VIEWPOINT: SUPER HORNET OR THE FIGHTING FALCON? PAGE 18

SP's MAI

AN SP GUIDE PUBLICATION

₹55.00 (INDIA-BASED BUYER ONLY)

ISSN 2230-9268

Vol: 6 Issue 7-8 | April 1-30 • 2016

www.spsmai.com

ONLY FORTNIGHTLY ON MILITARY AEROSPACE INTERNAL SECURITY

Page 6

Finally: Rafale Deal in 'final-stage'

Deepening partnership – India and US PAGE 10

Defexpo highlights 'Make in India' possibilities PAGE 15

DELENG/2010/34651

"In a country like India with limited support from the industry and market, initiating 50 years ago (in 1964) publishing magazines relating to Army, Navy and Aviation sectors without any interruption is a commendable job on the part of SP Guide Publications. By this, SP Guide Publications has established the fact that continuing quality work in any field would result in success."

Narendra Modi, Hon'ble Prime Minister of India (*message received in 2014)

SP GUIDE PUBLICATIONS

OVER 5 DECADES SINCE 1964

Commissioning of offshore patrol vessel ICGS Shoor

The Indian Coast Guard (ICG) ship Shoor, the second ship in the series of six offshore patrol vessels (OPV), was commissioned at Goa by Nitin Gadkari, Minister of Shipping, Road Transport and Highways, on April 11, 2016, in the presence of Director General Rajendra Singh, Director General, Indian Coast Guard; Rear Admiral Shekar Mittal (Retd), CMD of Goa Shipyard Limited (GSL) and other senior dignitaries of the Central and State Governments. Shoor, meaning 'Valiant,' is a projection of ICG's will and commitment 'to serve and protect' the maritime interest.

This 105-metre OPV has been designed and built indigenously by GSL and is fitted with most advanced navigation and communication equipment, sensors and machinery. The features include 30mm CRN 91 naval gun, integrated bridge system (IBS), integrated machinery control system (IMCS), power management system (PMS) and high power external firefighting system. The ship is designed to carry one twin-engine light

helicopter and five high speed boats including two QRIBs for fast boarding operations, search and rescue, law enforcement and maritime patrol.

The ship draws 2,350 tonnes (GRT) and is propelled by two 9,100 kW diesel engines to attain a maximum speed of 23 knots. It has an endurance of 6,000 nm at economical speed. The sustenance and reach coupled with the latest and modern equipment and systems provides her the capability to perform the role of a command platform and accomplish all the Indian Coast Guard charter of duties.

The ship on joining Coast Guard fleet will be based at New Mangalore and deployed extensively for exclusive economic zone (EEZ) surveillance and other duties as enshrined in Coast Guard charter, to safeguard the maritime interests of India. ICGS Shoor will be manned by 14 officers and 98 men commanded by Deputy Inspector General Surendra Singh Dasila under the administrative and operational control of the Commander, Coast Guard Region (West). SP

PHOTOGRAPH: ICG

Cover:
After protracted negotiations that have been going on for the last one year between the Indian Ministry of Defence (MoD) and Dassault Aviation of France for the purchase of 36 Rafale medium multi-role combat aircraft (MMRCA) in fly-away condition appears to have reached the 'final stage'.

Cover images: Dassault Aviation, PIB, DPR Defence

PUBLISHER AND EDITOR-IN-CHIEF
Jayant Baranwal

ASSISTANT GROUP EDITOR
R. Chandrakanth

SR TECHNICAL GROUP EDITORS
Air Marshal B.K. Pandey (Retd)
Lt General Naresh Chand (Retd)
Lt General V.K. Kapoor (Retd)
R. Adm S.K. Ramsay (Retd)

SPECIAL CONTRIBUTOR
Lt General P.C. Katoch (Retd)

CHAIRMAN & MANAGING DIRECTOR
Jayant Baranwal

PLANNING & BUSINESS DEVELOPMENT
Executive Vice President: Rohit Goel

ADMIN & COORDINATION
Bharti Sharma

DESIGN & LAYOUT
Creative Director: Anoop Kamath
Designers: Vimlesh Kumar Yadav, Sonu Bisht
Research Assistant - Graphics: Survi Massey

SALES & MARKETING
Director: Neetu Dhulia
General Manager Sales: Rajeev Chugh

SP'S WEBSITES
Sr Web Developer: Shailendra P. Ashish
Web Developer: Ugrashen Vishwakarma

SUBSCRIPTION/ CIRCULATION
Annual Inland: ₹1,320 • Foreign: US$ 325
E-mail: subscribe@spguidepublications.com
subscribe@spsmai.com

LETTERS TO THE EDITOR
editor@spsmai.com

FOR ADVERTISING DETAILS, CONTACT:
advertise@spsmai.com
neetu@spguidepublications.com
rajeev.chugh@spguidepublications.com

SP GUIDE PUBLICATIONS PVT LTD
A-133 Arjun Nagar
(Opposite Defence Colony)
New Delhi 110003, India.

Tel: +91 (11) 24644693,
24644763, 24620130
Fax: +91 (11) 24647093
E-mail: info@spguidepublications.com

REPRESENTATIVE OFFICE
204, Jal Vayu Vihar
Kalyan Nagar
Bengaluru 560043
Tel : +91 (80) 23682204

MOSCOW, RUSSIA
LAGUK Co., Ltd, Yuri Laskin
Krasnokholmskaya, Nab.,
11/15, app. 132, Moscow 115172, Russia.
Tel: +7 (495) 911 2762,
Fax: +7 (495) 912 1260

Owned, published and printed by Jayant Baranwal, printed at Kala Jyothi Process Pvt Ltd and published at A-133, Arjun Nagar (Opposite Defence Colony), New Delhi 110003, India.

Finally, Rafale deal to be 'signed'

The medium multi-role combat aircraft (MMRCA) deal for 126 fighters was to be 'Mother of all Deals' but it was not to be. Considering the complicated and protracted nature of the MMRCA programme, Prime Minister Narendra Modi surprised all during his visit to France in 2015. Setting aside the 126 aircraft deal, Modi announced that India would buy 36 Rafale fighter aircraft. After one year and a series of negotiations, the purchase of 36 Rafale appears to have reached the 'final stage'.

The Defence Minister Manohar Parrikar had said earlier during the year that India will select one or two fighter aircraft which will be manufactured locally under the 'Make in India' initiative. Analysing the Boeing F/A-18 E/F Super Hornet against the F-16IN Fighting Falcon from Lockheed Martin, Air Marshal B.K. Pandey (Retd) writes that the requirement of the IAF is not for a lightweight fighter but for a medium to heavyweight combat aircraft capable of operating over long range without in-flight refuelling, preferably powered by two engines with a high payload carrying capability.

In another significant development, India and the US have agreed in principle to sign the much discussed and negotiated Logistics Support Agreement (LSA), albeit with a different name called Logistics Exchange Memorandum of Agreement (LEMOA). The fast changing geopolitics of the Asia-Pacific region is encouraging the two countries to come closer and jointly safeguard their strategic interests in the face of increasing aggressiveness from the Chinese in the South China Sea.

At the ninth edition of Defexpo in Goa which attracted global and local exhibitors, Defence Minister Parrikar announced the release of Defence Procurement Procedure 2016 (DPP) which 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, etc. We have an analysis of the DPP by Lt General P.C. Katoch (Retd).

Defexpo 2016: A few points, our Government may like to consider

Our well established Defexpo (Land & Naval Systems Exhibition) began in 1999 and has been continuing in Delhi as the venue since then. For the first time the show was relocated in Goa for its 2016 edition.

We should be able to take note that the established defence and aerospace shows, listed below, have never been relocated (for ages):

- **Paris Air Show**
- **Farnborough International Airshow**
- **Eurosatory (Paris)**
- **DSEI (London)**
- **Dubai Airshow.**

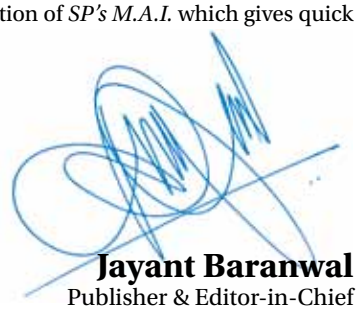
As none of such established shows was ever relocated, all these shows have been growing from strength to strength and steadily.

Also the cost to ferry the service officials and senior government officials all the way from Delhi to Goa is a considerable cost which can well be avoided as Delhi versions would never need such additional costs for obvious reasons.

Defexpo, being a government property, we believe needs to be handled with a little care. Uprooting it from its location of origin and relocating to a place which is otherwise perfectly suitable as tourism destination might hamper the real strength and acceptability of the show. We love Defexpo (a business show for defence fraternity) and all of us want the show to grow effectively and surpass global standards. We indeed wish the very best to the future editions of Defexpo.

All this and more in this edition of *SP's M.A.I.* which gives quick analysis of news in the fortnigh

Happy reading!



Jayant Baranwal
Publisher & Editor-in-Chief

DEFENCE & SECURITY INTERNATIONAL EXHIBITION

2016

EUROSATORY

13 - 17 JUNE 2016 / PARIS

THE LAND & AIRLAND SOLUTION

Identify your company as a key player

GICAT

www.eurosatory.com

COGES

AIR MARSHAL
B.K. PANDEY (RETD)

A welcome breakthrough!

