

# समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा

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## नौसेना को 2020 से मिलेंगे नए पी-8आइ विमान

नितिन प्रधान, सिएटल

समुद्री सीमाओं की निगरानी के लिए आर्डर किए गए चार अत्याधुनिक पोसाइडन-8आइ यानी पी-8आइ की डिलीवरी साल 2020 से शुरू हो जाएगी। इसी साल चार में से पहला विमान भारत पहुंचने की उम्मीद है। बाकी तीन की डिलीवरी वर्ष 2021 तक पूरी होने की उम्मीद है।

भारत ने समुद्री सीमाओं की सुरक्षा के लिए उसकी निगरानी की जरूरत को देखते हुए इसी साल जुलाई में इन विमानों के लिए बोइंग के साथ सौदे पर हस्ताक्षर किए थे। इससे पहले भारत बोइंग से ही आठ पी-8आइ खरीद चुका था। इन आठों विमानों के लिए साल 2009 में सौदा हुआ था। भारत उस वक्त अमेरिकी नौसेना के बाद पहला देश था जिसने यह विमान खरीदे थे। इसके बाद ऑस्ट्रेलिया भी अपनी नौसेना के लिए पी-8 खरीद चुका है। नए विमानों की डिलीवरी के बाद भारतीय नौसेना के पास कुल 12 पी-8आइ हो जाएंगे। माना जाता है कि भारत को अपनी पूरी समुद्री सीमाओं की निगरानी के लिए कम से कम 26 से 28 ऐसे जहाजों की आवश्यकता है। इसलिए भारतीय नौसेना इनकी संख्या आगे चलकर और बढ़ा भी सकती है। बताया जाता है कि इन चार विमानों का सौदा एक अरब डॉलर में हुआ है।

बोइंग का यह विमान बी-737 यात्री विमान के ढांचे पर तैयार किया गया है। इस अत्याधुनिक विमान में निगरानी के साथ-साथ अपनी रक्षा और बचाव की भी व्यवस्था की गई है। इसके डिजाइन और उपकरणों को लेकर अमेरिकी नौसेना ने काफी काम किया है और उसी के आधार पर इसका निर्माण किया जा रहा है। पी-8आइ में हारपून, जमीन से हवा और हवा से हवा में मार करने वाली मिसाइलों को ढोने और मार करने की क्षमता है। इसमें कुल मिलाकर नौ स्टेशन बनाए गए हैं जहां हथियार ले जाए जा सकते हैं। इनमें चार पंखों पर और पांच विमान की बाँड़ी के नीचे फिट किए जा सकते हैं। पी-8आइ में इंजन बोइंग 737 का ही लगाया गया है, लेकिन अतिरिक्त ऊर्जा की जरूरतों को पूरा करने के लिए जेनरेटर भी फिट किया गया है।

बोइंग के पी-8 परियोजना से जुड़े बोइंग मिलेट्री एयरक्राफ्ट के चीफ इंजीनियर मार्क जॉर्डन ने बताया कि इस विमान में एंटी सबमैरीन वारफेयर भी ले जाए जा सकते हैं। विमान को इस तरह डिजाइन किया गया है कि इसे आपदा प्रबंधन और अन्य मानवीय आपदाओं के दौरान राहत के लिए भी इस्तेमाल लायक बनाया जा सकता है। सभी तरह के मौसम और ऊंचाई पर इस्तेमाल में सक्षम पी-8आइ ईंधन की दिक्रत होने

पर हवा में रहते हुए ही ईंधन ले सकता है। विमान के संचालन के लिए नौ लोगों की आवश्यकता होती है। इनमें दो पायलट, दो आब्जर्वर और पांच वेपन (हथियार) ऑपरेटर शामिल हैं। इन ऑपरेटरों के लिए विमान में अत्याधुनिक ऑपरेशन कंट्रोल पैनल की व्यवस्था है।

पी-8 की काबिलियत का अंदाजा इसी बात से लगाया जा सकता है कि अमेरिकी नौसेना ऐसे 117 विमानों की आवश्यकता बता चुकी है। अभी तक बोइंग से अमेरिकी नौसेना 80 पी-8 खरीदने का सौदा कर चुकी है जिनमें से 47 की डिलीवरी की जा चुकी है। इसके अलावा ऑस्ट्रेलिया की नौसेना भी इनका इस्तेमाल कर रही है।



Wed, 16 Nov, 2016

## Hit the Enemy Hard: Army Chief

Amid escalating tensions along the Line of Control in the wake of killing of seven Pakistani soldiers, Indian Army chief General Dalbir Singh Suhag on Tuesday attended a two-hour-long crucial meeting with top Army commanders at Udampur-based Northern Command headquarters and reviewed the prevailing security situation. The meeting was attended by General Officers in Command (GoC's) of all three Corps headquarters based in Jammu, Srinagar and Leh division besides senior Formation Commanders deployed in the hinterland. During the meeting the Army chief is learnt to have communicated to the officers to adopt an 'aggressive approach' and 'hit the enemy hard.'

GOC-in-C of Northern Command Lt-Gen DS Hooda separately briefed the Army chief. His meeting was followed by meeting between the Corps Commanders and the Army chief.

While reviewing the level of preparedness of the troops amid fresh hostilities especially in Rajouri and Poonch sectors Suhag directed the troops to be alert against any inimical designs and be aggressive in their approach. Defence PRO in Jammu said, “The Army chief interacted with the Formation Commanders and reviewed the situation along the Line of Control (LoC) as well as internal security situation in the Command theatre.”

“The Army chief commended the soldiers for boldly responding to ceasefire violations along the LoC. He also lauded the synergy and co-operation between the Northern Command, Air Force, Paramilitary Forces, Civil Administration, Central Police Organisations operating in the region,” Defence PRO said.

Brief visit of the Army Chief is set to alter the response of the Indian forces to ‘unprovoked’ incidents of ceasefire violations and increasing number of infiltration bids in the garb of cover fire from the Pak istan troops. Rattled by the punitive strikes by the Indian troops Pak army is already running for cover and resorting to targeting of civilian areas using heavy calibre of weapons.

On Tuesday the Pakistan Army resorted to fresh exchange of fire in the Palanwala and Sunderbani areas for about four hours between 7.00 to 11.00 am. More than 5,000 civilians had earlier shifted to safer locations late Monday evening following intense shelling. The border residents faced many hardships in camps due to winter season. Majority of border residents from over two dozen villages in the Palanwala sector took shelter at various camps. The schools also remained closed in the forward villages fearing fresh shelling. According to ground reports Pak army was targeting civilian areas using 120 mm mortars. A senior officer in Palanwala said, “Pakistan Army is deliberately resorting to use of long range mortars to ensure safety of their own troops”. “Following strong Indian retaliation, Pakistan Army has changed its strategy and shifted its gun positions to new locations deep inside civilian areas from where they are targeting Indian villages taking advantage of height,” he said.

## THE ASIAN AGE

Wed, 16 Nov, 2016

### Suhag puts troops on alert at LoC

Jammu, Nov. 15: Army Chief Gen. Dalbir Singh Suhag on Tuesday reviewed security situation along the LoC in Jammu and Kashmir and asked the troops to be alert against any inimical activity, in the wake of heightened tension in Indo-Pak ties.

