationally. It has a symbolic relationship with Al Qaeda and

22. See, Zafar Abbas, "Pakistan Army Confronts Al Qaeda," *BBC News,* January 8, 2004, at http://news.bbc.co.uk/2/hi/south_asia/3378395.stm.

draws its ideological guidance from Al Qaeda, and Al Qaeda relies on the TTP for safe havens in the FATA. Given the proximity of the two groups, it would not be inappropriate to say that the TTP is a force multiplier for Al Qaeda.[23] The TTP has adopted an anti-state posture and has claimed responsibility for most of the terrorist attacks, including the assassination of Benazir Bhutto. The organisation is growing in influence among the unemployed youth and is using the *Sharia* to promote its political and ideological agenda.

CONCLUSION

Presently, Pakistan is a facing a broad landscape of militancy. A variety of terrorist groups with varying agendas operate from Pakistan and share a varied relationship with the state. Some of these organisations, like the TTP, regard the state as an enemy of Islam for joining hands with the West and killing its own people. On the other side are the deadly groups like the Jamaat-ud-Dawa (JuD), which are flourishing in the heart of Pakistan and enjoy state patronage. For the first time, militancy has managed to penetrate the interiors of Punjab and Sindh, and the Army General Headquarters (GHQ) became one of the terror targets in the recent past. The impact of the Afghan War has allowed Al Qaeda, the Haqqani network and the Taliban inside Pakistan where they have been expanding their influence, and "Talibanisation of Pakistan" has become a popular topic of discussion amongst the international community. The Pakistan military and ISI have nurtured some of the terrorist organisations which are categorically graded as "strategic assets" and are clearly not willing to act against them. These so-called "friendly"[24] groups, as Ayesha Siddiqua Agha terms them, include: the Good Taliban, LeT, JuD, and JeM.

The Frontier borders, NWFP and Khyber Pakhtunkhwa, have become the breeding ground for terrorism. The region presents a conglomeration of various insurgents and terrorists groups to the Pakistani military and NATO forces. Insurgency in Baluchistan, which became active in 2004, aggravated much more after the killing of Akbar

23. "Tehrik-e-Taliban Is a Terror Group," *VOANEWS.com Policy,* July 9, 2010, at http://www.voanews.com/policy/editorials/Tehrik-e-Taliban-Is-A-Terror-Group-102393269.html.
24. Ayesha Siddiqua Agha, "Pakistan's Counterterrorism Strategy: Separating Friends from Enemies," *The Washington Quarterly,* Winter 2011, pp.149-162.

Bugti in 2007. Added to this deadly mix of extremists is the TTP—the Pakistani Taliban pose a real danger to the state and are, in a way, an extension of the Sunni Deobandi militancy which has absorbed members from radical Sunni organisations. This has also further exaggerated the problem of Shia-Sunni violence, not only in the tribal belt but also in other parts of Pakistan.

Jihadi militancy in Pakistan today is an outcome of the policies and strategies the state has adopted for the past five decades. The ruling elites need to comprehend that terrorism as a policy of statecraft has resulted in the current *jihadi* blowback. The answer for Pakistan lies in a change of its policies and strategies, with focus on socio-economic development.

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