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Page 6

## Indo-French ties enduring partnership



## International Fleet Review 2016 rehearsals

PAGE 9



## Ensuring Secure Seas: Indian Maritime Security Strategy

PAGE 13

**FROM THE  
EDITOR'S DESK** 4  
**SECURITY BREACHES** 22

**MILITARY**  
Viewpoint 5, 11, 12  
Updates 13  
Report 16

**AEROSPACE**  
Developments  
Unmanned

18  
20

**PLUS**  
Corporate

21



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Narendra Modi, Hon'ble Prime Minister of India [\*message received in 2014]

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## Naseem Al Bahr 2016 – Visit of Royal Navy of Oman ships

**T**he Indian Navy and the Royal Navy of Oman (RNO) recently conducted a bilateral maritime exercise Naseem-al-Bahr in the Arabian Sea from January 22-27, 2016, off Goa. Naseem Al Bahr epitomises the strong long-term strategic relationship between the two countries initiated in 1993. The exercise has matured over the years with increasing scope, complexity of operations and level of participation. The current exercise was the tenth such exercise.

The primary aim of this exercise was to increase interoperability amongst the two navies and develop common understanding and procedures for maritime security operations.

During the exercise, the Indian Navy was represented by INS Trikand and INS Trishul. In addition, fast attack craft, maritime patrol aircraft and integral helicopters also participated in the bilateral exercise. The



Omani Navy was represented by RNOV Al Shamikh, a corvette and RNOV Al Seeb, a fast attack craft. The RNO ships arrived in the morning on January 22 and are also scheduled to participate in the International Fleet Review 2016 being held at Visakhapatnam.

The exercise progressed in two phases— the Harbour Phase at Goa and the Sea Phase off Goa. The Harbour Phase included a variety of professional interactions, courtesy calls, social and sporting interactions and planning conference. During the Sea Phase, various facets of fleet operations including navigation and seamanship evolutions, surface firing, force protection and anti-piracy exercises as well as flying operations were conducted. The exercise is aimed at deriving mutual benefit from each other's experiences and sharing best practices. The interoperability achieved over the years as a result of such exercises has proved to be operationally beneficial to both. The exercise was another milestone in strengthening maritime security cooperation between the two navies. **SP**



### Cover:

France has had the maximum distinction of its leaders being guest of honour at India's Republic Day parade and this time it was the French President François Hollande. Though the much anticipated signing of deal for the 36 Rafale aircraft did not happen, 15 other agreements were signed.

Cover images: PIB, Indian Navy

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## The French connection

**I**ndia and France have had more than cordial relations for many many years now and it is continuing to strengthen at different levels—cultural, education, climate, industrial, defence and so on. France has had the maximum distinction of its leaders being guests of honour at India's Republic Day parade and this time it was the French President François Hollande. Though the much anticipated signing of deal for the 36 Rafale aircraft did not happen, 15 other agreements were signed which will trigger off activities in both countries at different levels.

The French President was quite vocal on the strategic partnership and mentioned how the countries are willing to work in the same direction in the areas of security and climate change. In the aftermath of the Paris terror strikes, France is keen on intensifying exchanges, participate in inter-service cooperation and act to reinforce military equipment. President Hollande had clearly outlined that this would be part of the trip's agenda.

Also occupying centre-stage during the visit was the topic of climate justice and the President has assured that France will translate into action to implement the Paris Agreement as swiftly as possible by launching the Solar Alliance here which will help French companies to be in the vanguard of providing equipment for solar energy, energy efficiency and energy storage.

There is so much happening in India around this time with many global players looking at India's surge. One more feather in its cap is the International Fleet Review which is to get underway at Visakhapatnam. The International Fleet Review has attracted over 50 navies of the world, including the United States, China, Japan, Gulf countries and other littoral states of the Indian Ocean.

In line with engaging nations, multinational companies and other defence entities, the Defence Acquisition Council (DAC) has cleared new clauses to the proposed Defence Procurement Policy (DPP) and the most important takeaway is the increase in offset baseline from ₹300 crore to ₹2,000 crore and reducing delays in procurements. It has also created a new category of indigenously

designed developed and manufactured (IDDM), all welcome steps in the reforms process.

Russia is another great ally of India. In the recent past India has inked deals worth billions of dollars with Russia. The big deals include the \$12-billion deal for 272 Sukhoi-30MKI fighters, aircraft carrier INS Vikramaditya plus 45 MiG-29Ks. The DAC has also approved acquisition of five S-400 Triumf air defence missile systems at a cost of ₹39,000 crore. Indeed there is a lot of activity that is happening, thanks to the vision of the present government.

Despite the bonhomie, India has to tactfully negotiate with its neighbours both Pakistan and China, sometimes belligerent. The latter is making disturbing strides in its nuclear capabilities, the latest being conducting the sixth flight test of its new high-speed nuclear attack vehicle, capable of global strikes. We have an analysis of this development by Lt General P.C. Katoch (Retd). Further, in another viewpoint he underscores the urgency of tightening our borders, ensuring that there is no cross-border movement of extremist elements.

We have other regular features in this issue and we wish you happy reading !

**Jayant Baranwal**  
Publisher & Editor-in-Chief





LT GENERAL  
P.C. KATOCH (RETD)

# DPP 2016 – Big changes, big expectations

*The most important takeaway of the new Defence Procurement Policy is the increase in the offset baseline from ₹300 crore to ₹2,000 crore, besides the focus on reducing delays in procurements*

**W**ith the Defence Acquisition Council (DAC) clearing new clauses to the proposed Defence Procurement Policy (DPP) on January 12, Defence Minister Manohar Parrikar has stressed the new DPP will ensure that the modernisation of defence forces remains unaffected due to procedural intricacies.

While the most important takeaway of the new DPP is increase in the offset baseline from ₹300 crore to ₹2,000 crore, the DPP focuses on: reducing delays in procurements by eliminating repetitive procedures; new clauses allowing procurements in through single vendor with proper justification; government readiness to pay 10 per cent extra for products better than others; new category of Indigenously Designed Developed and Manufactured (IDDM) as the most preferred category for procurements, and; the three services to each have dedicated 'Project Management Units' headed by two-star general rank officers driving all 'Make' projects relating to respective service.

'Make' procedure will be divided in three sub-categories. Make I will involve 90 per cent funding of development cost by government; in Make II government will refund 100 per cent development cost in case the request for proposal (RFP) is not issued within two years of development of prototype; and Make III reserved for small and medium scale enterprises for projects worth less than ₹3 crore. The DAC's decision will need ratification from the Cabinet Committee on Security (CCS).

DPP 2016 will also be laying down benchmarks for selection of private strategic partners from among Indian or foreign firms. In future, vendors offering IDDM products will be preferred to vendors offering equipment designed abroad. This is a big change since focus so far was on licensed manufacture rather than higher-tech realm of designing and developing Indian weaponry. The current procurement policy (DPP 2013) only promotes manufacture in India. It gives top priority to the 'Buy (Indian)' category; followed by 'Buy and Make (Indian)' and 'Make' categories, which mandate high levels of indigenisation. Lower priority was given to 'Buy (Global)' and 'Buy and Make' categories, which allow a greater role to foreign production. The new DPP will explicitly boost Indian design and development. As per the Ministry of Defence (MoD), "This category will be the most preferred acquisition category, above the existing 'Buy (Indian)' category".

Besides being designed and developed in India, at least 40 per cent of a product must be manufactured in India for it to qualify for the IDDM category. In addition to indigenously designed kit, equipment containing 60 per cent or more of indigenous content will also make it to the highest procurement priority. The domestic compa-

nies eligible under this will have majority Indian control and operated by Indian nationals. In addition to building a technology base in the country, the government through the Department of Defence Production will fund private R&D for which various norms have been stipulated, as mentioned above.

Implementation of DPP 2016 will take another two months or so. The new category of IDDM undoubtedly is ingenious and can be a game changer catapulting India into the take-off destination for cutting-edge innovation with far-reaching effects. It also implies that India's defence exports could soar exponentially. But as they say, the proof of the pudding lies in its eating. So, the private industry while welcoming announcements made so far, would like to wait and see the manner in which this is implemented since any loopholes could be used to the disadvantage of some, rather than ensuring a level playing field. For example, private industry innovators wonder how accurately it would be possible to ascertain where a particular product has been designed; whether designed indigenously or abroad. Depending on the scale of the project and the money involved, a product could be claimed as designed in India, which may not be the case. Besides, if a product is designed in multiple countries including India how will such situation be tackled? Unless all such issues are addressed, it could lead to a cycle of corruption, allegations and counter allegations.