With the breakthrough in the deal of the 36 Rafale jets, finally, there is the proverbial 'light at the end of the tunnel'!

The 36 Rafale deal for the Indian Air Force reached the 'final stage'

PHOTOGRAPHS: Dassault Aviation, PIB

After protracted negotiations that have been going on for the last one year between the Indian Ministry of Defence (MoD) and Dassault Aviation of France for the purchase of 36 Rafale medium multi-role combat aircraft (MMRCA) in fly-away condition appears to have reached the 'final stage'. As against the total cost of the project pitched initially by Dassault Aviation at $12 billion (Euros 11 billion or ₹80,000 crore), the representatives of the MoD involved in the contract negotiations have succeeded in scaling down the financial burden substantially and are reported to have finalised the cost of the project at $8.8 billion (Euros 7.8 billion or nearly ₹59,000 crore). Subject to no further impediments, the contract is expected to be signed within three to four weeks from now and the first few aircraft are expected to be delivered within 18 months of the date the contract is signed. This indeed is a welcome breakthrough especially for the Indian Air Force (IAF) whose efforts to procure the MMRCA since 2002 had so far failed to fructify. This breakthrough has come nearly three months after Prime Minister Narendra Modi and French President François Hollande signed a memorandum of understanding (MoU) for the direct purchase of 36 Rafale combat jets when Presi-

dent Hollande had been invited as the chief guest at the Republic Day parade and related functions in Delhi this year. (We had published the article *'Finalise the Rafale Contract,'* warning of the consequences to IAF, on pages 8-9 of ***SP's Aviation 1/2016***).

With the significant tempering of the value of the contract, for Dassault, it is a significant climb down as the original equipment manufacturer has also agreed to an 'offsets obligation' of 50 per cent of the value of the contract as against its original stand of 30 per cent. French companies such as Safran and Thales will join Dassault in providing state-of-the-art technologies in the regime of stealth, radar, thrust vectoring for missiles and materials for electronics and micro-electronics. For its part, the Indian aerospace industry can look forward to infusion of a healthy dose of funds to the extent of $4.4 billion. If these funds are correctly utilised, the Indian aerospace industry can and should receive the necessary impetus to scale greater heights.

The fact that this government-to-government deal for the 36 Rafale MMRCA has been finalised within a year of the initial informal agreement between French President Hollande and Prime Minister Modi and that the IAF can expect to induct the first aircraft by the end of 2017, only serve to reinforce the belief that for procurement of urgently required high value military hardware for the Indian armed forces, direct deals with governments involved would be a far better option as compared the system of global tender mandated under the Defence Procurement Procedure (DPP) that had been in vogue for some years. Incidentally, the latest version of this document, dubbed as DPP 2016, was unveiled by Defence Minister Manohar Parrikar at Defexpo 2016 at Goa in March. However, DPP 2016 is yet to be put through baptism by fire to establish its efficacy.

As per the original tender for the MMRCA floated in August 2007, the IAF was to receive 126 aircraft equivalent of six squadrons. The deal for 36 Rafale jets currently in progress would provide the IAF with partial relief with the induction of just two combat squadrons. The numbers are clearly inadequate to address the debilitating shortages in its fleet of combat aircraft that the IAF is confronted with. Options therefore need to be explored to find ways to close the ever-widening and crippling gap that is destined to worsen in the next few years in the combat fleet if no urgent steps are taken to fast-track building of fourth-plus or fifth-generation combat platforms in the numbers required to restore the operational edge of the IAF against its potential adversaries. Following the realisation of the contract under discussion, one of the options before the nation would be to explore the possibility of manufacturing the Rafale jets in India under the 'Make in India' scheme both for the Indian and global markets.

With the breakthrough in the deal of the 36 Rafale jets, finally, there is the proverbial 'light at the end of the tunnel'! SP

Specifications and performance data

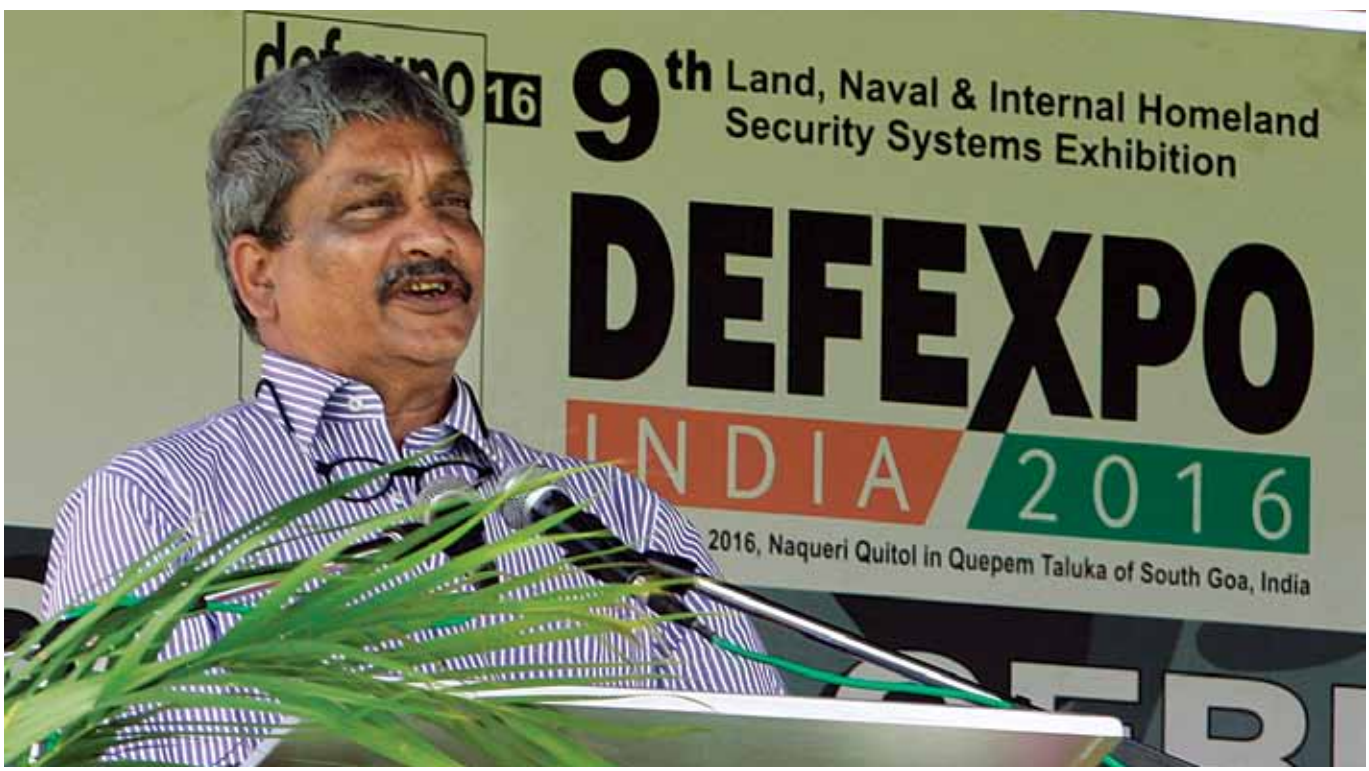
Dimensions:	
Wingspan	10.90 m
Length	15.30 m
Height	5.30 m
Weight:	
Overall empty weight	10 t (22,000 lbs) class
Maximum take-off weight	24.5 t (54,000 lbs)
Fuel (internal)	4.7 t (10,300 lbs)
Fuel (external)	up to 6.7 t (14,700 lbs)
External load	9.5 t (21,000 lbs)
Store stations:	
Total	14
Heavy-wet	5
Performance:	
Maximum thrust	2 x 7.5 t
Limit load factors	-3.2 g / +9 g
Maximum speed	M = 1.8 / 750 knots
Approach speed	less than 120 knots
Landing ground run	450 m (1,500 ft) without drag-chute
Service ceiling	50,000 ft

Source: Dassault Aviation

Strengthening ties: (left) Prime Minister Narendra Modi with the President of France François Hollande in Paris on April 10, 2015; (right) Prime Minister Modi with President Hollande, who was the chief guest at the Republic Day in New Delhi, on January 26, 2016.

DPP 2016 – The long and short of it

LT GENERAL
P.C. KATOCH (RETD)



Defence Minister Manohar Parrikar addressiing the participants of Defexpo 2016 on March 28, 2016

PHOTOGRAPH: SP Guide Pubns

The Defence Procurement Procedure 2016 (DPP) was released by Defence Minister Manohar Parrikar on March 28, 2016, coinciding with the inauguration of Defexpo 2016 in Goa – showing how much Indian defence has haphazardly progressed. That unlike Delhi no mid level officers who take professional decisions could visit Defexpo 2016 is another issue – only top brass meeting top brass from abroad.