“The Chief of Army Staff, General Dalbir Singh visited headquarters Northern Command at Udhampur today”, a senior Army officer said. The visit comes a day after Pakistan said the Indian army killed seven of its soldiers in shelling. Gen. Suhag exhorted the troops to be alert against any inimical designs and be aggressive in their approach. The General interacted with the Formation Commanders and reviewed the situation along the Line of Control (LoC) as well as internal security situation in the Command theatre, he said.

The Army Chief commended the soldiers for boldly responding to ceasefire violations along the LoC. — PTI

## THE ASIAN AGE

Wed, 16 Nov, 2016

### India, Israel to boost defence and anti-terror cooperation ties

*Regrettably, one of the countries of its origin and spread is in India’s neighbourhood,” Modi said.*

New Delhi: Reflecting rapid upswing in ties, India and Israel on Tuesday decided to “broad-base” their already close defence partnership and agreed to intensify cooperation in combating radicalism and extremism while calling for tough global action against terror networks and States harbouring them.

In wide-ranging talks between Prime Minister Narendra Modi and Israeli President Reuven Rivlin, the two sides also resolved to deepen their overall engagement including in key areas of trade and investment, agriculture, water resources, education and research. The two sides also inked two pacts to strengthen cooperation in agriculture and water resources management.

In a media statement after the talks, PM Modi made a veiled attack on Pakistan, saying one of the countries in India's neighbourhood has been supporting terrorism, adding he and Rivlin agreed to intensify bilateral cooperation in combating terror. "We recognise that terrorism is a global challenge, knows no boundaries and has extensive links with other forms of organised crime.

Regrettably, one of the countries of its origin and spread is in India's neighbourhood," Modi said.

Prime Minister Modi said both the countries agreed that the international community must act with "resolve and determination" against terror networks and States that harbour them.

"Failure to act and silence of speech only encourages the terrorists. We agreed to intensify our cooperation to combat the forces of extremism and radicalisation that threaten all peace loving nations," he said.

On his part, Rivlin, the first Israeli President to visit India in nearly 20 years, said both India and Israel were threatened by terrorism as the two countries uphold values of freedom and that nothing can justify terror. He said India and Israel will be together in fighting the menace.

Referring to growing collaboration between the two countries, particularly in the defence sector, President Rivlin said his country is ready to "make in India and make with India".

Noting that Rivlin's visit has given a "crucial push" to efforts to build "new pillars" in ties, Modi said both sides noted the strength of the growing defence partnership and agreed on the need to make it "more broad-based" through production and manufacturing partnerships.

Referring to Israel's expertise in micro-irrigation in drought-prone areas, the Prime Minister said water management and conservation, and collaboration in scientific research were identified as areas for priority engagement.

"As fellow democracies, our people are our biggest strength and the biggest beneficiaries of a strong India-Israel partnership. The 2000-year old Jewish community in India represents a thriving link to this past. Today, it is a vital part of our composite cultural mosaic that continues to thrive in their traditions. We are proud of the Jewish community in India. President and I agreed that promoting people-to-people contacts, which has a long shared history, is our shared priority," PM Modi said.

India is Israel's largest buyer of military hardware and the latter has been supplying various weapons systems, missiles and unmanned aerial vehicles over the last few years but the transactions have largely remained behind the curtains.



Wed, 16 Nov, 2016

## India, Israel to scale up counter-terror cooperation

*By Kallol Bhattacharjee*

***Both Israeli President Rivlin and PM Modi say terrorism is a global challenge and knows no boundaries***

India and Israel on Tuesday agreed to intensify counter-terror efforts to deal with "constant" security threats posed by terrorism. Welcoming visiting Israeli President Reuven Rivlin, Prime Minister Narendra Modi said that both sides would work to counter terrorism, radicalism and extremism even as they agreed to work together in areas such as agriculture and water resource management.

"Our people are constantly threatened by forces of terrorism and extremism. We recognise that terrorism is a global challenge, knows no boundaries," Mr. Modi said.

Mr Rivlin recollected the 26/11 attacks which claimed the lives of Israeli citizens. “We recognise that terrorism is a global challenge, knows no boundaries and has extensive links with other forms of organised crime. We stand together defending our people.”

The declarations came even as both leaders referred to the twenty-fifth anniversary of formal diplomatic ties between two countries that have turned out to be “broad-based.” Mr. Modi also thanked Israel for supporting India in multilateral diplomacy and said: “India is also grateful to Israel for its clear support to India’s permanent candidature in a reformed UN Security Council.”

**Pacts signed** - Earlier, Mr. Rivlin received a ceremonial welcome at the forecourt of the Rashtrapati Bhavan and met President Pranab Mukherjee and Vice-President Hamid Ansari. Later, he held bilateral discussions with the Indian delegation at Hyderabad House. Both sides signed agreements to firm up cooperation on agriculture and water resource management.

Both sides agreed to take “practical and specific” measures such as cyber-security cooperation and agreed to expand defence ties. “I wish to say that, Israel is ready to make in India and make with India,” said Mr. Rivlin, highlighting possible manufacturing and production partnerships in the defence sector.

The Israeli President is accompanied by a delegation of representatives of the country’s defence sector, leading academics and technology solution providers. He is also scheduled to travel to Agra, Chandigarh, and Karnal to highlight the impact of technological solutions to improve water supply and agriculture scenario in India.



Wed, 16 Nov, 2016

## To counter the dragon, govt rushing Parrikar to Dhaka

*By Rajat Pandit*

*Move Comes Days After China Gave B'desh Submarines*

India is dispatching defence minister Manohar Parrikar to Dhaka later this month to chalk out a major upgrade in bilateral defence cooperation in the backdrop of China continuing to expand its strategic footprint in Bangladesh. Government sources said on Tuesday that a new defence cooperation framework, which will lead to stepped-up military supplies, technology transfer, training and joint exercises as well as closer cooperation in counter-terrorism, will be discussed during Parrikar's two-day visit from November 30. “It is likely to be inked when Bangladesh PM Sheikh Hasina visits India in December. Incidentally, Parrikar will be the first Indian defence minister to visit Bangladesh in years,” said a source.

The visit comes soon after Bangladesh took delivery of its first-ever submarines from China on Monday. The two diesel-electric submarines, handed over to Bangladesh Navy chief Admiral Mohammad Nizamuddin Ahmed at the Dalian seaport of Liaoning province in China, is a big indicator of the extensive military ties being forged between Dhaka and Beijing.

In mid-October, Xi Jinping became the first Chinese president in 30 years to visit Bangladesh, which led to 27 deals worth \$25 billion being signed. India, of course, can neither match China's economic muscle nor its domestic defence industrial base.

But India is trying to counter China's inroads into its neighbourhood, ranging from Sri Lanka, Maldives, Seychelles and Mauritius to Bangladesh, Myanmar and Nepal. Apart from supplying air defence guns, radars and mine-protected vehicles to Sri Lanka, for instance, India is also constructing two naval offshore patrol vessels (OPVs) for the island nation.