The bottom line is that DPP 2016 sure is imaginative and with far-reaching changes, including first-time emphasis on IDDM to boost the 'Make' programme in which the government subsidises equipment development and provides encouragement to small-scale industry. At the same time, it must be realised that considering the present state of our R&D, the time required to reach the category of IDDM, production and fielding of weapons and military products into our armed forces will take considerable number of years, especially when our needs cover the entire range not just random products like helicopters, aircraft, ships, etc. We would be making a grave error in ignoring this fact especially considering the threats that are mounting around us. So it is not only the speedy implementation of DPP 2016 in the right spirit but also addressing critical voids of the armed forces in the interim period. Above all, if there is no national security strategy enunciated with no national security objectives defined despite the fast changing dynamics of geopolitics. Does MoD expect the armed forces to continue working out their long-term requirements in thin air? **SP**

*The views expressed herein are the personal views of the author.*

# Historic visit of French President François Hollande

*President François Hollande's visit is the fifth such by a French leader to have been honoured as the Chief Guest at the Republic Day, highlighting the expanding areas of cooperation and convergence between the two countries*



President of India Pranab Mukherjee and Prime Minister Narendra Modi with President of France François Hollande who was Chief Guest at the 67th Republic Day parade 2016 in New Delhi

**"I am happy that trust is there; trust from India in French industry, defence trust from France in India because we are in the 'Make in India', and I subscribe to this vision."  
— François Hollande**

[ By R. Chandrakanth ]

**F**rench President François Hollande wrapped up a three-day visit to India on January 26 by being the guest of honour at the Republic Day celebrations. He witnessed the elaborate display of Indian military hardware and India's rich cultural diversity at the celebrations. He was joined by the Prime Minister Narendra Modi.

A day prior to that the two countries signed about 15 agreements including one on jointly combating terror. However, the much anticipated deal for purchase of 36 Dassault's Rafale jets did not happen, but it is hoped that the final agreement would be signed soon, headway having been made.

India and France have had good relations and the latter is the only country which has been given exceptional status. More than any other country, France has had continuous ties with India and the

presence of French leaders at the Republic Day celebrations have been significant. President Hollande's visit is the fifth such by a French leader to have been honoured as the chief guest at the Republic Day, highlighting the expanding areas of cooperation and convergence between the two countries.

India has been engaging with many countries at different levels but with France it has always been a special one. The then President Jacques Chirac had a long-standing interest in India and undertook three visits to India, in 1976, 1998 and 2006, the only leader to have been chief guest at the Republic Day twice, first as Prime Minister in 1976 and then as President in 1998.

On his arrival in Chandigarh, President Hollande said: "Ladies and gentlemen, this is my second trip to India since the beginning of my presidential mandate. Today it has a special significance as I am invited for Republic Day, celebrating the Constitution of India. There is even a military parade bringing together the French and the Indian armies. This is the best symbol that can be given to the relations between France and India".

## Strategic Partnership on Security

The French president added: "Since many months, beyond the strategic partnership that we have forged since many years, there is the will of France and India to work in the same direction. I will name two: first, security, because we are concerned by regional crises, and also terrorism.

"Both our countries have been struck. Thus, we will together further intensify our exchanges, participate in inter-service cooperation and act to reinforce our military equipment. This is, in fact, part of this trip's agenda.

"But there is a second subject that comes immediately after the success of the COP21 in Paris in December, at which Prime Minis-

ter Modi had played a very important role and enabled, through his initiatives and concepts that he had formulated, i.e. 'climate justice', to reach this result".

## Solar Alliance in India?

"We will therefore translate into action our common will to implement the Paris Agreement as swiftly as possible by launching the Solar Alliance here, that is a great epic, a great adventure, where our companies—which are present in great numbers here—will be welcomed in India to be in the forefront, and also to be, I hope, in the vanguard of all these equipment that we need to provide for solar energy, energy efficiency, energy storage", said Hollande.

At the joint media briefing, the President said: "France and India are conscious of the threats that peace faces at this moment, especially terrorism, because both our two countries were victims of terror during the recent months. I thank Prime Minister Modi and the Indian people for the support that they gave us during this hardship, last January as well as in November last year. France will never forget these gestures of friendship coming from all over the world, especially from India, which was struck by terrorist attacks of which French citizens were victims.

"We know who has struck us. It is Daesh, which later claimed its crimes, which exhibits the perpetrators of its crimes, of its murders, which broadcasts images of atrocities. I affirm it here, we will never be terror-stricken and those abhorrent provocations amplify our resolution even more. They amplify the resolution I have taken to protect the French through the decisions I took and uphold. But also to strike, strike again at this organisation that threatens us and kills our children.

"It is the reason why we have decided, Prime Minister Modi and myself, to intensify our cooperation against terrorism, to reinforce the exchange of intelligence, to fight even more against the traffics that fuel terrorism. We have even decided a road map to fight against

Prime Minister Modi and President of France Hollande at the joint press statement at Hyderabad House in New Delhi







The French Army contingent marching through the Rajpath at the 67th Republic Day parade 2016 in New Delhi

all trafficking, especially in the Indian Ocean, and to ensure maritime security. We have also established, in the field of cyber security, instruments that will strengthen our systems of defence”.

## Rafale Deal

On the much awaited Rafael deal, the French President said: “We have just signed an inter-governmental agreement through our Defence Ministers. It is a decisive step for India to purchase those aircraft and for France to deliver them to such a great country as India. I am delighted. Financial aspects remain and will be solved in the next few days; but the essential part has been done today. In April it was a declaration, today it is an agreement between our two governments and between our two countries. I am happy that trust is there; trust from India in French industry, defence, trust from France in India because we are in the ‘Make in India’, and I subscribe to this vision.

“I am also here, as the Prime Minister said, to implement the commitments we took during the Paris climate conference. As I said, cooperation between France and India was decisive, because India chose to set a high level of ambition to produce 40 per cent of its electricity by 2030 from renewable energies. So France must stand alongside India.

“Thus, we decided on an exceptional cooperation, first in favour of smart cities. Yesterday we were in Chandigarh, a historic city, a city where France and India have already cooperated. Then, through this example, but also in other cities, Nagpur and Puducherry (there are 100 in the Prime Minister’s programme), we will put our expertise, our capacities, the capacities of our companies, to service of this beautiful idea of smart cities.

“They have all understood that if they want to develop here in India, they need to transfer technologies, they need to work in the spirit of ‘Make in India’. There are 1,000 French companies present in India. There are investments that will not stop increasing, in all areas. I wouldn’t want you to talk only about defence, because there are so many other areas involved, even if it is true that Rafale is a symbol.

“We have also developed cooperation on space. It is an area in which India and France have worked for 50 years. Civil nuclear energy, too. Is there a better example of trust than the technology we share on civil nuclear energy?

“There too there has been considerable progress. We are in the prospect of building 6 EPR in Jaitapur. We have good hope to be able to conclude in one year.”

Thus the President of France and the Prime Minister of India agreed to intensify cooperation between the Indian and French security forces in the fields of homeland security, cyber security, Special Forces and intelligence-sharing to fight against criminal networks and tackle the common threat of terrorism. They looked forward to early conclusion of an Agreement on Prevention of Consumption of Illicit Drugs and Psychotropic Substances between the two countries and expressed hope that cooperation in this field will also lead to the disruption of terrorist financing structures.

The leaders noted with satisfaction that the bilateral Agreement on Defence Cooperation concluded in 2006 has advanced cooperation in defence cooperation, production, research and development and procurement of defence material. The two sides agreed that the Agreement on Defence Cooperation will be extended for another 10 years. **SP**

**President of France and the Prime Minister of India agreed to intensify cooperation between the Indian and French security forces in the fields of homeland security, cyber security, Special Forces and intelligence-sharing to fight against criminal networks and tackle the common threat of terrorism**



# IFR 2016 rehearsal

*A Naval Fleet Review is a long-standing tradition of navies world over. The review was conceived as a show of naval might and combat readiness. The review aims at assuring the country, of the Indian Navy's preparedness, high morale and discipline. Assembling of warships without any belligerent intentions is now the norm in modern times. Leading nations of the world, occasionally invite their maritime neighbours, to participate with their ships in the review. Normally called 'International Fleet Review,' (IFR) the event then allows the host nation an occasion to display its maritime capabilities and mutual trust amongst maritime nations. In our country, thus far, ten reviews have been held, with the first in 1953 and the latest in 2011. The only IFR in India was conducted in February 2001, off Mumbai. Second edition of IFR is scheduled to be held at Visakhapatnam from February 4 to 8, 2016. The review will have more than 50 navies of the world, including the United States, China, Japan, Gulf countries and other littoral states of the Indian Ocean.*



Top (L-R): INS Vikramaditya on sail; INS Viraat sails for IFR 2016 with 6 Sea Harriers, 6 Sea Kings and 4 Chetaks embarked on the ship.  
Middle (L-R): Illuminated silhouettes of the Indian Navy ships.  
Above (L-R): Indian Navy P-8I flanked by fighters. 'Mission Assigned Mission Accomplished' is the motto of INAS 312.