As a prelude to DPP 2016, when the Defence Acquisition Council (DAC) cleared the clause of increased offset baseline from ₹300 crore to ₹2,000 crore besides focusing on reducing delays in procurements, the Defence Minister had stressed the new DPP will ensure modernisation of defence forces remains unaffected due to procedural intricacies. The media had also highlighted the proposed 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 was proposed to be divided in three subcategories: Make I involving 90 per cent funding of development cost by government; government refunding 100 per cent development cost in Make II in case request for proposal (RFP) not issued within two years of developing prototype; and Make III reserved for micro, small and medium enterprises (MSMEs) for projects worth less than ₹3 crore. DPP 2016 was also to lay down benchmarks for selection of private strategic partners from among Indian or foreign firms. Ironically, just before release of DPP 2016, the media quoted the Defence Minister saying that the issue of selection of strategic

Shelved: DRDO's Nishant UAV and Akash medium-range mobile surface-to-air missile defense system

partner would take another two-three months as discussions on the same were ongoing.

So, the most important ingredient of the new DPP linked with private sector participation is still missing, for which the private industry was waiting with baited breath to 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.

Significantly, when Prime Minister Modi met top businessmen of Saudi Arabia in Riyadh recently and asked them to invest in defence sector in India, they asked him why Indian private sector was not investing adequately in our defence sector. It is ironical that the issue of strategic partners has been left out despite the long time taken to define the new DPP and especially when the Dhirendra Singh Committee had spelt out guidelines for choosing strategic partners. It goes without saying that choosing strategic partners will have political connotations and will invariably change with different ruling parties at the Centre.

So why delay the decision? What will be resolved in next two-three months that could not be resolved past several months — unless the intention is to let ambiguity continue? The plusses in the DPP 2016 include introduction of the new procurement category 'Buy (IDDM)'; buying indigenously designed, developed and manufactured products with minimum 40 per cent indigenous content, and if not designed and developed indigenously with minimum 60 per cent indigenous content. 'Buy (IDDM)' should ostensibly replace 'Buy (Indian)' since latter also now requires 40 per cent indigenous content instead of erstwhile 30 per cent. How the acquisition process will be shortened will need to be observed through the application of the new DPP on ground because the stages of acquisition cycle remain practically same.

Other plusses include: Services Qualitative Requirements (SQRs) split into two categories as essential and desirable (Essential Parameters A and Essential Parameters B) with contracts signed based on A and vendor permitted to develop B after award of contract; Services Equipment Policy Committees (SEPCs) responsible for finalising SQRs permitted to seek expert assistance; RFPs will include Enhanced Performance Parameters (enhanced capabilities over and above the essential parameters) with vendors meeting additional parameters given weightage up 10 per cent for determining lowest bid; threshold for offsets raised from ₹300 crore to ₹2,000 crore; procedure defined to deal with change in name of vendor during procurement cycle for any reason including merger, acquisitions, etc; provision for adoption of a model wherein the foreign vendor can select an Indian Production Agency (IPA) from the private sector of its choice when Ministry of Defence (MoD) has not nominated a DPSU for the joint venture (JV) albeit if several Indian companies tie up with the foreign vendor, it will not be treated as 'single vendor'; funding of projects by the MoD increased from 80 per cent to 90 per cent, with balance 10 per cent reimbursed (if RFP not issued within two years of successful development of prototype) and development agencies given mobilisation advance of 20 per cent of estimated cost of development; projects with estimated development cost of ₹10 crore under 'Make' category funded by MoD and ₹3 crore for 'Make' category self-funded by developers will be earmarked for MSMEs, opened to others only if MSMEs don't evince interest; Annual Acquisition Plan (AAP) for 'Make' projects to be notified by MoD; sharing future military needs with industry through a Technology Perspective and Capability Roadmap (TPCR), covering 15-years acquisition plans.

The minuses besides the void of benchmarking strategic partners include: whether wholly-owned subsidiaries of foreign companies qualify as Indian Offset Partners (IOPs) is not addressed; detailed offset guidelines not notified; no changes mentioned to the TPCR in vogue past decade and a half which hasn't helped much; no worthwhile changes in other procedures including the Fast Track Procedure (FTP); and chapter containing the revised standard contract document as well as various annexures and appendices not released, without which DPP 2016 is quite incomplete.

So what was the great hurry in releasing it including when the issue of strategic partners remains unaddressed? What can be more proof of haphazard and lopsided functioning? But as they say, the proof of the pudding lies in its eating. But while we await the missing parts of DPP 2016, too much hanky-panky is going on in the governmental defence-industrial complex with connivance of MoD, Nishant followed by Akash finally dumped after crores and years wasted being just two examples. What we perhaps need is a monitoring body for defence procurement independent and above the MoD, with adequate powers as part of the Parliamentary Standing Committee on Defence. Finally, policies and procedures don't matter much if there is indecisiveness and lack of will. When the Defence Minister announces 'emergent' procurement of 50,000 bullet proof jackets in 2014 and these have still not arrived despite Army's deficiency having gone up beyond 3,50,000 what streamlining and fast-tracking are we talking about? SP

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

PHOTOGRAPHS: SP Guide Pubns

Defence Minister Manohar Parrikar with his US counterpart Dr Ashton Carter in New Delhi on April 12, 2016

Deepening partnership – India and US

[By **Ranjeet Kumar**]

The fourth meeting (April 11, 2016) within a span of one year between Indian Defence Minister Manohar Parrikar and US Secretary of Defense Ashton Carter has resulted in unprecedented announcement from Indian Defence Minister that both the countries have agreed in principle to sign the much discussed and negotiated Logistics Support Agreement (LSA), albeit with a different name called Logistics Exchange Memorandum of Agreement (LEMOA). This announcement has shown that something serious was cooking up between the two Defence Ministers of once estranged democracies during last one year. However, the fast changing geopolitics of the Asia-Pacific region is encouraging the largest and oldest democracies to come closer and jointly safeguard their strategic interests in the face of increasing aggressiveness from the Chinese in the South China Sea.

In fact the US side has been pressing India to agree on three foundational agreements since last one decade but the Indian UPA Government did not show interest in pursuing these agreements, as these would have firmly put India as alliance partner of the US. Besides the Logistics Exchange Agreement the US side has been insisting on the early conclusion of the CISMOA (Communication, interoperability and Security Memorandum Agreement) and BECA (Basic Exchange and Cooperation Agreement), but the current Narendra Modi regime also did not allow them to be mentioned in the joint statement. However, sources in the US Embassy in New Delhi maintain that the US side will continue to insist on the finalisation of the CISMOA and the BECA for geospatial cooperation. The three foundational agreements will strongly bind the two nations in defence cooperation but Indian side refrained from going that far.

However, the talks resulted in a joint statement which revealed the deepening of strategic partnership between the two countries. Accord-

PHOTOGRAPH: PIB

ing to the Joint Statement the two Defence Ministers reviewed the important steps taken since the signing of the new Framework for the US-India Defence Relationship last June to deepen bilateral defence ties. Carter and Parrikar also discussed the priorities for the coming year in defence ties as well as specific steps both sides will take to pursue those priorities. These included expanding collaboration under the Defence Trade and Technology Initiative (DTTI) and 'Make in India' efforts of the Indian Government, new opportunities to deepen cooperation in maritime security and maritime domain awareness , military to military relations, the knowledge partnership in the field of defence and regional and international security matters of mutual interest.

According to officials, the two countries are planning across the armed forces for greater complexity in their military engagements and exercises which includes plans for more advanced maritime exercises. In fact the year 2016 will prove to be one of the most intense exchanges in recent years. After a gap of many years Indian Navy has been permitted to participate in the RIMPAC exercises where as the Indian Air Force was instructed to participate in the multilateral Red Flag exercises held this month.

After the talks, Parrikar said, "Our discussions, spread over the past three days, have been marked by characteristic warmth, candour and a sense of mutual purpose. I am confident that the India-US relationship will be one of the key global partnerships of this century. Defence cooperation is a central pillar of India's multi-faceted relationship with the US. A stronger India-US partnership will promote peace, stability and progress in our region and the world."

Parrikar described Carter as the architect of the India-US Defence Trade and Technology initiative, which has provided an unprecedented platform for the two countries to strengthen bilateral cooperation in cutting-edge technologies and to address procedural delays in decision making. Both the Defence Ministers decided to take forward discussions under DTTI more aggressively on key areas such as jet engine technology. Significant progress has already been noted in the cooperation in the framework of the joint working group on aircraft carriers. Both sides also reached an understanding to conclude an information exchange annex (IEA) to enhance data and information sharing specific to aircraft carriers. In support of 'Make in India' the US side shared two proposals to bolster India's suite of fighter aircraft for consideration of the Government of India. Sources privy to the talks said that US side has offered the Boeing twin-engine F-18 Super Hornets, which can be utilised both by the Indian Air Force and the Indian Navy as the F-18s are capable of flying from the deck of an aircraft carrier also.

Both the Defence Ministers also agreed to expand the nature and scope of DTTI by introducing new and more ambitious projects for mutual collaboration. Interestingly the two Defence Ministers noted the strong complementarities between 'Make in India' initiative and the DTTI. In this context both the Defence Ministers decided to personally facilitate synergies between Indian and US companies in high technology areas and in particular to promote participation of Indian companies in global supply chains. Both the Defence Ministers reviewed the progress and reiterated their commitment to pursue co-development and co-production of advanced defence articles under the DTTI. In this context, the two sides agreed to initiate two new DTTI pathfinder projects on digital helmet mounted displays and the joint biological tactical detection system. Both the Defence Ministers commended the ongoing discussions at the Jet Engine Technology Joint Working Group (JETJWG) and the Joint Working Group on Aircraft Carrier Technology Cooperation (JWGACTC). They agreed to work towards greater cooperation in the field of cutting-edge defence technologies, including deepening consultations on aircraft carrier design and operations and jet engine technology.