“Similarly, India can supply OPVs to Bangladesh through innovative financing mechanisms. The training of Bangladeshi personnel in Indian military establishments will also be increased under the overall capacity building,” said the source. The sixth edition of India-Bangladesh joint military exercise ‘Sampriti’ is also currently underway at Tangail in Dhaka. “With the focus being on counterterrorism, the exercise will boost

interoperability between the two armies. Regular naval and air force exercises will also be on the agenda now," said the source.

India's ties with Bangladesh are on an upward trajectory under Sheikh Hasina's leadership. The two have backed each other on terrorist attacks on their soils, with Dhaka supporting New Delhi's stand on boycotting the Saarc summit in Islamabad. India was relieved at Bangladesh's move to scrap China's bid to construct the Sonadia deepsea port at Cox's Bazar earlier this year. But China has several other projects underway in Bangladesh, which also supports the former's 'One Belt, One Road' initiative.

India has actively worked towards bolstering ties with Bangladesh over the last three-four years, with one of the main objectives being the need for the two to "resolutely" tackle terrorism together.



Wed, 16 Nov, 2016

## Needless Accusations

### *Pakistan must crack down on terror factories*

The recent accusations of ceasefire violations from India across the Line of Control (LoC) and the International Border by Pakistan are that country's desperate attempt to shift blame from its own transgressions. Indeed, the incidents of ceasefire violations have spiralled from the Pakistani side after India's military conducted the surgical strikes in September following the Uri attack. Records show that the Indian security forces had retaliated only when their Pakistani counterparts attacked first. Most of the responses from the Indian Army come in a bid to prevent impending or attempted infiltration by militants from Pakistani soil. Pakistan must see to it that all terror activities from its soil are stopped immediately. There will be then be no retaliation from the Indian soil.

Meanwhile, Pakistan's Defence Minister Khawaja Mohammad Asif stated that the Indian Government was "heating the situation up along the borders and working boundary due to internal compulsions". It must be made clear to the Pakistani Government that the Indian Army is doing its duty, nothing more. It is safeguarding its boundaries from Pakistan-sponsored infiltrators. Also, it is disheartening to note that Prime Minister Nawaz Sharif has been trying to highlight supposed human right violations in the State of Jammu & Kashmir, instead of addressing the issue of terrorism.

Notably, it is for the first time that Pakistan has officially acknowledged it has suffered casualties on its side. The normal practice in Pakistan is to hide its casualties so that it can convince its people that only Indian soldiers were being killed. It is believed that Pakistan's old tactics of making false claims are not yielding positive results. However, on the other hand, the Indian Army has been placing facts before the public so that no misconception prevails about the activities on the sensitive border. Ceasefire violations by Pakistan have crossed 150 in number this this year in Jammu & Kashmir. Sources say that these figures were in single digits in the beginning of this year, but within a short span of time, it has increased at an alarming rate. Is Pakistan just pursuing its old agenda of disturbing peace in Jammu & Kashmir? Or is it trying to provoke the Modi Government so as to create international opinion against Indian military actions along the borders?

It seems the entire establishment in Pakistan is confused and in total chaos. the civilian Government of Nawaz Sharif is in no way controlling or is able to control the Army and the most important intelligence service of that nation, the Inter-Services Intelligence. Therefore, it would be very difficult for the Indian Government to start talks with the Pakistan Government to de-escalate the tensions. For this, unless the Pakistan Army comes with an understanding with the Sharif Government, no talks can be possible in the coming days. With winter approaching, it would be a hard task for both the sides to monitor the borders at many crucial posts, despite having state-of-the-art facilities. This can help some militants to cross the border, though overall infiltration attempts during winter go down. While countering the Pakistani regulars and the insurgents, the Government must sustain its aggression — which is the new normal.

Wed, 16 Nov, 2016

## Pak violates ceasefire, targets civil locations

By Sanjay Khajuria

Pakistan yet again violated the ceasefire, targeting forward villages and posts on the Line of Control (LoC) twice on Tuesday with unprovoked small-arms fire and mortar shelling in Jammu district's Pallanwala sector and Rajouri district's Sunderbani sector.

“Pakistan resorted to heavy unprovoked firing this morning at around 0715 hours and fired small arms and mortars in Pallanwala and Jogwan post,” police sources said. “Pakistan is targeting forward villages, which has created panic among villagers. No injury has been reported.” sources added. Meanwhile, the defence spokesperson in Jammu, Lt Col Manish Mehta, said, “Unprovoked CFV by the Pakistan Army in Sunderbani sector from 0710 hrs using mortars and automatics...”

### 'Pak can't be bullied, by Indian tactics'

Pakistani Prime Minister Nawaz Sharif on Tuesday said that Pakistan cannot be bullied by Indian “tactics” and its restraint should not be “misunderstood” as it's weakness, warning that his country was fully capable of defending against “any belligerence”. Sharif was speaking at a high-level meeting to review the situation along the LoC.



Wed, 16 Nov, 2016

## India-Japan nuclear deal: Pact to plug gaps in N-plan

*The agreement is going to be a key factor in helping India achieve its nuclear energy targets.*

The civil nuclear deal inked on Friday by India and Japan would have a significant bearing on the progress of the two atomic projects currently under discussion involving American nuclear vendors — GE-Hitachi and Toshiba-Westinghouse. The Agreement for Cooperation in Peaceful Uses of Nuclear Energy signed by the two sides is set to be a crucial determining factor as the two US-based reactor vendors, as well as a range of other global nuclear reactor manufacturers that have alliances with Japanese companies and source the most critical equipment in a reactor — the calandria or reactor vessel — from Japanese heavy forging major Japan Steel Works (JSW).

The deal, concluded after more than six years of negotiations began in June 2010, marks a fundamental shift in Japan's policy as India is the first non-NPT signatory with which Tokyo now has a nuclear pact. The first project to leverage the benefits of the deal will be a Light Water Reactor-based project slated to be set up by US nuclear vendor Westinghouse Electric, which is working on plans to deploy six atomic reactors units in India in a pact with state-owned Nuclear Power Corporation of India Ltd (NPCIL). For this, the Toshiba Corp-owned American reactor firm is expected to put out a revised techno-commercial proposal shortly.

With the Japan pact now through and assuming that negotiations proceed on schedule, the commercial contract for this deal should be signed by June 2017, officials involved in the exercise said. The site design and engineering work is expected to start immediately for the project that has been relocated to Andhra Pradesh and will deploy Westinghouse's new AP1000 reactors. Each of these “third-generation” reactors has a capacity of 1,150 megawatt electric (Mwe).

Globally, apart from Japan's JSW, there are just three major heavy forging capacities in operation worldwide that can fabricate large single-piece pressure vessels for nuclear reactors — Creusot Forge (a subsidiary of

France's Areva group), Russia's OMZ Izhora and Chinese state-owned firm China First Heavy Industries. But JSW dominates the nuclear forgings business, accounting for an estimated 80 per cent of the world market for large forged components for nuclear plants and owns the world's only plant capable of producing the central part of a large-size reactor's containment vessel in a single piece from a 600-tonne ingot, which reduces radiation risk.

All the global suppliers are booked with orders for at least the next several years as the most critical issue for accelerating nuclear power plant construction is the availability of heavy engineering plants to make the reactor components, especially for units of over 1,000 MWe.