Top (L-R): In the 29th year of service with Indian Navy, INS Viraat has served the Indian Navy and Royal Navy for 56 years; This is how the Review Column (ships having the President, Prime Minister and other dignitaries) shall look on the D-Day.  
 Middle (L-R): An aerial view of INS Viraat with her deck full of fighters and Seaking 42B ASW helicopters; A closer look of the Presidential Yacht.  
 Above (L-R): Various manoeuvres are part of rehearsals in the port city, IFR 2016 will also have a parade of sails during the review.



LT GENERAL  
P.C. KATOCH (RETD)

# S-400 Triumph for India's air defence

*India has cleared the acquisition of five S-400 Triumph air defence missile systems at a cost of ₹39,000 crore. The challenge now is how soon the deal can be inked, the systems inducted and integration into our air defence matrix.*

**J**ust before the December 2015 Moscow summit between Prime Minister Narendra Modi and Russian President Vladimir Putin, the Defence Acquisition Council (DAC) approved acquisition of five S-400 Triumph air defence missile systems from Russia at a cost of ₹39,000 crore. The DAC approval, however, is just an acceptance of necessity (AoN) to be followed up through formal negotiations on the government-to-government deal with the Russians.

Referred as SA-21 Growler by NATO, the S-400 Triumph can destroy incoming hostile aircraft, stealth fighters, missiles and drones at ranges of up to 400 km with a tracking range of 600 km and the ability to hit targets at a blistering speed of 17,000 km an hour – faster than any existing aircraft. The S-400 was developed to defend Russian air space and a few hundred kms further against missiles and aircraft of all types, including stealth. Because it is a highly potent and accurate weapon that can tip the balance of power in any war theatre, Moscow has long resisted the temptation of exporting even its older iteration, the S-300. When the S-400 deal is actually signed, it will among the largest-ever deals with Russia.

The other big deals inked with Russia include the over \$12 billion deal for 272 Sukhoi-30MKI fighters, aircraft carrier INS Vikramaditya costing \$2.33 billion plus 45 MiG-29Ks at a cost of \$2 billion to operate from the deck of INS Vikramaditya.

The S-400 is an anti-aircraft weapon system developed by Russia in the 1990s as an upgrade to the S-300. It has been in service with Russian armed forces since year 2007, completion of the project having been announced in February 2004 and ballistic missile having been intercepted in a test of the upgraded 48N6DM interceptor missile during April of same year. The S-400 Triumph uses three different missiles to cover its entire performance envelope; the very long-range 40N6, long-range 48N6 and medium-range 9M96 missile. The S-400 utilises an active electronically scanned array. Only one system comprising up to eight battalions can control up to 72 launchers, with a maximum of 384 missiles. The missile is fired by a gas system from the launch tube and sent off more than 30 metres into the air before the rocket motor ignites which increases the maximum range, and decreases the minimum.

All missiles are directed explosion warhead, increasing the chances of complete destruction of the target.

In November 2014, China had signed a deal with Russia to acquire six battalions of S-400 at a cost of \$3 billion ostensibly for use against US and its allies in the Western Pacific. According to Paul Giarra, President, Global Strategies and Transformation, the S-400 will have the “effect of turning a defensive system into an offensive system, and extend China’s A2/AD (anti-access/area-denial) umbrella over the territory of American allies and the high seas.” Each S-400 battalion has eight launchers, a control centre, radar and 16 missiles available as reloads.

As per analysts, the S-400 defeats the US F-35 fighters. To counter the missile threat to its carriers, the Americans are relying on the F-35 as a cruise missile killer. More than a trillion dollars have already been spent on this troubled project. Even if the F-35 is able to miraculously overcome its shortcomings, the S-400 upends this strategy. On balance, the \$500 million S-400 missile system is reported to be an effective counter to the brand new F-35 fighter making it almost obsolete despite being a trillion-dollar programme. According to ‘Air Power Australia’, “The S-300P/S-400 family of surface-to-air missile systems is without doubt the most capable SAM system in widespread use in the Asia-Pacific region.” In contrast, Lockheed Martin claims the F-35 has such advanced electronics that it can jam anything directed



S-400 Triumph with launch vehicle

at it but the S-400 won’t be easy to shake off.

According to defence analyst Ivan Oelrich, the S-400 has many features specifically designed to overcome countermeasures and stealth, such as a larger, more powerful radar that is more resistant to jamming, besides it also actually has a set of three missiles of varying range that provide overlapping layers of defence.

As for India, now with the acquisition of the S-400 has been cleared, the challenge is how soon the deal can be inked, the systems inducted and deployed and above all their integration into our air defence matrix. Concurrently the air defence control and reporting system (ADC&RS) must also be speedily deployed. **SP**

*The views expressed herein are the personal views of the author.*





LT GENERAL  
P.C. KATOCH (RETD)

# Chinks in border fencing: But what about facilitators

*The bottom line is that while India should go for the latest technology, it should also eliminate the mafia within its border areas, besides establishing credible deterrence to Pakistan's proxy war*

**T**hat terrorism has become an industry is a widely acknowledged fact but when heavily laced with narcotics it becomes that much more lucrative. However, in the case of what is happening in Punjab, the situation is also linked to a strategic objective of Pakistan's Inter-Services Intelligence (ISI). Special Forces of a friendly country having done joint training in Pakistan had disclosed five years back that ISI had a definitive plan to revive the insurgency in Punjab, and that as a prelude they would flood Punjab with narcotics. Punjab being an affluent state had stonewalled similar ISI move earlier after much violence and should do so now too but the present deluge of drugs into Punjab has created a sinister situation.

As per a National Drug Dependence Treatment Centre (NDDTC), AIIMS 2015 study, in Punjab out of a population of 27.7 million, around 2.3 million people are opioid-dependent, around 8,60,000 people are estimated to be opioid users, and more than 1,23,000 people are heroin-dependent, which is an alarming situation. The largest numbers of addicts are in the 18 to 35 age group. Over ₹7,500 crore worth of drugs is consumed on an annual basis in Punjab. The money spent on heroin abuse is calculated to be a whopping ₹6,500 crore. Businessmen, transport workers, labourers and farmers are consuming drugs, the study found, but college students are taking it in increasing quantities. It is obvious that the recent terrorist strikes in Dinanagar, Gurdaspur and Pathankot were linked to these infiltration-cum-narcotics smuggling routes. But obviously, the narcotics smuggling has been going around for lot many years beyond the last five years.

What is even more surprising is that post the Pathankot terror strike, media reports that "more than 40 vulnerable unfenced stretches along the India-Pakistan border will be covered by laser walls soon". Why were there more than 40 vulnerable points left unaddressed in the first place especially when Pakistan had shifted the cross-border firing from the line of control (LoC) to international border (IB) sector months back? The border along Punjab is not like Jammu and Kashmir where hilly terrain, vagaries of weather and enemy cross-border firing facilitates infiltration and helps terrorists use explosives to make gaps in the fencing or dig holes under the fence.

In November 2014, Home Minister Rajnath Singh had visited one of the border outposts in Gaza and saw the Israeli technology used for border security which includes high-quality long-range day cameras along with night observation systems, third-generation thermal imagers, long-range detection radars, electronic touch and motion sensors on the fence as well as underground sensors to detect any tunneling attempts. The Israeli border fencing along

West Bank, Gaza and Egypt also consists of latticed steel, topped and edged with razor wire, extending at least two metres below ground and in some sections reaching seven metres above the ground. Ditches and observation posts with cameras and antennae will line the route. An electronic pulse runs through the fence, setting off an alarm on contact that allows security guards to locate the exact spot of attempted infiltration. A sandy tracking path shows the footprints of infiltrators and the military patrol road gives unhindered access to army units. The Home Minister was told that in certain "dark areas" where fencing was not possible, like on India-Pakistan border as well, Israel had used small UAVs for security coverage.

The US has adopted the Israeli system consisting of seismic sensors, Elbit's Hemes (UAV) ground surveillance radars, etc. The Israel Defense Forces (IDF) use the ELM -2112 family of surveillance radars featuring four stationary antennas, each covering a 90-degree sector enabling persistent surveillance and a wide horizon visual and sound track. These radars can detect individuals within a 20-km range and vehicles within 40 km, and present an integrated picture when multiple radars are combined into a single system. Oversight is ensured through alarm alerts, drone surveillance, etc.

As far as adopting the Israel type border fencing, we also must doubly ensure we do not get surprised like Israel was when multiple tunnels dug by Hamas under the Gaza strip were discovered. Ironically, we have been using the unattended ground sensors (UGS) imported from Israel in J&K even though they are not meant for snow condition and our Defence Research and Development Organisation (DRDO) has not been able to develop a substitute despite so many years. However, no matter what technology we finally adopt, the human factor of narco-terrorism will remain supreme. As discussed above, narcotics coming into Punjab are huge money and while some security forces on the border for sure would be part of the mafia, involvement of politicians at whatever level can hardly be ruled out. Media reports of narcotics being pushed across PVC pipes through the border fencing indicates there is an institutionalised setup. Therefore, arrest of one or two ex cops and ongoing investigations with respect of Gurdaspur Superintendent of Police Salwinder Singh amounts to only scratching the surface of the problem, especially with ISI highly focused on its nefarious objectives to destabilise India including Punjab.