In the background of Chinese aggressive behaviour in South China Sea and naval forays in the Indian Ocean region, a very significant decision was taken to set up a new bilateral maritime security dialogue to be conducted between the senior officials of the respective Defence and Foreign Affairs Ministries. In this context the decision was also announced to enhance ongoing navy to navy discussions to cover submarine related issues. Both countries will also deepen cooperation in the Maritime Domain Awareness by finalising a White Shipping Agreement. This is relevant in the context of the concerns expressed in the Joint Statement regarding the current state of Affairs in South China Sea. The Joint statement reaffirmed, "the importance of safeguarding maritime security and ensuring freedom of navigation and over flight throughout the region, including in the South China Sea. They vowed their support for a rules-based order and regional security architecture conducive to peace and prosperity in the Asia-Pacific and Indian Ocean, and emphasized their commitment to working together and with other nations to ensure the security and stability that have been beneficial to the Asia-Pacific for decades."

F/A-18A Hornet multi-role fighter aircraft

In fact, immediately after the end of Cold War in 1992, the US Pacific Commander Lt General Kicklighter had visited India, which resulted in the setting up of Malabar bilateral naval exercise structure, which has now seen expansion with the permanent inclusion of Japan. Now in last two-and-half decades, in spite of a brief suspension in defence exchanges in the aftermath of Indian nuclear test in Pokharan in May 1998 interaction between the two armed forces have become broad based and intense, which are now the significant aspect of India US bilateral relations. Today India has more joint exercises with the United States than any other country in the world. After a few years gap, the Indian armed forces will be taking part in multilateral exercises hosted by US forces like the RIMPAC naval exercises and the Red Flag air exercises. According to Parrikar this deepening of engagement has necessitated the need to develop mechanisms to facilitate such exchanges, under the umbrella of Logistics Exchange Memorandum of Agreement, which has been agreed in principle and to be inked within a few months. The two countries have already agreed on the need to have mutually agreed memorandums to form the basis of such exchanges. SP

PHOTOGRAPH: Department of Defence, Australia

Defence Minister Manohar Parrikar and his US counterpart Dr Ashton Carter at the India-US delegation level talks in New Delhi on April 12, 2016

India-United States Joint Statement

Following is the text of the Indo-US Joint Statement on the visit of Secretary of Defense Dr Ashton Carter to India from April 10-13, 2016

The US Secretary of Defense Dr Ashton Carter is on an official visit to India at the invitation of Raksha Mantri Manohar Parrikar from April 10-13, 2016. Raksha Mantri hosted Secretary Carter in Goa. They visited the Indian naval base in Karwar and the INS Vikramaditya, the aircraft carrier. They also visited the USS Blue Ridge which was conducting a port call in Goa during the Secretary's visit. Secretary Carter then travelled to New Delhi for official talks with Raksha Mantri. He also met the National Security Advisor and the Prime Minister.

The United States and India share a deep and abiding interest in global peace, prosperity, and stability. Bilateral Defence cooperation is a key component of the strategic partnership between India and the United States. Secretary Carter's visit marked the fourth meeting between him and Raksha Mantri Parrikar within a year, demonstrating the regular ministerial-level oversight of the robust and deepening bilateral defence relationship.

During their meeting, Raksha Mantri Parrikar and Secretary Carter reviewed the important steps taken since the signing of the new Framework for the US-India Defence Relationship last June to deepen bilateral defence ties. They discussed the priorities for the coming year in defence ties, as well as specific steps both sides will take to pursue those priorities. These included expanding collaboration under the Defence Technology and Trade Initiative (DTTI); 'Make in India' efforts of the Government of India; new opportunities to deepen cooperation in maritime security and maritime domain awareness; military-to-military relations; the knowledge partnership in the field of defence; and regional and international security matters of mutual interest.

Raksha Mantri Parrikar and Secretary Carter welcomed the efforts by the Indian and US armed forces to further expand collaboration in the years to come. They welcomed plans across our Services for greater complexity in their military engagements and exercises, including developing plans for more advanced maritime exercises. Both sides acknowledged India's participation in the Rim-of-the-Pacific (RIMPAC) multilateral naval exercise in 2016 as well as participation by the Indian Air Force in the multilateral Red Flag exercise in April-May 2016 in Alaska and US participation in the International Fleet Review of the Indian Navy at Visakhapatnam in February 2016. They expressed their desire to explore agreements which would facilitate further expansion of bilateral defence cooperation in practical ways. In this regard, they announced their in-principle agreement to conclude a Logistics Exchange Memorandum of Agreement, and to

PHOTOGRAPH: PIB

Highlights...

...expanding collaboration under the Defence Technology and Trade Initiative (DTTI); 'Make in India' efforts of the Government of India; new opportunities to deepen cooperation in maritime security and maritime domain awareness; military-to-military relations; the knowledge partnership in the field of defence; and regional and international security matters of mutual interest.

...in-principle agreement to conclude a Logistics Exchange Memorandum of Agreement, and to continue working towards other facilitating agreements to enhance military cooperation and technology transfer.

...agreed to commence navy-to-navy discussions on submarine safety and anti-submarine warfare.

...agreed to initiate two new DTTI pathfinder projects on Digital Helmet Mounted Displays and the Joint Biological Tactical Detection System. They commended the ongoing discussions at the Jet Engine Technology Joint Working Group (JETJWG)and the Joint Working Group on Aircraft Carrier Technology Cooperation (JWGACTC). They agreed to work towards greater cooperation in the field of cutting-edge defence technologies, including deepening consultations on aircraft carrier design and operations, and jet engine technology. They noted the understanding reached to conclude an information exchange annex (IEA) to enhance data and information sharing specific to aircraft carriers.

... agreed to encourage their respective defence industries to develop new partnerships in the pursuit of a range of cutting-edge projects.

... finalisation of four government-to-government project agreements in the area of science and technology cooperation: Atmospheric Sciences for High Energy Lasers, Cognitive Tools for Target Detection, Small Intelligent Unmanned Aerial Systems, and Blast and Blunt Traumatic Brain Injury.

continue working towards other facilitating agreements to enhance military cooperation and technology transfer.

In support of the India-US Joint Strategic Vision for the Asia-Pacific and the Indian Ocean region and the maritime security objectives therein, both sides agreed to strengthen cooperation in the area of maritime security. In this context, they reaffirmed their desire to expeditiously conclude a 'white shipping' technical arrangement to improve data sharing on commercial shipping traffic. They agreed to commence navy-to-navy discussions on submarine safety and anti-submarine warfare. They also agreed to launch a bilateral Maritime Security Dialogue, co-chaired by officials at the Joint Secretary/Assistant Secretary-level of the Indian Ministries of Defence and External Affairs and the US Departments of Defense and State.

Secretary Carter and Raksha Mantri Parrikar reaffirmed the importance of safeguarding maritime security and ensuring freedom of navigation and over flight throughout the region, including in the South China Sea. They vowed their support for a rules-based order and regional security architecture conducive to peace and prosperity in the Asia-Pacific and the Indian Ocean, and emphasised their commitment to working together and with other nations to ensure the security and stability that have been beneficial to the Asia-Pacific for decades.

Raksha Mantri Parrikar and Secretary Carter reviewed the progress and reiterated their commitment to pursue co-development and co-production of advanced defence articles under the DTTI. In this context, they agreed to initiate two new DTTI pathfinder projects on Digital Helmet Mounted Displays and the Joint Biological Tactical Detection System. They commended the ongoing discussions at the Jet Engine Technology Joint Working Group (JETJWG) and the Joint Working Group on Aircraft Carrier Technology Cooperation (JWGACTC). They agreed to work towards greater cooperation in the field of cutting-edge defence technologies, including deepening consultations on aircraft carrier design and operations, and jet engine technology. They noted the understanding reached to conclude an information exchange annex (IEA) to enhance data and information sharing specific to aircraft carriers.

With the aim of encouraging greater participation of US defence industries in the 'Make in India' programme of the Government of India, Raksha Mantri Parrikar informed Secretary Carter about the recently announced Defence Procurement Policy and other reforms in the Indian defence sector. Both sides agreed to encourage their respective defence industries to develop new partnerships in the pursuit of a range of cutting-edge projects. In support of 'Make in India', the United States shared two proposals to bolster India's suite of fighter aircraft for consideration of the Government of India.

Secretary Carter and Raksha Mantri Parrikar welcomed the finalisation of four government-to-government project agreements in the area of science and technology cooperation: Atmospheric Sciences for High Energy Lasers, Cognitive Tools for Target Detection, Small Intelligent Unmanned Aerial Systems, and Blast and Blunt Traumatic Brain Injury.