While Toshiba-Westinghouse's AP1000 pressure vessel closure head and three complex steam generator parts can only be made by JSW, the Japanese firm has advance orders from GE-Hitachi for fabricating components for its ABWR and ESBWR range of boiling water reactors.

JSW had also supplied the pressure vessels for Areva's first two 1650 MWe EPR projects in Finland and France. Vendors prefer large forgings to be integral, as single products, but it is possible to use split forgings that are welded together. These welds then need checking through the life of the plant.

An NPCIL official said the process of bridging the difference over the substantive issues on the proposed India-Japan nuclear agreement is on and that both countries had made significant progress in the negotiations on civil nuclear cooperation. JSW had set up a marketing office in India in 2009 through a subsidiary — JSW India Pvt Ltd.

The Japan deal is being seen as a boost to India's strategy to pursue a low-carbon growth model in decades to come, formally enunciated in the Intended Nationally Determined Contribution announced at COP-21 in Paris late last year and ratified by the government on October 2, now being translated into an actionable working plan.

Alongside a concerted push for solar and wind energy capacities, a detailed plan to augment the investment in the nuclear power generation sector spanning the next 15 years is being prepared by the Department of Atomic Energy.

Alongside the addition of second 1,000-MWe Kudankulam nuclear power unit (built with Russian assistance) to India's national grid in August this year, which increased the country's installed nuclear power capacity to 6,780MWe, nine more reactors that are at various stages of implementation are expected to add an additional 6,700 MWe capacity over the next seven years.

According to the plan, before March 2017, commencement of work is planned on 16 new reactors with a total capacity of 16,100 MWe, including eight indigenous PHWRs of 700 MWe each with a total capacity of 5,600 MWe and eight LWRs based on international cooperation — with Russia, France and the US — totaling to a capacity of 10,500 MWe. Finalisation of these projects, a senior official indicated, is being pursued with "due attention to cost, technology adaptation and safety".

For stepping up the nuclear capacity, there are three key enablers. The pact with Japan would be a major step in this direction, especially in getting access to key suppliers such as JSW. Secondly, by the end of this calendar, nearly 3,000 metric tonnes (MT) of nuclear fuel is likely to be shipped into India from three countries — the Russian Federation, Canada and the Republic of Kazakhstan. The uranium shipments expected in 2016 is likely to be a record for a single year and would, in quantitative terms, amount to nearly 53 per cent of total nuclear fuel imported into India since the country's access to the global nuclear fuel market opened up in 2008.

Thirdly, the Indian Nuclear Insurance Pool, launched by the state-owned General Insurance Corporation-Reinsurer (GIC-Re) and other Indian insurance companies in June last year to offer an insurance product for NPCIL for covering the operator's liability under the provisions of the Civil Liability for Nuclear Damage (CLND) Act 2010, will subsequently launch a separate product to specifically cover the risks of the suppliers under this Act — something that was being seen as crucial to foster investor interest among suppliers, both domestic and foreign, in the sector.

## Don't nuke the debate

*Manohar Parrikar has been criticised for suggesting a re-evaluation of 'no-first-use'. But nuclear doctrines are not written in stone.*

While speaking at the launch of *The New Arthashastra: A Security Strategy for India* (HarperCollins India, 2016), the book I have edited on India's national security strategy, Defence Minister Manohar Parrikar said that there should be an element of unpredictability in the country's military strategy.

Thinking aloud while answering a question, he wondered whether India's nuclear doctrine should be constrained by a "no first use" posture. He mentioned the advantages of unpredictability and said, "If a written strategy exists, you are giving away your strength. Why should India bind itself (to no first use)? India is a responsible nuclear power and (it should suffice to say that) we will not use nuclear weapons irresponsibly."

The essence of the defence minister's introspection was that ambiguity enhances deterrence. This view has been expressed by several nuclear strategists. However, he emphasised several times that there was no change in India's nuclear doctrine and that he was expressing a personal view. While he has been criticised, there can be no doubt that fresh thinking is invaluable to the discourse on the subject.

There is no justification for the belief held by some that the nuclear doctrine should be debated only in government circles and not in public. Bernard Brodie, Herman Kahn, Henry Kissinger, Thomas Schelling et al and, nearer home, K. Subrahmanyam, Jasjit Singh and several others have made sterling contributions to advancing thought on nuclear deterrence.

With a pacifist strategic culture steeped in Gandhian non-violence, India is a reluctant nuclear power. India believes that nuclear weapons are political weapons, not weapons of warfighting; their sole purpose is to deter the use and threat of use of nuclear weapons. India's nuclear doctrine is built around "credible minimum deterrence" and professes a "no first use" posture.

As a corollary, India is willing to absorb the damage that a nuclear first strike may cause and has declared its intention to launch massive retaliation to cause unacceptable damage in return. Consequently, India follows a policy of deterrence by punishment through a counter value targeting strategy aimed at the destruction of the adversary's major cities and industrial centres.

A doctrine is a set of beliefs and principles that guide the actions of military forces in support of a nation's objectives. According to C. Von Clausewitz in *On War*: "Doctrine is a guide to anyone who wants to learn about war from books: It will light their way, ease their progress, train their judgement and help them to avoid pitfalls. Doctrine is meant to educate the minds of future commanders... not to accompany them to the battlefields."

Nuclear doctrines are not written in stone and are never absolutely rigid. They are not binding international treaties that must be adhered to in letter and spirit. The purpose of doctrine is partly declaratory — that is, to enhance deterrence by making public one's intentions; partly to provide the basis for organising a country's nuclear force structure, including the command and control system; and, partly to reassure one's own people and, where applicable, one's allies. If deterrence breaks down, publicly declared doctrine becomes irrelevant and goes out of the window. During a crisis involving nuclear exchanges, the essence of national military strategy would lie in preventing escalation and minimising civilian and military casualties and material damage while ensuring the survival of the state.

The Political Council of the Nuclear Command Authority (NCA) will decide how to retaliate based on the advice given by the Executive Council, of which the army, navy and air force chiefs are members. The method and mode of the retaliation will take into account the prevailing operational-strategic situation and the likely responses of the adversary, especially the probability of further nuclear exchanges.

The assessment will also include the reactions of the international community — the threats held out, the appeals made and the course of the discussions held in the United Nations Security Council.

Almost 14 years have passed since India's nuclear doctrine was approved by the Cabinet Committee on Security (CCS) after reviewing the progress in the operationalisation of nuclear deterrence. The doctrine was enunciated in the Government of India statement issued on January 4, 2003. Since then, many new developments have taken place, including the development of "full spectrum deterrence" by Pakistan. Hence, a review of the nuclear doctrine is long overdue. In fact, a review should be carried out every five years. In its manifesto for the general elections of May 2014, the BJP had promised such a review, but no move appears to have been made in this direction so far.

Credible minimum deterrence and the posture of no-first-use have stood the test of time. There is no conceivable operational contingency that justifies a first strike, because it is guaranteed to result in the destruction of several great cities when the adversary retaliates with the nuclear forces that it will still have left in its kitty after absorbing India's first strike.

India's declared strategy is that of massive retaliation. Ideally, the retaliatory strategy should have been "punitive retaliation, to inflict unacceptable damage", as envisaged in the Draft Nuclear Doctrine of August 17, 1999, prepared by the first National Security Advisory Board headed by K. Subrahmanyam. This would have permitted flexible response that offers a range of options.