The bottom line is that while we go for the latest technology, we must also eliminate the mafia own side of the border, in addition to establishing credible deterrence to Pakistan's proxy war. **SP**

*The views expressed herein are the personal views of the author.*



# Ensuring Secure Seas: Indian Maritime Security Strategy

*On October 26, 2015, the Indian Navy released its latest maritime strategy, titled “Ensuring Secure Seas: Indian Maritime Security Strategy.” This edition is a revised and updated version of the previous outlined strategy “Freedom to Use the Seas: India’s Maritime Military Strategy,” published in 2007. The 2015 maritime security strategy addresses the evolving security dynamics in the Indian Ocean region and reflects a bold Indian Navy with a renewed outlook on India’s maritime security needs. In his foreword, Chief of the Naval Staff Admiral R.K. Dhowan, explains how the seas will remain a key enabler in India’s global resurgence.*

India’s quintessential maritime character and vital geostrategic location are twin factors that have defined her growth as a nation and evolution as a cosmopolitan civilisation. Her prominent peninsular orientation and flanking island chains overlook strategic sea lanes in the Indian Ocean, linking her security and prosperity inextricably to the seas. With rugged terrain and high mountain ranges dominating her northern borders, India finds the seas to be the primary means of extending her connectivity and trade links with her neighbourhood and the world at large. Not surprisingly, over 90 per cent by volume and 70 per cent by value of her external trade even today is transacted by sea.

The last decade has witnessed India’s dependence on her maritime environment expanding substantially as her economic, military and technological strength grew, her global interactions widened and her national security imperatives and political interests stretched gradually beyond the Indian Ocean region. There seems little doubt today that the 21st century will be the ‘Century of the Seas’ for India and that the seas will remain a key enabler in her global resurgence.

The Indian Navy today remains the principal manifestation of India’s maritime power and plays a central role in safeguarding and promoting her security and national interests in the maritime domain. The Navy’s roles and responsibilities have also expanded significantly over the years in response to changing socioeconomic and geostrategic circumstances.

These facts and factors were aptly reflected in the Indian Maritime Doctrine, promulgated in 2004 and revised in 2009, and the Freedom to Use the Seas: India’s Maritime Military Strategy, published in 2007. The two publications articulated the Navy’s maritime strategic outlook, defined the parameters of its employment, and provided overarching guidance for its evolution as a combat force. They, however, need periodic review to continue reflecting prevailing circumstances and remaining contemporary and relevant. Such an exercise has become necessary today owing to three significant developments of the past decade that affect India’s maritime security and the role of her Navy.


The first is the sweeping change that the global and regional geostrategic environment has seen during the period. The shift in worldview from a Euro-Atlantic to an Indo-Pacific focus and the repositioning of global economic and military power towards Asia has resulted in significant political, economic and social changes in the Indian Ocean region and impacted India’s maritime environment in tangible ways.

The second is a considerable change that India’s security-cum-threat calculus has seen during the period. In addition to persisting threats and challenges of the ‘traditional’ nature, India’s maritime security environment has become even more complex and unpredictable today with the expansion in scale and presence of a variety of ‘non-traditional’ threats. The 26/11 terrorist attacks in Mumbai in 2008, for instance, demanded a re-evaluation of our security perceptions and devolved to the Navy the responsibility for India’s overall maritime security, including coastal and offshore security. This, in turn, called for a reorientation of our organisation, operating philosophy and force development plans.

The third is a national outlook towards the seas and the maritime domain, and a clearer recognition of maritime security being a vital element of national progress and international engagement. Today, India interacts more actively with littoral states of the Indian Ocean region and employs maritime security engagement as a cornerstone of her regional foreign policy initiatives. There is also wider acknowledgement of the role the Navy can play in strengthening and enhancing maritime security in the region.

These developments have necessitated a revision of the Navy’s 2007 strategy and the promulgation of a follow-on edition. Titled ‘Ensuring Secure Seas: Indian Maritime Security Strategy’, this edition aims to highlight India’s contemporary maritime security considerations and reflect the incontrovertible link between secure seas and India’s resurgence in the 21st century.

This document covers a wide canvas. It seeks to provide readers in the Indian Navy, Indian Coast Guard, other maritime agencies and armed forces, as well as the government and informed public, an insight into the rationale for strengthening India’s maritime security in the coming years. It has been compiled through an iterative and inclusive process, eliciting inputs from the Indian Army, Indian Air Force, Headquarters Integrated Defence Staff, Indian Coast Guard, several defence-related ‘think tanks’, and a large number of acknowledged experts in maritime affairs within and outside the Navy.

The document intends to provide strategic guidance for the growth, development and deployment of the Navy in the coming years, and will need review and retuning as circumstances and conditions change and evolve. I am sanguine that it will provide a useful template to guide the professional perspectives of those in the white uniform, as well as those that are associated with, or interested in, strengthening India’s maritime security in different ways in the 21st century. 

## Coast Guard Day 2016

**T**he Indian Coast Guard (ICG) is celebrated its 39th Anniversary on February 1, 2016. With a modest beginning of just seven ships in 1978 the service has grown into a formidable force with 119 ships, 62 aircraft and 42 stations. By the turn of present decade, the Coast Guard is likely to have an inventory of 150 ships and 100 aircraft.

As the fourth largest Coast Guard in the world the Indian Coast Guard has played a significant role in securing the Indian coasts and enforcing the regulations within the maritime zones of India. True to its motto 'Vayam Rakshamah' meaning We Protect, the service has to its credit of saving 6,929 lives and apprehending 13,000 miscreants since inception. Keeping a hawk's vigil on the Indian Coast, the service has provided a robust and impregnable coastal security mechanism which has led to seizure of contraband worth ₹600 crore since last one year.

In consonance with the government policy of empowering women the ICG has employed lady officers in combat with the successful all women Dornier flight. Soon they will also be inducted in afloat platform that is ACV (Air Cushion Vehicle), for which they are presently undergoing training.

The President, Vice President, Prime Minister and Defence Minister in their message congratulated the Indian Coast Guard on



completion of 39 glorious years of service to nation and appreciated the pivotal role played by the service in ensuring the national interests in the maritime zones.

The traditional CG Reception ceremony held on the eve of Coast Guard Day was graced by the Defence Minister Manohar Parrikar. Senior officials from the Ministry of Defence and other armed forces also graced the occasion. **SP**

## Sri Lankan President visits INS Vikramaditya at Colombo



**M**aithripala Sirisena, the President of Sri Lanka, visited INS Vikramaditya recently. He was received onboard by Rear Admiral Ranveet Singh, NM, Flag Officer Commanding, Western Fleet and Captain Krishna Swaminathan, Commanding Officer of the ship. Y.K. Sinha, High Commissioner of India to Sri Lanka, and Vice Admiral Ravindra C. Wijegunaratne, Commander of the Sri Lanka Navy, were also present. On his arrival onboard, the President was presented a 50-men guard of honour and was received with the playing of Sri Lanka and Indian national anthems by the Indian Navy band. He was then introduced to the ship's officers.

This visit is very significant since it marks many firsts. It was not only the first visit of the President of Sri Lanka to a foreign warship after assuming office in January 2015, but also the first Head of State visit to the Indian Navy's biggest warship and aircraft carrier, INS Vikramaditya. The fact that this visit of the ship to Colombo was the

first ever foreign port being visited by the ship after being inducted into the Indian Navy makes the visit of the President onboard even more remarkable. **SP**

## Beta Version of Integrated Quartermaster Package (IQMP) for the Indian Army released

**T**he Beta Version of Integrated Quartermaster Package (IQMP) was released by the VCOAS, Lt General M.M.S. Rai, on January 28, 2016, as a precursor to the final release of IQMP. As part of ongoing efforts, DGIS with the help of Tata Consultancy Services Ltd, has developed Integrated Quartermaster Package for automating all logistics functions at the unit level.

The full functional Beta Version of IQMP will undergo rigorous exploitation in the test bed units comprising of all arms & services across all the army commands. The final roll out of the IQMP is planned in the Indian Army by mid-2016. **SP**



## Vice Admiral Girish Luthra assumes command of Southern Naval Command



Vice Admiral Girish Luthra exchanging baton with the outgoing Commander-in-Chief Vice Admiral Sunil Lanba

**V**ice Admiral Girish Luthra, AVSM, VSM, took over charge as the Flag Officer Commanding-in-Chief of the Southern Naval Command from Vice Admiral Sunil Lanba, PVSM, AVSM, on January 30, 2016. An impressive ceremonial parade was held at the naval base on the occasion which was followed by the traditional 'Pulling Out' ceremony in which the outgoing Commander-in-Chief, Vice Admiral Sunil Lanba was ceremonially pulled out in a jeep by Flag Officers and Commanding Officers of ships and naval establishments of Kochi, amidst emotional 'Jai-Jai' by the men of Southern Naval Command.