Before departing India, Secretary Carter oversaw a repatriation ceremony of US World War II remains from India to the United States. Secretary Carter expressed his gratitude to Raksha Mantri Parrikar and the Government of India for their support in facilitating the recovery effort. The Indian Government agreed to support America's commitment to bringing its fallen personnel home and providing their families the fullest possible accounting, and looks forward to further humanitarian missions of this kind over the next few years to return the remains of these US heroes to their families. SP

Nuclear Security Summit and the ground realities

LT GENERAL
P.C. KATOCH (RETD)

While President Barack Obama talked of "one of the greatest threats to global security — terrorists getting their hands on a weapon of mass destruction" at the two-day Nuclear Security Summit (NSS) held in Washington recently, and the US media interpreted it as identifying Pakistan, it was hardly the find of the century in the backdrop of the US administration deliberately looking the other way as it was Pakistan that brokered the entente cordiale between China and the US and it was the US that facilitated Pakistan to become a nuclear power. China transferred nuclear technology to Pakistan and both China and Pakistan indulged in blatant nuclear proliferation. A.Q. Khan, father of Pakistan's nuclear programme, was not even questioned by US intelligence. Pakistan's arsenal of tactical nuclear weapons (TNWs) has been permitted to grow at unprecedented pace. The US that made Pakistan join GWOT on the threat of otherwise being "bombed into the stone age" could have done much better to control Pakistan's radicalisation, export of terror and growing threat of her nukes falling into terrorist hands.

President Barack Obama and Indian Prime Minister Narendra Modi at the White House in Washington, D.C. on March 31, 2016

Obama also again displayed his penchant for hyphenating Pakistan with India by saying, "The other area where I think we need to see progress is Pakistan and India, that subcontinent, making sure that as they develop military doctrines, that they are not continually moving in the wrong direction." Now how is India moving in the wrong direction with a 'no first use' military doctrine even while confronted by the joint China-Pakistan threat, both nuclear and pursuing their unholy partnership in waging asymmetric war against India? And for that matter, when did the Pakistani establishment have her military doctrine moving in the right direction—something that the universal policeman refuses to acknowledge.

President Obama also added "Working with other nations, we have removed or secured enough nuclear material for more than 150 nuclear weapons that will now never fall into the hands of terrorists" but then just one-two nuclear weapon falling into terrorist hands would be enough. That Pakistan has been brandishing her nuclear weapons simultaneously flouting her terrorist sinews has been established past several years, yet she continues to get the backing of China and US. It is perhaps for such reasons that Russia chose to abstain from the Nuclear Security Summit that was heavy on words but may well be limited in execution, that too selectively. So, while Prime Minister Narendra Modi gave the clarion call by saying, "First, today's terrorism uses extreme violence as theatre. Second, we are no longer looking for a man in a cave, but we are hunting for a terrorist in a city with a computer or a smart phone. Third, state actors working with nuclear traffickers and terrorists present the greatest risk", there is unlikely to be very much change in Pakistan. As regards use of TNWs, Pakistan in all probability will do so through proxies, as done during 9/11. If India is targeted, the US and China will sermonise us about "showing restraint". Alternatively, in case of the West suffering a nuclear terrorist strike, the US-NATO may go for another Iraq like target instead of Pakistan – isn't that what happened despite clear proof of funding 9/11 from within Pakistan? We must also remember that the Al Qaeda, Taliban and ISIS were all created with support from the West. With reference to the NSS, Sobdar Baloch wrote on social media, "Concerned about the dangers of proliferation of nuclear weaponry and technology, the US has however, turned a blind eye to the genocidal treatment that is being meted out by its 'ally', Pakistan to the people of Balochistan. In fact, the US has added fuel to the fire of destruction that has been engulfing the Baloch people by agreeing to provide the Pakistani army latest F-16 fighter jets."

Prime Minister Modi has announced several key initiatives taken by his government in the area of nuclear security and non-proliferation, including countering nuclear smuggling and deployment of technology to deter nuclear terrorism, adding that the UN needs to do much more. India sure is keen to strengthen mechanisms against nuclear terrorism but it is the genuineness of the global community that matters. China proliferated nuclear technology to Pakistan and North Korea. Russia did not attend the NSS, Iran was not invited and the UN lacks muscle in absence of all this. These are the ground realities. SP

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

PHOTOGRAPH: Ben Solomon / U.S. Department of State

Defexpo highlights 'Make in India' possibilities

[By **R. Chandrakanth**]

Quitol in Goa may be back of beyond. But from March 27 to 31, it beckoned those in defence and aerospace to the ninth edition of Defexpo 2016, the most definite land, naval and homeland security exhibition. The place was transformed from scratch into an exhibition area, though with hiccups, and it signalled to the world that there is so much space for development in India and it can happen anywhere, not just in the big cities.

Defexpo 2016 attracted a record number of participants reflecting industry sentiments to India's march towards indigenisation, development and an economic powerhouse. According to the organisers, this edition attracted 1,055 exhibitors, up from 624 in the last edition held at Pragati Maidan in New Delhi. Inaugurating Defexpo 2016, the Minister of Defence, Manohar Parrikar, said: 'The huge number of exhibitors is encouraging. Maybe Goa has something to do with it or may be 'Make in India' initiative has something to do with it." He gave a hint that the successive editions may be held in Goa and asked the Chief Minister of Goa to look into aspects such as road widening, etc.

(Top) Defence Minister Manohar Parrikar at the Global Investors' Summit-Defence Sector organised at Defexpo 2016; (middle) main battle tank Arjun Mk II demo on the inaugural day; (above) the naval version of LCA Tejas flying on the inaugural day.

PHOTOGRAPHS: DPR Defence

Domestic and Export Markets

Parrikar announced that the Defence Procurement Procedure (DPP) had been tweaked and the latest updates had been put up on the Ministry of Defence's website. "This will boost the agenda of 'Make in India.'" It will create a defence industry network not just for domestic consumption but also exports. Similarly, there were issues related to offsets which would be tackled in a few months, all to create a conducive defence industrial base.

Growing from Strength to Strength

The Secretary of Defence Production, Ashok Kumar Gupta, mentioned that this edition had attracted 1,055 companies compared to 624 in the previous edition and the net exhibition area was up from 27,515 square metres to 40,725 square metres, an increase of 48 per cent. The gross area of exhibition has increased over threefolds to 1,50,000 square metres against 45,000 square metres in 2014.

The exhibition showcased India's capabilities in land, naval and security systems as well as its emergence as an attractive destination for investment in defence sector. The event provided a platform for forging alliances and joint ventures in the defence industry.

About 47 countries from different continents took part in the exhibition against 30 countries which participated in the last edition. The countries were Australia, Austria, Belarus, Belgium, Brazil, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Egypt, Finland, France, Germany, Hong Kong, Hungary, India, Israel, Italy, Japan, Lithuania, Malaysia, Netherlands, New Zealand, Nigeria, Norway, Panama, Poland, Portugal, Republic of Korea, Romania, Russia, Serbia, Singapore, Slovak Republic, South Africa, Spain, Sudan, Sweden, Switzerland, Taiwan, Turkey, UK, Ukraine, United Arab Emirates and the United States of America.

Foreign OEMs Making Moves

Though there were no major industrial partnership announcements at Defexpo, there certainly was anticipation in the air that the government would further tweak its policies to push the 'Make in India' programme and also attract foreign players. The biggies such as Airbus Group, Boeing Defense and Security, BAE Systems, Northrop Grumman, Lockheed Martin, Saab and many others showed the road map they have created to be part of India's indigenisation efforts. Israeli, Russian, US and French companies had

strong presence at the event and were busy in connecting with Indian companies. Boeing announced that it would be expanding its sustainment programme in India considering that the number of military aircraft acquisitions was going up considerably.

While Indian companies such as Bharat Electronics Limited, Mahindra, L&T, DRDO institutions, Ordnance Factory Board, Alpha Design Technologies, Zen Technologies, Bharat Forge, Ashok Leyland and others excelled in their presentations on how India was capable to deliver in the defence realm, albeit starting a bit late. Many of them have tied up with foreign companies to bring in latest technologies.

Bharat Forge, AM General Tie-up

Kalyani Group's flagship company, Bharat Forge Limited, and US based AM General LLC, announced to bid for India's light specialist vehicle (LSV) programme using AM General's battle-tested HMMWV as the LSV's base platform – with final build and production to take place in India.

"The teaming between world renowned light tactical vehicle provider AM General and Bharat Forge, known for manufacturing excellence, will lead to providing cost-effective and best-in-class mobility solutions for the indian armed forces," said Baba N. Kalyani, Chairman and Managing Director, Bharat Forge.

"AM General is pleased to be teamed with the Kalyani Group's Bharat Forge to bring our proven light tactical vehicle solutions to India for military and paramilitary requirements," said AM General President and CEO Andy Hove. "Bharat Forge has proven to be a world-class manufacturer, and we look forward to working together with them to deliver combat-proven mobility solutions to customers in India."

Rockwell Collins Campaign

Rockwell Collins demonstrated its strong value proposition for customers in India with commercially-based, customisable, technologically-advanced products and systems. "We are fully aligned with the government's 'Make in India' campaign by developing capability locally while simultaneously aligning with local strategic partners," said Sunil Raina, Managing Director India for Rockwell Collins.

BEL Ties-up with Rosoboronexport

The Bharat Electronics Ltd (BEL) and Rosoboronexport (part of Rostec State Corporation) signed a memorandum of understanding (MoU) under which the two will cooperate for the joint development of various subsystems of major defence projects under the offset clause of the DPP. The industrial tie-up will cater to the requirements of all the three arms of the Indian defence forces as well as the civilian sector.