However, massive retaliation is a viable deterrence strategy that has served India well; any change now would not be beneficial. It would even deter Pakistani plans to use tactical nuclear warheads (TNWs) against Indian forces on Pakistani soil as they cannot possibly risk massive retaliation that would result in the destruction of all major cities and lead to the end of Pakistan as a cohesive nation state.

However, the credibility of massive retaliation needs to be enhanced through a carefully formulated signalling plan. Signalling should be based on an elaborate plan designed to showcase the preparedness of India's nuclear forces and the firmness of its political will.

## THE ASIAN AGE

Wed, 16 Nov, 2016

### It pays to be tough with China

*Before India's independence nobody ever contested the fact that Demchok was the last village on the road to western Tibet.*

Interesting news has been coming in from the high plateau of Ladakh. For three days, the Indian Army and the Indo-Tibetan Border Police had an eyeball-to-eyeball confrontation with the People's Liberation Army on the Line of Actual Control in the border village of Demchok.

While this village of Nyoma block in Leh district is small (with 74 inhabitants, the last census said), its location on the Indus river is strategic.

It's been a part of Ladakh and thus Indian territory for centuries. In fact, no Chinese was ever seen in this rather desolate area before the 1950s. Today, however, Beijing claims Demchok as Chinese. It's not that China is Alzheimerish; it's simply convenient to rewrite history for its strategic purpose.

Before India's independence nobody ever contested the fact that Demchok was the last village on the road to western Tibet on the Kailash Mansarovar pilgrimage. It was agreed to by all.

Take Rai Bahadur Dr Kanshi Ram, the British trade agent in western Tibet. Starting from Simla on May 20, 1937, he reached Srinagar seven days later; and from there was joined by Wazir Wazarat, commissioner of Ladakh, on his onward journey to the Tibetan border. Both officers were to meet the garpon (governor) of western Tibet for a tripartite inquiry into an alleged murder, in Ladakh a few years earlier, of a Tibetan, Champa Skaldan, by Zaildar, a Ladakhi of Rupchu.

After a week's halt in Leh, they reached Demchok on July 17, 1939, where they were to meet the senior and junior garpons; and the inquiry started three days later.

Dr Kanshi Ram, in his report to Simla, notes: "On the night of July 21 the stream by the side of which we were camping suddenly rose to higher level and began to flow over our camping ground at midnight. We were abed as alarm was raised and we then got up and took our luggage and other belongings to a place of safety, and had to keep awake throughout the night. The rain, which began to pour down since morning, was still continuing. The next morning we crossed the stream and camped on the Tibetan border at a place of safety ... This stream forms a natural boundary between Tibet and Kashmir at Demchok."

This is interesting because it shows that just before Independence the Indo-Tibet border in Ladakh was well defined and agreed upon by the government of British India (represented by the trade agent), the state of J&K (wazir) and the Tibetan government (garpons).

Unfortunately, the Chinese "claims" have resulted in what is prosaically called today "differences of perception" on the Line of Actual Control.

Why did China start claiming the area?

The change in Chinese maps, particularly in the Demchok sector, began with the objective to protect a new road linking Tibet to Xinjiang in Aksai Chin area in the mid-1950s (the famous Aksai Chin road). Though the issue would only become public through a debate in the Lok Sabha in August 1959, in early 1950s New Delhi was already aware that China was building a road, but South Block was not ready to acknowledge it. Changing the map of the frontier was the best way for China to create a strategic buffer for the new road. But let us come back to the present stalemate.

In April, the residents of Demchok had appealed to the deputy commissioner in Leh for their resettlement elsewhere in the district; the reason was the continuous obstructions to development work in the area by Chinese troops.

Quoting Army sources, scoops.news, a Ladakhi website, said last week that on November 2: "Nearly two platoons of the PLA came close to Indian territories in Demchok village and objected to laying of a water pipe for use in irrigation and drinking purpose, a project carried out by the state rural development department in the area."

The same source explained that the PLA personnel "appeared on the scene and raised objections to ongoing civilian construction work and stayed there for whole day and returned in late evening. Surprisingly, they appeared once again next day morning."

The PLA asked local people to immediately stop their work; the Chinese quoted the agreement between India and China, which says either side needs prior permission before undertaking any construction work.

This argument did not fool the Indian Army, who pointed out to the Chinese that the Indo-Sino border agreement specifically says information about the construction needs to be shared only in case the development was for defence purposes, not otherwise, certainly not for civilian work.

While both sides continue to deny any incursions or transgressions, the Indian side clarified that issues, if any, would be resolved at a local level with Chinese officials at the border meeting point (Chushul in this case).

Finally, on the third day, local engineers could finish laying a water pipeline for irrigation of the remote Indian village. The pipeline is nearly a kilometre long. The stalemate ended on November 5 in the evening.

The scene witnessed the holding of "vritual" banners by the PLA: "It is my territory, go back"; but the Army and ITBP personnel did not allow the PLA guards to erect a hut and the Chinese ultimately had to take the material back to their base camp in Tibet. In the end, the work was done: India didn't back out while confronting the PLA troops in Demchok. Almost a few thousand kilometres away, also near the LAC, India took another great step to defend its borders.

For the first time, the Indian Air Force successfully carried out a test landing and takeoff of the C-17 Globemaster-III at Mechuka's Advanced Landing Ground. After the upgradation of Mechuka's ALG, the giant

Boeing C-17 could land. It should eventually ensure the transport of men and material to the remote border village of west Siang district of Arunachal Pradesh, which was invaded by the Chinese in 1962. Let us not forget that Dibrugarh, the nearest air/rail head, is located some 500 km away (practically a drive of two days).

A few days later, the eighth meeting of the China-India Defence and Security Consultation was held in New Delhi and Xinhua reported all was well at the border between India and China. Around the same time, Meng Jianzhu, China's security tsar and member of the all-powerful politburo, discreetly visited New Delhi and met Prime Minister Narendra Modi (and home minister Rajnath Singh); apparently not about any border issues, but for a serious discussion on "global" terrorism. It always pays to take a tough position with China.



Wed, 16 Nov, 2016

## China refuses to budge on anti-India NSG stand

China, which has been blocking India's NSG bid, maintained its tough stand on the issue on Tuesday and called for a two-step "non-discriminatory" solution to admit non-NPT members into the 48-member elite grouping.

China's remarks came as the Nuclear Suppliers Group (NSG) at its meeting in Vienna on November 11 discussed a formula acting on India's application to join it.

"We maintain that we should follow a two-step approach. First we should find a solution applicable to all nonNPT (nuclear non-proliferation treaty) members' applications to the NSG through consultations," Chinese foreign ministry spokesperson Geng Shuang told reporters here outlining China's stand at the Vienna meeting.

The second step is to discuss specific non-NPT members' admission into the NSG, he said.

"We believe that the solution should be non-discriminatory and applicable to all non-NPT members and it must not damage the core value of NSG as well as the authority, effectiveness and integrity of NPT," he said.

"We hope we can enter into the second step after finishing the first step at an early date which is to talk about specific non-NPT members joining the NSG," he said.