Earlier in the day, Vice Admiral Luthra laid wreath at the War Memorial, prior to assuming command, as a tribute to the thousands of martyrs who had fought for the country. The Flag Officer, a native of Haryana, had arrived in Kochi on January 29, 2016.

In his farewell address Vice Admiral Lanba reminded everyone particularly the personnel under training that it was incumbent upon them to utilise the top class training being accorded to them towards becoming excellent professionals in the service of the country. The parade was witnessed by many senior officers, men and families of Southern Naval Command. SP

## Vice Admiral Sunil Lanba takes over Western Naval Command

**V**ice Admiral Sunil Lanba took over the reins of Western Naval Command (WNC) as the Flag Officer Commanding-in-Chief (FOC-in-C) on January 31, 2016, from Vice Admiral S.P.S. Cheema at a ceremonial parade held at INS Shikra. Later in the day, officers of the Western Naval Command accorded Vice Admiral Cheema a warm send off, with the traditional 'Pulling Out' ceremony. Vice Admiral Cheema retired on January 31, after completing nearly four decades of service to the nation and the Navy.

Calling the personnel on parade as his 'ship mates', Vice Admiral Cheema expressed his gratitude to all personnel of the command for their support and their dedicated efforts in functioning of the command. Recounting his expanse of service he said that he has seen many changes in the Indian Navy in terms of technology, quality of

manpower and resources. He was, however, indeed very glad that the spirit of enthusiasm, ability to face all odds and above all a deep sense of patriotism has not changed among the men in uniform.

Vice Admiral Lanba, a specialist in navigation and direction and an alumnus of the Defence Services Staff College, has very rich operational and staff experience over a career spanning more than three decades. He has served as Navigating Officer of INS Sindhudurg (Corvette) and INS Dunagiri (Frigate). During his illustrious service he commanded four frontline warships namely, INS Kakinada (Minesweeper), INS Himgiri (Frigate), INS Ranvijay and INS Mumbai (Destroyers). He is also an alumnus of the College of Defence Management, Secunderabad, where he also served as the faculty.

He has also held important staff assignments such as Fleet Operations Officer of the Western Fleet and Chief of Staff, Southern and Eastern Naval Commands. He has also been the Flag Officer Sea Training, Flag Officer Commanding Maharashtra and Gujarat Naval Area, Commandant, National Defence College and Vice Chief of Naval Staff. He was Commander-in-Chief of the Southern Naval Command at Kochi, prior to being appointed to head the premier operational command of the Indian Navy.

Vice Admiral Lanba is a recipient of the Param Vishist Seva Medal and the Athi Vishist Seva Medal for distinguished service of an exceptionally high order. SP

## Assam Regiment adjudged best marching contingent on Republic Day parade 2016



**T**he Assam Regiment has been adjudged as the Best Marching Contingent amongst the three Services in the Republic Day parade held on January 26, 2016. The contingent comprising of 149 soldiers from the seven states of North East India, was led by Lieutenant Aditya Bisht. The impressive victory comes in the beginning of the Platinum Jubilee year of the Assam Regiment.

The Assam Regiment was raised on June 15, 1941, and draws its troops from the seven North-eastern states. The regiment's insignia, Unihorned Rhinoceros, reflects toughness, aggressiveness, determination and martial qualities. Raised through the Japanese invasion during World War II in 1941, this gallant regiment has won six Battle Honours and Theatre Honour 'Burma' in the first three years of its raising. The Fifth Battalion of the Regiment also has the unique distinction of being the only infantry battalion to have been awarded Battle Honour in Chhamb sector during the 1971 Indo-Pak war.

Since its raising, the regiment has been awarded seven Battle Honours, three Theatre Honours, nine Chief of the Army Staff Unit Citations, 23 Army Commanders Unit Citations, two United Nations Citations and numerous other gallantry awards. SP





LT GENERAL  
P.C. KATOCH (RETD)

# Hypersonic weapons to missile on rails – China readies for global war

*China is among three nations that are developing hypersonic weapons, along with Russia and the US. It is also building and deploying sophisticated surveillance satellites, aiming to deploy 138 satellites in space by 2030, that would be used for supporting the precision global strike weapons.*

**O**n November 23, 2015, China conducted the sixth flight test of its new high-speed nuclear attack vehicle (DF-ZF) capable of global strikes and obviously designed to defeat US missile defences. The DF-ZF hypersonic glide vehicle was launched atop a ballistic missile fired from the Wuzhai missile test centre in central China's Shanxi province. The vehicle separated from its launcher near the edge of the atmosphere and then glided to an impact range several thousand kilometres away in western China, flying at speeds beyond Mach 5. The DF-ZF is believed to reach speeds of between Mach 5 and Mach 10 per hour.

Current US missile defences are designed to counter non-maneuvring warheads with more easily-tracked ballistic trajectories. China also could use the DF-ZF for conventional-armed rapid global strike capability; equivalent to America's Prompt Global Strike. The US considers hypersonic glide vehicles as new strategic warfare technology and an emerging threat. The fact that the DF-ZF offers both conventional and nuclear options, can keep the adversary guessing when China would use the nuclear, making it even more complicated. The annual report of America's congressional US-China Economic and Security Review Commission released last November stated that China's hypersonic weapons are in the developmental stages and are "progressing rapidly." The glide vehicle could be deployed by 2020, and a separate high-technology ramjet-propelled cruise missile could be deployed by 2025.

China is among three nations that are developing hypersonic weapons, along with Russia and the US. China also is building and deploying sophisticated surveillance satellites, aiming to deploy 138 satellites in space by 2030, that would be used for supporting the precision global strike weapons. Despite multiple US-China institutionalised bilateral dialogues, China has refused to negotiate limits on its strategic weapons and remains highly secretive about all its weapon programmes. More significantly, less than a fortnight of the sixth flight test of the DF-ZF, China conducted the launcher test of a new rail-mobile version of its latest intercontinental ballistic missile (ICBM), the DF-41 (CSS-X-20), on December 5, 2015.

The test involved a 'cold launch' of a DF-41 from a canister with

a gas charge without the engine of the missile being ignited. In a full test, the missile's engine would ignite microseconds after exiting the launch tube. A day earlier on December 4, a DF-41 was flight-tested at the Wuzhai missile test centre. The Chinese rail-mobile ICBM system is reportedly modelled on the Ukrainian-designed RT-23 (SS-24 'Scalpel') rail-mobile solid-fuel ICBM. The test was to establish the tube launch system's compatibility with China's new rail car. The RT-23 first deployed by Russia in 1987 uses an ejection tube to boost the missile from the train car shortly before ignition of its engine. The United States estimates the DF-41 can carry up to ten 150-300 kiloton yield thermonuclear warheads per missile capable of target-

ing entire US. It is solid fuelled, road mobile and has an estimated range of between 12,000 and 15,000 km.

But Chinese missiles aboard trains will be particularly difficult to track. According to Phillip Karber, US defence analyst, "The combination of high-speed mobility, launch cars disguised as civilian passenger trains, tunnel protection and secure reloading of missiles, coupled with multiple warheads, makes the system extremely hard to regulate or verify the number of systems."

China has already built 2,000 km of heavy gauge rail for this system and is likely to have more than 2,73,500 km of such train tracks by 2050. The missile will

likely be deployed sometime between 2018 and 2020 and is likely to be armed with China's deadliest DF-ZF hypersonic glide vehicle (HGV). China has the world's longest high-speed rail network, which is being expanded to other Eurasian countries. China's rail links coming to Nepal, Myanmar and most significantly, the China-Pakistan Economic Corridor (CPEC) all the way to Gwadar and the Persian Gulf need to be taken note of. If the biggest missile can be rail-mobile, so can any other Chinese missiles. And China has more short-range to intermediate-range missiles than the rest of the world combined. China's artilleries, anti-air missiles, tanks, mechanised infantries can also be rail-mobile. Not only is China preparing to speedily transport her forces through high speed rail but her deployment of all types of missiles on rails readies China for conflict in the Indian Ocean, Indo-Pacific and aims at enlarging the threat in being for India. **SP**



DF-ZF hypersonic glide vehicle





AIR MARSHAL  
B.K. PANDEY (RETD)

# Hype vs reality

*Will the Tejas be able to make an impact in the discerning global market where the platform will be subjected to intense scrutiny by aerospace professionals from across the world?*

**T**he light combat aircraft (LCA) Tejas Mk I, pride of the Indian aerospace industry, is participating in the Bahrain International Air Show (BIAS) 2016, the International Air Show being held at the Airbase in Sakhir in Bahrain from January 21 to 23 this year. The two aircraft participating in the airshow are the Limited Series Production 3 (LSP 3) and LSP 4. One of these two aircraft will be carrying out the flying display and the other will be on static display. On standby at Bengaluru will be the SP 1 that was registered on the inventory of the Indian Air Force (IAF) precisely a year ago.