M777 Howitzer Takes Centre Stage

BAE Systems' world-class, battle proven M777 ultra lightweight howitzer, for which India and the United States are in discussions for a foreign military sale (FMS) for the Indian Army, took centre stage at Defexpo. The company recently reaffirmed its commitment to 'Make in India' by down-selecting Mahindra and Mahindra as its business partner for the proposed in-country assembly, integration and test facility. In addition to the M777 ultra lightweight howitzer, BAE display included the Archer 155mm FH77 BW L52 self-propelled field howitzer along with a full spectrum of munitions spanning hyper velocity projectile, 81mm Mortar, 105mm and 155mm artillery ammunition, 120mm tank ammunition and the 3P ammo.

There were many such products and solutions from foreign OEMs which were new to India and the refrain at Defexpo was to get into partnerships as to make India's dream of defence indigenisation come true. SP

PHOTOGRAPHS: AMPL

Astra Microwave signs two key MoUs

Hyderabad-based Astra Microwave Products Limited (AMPL) has tied up with a Israeli defense technology company, Rafael Advanced Defense Systems Ltd to form Astra Rafael Comsys Pvt Ltd (ARC) with 51 and 49 per cent holding respectively and in future it could be 50:50 partnership, subject to regulatory approvals.

AMPL is a 25-year-old public listed company engaged in design, development and manufacture of critical RF and microwave products and other strategic electronics subsystems in India. Rafael Advanced Defense Systems Ltd designs, develops, manufactures and supplies a wide range of high-tech defence systems for air, land, sea and space applications. The company offers its customers a diversified array of innovative solutions at the leading edge of global technology, from underwater systems through naval, ground and air superiority systems to space systems.

ARC will carry out production, integration, customisation, marketing sale and life-cycle support and additional activities as required in the fields of tactical radio communication systems, electronic warfare systems and signal intelligence systems. ARC will become operational from September 2016 and about $40 million is expected to be invested jointly by the promoters in the first three to four years operations. ARC will have its manufacturing facilities in Hyderabad with a marketing office at Delhi.

AMPL has signed another key agreement to set up joint ventures in India in association with a Canadian company.

Astra is forming a joint venture with Canada-based Unique Broadband Systems Ltd to do business in the areas of UHF broadcasting, satellite uplinking and medical imaging products for Indian and other international markets. The joint venture is expected to do business of $50 million to $70 million in next five to seven years and create over 200 new jobs.

The company Astra UBS Technologies Private Limited is the joint intent to provide Canadian and Indian technology and complex communication system components to further support India and numerous international customers. This is a brain-chain approach to provide Canadian technology and complex communication system components from technology giant of Canada Unique Broadband Systems. This is a Brain-Chain approach to provide Canadian technology and complex communication system components from technology giant of Canada Unique Broadband Systems to very high tech Indian partner for Astra Microwave products further manufacturing as well as post-sales support in India. SP

LT GENERAL
P.C. KATOCH (RETD)

South China Sea – Dragon laying eggs

India has never claimed the Indian Ocean but China has been saying periodically that Indian Ocean does not belong to India—exhibiting the intellect of a special child. But when it comes to the South China Sea (SCS), China claims entire SCS as its own—exhibiting qualities of a spoilt brat. China refuses to respect the universally acknowledged United Nations Convention on the Law of the Sea (UNCLOS).

China does not respect global commons and has refused to recognise the Hague-based Permanent Court of Arbitration ruling on territorial claims of the Philippines filed in 2013 against China over disputed areas in SCS. Chinese mindset is rooted in her historical 'Tian Xia' (under the Heaven) concept which traditionally views 'all territories' under the sun belonging to Chinese. After China became a net importer of oil in 1993, she has been publicly declaring intentions of stepping beyond its traditional continental land oriented security paradigms.

China has identified the first quarter of 21st century as a period of 'strategic opportunity' and the next for 'strategic expansion' for becoming a 'Great Power'. Tensions have been rising in SCS because of Chinese aggressive stance. Last year, USS Lassen entered Zhubi Reef, which China claims part of China's Nansha islands. Zhubi Reef is an undersea rock in the SCS that China has built into an artificial island in the contested Spratly Islands. Beijing's claim is illegal since UNCLOS specifies that coastal states may construct artificial islands within exclusive economic zones (EEZ) extending 200 nm off their coasts. Beyond that limit, the law allows no such projects. Zhubi Reef is 500 nm from nearest Chinese shoreline. The US has termed the USS Lassen incident a 'regular occurrence' but China says if such provocations continue, Chinese warships will have to engage in face-offs.

It remains to be seen how the situation develops; China denying freedom of navigation at sea to other nations and US wanting to ensure freedom of movement in global commons. In recent months, has stepped up 'freedom of navigation' patrols in SCS close to territory claimed by Beijing to assert Washington's view that these areas remain international waters and airspace. But China has continued to build facilities arguing that it is US who is militarising the SCS. China has now deployed more advanced J-11BH/BHS fighter aircraft on Woody Island which is largest of the Paracel Islands in SCS. Surface-to-air missile batteries have appeared last month in the Paracels, more than 500 km to the north, and satellite photos show powerful radar facilities, potentially extending the kill zone of missiles on the Chinese mainland that are devised to sink aircraft carriers.

Chinese President Xi Jinping has used the isles in SCS to expand China's military footprint in the region, gradually building and militarising and equip outposts as far from the Chinese mainland as possible, also challenging the military status quo in the Western Pacific – in line with extending a security buffer extending far from its coast. By the same analogy for creating a buffer on land, China had annexed Xinjiang, Tibet and Inner Mongolia. The placement of advanced fighter aircraft on Woody Island in the Paracel archipelago extends China's fighter aircraft an additional 360 km into the SCS from the nearest Chinese airbase on Hainan Island. Farther south of Woody Island, China is building airbases and port facilities in Spratly Islands. These include Subi Reef (mentioned above), Mischief Reef and Fiery Cross, adding airstrips, hangars, weapon storage facilities and fuel storage tanks. The build-up has been incremental but very swift while China's neighbours have been locked in a stalemate over the islands. Dredging of sand to build artificial islands atop coral reefs in the Spratlys began began in 2014 but has accelerated in recent months, now featuring deepwater harbours and long runways suitable for warships and fighter jets.

Mischief Reef

China's military aircraft, missile batteries and radars serve multiple purposes, mainly to deter the US and allies and countries in Asia-Pacific that have claims on islands in SCS, plus freedom of navigation for the international community at large. As per Admiral Harry B. Harris Jr, Commander US Pacific Command, China's actions are changing the operational landscape in the SCS. James R. Clapper, Director US National Intelligence Agency, says that China would "have significant capacity to quickly project substantial military power to the region" by early 2017. The question is will China have her way or will there be flashpoints and if so what would be the outcome? SP

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

PHOTOGRAPH: amti.csis.org

A RAAF's F/A-18 Hornet and a USAF's F-16 Viper and in a training sortie

PHOTOGRAPH: Commonwealth of Australia

AIR MARSHAL
B.K. PANDEY (RETD)

Super Hornet or the Fighting Falcon?

The requirement of the IAF is not for a lightweight fighter but for a medium to heavyweight combat aircraft capable of operating over long range without in-flight refuelling, preferably powered by two engines for enhanced safety and should have a high payload carrying capability

A statement in mid-February this year by Manohar Parrikar, the Minister of Defence, that "India will select one or two fighter aircraft which will be manufactured locally by a private company under 'Make in India' initiative", has led to a flurry of activity not only in the Indian aerospace industry in the private sector, but also amongst the leading manufacturers of combat aircraft in the world. However, behind-the-scene activity in this regard had begun much earlier, to be precise, soon after the tender for the 126 Rafale medium multi-role combat aircraft (MMRCA) was cancelled in April last year. While the fresh initiative of that time by Prime Minister Narendra Modi to procure 36 Rafale jets in fly-away condition in a direct deal with the Government of France was welcome, the global aerospace industry was well aware that this would only partially alleviate the difficulty the Indian Air Force (IAF) is in with regards to the rapidly depleting strength of its fleet of combat aircraft. By 2020, the IAF will be short by as many as 300 aircraft in its combat fleet.

Saab of Sweden was perhaps the first in line with the offer to manufacture in India, the latest version of the JAS 39 Gripen which is claimed to be a fifth-generation platform, with full transfer of technology. In competition followed two companies from the aerospace industry of the United States offering manufacture of combat aircraft in India under identical terms related to transfer of technology.

In October last year, the Boeing company of the US had already revealed intentions of offering to build its latest version of F/A-18 Super Hornet in India if given an opportunity by the IAF. This first indication of this offer came from James McNerney, Chairman of Boeing, when he was addressing the gathering at an aerospace summit in India wherein he stated that he was looking forward to a partnership to "bring the best of Boeing to India and the best of India

to Boeing." He also went on to say that India did need combat aircraft in fairly large numbers and that his company would be willing to manufacture a suitable fighter aircraft in India provided the order was large enough to justify the investment which undoubtedly, would be sizeable. While McNerney did not specify the aircraft that Boeing was prepared to offer, Chris Chadwick, President and CEO of Boeing Defense, Space and Security (at that time), went on to make a specific offer of the F/A-18 E/F Super Hornet for manufacture in India.

Not to be left behind, the US aerospace major Lockheed Martin Corporation has also come up with an offer to manufacture the F-16IN Fighting Falcon combat jets in India, once again under the 'Make in India' scheme. This declaration was made to the media by Phil Shaw, CEO of Lockheed Martin India Private Ltd, at the Singapore Airshow 2016. He also revealed that talks with the Indian authorities on this subject had been in progress for some time.