China's stand for a nondiscriminatory criteria is regarded significant as Pakistan, which is a close ally of Beijing, too has applied for the NSG membership.

Geng said the discussion about the entry of new members is a "good start".



Wed, 16 Nov, 2016

## China's aircraft carrier ready for combat

*There are more than 1,000 non-commissioned officers on the Liaoning, and they are the main part of China's aircraft carrier.*

Beijing: China's first aircraft carrier is now ready for combat, a key breakthrough for a navy that has been trying to flex its muscles far beyond its shores amid territorial disputes with several neighbouring countries.

The Liaoning carrier, made from an empty hull of a Soviet era ship, recently left its shipyard in Qingdao in east China to start a new training mission to test its combat capacity as it is prepared to "fight against enemies".

The construction of China's second indigenously-built aircraft carrier is already underway at a feverish pitch. Liaoning, which had previously been described in Chinese media as a surface platform for tests and training, has now "formally been described as having a real combat capacity," the state-run Global Times said.

"As a military force, we are always combat ready and our combat capacity also needs to be tested by war. At this moment, we are doing our best to promote our strength and use it to prevent war. But we are preparing for actual combat at any time," Senior Captain Li Dongyou, the political commissar of the vessel, told the daily.

The refurbished ship was launched by former president Hu Jintao in 2012.

There are more than 1,000 non-commissioned officers (NCOs) on the Liaoning, and they are the main part of China's aircraft carrier. "Among them, we have 42 Chief Petty Officers with an average age of 40 and experience of serving in the navy for more than 20 years," Li said.

"Weaponry is the key for combat capability on the carrier. As China's first generation of NCOs on the carrier, these officers' capability on how to operate, repair and maintain equipment is irreplaceable. And they are the source of our confidence," Li said.

The report did not elaborate on how China plans to use the carrier, but Liaoning is seen as to put more muscle behind the Communist giant's increasing assertive moves in the South China Sea, where territorial claims by neighbouring nations have dogged China's expansionist idea, and where it faces challenges from the US.

The South China sea, through which USD 5 trillion of trade passes annually, has been a centre of dispute between China and Brunei, Malaysia, the Philippines, Taiwan and Vietnam.

"As a combat platform, China still lags behind the US in technology and capability to execute missions, but three senior US officials who visited the Liaoning before all gave a positive evaluation on the management of the carrier, officers and soldiers' daily lives and training are well organised and the equipment maintenance is fine," Li said.

Chinese media reports have said that as the construction of the second aircraft carrier picked up pace, China has stepped up preparations to deploy the first carrier force by putting in place a new batch of carrier-based fighter pilots.

With plans to build two more carriers, the PLA as built up its largest carrier-based pilot team after more than three years of intensive training, media reports had said in August. Speculation is rife that China may deploy one of the aircraft carriers in the South China Sea.



Wed, 16 Nov, 2016

## U.S. could join China's 'Belt and Road' initiative

*An embrace of the China-led AIIB could be on the cards under a Trump administration*

The head of China-led Asian Infrastructure Investment Bank (AIIB), Jin Liqun, has signalled that the United States under President-elect Donald Trump could reverse its decision not to join the lender — a move that could pave the way for Washington's broader acceptance of Beijing's One Belt One Road (OBOR) connectivity initiative across the Eurasian region.

The AIIB is widely viewed as part of a new global financial architecture, and is expected to back infrastructure projects in Asia that are part of OBOR.

### U.S. could join AIIB

In an interview with the official *People's Daily*, Mr. Jin said: "I have heard a certain senior official of the President Barack Obama speak good of the AIIB and after Donald Trump won, I was told that many in his team have an opinion that Obama was not right not to join the AIIB, specially after Canada joined, which was a very loud endorsement of the bank. So we can't rule out the new government in U.S. endorsing the AIIB or indicating interest to join as member." A separate article in the same publication quoted individuals — supposedly part of the Trump camp — as telling that the U.S. embrace of OBOR under the newly elected President could be on the cards, in case Beijing agreed not to alter the *status quo* in the Asia-Pacific. The daily pointed to a November 10 article by former CIA director James Woolsey, who is part of Mr. Trump's

inner-circle, titled, “Under Donald Trump, the U.S. will accept China’s rise — as long as it doesn’t challenge the *status quo*.”

### **China’s leadership role**

According to the *People’s Daily*, “Woolsey recognised China’s leadership role, but also said that the balance of power in Asia depends on America’s strength”.

It added: “He [Mr. Woolsey] called U.S. opposition to the formation of the Asian Infrastructure Investment Bank ‘a strategic mistake,’ and said that the new administration should warm up to the ‘Belt and Road’ initiative. He expressed hope for a new agreement between the two sides.”

The daily also carried an article by Nicholas Rosellini, the China head of the United Nations Development Programme (UNDP), extolling the OBOR’s potential to positively change the international landscape.

Mr. Rosellini highlighted that the “ambitious ‘Belt and Road’ Initiative, potentially the world’s largest economic corridor, is part of a new trend and an innovative contribution to global governance. It represents an opportunity to build a shared vision for common prosperity through regional cooperation, and could act as an accelerator for achieving the Sustainable Development Goals (SDGs).”

Mr. Rosellini also said that the Chinese initiative covers a vast population of 4.4 billion and an economic output of \$21 trillion in more than 70 countries in the Asia and the Pacific, Europe and Africa... The majority of them are emerging and developing countries. Through connectivity, it “aims to foster trade, financial integration, and people-to-people bonds, while promoting inclusiveness and win-win cooperation — hence reshaping the landscape of international cooperation.”



*Wed, 16 Nov, 2016*

## **What CPEC Means For South Asia**

*By Ashok Malik*

*It fundamentally alters Pakistan's alignment, sundering its link to the subcontinent*

Why is the China Pakistan Economic Corridor such a challenge to India? Conventional wisdom has it that India is worried about CPEC at its two ends: Gwadar, where the Chinese are building a maritime presence, and Pakistan-occupied segments of the former kingdom of Jammu & Kashmir, where Pakistani and Chinese territorial and military frontiers are merging.

However, there is a deeper issue, one that has hitherto underpinned India's long-term Pakistan strategy . The very fundamentals of that strategy are now under question. Indeed, CPEC is rewriting the economic geography and regional integrity of the subcontinent in a manner that will require more than a tactical, episodic response.

Historically and across the world, trade routes have tended to flow from north to south. There have been exceptions, such as when Britain northern Europe became an economic power and a significant consumer of commodities, and trade routes moved south to north. Yet, for the most part that trajectory has been maintained.

This is no coincidence. Most of the world's people live in the northern hemisphere and trade has tended to seek a route to the sea (to the south) to explore new markets. So it has been in the Indian subcontinent too, for centuries and millennia. Trade routes came down from Central Asia to modern Pakistan, into contemporary northern India, before finding their way to peninsular India.