The Tejas has been participating on a regular basis in air displays in the Aero India International Air Show held every two years at the Air Force Station Yelahanka on the northern outskirts of Bengaluru. The LCA Tejas has been on static display at Bahrain in 2014. However, this is the first time that the aircraft will be participating in a flying display beyond the shores of the nation. Apart from the fact that positioning two aircraft at Bahrain along with the required manpower, spares and support equipment, will be a logistical exercise of extreme complexity, it will undoubtedly entail careful planning, herculean effort and heavy expenditure. However, the Indian aerospace industry has twin objectives in its vision to be achieved through showcasing the LCA Tejas Mk I at BIAS 2016. Firstly, its debut at Bahrain will provide it an opportunity to the Indian aerospace industry to transmit a clear message to the global market that it has developed the capability to build a modern combat aircraft. Secondly, through participation in an international airshow, the Indian aerospace industry will be able to explore the potential for markets abroad for the Tejas and hopefully compete with the JF-17 Thunder manufactured by Pakistan Aeronautical Complex that appears to have stolen a march over the Tejas. But will the Tejas be able to make an impact in the discerning global market where the platform will be subjected to intense scrutiny by aerospace professionals from across the world?

It is widely known that it took the Indian aerospace industry more than three decades to hand over the first LCA Tejas Mk I to the IAF. Its history of development is marked by design and performance problems, technical glitches as well as missed deadlines. Initially,

two squadrons of the aircraft were planned to be inducted by 2010. However, the aircraft has just about managed to obtain initial operational clearance (IOC) and that too after the second attempt, the first not being acceptable to the IAF. Induction of the platform into the IAF commenced in the beginning of last year and the IAF placed an initial order for 40 of the IOC II configuration. With the current rate of production of four to six aircraft per year, it would have taken up to a decade for the delivery of 40 aircraft to be completed. Fortunately, the government has sanctioned creation of infrastructure to progressively ramp up production to 16 aircraft per year.

After several procrastinations, the final operational clearance (FOC) is now expected to be obtained by the middle of the current year provided there are no further technical issues. Unfortunately, in May last year there was another setback when the Comptroller and Auditor General of India (CAG) submitted a scathing report to the government that was tabled in the Parliament. The report listed 53 shortcomings in the LCA Tejas Mk I that would severely limit its operational capability. The report by the CAG implied that the platform was not yet suitable for induction into the IAF as an operational asset.

Meanwhile, the IAF is confronted with a serious dilemma as the strength of its combat fleet is dwindling rapidly and attempts at inducting replacements in the numbers required over the last decade or so have failed miserably. There appears to be no option before the IAF but to induct the LCA Tejas in larger numbers. The IAF has been offered a marginally improved version dubbed as the LCA Tejas Mk IA. It is understood that the IAF has opted to enhance the order to 120 including 100 of the LCA Tejas Mk IA version. With the second production line being established, the Indian aerospace major the Hindustan Aeronautics Limited (HAL) hopes to enhance the rate of production to 16 per year.

Unless the projected rate of production of the Tejas Mk IA is enhanced, the aircraft is inducted into the IAF in sizeable numbers and the reputation of the platform is established as a proven and capable operational platform, its debut at BIAS 2016 is not likely to be of much help in the efforts of the Indian aerospace industry to penetrate the global market. **SP**



LCA Tejas at the Bahrain International Air Show

## Russian Helicopters delivers 151 helicopters to India

**R**ussian Helicopters, part of state corporation Rostec, recently delivered the final batch of helicopters to India under a previously signed agreement. India received 151 Mi-17V-5 military transport helicopters produced by JSC Kazan Helicopters through Rosoboronexport.

"India is one of the key markets for Russian helicopter building industry and the largest operator of Russian-made helicopters in the South East Asia. Today, this country uses more than 400 helicopters, which have proved themselves well," said Russian Helicopters CEO Alexander Mikheev. "We produce high-tech multi-role helicopters capable of solving the most difficult tasks anywhere in the world."

The Mi-17V-5 helicopters supplied to India are some of the best technically equipped helicopters of the Mi-8/17 series and gathered the best solutions of previous generations. Every Indian Mi-17V-5 helicopter is fitted with a KNEI-8 avionics suite. The suite has replaced multiple systems indicators with four large multifunctional that are easy to read and reduce the intensity of pilot's workload. This avionics suite also helps to cut down pre-flight inspection time by displaying all systems data and alerting the crew when necessary. Besides, the helicopters supplied to India are equipped with the latest and more powerful engines, which will greatly enhance its payload carriage capability at higher altitudes, characteristic of the Indian landscape.

As recently announced, Russia and India have started to implement a large project aimed to manufacture of no less than 200 light



multi-role Ka-226T helicopters. According to documents signed by the governments of the two countries, no less than 200 of the Ka-226T helicopters and their modifications will be manufactured in India. The agreement also includes maintenance, operation, repairs of helicopters and provision of technical support.

In addition, the Indian Air Force is planning to order another 48 Mi-17V-5 helicopters. These new helicopters will be used for flights over various landscapes, in deserts as well as in mountainous regions. SP

## Egypt gets three more Rafale fighter jets



**E**gyptian Air Force (EAF) received three Dassault Aviation-built Rafale fighter jets from France recently. This is the second batch of the jets to be dispatched as part of a \$5-billion deal signed last year.

The first three jets arrived in Egypt in July 2015 as part of the deal, which consists of 24 Rafale jets and a FREMM (Frégate Européenne Multi-Missions) multi-purpose frigate. The FREMM frigate, the Tahya Misr, was delivered in June 2015.

"This deal allows the Egyptian naval and air forces to achieve a special step in its ability to fulfill its missions in supporting efforts to achieve safety and stability in the Middle

East," Army Spokesman Brigadier General Mohamed Samir said in a statement.

A ceremony took place, attended by Egyptian and French delegations, to formally receive the jets. The jets then performed an air display over Greater Cairo.

Samir said the six Rafale fighter jets that Egypt now owns "represent a huge addition to the air forces' fleet and are considered a new addition to the armament system and combat readiness, and enhances the combat capabilities of the armed forces." SP

## Boeing gets \$2.5-billion contract for 20 more P-8A Poseidon aircraft

**B**oeing will further equip the US Navy and Royal Australian Air Force (RAAF) with maritime patrol capabilities, building 20 more P-8A Poseidon aircraft following a \$2.5-billion US Navy order announced recently.

The contract, for Lot 7 of the total P-8A programme of record, includes 16 aircraft for the US Navy and the next four aircraft for the RAAF. The RAAF's initial four P-8A aircraft were included in the August 2015 Lot 6 contract award.

"We continue to hear feedback from our Navy customer about the incredible capabilities of the P-8A," said James Dodd, Boeing Vice President and Program Manager of P-8 Programs. "The deployed squadrons tell us it's exceeding expectations - we're looking forward to providing even more capability to the fleet and to Australia."

This latest award puts Boeing on contract to build 78 Poseidons for the Navy and eight for the Australian fleet, with 33 Poseidons delivered to the US Navy to date. The Lot 7 aircraft will begin delivery in late 2017.

Based on Boeing's next-generation 737-800 commercial airplane, the P-8A offers the world's most advanced anti-submarine, anti-surface warfare and intelligence, surveillance and reconnaissance capabilities. The Navy has deployed four P-8A patrol squadrons since operations began in 2013.

Australia's participation in the P-8A programme began in 2009 when the government signed the first in a series of memorandums of understanding to work with the US Navy on system design and development. The US Navy and the RAAF also established a joint programme office that operates at Naval Air Station Patuxent River, Maryland. The first Australian P-8A will be delivered to the RAAF in late 2016. SP

## Northrop to produce first Japanese E-2D Advanced Hawkeye



**N**orthrop Grumman Corporation recently received a US Navy contract modification for non-recurring engineering and recurring support to configure the first Japanese E-2D Advanced Hawkeye.

The E-2D is an all-weather, airborne early warning (AEW), command and control aircraft that will meet the Japanese Defense Ministry's requirements for a future airborne early warning platform, according to a statement it released in November 2014. The aircraft will be produced at the company's Aircraft Integration Center of Excel-

lence in St. Augustine, Florida.

Under the \$28,59,75,244 contract modification, Northrop Grumman will configure the Japanese E-2D aircraft utilising the same E-2D multi-year production line used for US aircraft to allow for a more efficient and affordable delivery schedule. The E-2D is the world's only in-production AEW aircraft.

In November 2014, the Japanese Ministry of Defense competitively selected the E-2D to fulfill an emerging next-generation AEW requirement.