One distinct advantage that would favour the selection of the F/A-18 E/F Super Hornet over the F-16 IN Fighting Falcon is the fact that the former would be eminently suitable for the Indian Navy as well

Brief History of Development

Development of the F-16 and the F-18 began in the US around the same time that is in the early 1970s. In a competition to develop a lightweight fighter aircraft for the US Air Force (USAF), General Dynamics (now Lockheed Martin Corporation) was awarded a contract to develop a single-engine fighter aircraft that was designated as the YF-16. Simultaneously, Northrop (later McDonnell Douglas) was contracted to develop a competing twin-engine combat aircraft dubbed as the YF-17. The prototype of the YF-16 undertook its maiden flight in December 1973 and the YF-17 took to the air in June 1974. After extensive evaluation, in January 1975, the YF-16 was chosen over the YF-17 in the lightweight fighter competition. Soon after, in the Navy Air Combat Fighter competition held on May 2, 1975, the US Navy selected the YF-17 as the basis for what would evolve as the McDonnell Douglas F/A-18 Hornet in single and twin-seat variants classified as C and D. The Boeing single-seat F/A-18E and the twin-seat F/A-18F Super Hornet multi-role combat aircraft are larger and more advanced derivatives of the F/A-18C and D Hornet and are capable of operating from aircraft carriers as well.

Combat Aircraft for the IAF

The versions of the two combat aircraft from the US aerospace industry that were competing for the contract for 126 MMRCA were the F-16IN Fighting Falcon and the F/A-18 Super Hornet. Both the platforms were of the fourth plus generation. Unfortunately for the US aerospace industry, both the aircraft were eliminated in the Indian MMRCA competition as the Rafale from Dassault Aviation of France emerged as the winner. However, eight years after the request for proposal for the MMRCA was floated, the tender was cancelled leaving the IAF in serious difficulty with regard to its combat fleet. Problems for the IAF were compounded as the project to develop a fifth-generation fighter aircraft (FGFA) jointly with Russia was and is not progressing at the desired pace. The need to explore alternatives for speedy induction of medium to heavyweight combat aircraft in the numbers required has therefore become even more urgent.

With the strengthening strategic partnership between India and the US, including the expanding relationship in the regime of defence, both driven partially by the increasing belligerence of China especially in the South China Sea, it would only be reasonable to expect that India would accord higher priority to defence deals with the US. India in now in a situation wherein it has to make a choice between the F-16IN Fighting Falcon and the F/A-18 E/F Super Hornet, the two readily available options. To begin with, the requirement of the IAF is not for a lightweight fighter but for a medium to heavyweight combat aircraft capable of operating over long range without in-flight refuelling. The requirement of the IAF of a lightweight fighter is expected to be met through the indigenous light combat aircraft (LCA) Tejas Mk I and IA initially and subsequently by Tejas Mk II. As for the requirement of a heavier platform, preferably, the aircraft should be powered by two engines for enhanced safety and should have a high payload carrying capability. It is also desirable that the aircraft be able carry a crew of two to provide for better efficiency when deployed on long range and long duration missions. Compared with the F-16IN Fighting Falcon, the F/A-18 F model of the Super Hornet is much larger in size, has a maximum take-off weight that is over ten tonnes higher, has a 31 per cent higher combat radius and can carry weapon load that is significantly larger and of wider spectrum. As compared to the F-16IN Fighting Falcon, the F/A-18 F is definitely more suitable for operating against targets in China.

One distinct advantage that would favour the selection of the F/A-18 E/F Super Hornet over the F-16IN Fighting Falcon is the fact that the former would be eminently suitable for the Indian Navy as well. The Super Hornet has been and continues to be the mainstay of the aviation wing of the US Navy for several decades.

Advantages of Boeing's Offer

It is understood that the offer from Boeing includes transfer of technology and substantial indigenous content. The IAF may thus have the option of selecting from a wide range of Israeli and French avionics made in India as well as from a range of weapon systems developed indigenously or procured from Europe or the US again through the 'Make in India' route. These issues will have to be resolved through negotiations in the initial stages itself. Boeing has recently made inroads into the Indian aerospace industry through the two other programmes that are ongoing, namely the order for the 22 AH-64E Apache attack helicopters and 15 CH-47F Chinook heavy-lift helicopters for which components are being made by companies in the private sector of the Indian aerospace industry. The US thus sees immense opportunities in India for its own aerospace industry.

Another major advantage of opting for the Super Hornet will be the GE-F414 engine. As Boeing has offered to set up the entire production line in India, it would be reasonable to assume that the GE F-414 engine, that powers the F/A-18 Super Hornet, will also be manufactured in India. This engine has also been selected to power the Tejas Mk 2 which is now under development. The IAF will be assured of the availability of life-cycle support within India for the engines for both the fleets of the Super Hornet and the Tejas Mk 2. This would result in huge cost savings through economies of scale and also provide an opportunity to the Indian aerospace industry to acquire the capability to develop power plants for aircraft indigenously, something that it has not been able to achieve so far.

Perhaps the most compelling reason why India should not and will not opt for the F-16IN Fighting Falcon is the decision by the US Government to continue to supply the latest versions of this platform to Pakistan. SP

Mighty Jets: 55 years of strategic reach

Mighty Jets, one of the oldest transport squadrons of the Indian Air Force (IAF) with its motto of 'Ishtam Yatnen Sadyet' that translates into 'Achieve Goals through Perseverance,' celebrated its 55th anniversary on March 31, 2016. It was raised in Chandigarh with An-12 aircraft on March 31, 1961, under the command of then Wing Commander T.N. Ghadiok in support of Indian armed forces in Jammu & Kashmir (J&K) region. It actively took part in 1962, 1965 and 1971 wars. During 1971 war, the unit was bestowed 'Battle Honours' for Offensive Operations for its successful bombing missions against the enemy, a rare honour for a transport squadron. The squadron was awarded the President's Standard in March 2011.

In April 1985 re-equipped with IL-76 'Gajraj' aircraft and rechristened 'Mighty Jets', it relocated to Agra (April 1985) and to Nagpur (March 2003), before finally relocating back to Chandigarh in August 2011. All these years it continued to fly in support of J&K forces as well the civilian population being a harbinger of peace and bringing progress to the state. The only IL-76 squadron in the IAF, it has logged more than one lakh flight hours on the four-engined IL-76 aircraft.

Being equipped with heavy-lift aircraft, the squadron has a long list of firsts to its credit. A T-72 tank can be directly driven into the IL-76 for an airlift, or three 6.5-tonne trucks, and a host of heavy and outsized vehicles and equipment can be carried over long distances. The notable firsts and credits include: The only Indian unit to circumnavigate the world. Fly over North Pole, land in Car Nicobar on a damaged runway after 2004 tsunami. The first woman multi-engine jet pilot of the IAF (then Sqn Ldr Veena Saharan).

Mighty Jets have been the messiah of relief during various natural calamities within the country (Bihar-Purina, Gujarat, Punjab, Haryana, J&K-Srinagar & Leh, Assam, Tamil Nadu, Andaman & Nicobar, Uttar Pradesh, etc.) and abroad (US- Katrina Hurricane, Iran, Pakistan, Philippines, Sri Lanka, Indonesia, Yemen, Nepal, Male, Armenia, Kyrgyzstan, Afghanistan, Oman, etc). Its operations have so far spanned Asia, Europe, North America and Africa.

Being a legacy fleet, IL-76 maintenance poses enormous challenges, however through professionalism and dedication of its personnel, the squadron has risen to the occasion meeting all its assigned tasks. It has earned one MVC, four VRCs, one YSM, two BAR to VMs, 39 VMs, three VSMs and five M in Ds.

Presently, the unit is commanded by Group Captain Sunil Katoch commemorate 55 years of its glorious service to the nation. SP

Embraer selects Rheinmetall Germany for KC-390 programme

Embraer Defense & Security announced that it has selected the German company Rheinmetall Defence Electronics Simulation and Training to develop and deliver the training media suite for the KC-390 military transport jet.

"We are looking forward to build further on our recent fruitful cooperation and are confident that our partnership with Rheinmetall will result in a first class KC-390 training media suite that will indefinitely contribute to the overall success of the KC-390 Programme", said Jackson Schneider, President and CEO, Embraer Defense & Security.

Embraer KC-390 is a tactical transport aircraft designed to set new standards in its category, while presenting the lowest life-cycle cost of the market. It can perform a variety of missions, such as cargo and troop transport, troop and cargo air delivery, aerial refuelling, search and rescue and forest firefighting. Embraer expects to receive the certification of the KC-390 jet by the end of 2017 with first deliveries of the aircraft scheduled for the first half of 2018. SP

BEL hands over EOIR payloads to IAF

The Bharat Electronics Limited (BEL), Bengaluru, handed over the first lot of two numbers of electro-optic infrared (EOIR) payloads for helicopters to the Indian Air Force (IAF) in Chennai on March 21, 2016. Air Vice Marshal A.S. Butola, Assistant Chief of Air Staff, Operations (Transport & Helicopters), received the EOIR payloads from Amol Newaskar, Director (Other Units), BEL.