Partition interrupted this perennial free trade zone (before we knew what the expression meant). Economically this hurt India, especially north India, and cut it off from markets such as Afghanistan. It hurt Pakistan even more and left it trapped and locked out of its natural trading hinterland. More than the political act of Partition a fact of history nobody seriously wants to change it was the trade walls that came up on the Radcliffe Line that negatively affected the destiny of the subcontinent. As India opened up its economy in 1991, this absence

of sufficient economic osmosis with its neighbours emerged as a paradox. Every prime minister since then, irrespective of party and whatever his individual instincts and political beliefs, came to accept that as India's economy grew, Pakistan would be compelled by business and commercial logic to engage with India.

This could be a product of enlightenment or self-interest, internal pressure or global currents: but it would happen. It would make Pakistan, depending on where it was placed, India's Canada or India's Mexico. The persuasiveness of the north-south trade route could not be rejected forever.

CPEC alters that supposition. It replaces Pakistan's dependence on a north-south trade corridor with its bet on an east-west corridor, from Kashgar (Xinjiang province) to Gwadar. This trade route is fairly unprecedented and is an expression of a new economic and strategic geography that China wants to define.

Admittedly CPEC is not quite the “corridor of opportunities” that its advocates contend. Many of its projects are financially unviable. The power plants it is building will require tariffs that are unsustainable for most Pakistanis. CPEC follows a familiar pattern of Chinese investments in South Asian countries including for instance Hambantota port, the white elephant Sri Lanka has been saddled with.

In this model much of Chinese “investment” is actually a loan that the host nation has to repay. The bulk of Chinese money goes not to locals but is transferred from a state-owned Chinese bank or credit institution to a state-run or state-associated Chinese infrastructure company that executes the project using Chinese workers. Project costs are gold plated to account for both bribes for local elites (generals in Rawalpindi or politicians in Punjab and Balochistan) as well as to ensure windfall gains for the Chinese.

By all accounts, CPEC is going down this path as well. Having said that, its strategic importance for China is greater than usual. This is because of the access it allows western China to the Indian Ocean, as an alternative to the Straits of Malacca. It also gives China a presence and for all purposes a colony that will allow it room for immediate military and political influence in India's neighbourhood and in West Asia.

Whether CPEC's power plants eventually light up homes in rural Punjab or not, the fact is Pakistan's political and military elite has willingly signed on to this Chinese strategic blueprint. As in the case of another superpower in the past, it has happily sacrificed its country's realisable, long-term interests for personal benefit and in the service of an external benefactor.

By embracing the east-west corridor (CPEC) Pakistan is not just abandoning its obvious north-south trade alignment but in effect turning its back on the subcontinent and on South Asia. It sees itself as culturally in West Asia and strategically as located within the Chinese politico-economic zone. This means that irrespective of how quickly or impressively India's economy may expand in the coming decades, Pakistan is not interested in a linkage let alone integration. New Delhi's assumption that this was a longterm inevitability no longer holds.

How does India respond? It can wage a political and diplomatic battle to make CPEC un-implementable. This is possible but not probable. A harder school in the Indian establishment believes that if the subcontinent is no more the unit of reckoning for Pakistan, then India's interest in recognising and preserving shared tangible legacies, including natural and water resources, should correspondingly decline. Expect more on that in the coming days. *The writer is Distinguished Fellow, Observer Research Foundation*

## THE ASIAN AGE

Wed, 16 Nov, 2016

### **New report warns of arms race in Asia**

*Despite the major diplomatic capital invested by Obama in reaching out to Asia in the past eight years, his so-called ‘pivot’ policy has yielded only modest gains in countering the rise of China.*

Washington: The U.S. approach to Asia faces a major overhaul when Donald Trump takes office, but what will take its place? A new report warns of a leadership vacuum and even a nuclear arms race if the U.S. withdraws from a region threatened by a provocative North Korea.

But authors of the Asia Foundation report provided to the Associated Press ahead of its publication Tuesday also say in some parts of the region there's hope that a shift from President Barack Obama's signature foreign policy could be for the good.

Despite the major diplomatic capital invested by Obama in reaching out to Asia in the past eight years, his so-called "pivot" policy has yielded only modest gains in countering the rise of an assertive China. There's been a slight increase in the U.S. military presence in the region; a political opening in former pariah state Myanmar; and better relations with old enemy Vietnam.

The main economic plank of his policy - the Trans-Pacific Partnership - is in ruins. Trump's election victory has erased chances of early U.S. ratification of the 12-nation trade pact.

Determining what else of Trump's populist campaign rhetoric translates into action remains a guessing game - one with high stakes for Asia.

Trump has raised the specter of withdrawing U.S. forces from South Korea and Japan unless they share more of the burden of hosting the 80,000 troops - even as neighboring North Korea has conducted nuclear and missile tests with unprecedented intensity.

The Asia Foundation report, based on consultations among academics and former officials from 20 Asian nations, warns that withdrawing U.S. forces could compel Tokyo and Seoul to seek their own nuclear deterrents - rather than rely on America's - which in turn would "trigger massive destabilization regional order."

"A precipitous reduction of engagement in Asia would be detrimental to the interests of most Asian countries as well as the United States," the report says. Trump has taken some early steps to allay those fears. He quickly reassured the leaders of Australia, Japan and South Korea of his commitment to U.S. alliances. On Thursday, Trump will meet in New York with Japan's Prime Minister Shinzo Abe who is traveling to a summit of AsiaPacific leaders in Peru. Japan's archrival, China, views a Trump presidency with less trepidation. It has viewed the pivot as a U.S. attempt to contain China's rise as a military and economic power. But Beijing is wary of Trump's threat to impose hefty import tariffs over alleged trade and currency violations, amid fears it could stoke a trade war. President Xi Jinping Monday called Trump and told him that cooperation was needed between the world's two biggest economies.

Thitinan Pongsudhirak, a Thai academic and one of three co-authors of the report, said that despite the uncertainty over Trump's lack of government experience, he has something in his favor - a clean slate.

Thitinan said that's a plus in Southeast Asia, where current US policy has failed to live up to its billing and where criticism on human rights has turned off old allies like the Philippines and Thailand. "Southeast of the Asian nations don't want to be dominated by China, they don't want to put all their eggs in the China basket, but they've had to because the pivot and rebalance were shallow and ultimately hollow," he said. Indian academic C. Raja Mohan said Trump has in his own chaotic way opened a constructive debate about how Asian nations might take a more active role to cope with the rise of China with less dependence on America.

"Unlike the European liberals' reaction in the last few days, Asians are going to accommodate rather than object," Mohan said. "We have to deal with who is in power in Washington." Once Trump fills top positions on foreign policy and defense, his intentions on Asia should become clearer. A recent commentary by two Trump advisers may offer clues.

Former Republican congressional aide Alexander Gray and University of California economist Peter Navarro said Trump "remains committed to its traditional role as guarantor of the liberal order in Asia." But add: "It's only fair — and long past time — for each country to step up to the full cost-sharing plate." South Korea currently pays about \$860 million a year - about 50 percent of non-personnel costs of the U.S. military deployment on its soil and is paying \$9.7 billion more for relocating U.S. military bases.