"The E-2D will provide a critical capability that will serve as a force multiplier for the Japanese Government," said Jane Bishop, Vice President, E-2D Advanced Hawkeye and C-2 Greyhound programmes, Northrop Grumman. "First responders will be able to receive and act on information more quickly than before with greater airborne early warning capability and a networked communications system."

The Japanese Air Self-Defense Force has operated the E-2C Hawkeye since the late 1980s. The E-2C is also currently in use by Taiwan, France and Egypt. **SP**

## P-8I aircraft deployed in Andaman and Nicobar Islands

**I**ndia has started to deploy long-range naval patrol aircraft Poseidon-8I and spy drones at the forward military base in



Andaman and Nicobar Islands as part of its strategy to counter China's move to regularly send its nuclear and conventional submarines to the Indian Ocean region (IOR).

A national daily quoted Defence Ministry sources as saying that two Poseidon-8I aircraft have been patrolling the maritime area in the strategically-located Andaman and Nicobar Islands for about two weeks now.

Navy and Air Force's Israeli Searcher-II unmanned aerial vehicles (UAVs) have also been deployed in the archipelago on a temporary basis.

The P-8I aircraft are especially designed to gather intelligence and detect threats. The aircraft are armed with Harpoon Block-II missiles, MK-54 lightweight torpedoes, rockets and depth charges, the daily reported. **SP**

## HAL rolls out HTT-40 prototype

**H**industan Aeronautics Limited (HAL) has rolled out the first prototype of HTT-40 with the aircraft sporting all the aircraft lights and powered on cockpit. T. Suvarna Raju, CMD, HAL said that the HTT-40 prototype efforts symbolises the renewed and revitalised proactive approach at HAL. "It is important that all of us work towards meeting deadlines by overcoming challenges to meet the expectations at various levels. The project has managed to steer through the initial headwinds and now is going full throttle. There are plans to weaponise and optimise HTT-40 aircraft", he added.

The roll out of prototype took place recently from the equipping facility at Aircraft Research and Design Centre (ARDC) hangar through a remotely operated minicar. HAL Board members were present along with members from Flight Operations, IAF-IPMT (integrated project management team) headed by Air Marshal Rajesh Kumar, Regional Centre for Military Airworthiness (RCMA) and Regional Director of Quality Assurance (RDQA). The team composition of HTT-40 is the youngest

ever on any prototype programme in HAL.

The aircraft is now ready for undertaking ground runs and taxi trials to be followed by its maiden flight. The ground runs will be conducted with the assistance from the engine OEM at ARDC itself.

The HTT-40 design was adapted to a final decision on engine selection in May 2015 and the first prototype manufacturing is completed followed by this roll out.

In November 2015, the Indian Air Force had issued task directive for the Design and Development of HTT-40.

ARDC also touts HTT-40 as the first ever prototype to be manu-

factured completely based on a digital mock-up and also by using laser tracked jigs and metal tooling at proto phase itself. Also, the division has sought active participation of Aircraft Division at Bengaluru which has been identified as the production agency for HTT-40. Out of the 90 LRUs on HTT-40, 70 systems are sourced from sister divisions of HAL which include HAL lucknow, HAL Hyderabad and HAL Korwa (Uttar Pradesh). The Aero Engine Research & Design Centre, Engine Division and HAL Kanpur are participating on the engine integration aspects. **SP**





## Heron-1 UAS reaches 70,000 operational flight hours in Afghanistan

**I**srael Aerospace Industries' (IAI) Heron-1 unmanned aerial system (UAS) recently marked its 70,000th flight hour in Afghanistan, after less than seven years of operation in the country. This follows Heron's completion of 25,000 flight hours last month under German Air Force operations in Afghanistan.

After successful use in Afghanistan by several Western NATO members, including Germany, France, Canada and Australia, this milestone demonstrates Heron's compatibility with challenging conditions in various areas around the world.

In an announcement from the Australian Ministry of Defence, Senator David Johnston, the Australian Minister of Defence, said: "The Heron is a proven capability – providing 'eyes in the sky' for our troops in the Middle East. The retention of the system following their withdrawal from Afghanistan will ensure that Australia remains at the forefront of this advancing technology."

Heron-1 is a medium altitude long endurance (MALE) UAS that provides crucial intelligence, surveillance, and reconnaissance information in real-time to commanders and frontline soldiers. It has significant capabilities, such as carrying a wide variety of sensors, which are able to provide real-time information over a



wide area for an extended period.

IAI is continuously raising the bar by further improving this system, as the new generation of the Heron family is based on the vast knowledge and experience accumulated in over four decades of planning, developing, manufacturing and operating UAS.

IAI's UAS have reached over 1.35 million flight hours used by more than 50 global customers. The Heron family alone has accumulated more than 2,50,000 operational flight hours worldwide. SP

## US soldiers bid farewell to this Army's oldest unmanned aircraft



**T**he US Army's oldest unmanned aircraft system had its final flight here as part of a ceremony that marked transitions for both the aircraft and its operators, December 16.

Fort Hood Soldiers and guests said goodbye to the Hunter unmanned aircraft system (UAS) the Army's first UAS, during the ceremony at Robert Gray Army Airfield.

"Thundercats, congratulations on your part of history, that you're making today," Lt. Colonel Gregory Hardy, commander of the 15th Military Intelligence Battalion, said during the ceremony commemorating the flight. "I am absolutely confident that you're

going to excel, as you have in the past, as we transform into a Grey Eagle company."

The Hunter was the first UAS to be actively employed by the US Army, according to an Army press release. The Hunter was fielded in 1995 to both the Joint UAS training base on Fort Huachuca, Arizona, and to Fort Hood with Company A, 15th Military Intelligence Battalion, III Corps' Aerial Exploitation unit. Subsequently, the Hunter was fielded to the Joint Readiness Training Center on Fort Polk, Louisiana, in 1999 and to the Initial Brigade Combat Team on Fort Lewis, Washington, in 2000, and to V Corps at Hohenfels, Germany, in 2003.

After two decades on Fort Hood, the Hunter is being transferred to government-owned, contractor-operated units supporting operations overseas. SP

## AirMule completes its first autonomous flight

**O**n December 30, AirMule successfully completed its first autonomous, untethered flight at the Megiddo airfield in northern Israel. The company said it got permission from the CAA to fly in Megiddo and were able to set up a portable testing facility with full-time access to a small airfield.

The testing schedule in Megiddo includes plans for a demonstration of AirMule's cargo delivery capability as well as

a 'beyond the line of sight' flight along a path running through an adjacent, forested area. All in all, we expect that in 2016 we will finally be able to demonstrate some of AirMule's unique capabilities.

Additionally, the test flight achieved 'category 2' certification for an export variant of the aircraft known as 'Cormorant', under the international Missile Technology Control Regime (MCTR), an important element in the eventual marketing of the aircraft. SP

## Northrop to develop MALE UAV for small ships

**N**orthrop Grumman Systems Corp. Aerospace Systems, El Segundo, California, has been awarded a \$9,30,76,636 Other Transaction Agreement for prototype project—Tactically Exploited Reconnaissance Node (Tern) programme, Phase III.

The Tern programme will design, develop, and demonstrate enabling technologies and system attributes for a medium-altitude long-endurance unmanned air vehicle and ship-board-capable launch and recovery system allowing operations from smaller ships.

The Tern Phase III programme will focus on the design, fabrication and testing of a prototype Tern Demonstration System. SP



## Mahindra, Airbus joint venture for military helicopters

**T**aking forward the memorandum of understanding signed in July, Mahindra Defence and Airbus Helicopters on January 24 inked a pact to form a joint venture (JV) to produce military helicopters in India.

The statement of intent was signed by representatives of both companies in the presence of Prime Minister Narendra Modi and French President François Hollande.

"We have made significant progress in setting up the joint venture and together the companies are creating a world-class advanced helicopter production facility in India," Mahindra and Mahindra Group President for Aerospace and Defence S.P. Shukla said in statement.

Mahindra Defence and Airbus Helicopters have already started working on steps to produce helicopter parts locally and are defining additional work packages to be industrialised in India. Simultaneously, both sides are evaluating potential indus-

trial sites and are screening the existing local supply chain while moving ahead with the setting up of the JV.

"Through this partnership, we target building several of our globally leading helicopter models in India. This will lead to the transfer of state-of-the-art technologies, development of manufacturing activities and creation of high-skilled jobs in India," said Airbus Helicopters President and CEO Guillaume Fauray.

The companies are proposing to set up a final assembly line in India, develop Tier-1 and Tier-2 suppliers and make extensive transfer of technology, with the intent to ultimately achieve 50 per cent indigenous content.