The EOIR payload being manufactured by BEL Chennai is a stabilised turret assembly consisting of day and night camera with eye-safe laser range finder which provides capabilities for day/night target detection, recognition and identification and range measurement in various weather conditions. It is a compact and low-weight system. SP

India to acquire Raytheon Stinger missiles

The Indian Ministry of Defence has signed an agreement with the US Department of Defense to acquire Stinger air-to-air missiles made by Raytheon Company. As part of the deal, India will receive 245 Stinger air-to-air missiles along with launchers and engineering support.

"India joins nations around the globe who recognise that air-to-air Stinger can be a key component of attack and light attack helicopter mission configurations," said Duane Gooden, Raytheon Land Warfare Systems Vice President. "Stinger significantly improves the ability of the aircraft to successfully perform today's missions while countering existing threats."

Combat-proven in four major conflicts, Stinger has more than 270 fixed- and rotary-wing intercepts to its credit. It is deployed in 19 nations and with all four US military services. India's Stinger acquisition is part of a $3.1-billion deal with the US that includes combat helicopters, weapons, radars and electronic warfare suites. SP

PHOTOGRAPHS: PIB, Embraer Defense and Security

HAL conferred with 'SCOPE Excellence Award'

The Hindustan Aeronautics Limited (HAL) has been conferred with 'SCOPE Excellence Award' for outstanding contribution to the Public Sector Management. The President of India Pranab Mukherjee presented the prestigious award to T. Suvarna Raju, Chairman and Managing Director of HAL at Delhi recently.

On receiving the award, Raju said, "Bestowal of SCOPE Excellence Award validates the work we are doing at HAL with passion. The award further motivates us to excel and deliver on our promises". The coveted award was presented to HAL under institutional category for the year 2011-12.

Significantly, HAL's turnover has surged to ₹16,524 crore for the financial year 2015-16 with PBT standing at ₹3,210 crore for the year. HAL made a contribution of ₹4,284 crore to the government as buyback of 25 per cent of the share capital and free reserves apart from paying a dividend of ₹510 crore for the FY 2015-16. SP

Thales and Airbus to produce new digital maps

The French National Geographic and Forestry Information Institute (IGN) has awarded the Thales-Airbus Defence and Space consortium the GeoMaps contract for the next six years. The French armed forces will get high added-value geographical data that will give them the upper hand in missions in theatres of operations.

The data will mainly be based on images acquired by the two Pléiades satellites, significantly increasing the accuracy of the maps to be produced. This contract runs from 2016 to 2021 and guarantees the consistent geometry and formatting of all reference mapping data to optimise interoperability between the French Ministry of Defence's different systems and services, as well as with their allies and partners. SP

JFD wins £193-million significant Indian Navy submarine rescue contract

JFD, the leading global subsea operations and engineering company and part of James Fisher and Sons plc, announced that it has been awarded a £193-million contract by the Indian Navy for the provision and long-term support of its submarine rescue capability.

The contract includes the design, build and supply of two complete submarine rescue systems, and a 25-year all-inclusive annual maintenance contract. This further enhances JFD's worldwide submarine rescue service presence following last year's announcement award of a £12.1-million contract by the UK Ministry of Defence for operation of the NATO submarine rescue system (NSRS). With this additional contract, JFD will be delivering submarine rescue services to six of the most advanced navies in the world confirming the company's leadership in this elite niche.

JFD will provide two complete fly-away submarine rescue systems, including deep search and rescue vehicles (DSRV), launch and recovery systems (LARS) equipment, transfer under pressure (TUP) systems, and all logistics and support equipment required to operate the service. The equipment will be designed, manufactured, integrated and tested by JFD prior to shipping to India for final commissioning and trials. SP

Saab and Tata to develop and manufacture self-protection systems

Defence and security company Saab and Indian company Tata Power Strategic Engineering Division (Tata Power SED) have started the process of manufacturing self-protection systems for land-based platforms for the Indian market and for export to Saab's global market. The partnership will also involve joint development of the next-generation self-protection system.

The process of transfer of technology (ToT) for production of initial orders for Saab's global customers has already commenced at Tata Power SED's facility in Bengaluru. Tata Power SED will eventually manufacture a large part of the system in India and also do final assembly. Tata will also be responsible for marketing the system in India.

"Saab is fully committed to working with Indian industry to 'Make in India', and this partnership is another step in that direction. Tata Power SED's strengths in defence electronics manufacturing are a perfect complement to Saab's expertise in electronic warfare systems, sensors and self-protection systems for all domains", says Jan Widerström, Chairman and Managing Director, Saab India Technologies.

Land Electronic Defence System (LEDS) 50 MK2 is a subset of an integrated and modular, active defence system consisting of a laser warning segment (LWS) and effector control segment (OSCS). The solution provides combat personnel with vital situational awareness on laser threats and countermeasure availability and areas of coverage/protection offered under dynamic conditions, allowing manual or fully automatic responses against threats. SP

PHOTOGRAPHS: HAL, Thales

Belgium's Transport Minister resigns

The Belgium Transport Minister Jacqueline Galant has resigned following accusations of security lapses prior to the March terrorist attacks in Brussels. She is the first government official to leave in the wake of the March 22 bombings at Brussels Airport in Zaventem and the Maelbeek subway station in which 32 people were killed and more than 300 were injured.

Galant said she never saw a confidential 2015 European Union (EU) report, leaked by opposition parties, showing security lapses at Belgian airports and warning that the country's Civil Aviation Authority, an agency of the Transport Ministry, was not adequately conducting inspections and checks.

Prime Minister Charles Michel had defended Galant, but said her resignation was appropriate because her office failed to inform him of the EU report. Michel said the government has commissioned an analysis of how the report was handled by the Belgian government officials after it was received. SP

US border not impregnable

Security issues were found at nearly all of the US Customs and Border Protection's (CBP) remote facilities along the southwest border, according to a Department of Homeland Security Inspector General report.

Inspectors visited seven of the 11 facilities, known as 'Forward Operating Bases,' (FOBs) in the El Paso, Rio Grande Valley and Tucson regions. Three of the 11 were not operational at the time of the inspection. Six of the seven facilities had security lapses, such as inoperable cameras as well as ongoing challenges with providing safe drinking water to personnel. One of the facilities also had inadequate living conditions.

The operating bases are very remote CBP facilities built to reduce the response time for Border Patrol agents working in austere areas of the border region. They are also intended to increase law enforcement's presence in the area. Four of the bases that were inspected didn't have fully functioning closed-circuit security camera systems, which is required by CBP rules to allow agents on guard duty to monitor the facility and grounds.

"Because of their proximity to the US-Mexico border, it is essential that FOBs are equipped with proper, functioning surveillance equipment," the report stated. The report also found that customs officials were not performing all the required inspections of the facilities and didn't keep the necessary documentation of repairs. "Without regular inspections and timely maintenance and repairs, CBP cannot ensure it will continue to provide adequate security, safety and living conditions." SP

Temple fire due to security lapses

Serious security lapses in handling of explosives led to the fire disaster at Puttingal temple in Kollam, Kerala, on April 10, Chief Controller of Explosives said in a report submitted to the Government of India. Explosive chemicals exceeding the norms in intensity, quantity and size were used to raise the decibels, the report said.

The festival organisers ignored the basic rule that the shed for storing fireworks should be located at least 100 metres away from the display site. The Explosives Act clearly mentions the size of the rockets ('amittu') that burst into colourful patterns as they progress through the sky from one stage to another. But the seize of the rockets used at Puttingal was almost 10 times above the prescribed limits. The standard size of the iron barrels used for launching the rockets is 8-10-12. Nearly half of the long barrels should be below the ground and be firmly fixed by tying them with iron rods used in concrete.

These rules were not followed at Puttingal. In fact, a barrel tilted during the rocket launch and instead of going up it went straight into the shed where a huge pile of fireworks was stored. The Kerala High Court has banned the use of high-decibel crackers and fireworks display after sunset in places of worship across the state in the wake of the temple fire tragedy in Kollam that has claimed more than 110 lives. SP

PHOTOGRAPHS: Facebook, Wikipedia

RELENTLESS JOURNEY OF
EXCELLENCE SINCE 1964

Follow us on Twitter

SP'S MILITARY YEARBOOK™
SINCE 1965

SP'S AVIATION
SHARP CONTENT FOR SHARP AUDIENCE

SP's LandForces

SP's NavalForces

SP'S AIRBUZ
AN EXCLUSIVE MAGAZINE ON CIVIL AVIATION FROM INDIA

SP's MAI
DAILY FORMIDABILITY ON MILITARY AEROSPACE INTERNAL SECURITY

BizAVIndia
An initiative by SP GUIDE PUBLICATIONS &

SP GUIDE PUBLICATIONS

OVER 5 DECADES SINCE 1964

www.spguidepublications.com

A Finest & Handy Document

Now Available
NEW EDITION

Indispensable Reference

SP'S MILITARY YEARBOOK 2015-2016

SINCE 1965 43RD ISSUE

From 52 Years Old Media House

MUST BUY FOR ALL THOSE WHO VALUE & ARE ASSOCIATED WITH THE ARMED FORCES IN THE DESTINATIONS - INDIA & ASIA

Reserve Your Own Copies, Now!

order@spsmilitaryyearbook.com

SP GUIDE PUBLICATIONS

OVER 5 DECADES SINCE 1964