Japan pays about \$2 billion a year, about half of the cost of the stationing U.S. forces. — AP

## **Trump, Putin to work together**

*Talk of equality, mutual respect and non-interference in domestic affairs*

### **No meeting between two before Prez-elect assumes office**

- *Russian President Vladimir Putin and US President-elect Donald Trump are not due to meet before Trump assumes office on January 20, 2017, the Kremlin said on Tuesday*
- *They spoke by phone on Monday and agreed to work together towards “constructive cooperation” on fighting terror. Trump had spoken of wanting to meet Putin*

### **Giuliani likely to be Secretary of State**

- *US President-elect Donald Trump is in final stages of giving shape to his Cabinet and announcements in this regard could be made anytime this week, his aides have indicated*
- *Former New York City Mayor Rudy Giuliani has emerged as a leading candidate to be US Secretary of State for President-elect Donald Trump, a source familiar with the situation said*

Washington/Moscow - US President-elect Donald Trump and Russian President Vladimir Putin today spoke over phone for the first time and agreed on the need to normalise the "extremely unsatisfactory state" of bilateral ties and combat the threat posed by terrorism.

Putin "called to offer his congratulations on winning a historic election," according to a Trump statement. The two leaders discussed issues including shared threats, strategic economic issues and the historical US-Russia relationship. The Russian President was one of the first world leaders to congratulate Trump last Wednesday, sending him a telegram about an hour after he had emerged the victor, but the two have not met nor had they spoken previously.

"President-elect Trump told President Putin that he is very much looking forward to having a strong and enduring relationship with Russia and the people of Russia," the statement by Trump's transition team said. According to the Kremlin, Trump and Putin agreed on "the extremely unsatisfactory" state of relations between the two countries and "declared the need for active joint work to normalise them."

They both said they would work to "bring them (bilateral ties) to the framework of constructive cooperation. Citing Putin, the Kremlin statement said this new relationship would be based "on the principles of equality, mutual respect and respective non-involvement in the other party's domestic affairs." — PTI

## **NATO ‘absolutely vital’ for US security: Obama**

Athens - A strong and unified Europe is “good” for the United States and NATO is “absolutely vital” for US security and prosperity, US President Barack Obama said today as he launched his final European trip.

“We believe a strong, prosperous and unified Europe is not only good for the people of Europe but good for the world, and good for the United States,” Obama told Greek President Prokopis Pavlopoulos in Athens.

He added that the trans-Atlantic relationship is “the cornerstone of our mutual security as well as prosperity.” Obama will seek to calm the nerves of allies concerned by Donald Trump’s shock presidential election victory, especially as the brash Republican has downplayed the importance of the NATO military alliance.

Obama stressed “across Democratic and Republican administrations there is a recognition that the NATO alliance is absolutely vital”. — AFP



*Wed, 16 Nov, 2016*

## **We can see with our ears too**

We become conscious of the environment through our senses — and the principal human senses are vision, touch and sound. Sight reveals colour and great spatial detail while touch makes us aware of heat and texture. Hearing is both an important medium of perception and in many species, the chief means of communication.

James A Traer and Josh H McDermott of the Department of brain and cognitive sciences, Massachusetts Institute of Technology, in their paper published in the journal, *Proceedings of the National Academy of Sciences of the USA*, point out that the signal the ears receive is a mixture of information from many sources and there is considerable distortion and duplication of sound waves before they are heard. The kind of distortion, however, depends on the geometry of the space around us, they say, and their research is about the mechanics of how biological systems are able to segregate sources and assess surroundings.

The principal difference in the way the eyes and ears function is that the eyes need to move and face the source of light but the ears react equally to sound that comes from all directions. The reason, of course, is that light, for practical purposes, travels in straight lines while sound waves, whose wavelength is in metres, passes freely around corners. And then, sound is also efficiently reflected by most surfaces. The result, however, is that the eyes are able to focus on specific objects and create a detailed map of the field of view, which is possible only to some extent for the ears.

Apart from the eyes being provided with lenses that focus objects clearly on the retina, which aids estimate of distance, the fact that we have a pair of eyes enables us to see “in depth” or to make out what objects are near and which ones are further away. An auditory parallel of such “stereoscopic” vision is “stereophonic” sound, where the fact that we have two ears helps us make out where different sounds originate from, so long as we hear the sounds directly, and not second hand, by echoes or via loudspeakers. In the case of depth vision, the effect is thanks to the slightly different views that each eye sees, because they are placed a few inches apart, and the brain learning to make use of the perspective.

But in the case of sound, the separate ears receive, from each source, sound waves that are either a little louder or softer, or a little out of phase, which is to say, the stage of wave motion, depending on the distance from the ears. When the sounds are equally loud or in phase, of course, we sense the sound as coming from directly before or behind us. Even such limited judgment, however, is often obscured by the ears receiving sound that has been reflected off other objects or surfaces, which obscures the source and causes “reverberation”.

Reverberation is an effect that can even result in speech being unintelligible because the echo of each word from the walls and roof a large hall runs into the sound of the following word.

The study of the MIT duo was regarding the characteristics of the ever-present reverberation of sounds in places — the ones people usually inhabit and what part of this people can actually discern — which helps them isolate the sources. Based on the experience of reverberation in known places, the study reveals that the brain is able to separate sound into contributions from the source and the environment. That helps recognition of sounds and also provides information about the surroundings.

In the case of bat or dolphins, the use of sound is much more effective and the animals’ ears are the chief organ of navigation. The difference in these cases is that what the animals listen to are not sounds created by objects in the surroundings, but the distinct echo of a high pitched “click” that the animal itself generates. There would, of course, be an element of secondary echoes in the return sound that is heard, and this may contribute to enhancing the information received, in the manner that the MIT researchers have discovered in the case of human subjects of their study.

The first step in the study conducted was to see if there were statistical regularities in the reverberation space of the normal aural environment of people. If there was such a “normal” pattern, this may explain the observation that the brain is able to filter out the distortion caused by reverberation and purify the meaningful signal. The study therefore first identified places, which could be objectively considered a “normal” environment by tracking a group of volunteers with the help of random text messages 24 times a day for two weeks. The volunteers were required to respond by stating the place where they were when they received the message, and this generated a starting list of 301 locations, in the Boston metropolitan area — in 271 of them it was possible to conduct further study.

Trials at each of the 271 places resulted in data of the nature of sound energy received by a listener at these places, particularly the timing and amplitude of the echoes and the falling off of the loudness, as the sound died out. The result of the trials, the study says, was to find that there was a common feature of the way the later part of the sound decayed. This finding — that the reverberation that arises when sounds are generated in places which people frequent — has common characteristics, leads to the possibility that the brain, with experience, learns these patterns and can then devise a way to filter the distortion out.

The next part of the experiments was to play these sounds, and also synthetic sounds that had the same characteristics or had been modified, to human listeners, to see if they could make out the changes in the nature of reverberation. The result, the study says, was that the subjects were able to consistently identify the cases where the patterns were different from the normal. Next, the experimenters tested whether listeners could identify the part of the sound that came from the original source. Here again, the subjects gave statistically significant correct answers when the source sound was accompanied by a “natural” synthetic reverberation but not when the reverberation added was different from normal.

The study thus shows that the auditory system has a working method of using past experience to filter out the distortion caused by reflections from surroundings, which the listener is familiar with. This helps to both identify the source of the sound and also gives her an idea of “normal” surroundings, when the nature of distortion by echoes is like what is normally experienced. The ability, to take experience into account when data is distorted or insufficient, parallels what happens in the visual field too.