"Mahindra Defence and Airbus Helicopters have agreed on a blueprint that can put India on the world map for military helicopter manufacturing," President of Airbus Group India Pierre de Bausset said. The joint venture formation will be subject to customary regulatory approvals. **SP**

## Airbus Defence and Space and OneWeb join hands

**A**irbus Defence and Space, the world's second largest space company, and OneWeb, which is building a new global satellite communications system, announced the creation of OneWeb Satellites. The new joint venture, equally owned by Airbus Defence and Space and OneWeb, will design and build the 900 satellites of the OneWeb constellation, which will offer high-speed Internet with global coverage. The new company will be led by Brian Holz as CEO.

OneWeb Satellites will also be able to build satellites, platforms and equipment to be marketed by Airbus Defence and Space to other operators of future constellations.

OneWeb Satellites will undertake design activities for the entire satellite fleet and the manufacture of the first 10 flight models will take place in France, with the first ever mass production of the operational satellites planned for North America. Each satellite will weigh less than 150 kg and will operate in low Earth orbit. They will be launched by Arianespace and Virgin Galactic starting from 2018 and reach their orbital positions using electrical propulsion. **SP**

## Rheinmetall Europe's leading producer of military vehicles

**R**heinmetall AG has decided to consolidate its defence unit's extensive military vehicle activities in a new division called 'Vehicle Systems'. As a first step, Rheinmetall Landsysteme GmbH (RLS) and Rheinmetall MAN Military Vehicles GmbH (RMMV) have been placed under joint management effective from January 1, 2016.

Ben Hudson, CEO, and Michael Wittlinger, CFO, will lead the new division. Starting on January 1, 2016, Hudson has also been appointed to the Executive Board of Rheinmetall Defence where he will represent the new Vehicle Systems division.

The resulting unit is poised to be a comprehensive supplier of tracked and wheeled military vehicles and turret solutions, capable of meeting the complete ground mobility needs of the world's armed forces—all from a single source.

Under the new structure, Rheinmetall Defence will consist of the following three divisions: Vehicle Systems, Electronic Solutions and

Weapons and Ammunition. The united competencies of RLS and RMMV create a leading European systems supplier and the world's most robust platform for tactical land mobility solutions, with annual sales expected to reach €1.4 billion in fiscal 2016. **SP**

## Thales and ASV strengthen partnership in the UK

**A**fter successful trials on Halcyon unmanned surface vehicle (USV), Thales and ASV strengthen their partnership. Both companies have signed an agreement to develop autonomous unmanned surface vehicle (USV) technology and capability for maritime, civil, security and military domains.

Thales is a global technology leader with a unique capability to design and deploy equipment, systems and services to meet customer's operational requirements. ASV, an agile small and medium-sized enterprise (SME) with 60 employees spread across the UK and USA, has specialised expertise and experience in USV design, build, operation and maintenance.

This agreement, which builds on the strong existing relationship and the combined skills and expertise of the two companies, provides world leading, innovative solutions for autonomous maritime requirements. **SP**

## HAL bestowed with Raksha Mantri's awards

**T**he Prime Minister Narendra Modi laid the foundation stone for HAL's new Helicopter Manufacturing Facility at Biderehalla Kaval, Gubbi Taluk, Tumakuru, about 100 km from Bengaluru recently.

Hindustan Aeronautics Ltd. (HAL) has been conferred with 'Raksha Mantri's Awards for Excellence in Performance, Innovation and Indigenisation'. The awards were presented by the Defence Minister Manohar Parrikar.

On receiving the awards, T. Suvarna Raju, CMD-HAL said, "Raksha Mantri's Awards for Excellence is a recognition of the faith reposed on HAL by its customers. HAL is a leader amongst Defence PSUs in the field of high-end technology and the Government trusts the Company as flag bearer in 'Make in India' campaign." **SP**

## People's Choice Awards interrupted

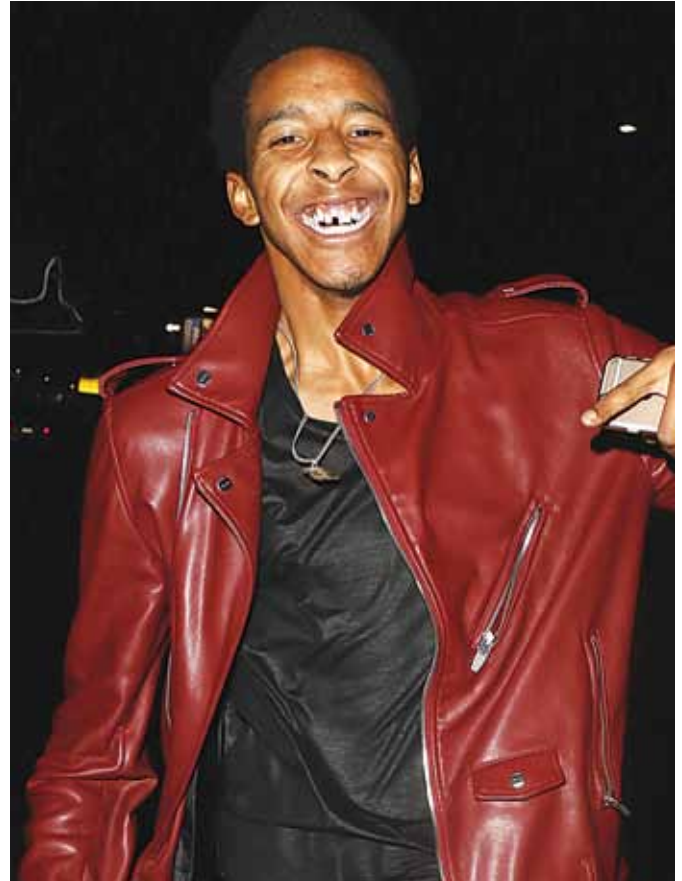
**T**he People's Choice Awards was rocked by an apparent security breach when a man ambushed the stage during The Talk panel's thank you speech.

Just as the hosts of CBS' *The Talk* took the stage to accept their People's Choice Award for favourite daytime TV hosting team, audience member Zacari Nicasio stormed the stage, grabbing the microphone away from co-host Sara Gilbert. Shouting hip-hop artist Kevin Gates' name and referring to Kanye West, the crasher yelled, "Yeezy jumped over the Jumpman," before getting kicked offstage by Sharon Osbourne.

Later, the Los Angeles Police Department placed him in handcuffs inside the People's Choice venue in downtown Los Angeles before releasing him shortly after.

Nicasio then told a news channel that he does this often — he also says he crashed Kris Jenner's 60th birthday party — saying that he's trying to make a name for himself and that he went to the People's Choice Awards "to tell everybody who I was."

Adding that he was not inspired by Kanye West's infamous VMA interruption, he said that he just wanted to promote his own music and pay respect to his music idols. "I had to shout out who I look up to: Kanye West and Kevin Gates," he says. "I came here to do this tonight. I could honestly care less about what was going to happen." **SP**



## Call centre breach

**T**hree employees of a call centre run by Wipro for UK telecom firm TalkTalk have been arrested over security breach allegations, according to British media. The Kolkata-based workers were arrested earlier this month following a data security review by the London-based firm, which then alerted Indian police.

The arrests came months after TalkTalk was hit by a high-profile hacking in October last year when personal details of its customers were compromised. But the company have indicated that the latest arrests in India are not related to last year's data breach.

"Following the October 2015 cyber attack, we have been conducting a forensic review to ensure that all aspects of our security are as robust as possible — including that of our suppliers. Acting on information supplied by TalkTalk, the local police have arrested three individuals who have breached our policies and the terms of our contract with Wipro. We are also reviewing our relationship with Wipro," TalkTalk said in a statement.

"We are determined to identify and deal effectively with these issues and we will continue to devote significant resource to keeping our customers' data safe," the phone and broadband service provider added.

News of the arrests was first reported on Britain's Channel 4 News. It reported that Indian police had made the arrests over the last fortnight in relation to allegations of theft of customers' data and

using it to con them out of thousands of pounds.

"Wipro is committed to maintaining the integrity and confidentiality of all customer data and has a zero tolerance policy on security breaches," Wipro said in a statement. "Wipro is working closely with the customer in the investigation and will continue to extend its full cooperation to the investigating authorities. We are unable to comment on the matter that is currently under investigation," it added. **SP**

## Woman crashes car through Phoenix Airport gate

**A** woman who crashed her car through a Arizona's Phoenix Airport's security gate and drove onto a runway with her infant son in the vehicle has been sentenced to five years of probation. Maricopa County Superior Court officials say 24-year-old Koko Nicole Anderson was sentenced on misdemeanor count of child abuse. She reached a plea agreement in December in which she wouldn't have to serve any jail term.

Besides probation, it called for her to attend parenting classes, undergo mental health treatment and monitoring plus pay unspecified restitution for the November 2012 security breach at Sky Harbor International Airport.

Anderson told authorities that she has bipolar disorder and wasn't taking medication at the time because she was breast-feeding. Sky Harbor officials say the incident caused \$13,500 in damages. **SP**



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