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Vol: 11 AERO INDIA 2021 Special

www.spsmai.com

ISSN 2230-9266



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Chief of the Army Staff PAGE 6



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Chief of the Naval Staff PAGE 10



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Chief of the Air Staff PAGE 12



Rajnath Singh
Defence Minister of India

Targeting \$5 billion in Defence Exports

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Indian Navy Conducts Joint Exercise with Army and Air Force



A large-scale tri-service joint amphibious exercise AMPHEX – 21 was conducted in Andaman & Nicobar group of islands from January 21-25, 2021. The exercise involved participation of Naval ships, amphibious troops of the Army and different types of aircraft from the Air force. The exercise was aimed at validating India's capabilities to safeguard the territorial integrity of its island territories. It also sought to enhance operational synergy and joint warfighting capabilities amongst the three Services. The exercise involved multi-faceted maritime operations by synergised employment of amphibious assault ships, surveillance platforms, execution of maritime air strikes and complex manoeuvres at sea. Airborne insertion of Marine Commandos of Navy and Special Forces of the Army, naval gunfire support, amphibious landing of forces and follow-on operations also formed part of the exercise.

Ex KAVACH for defence of Andaman & Nicobar Islands formed a part of AMPHEX – 21. A joint intelligence, surveillance and reconnaissance exercise under the aegis of HQ Integrated Defence Staff was also run concurrently to achieve Maritime Domain Awareness by employment of a multitude of sensors. **SP**



Cover:

Defence Minister Rajnath Singh is leading India's push for "AtmaNirbhar Bharat" and growing its capabilities of manufacturing and exporting a wide variety of high-value defence platforms with an aim to achieve a target of \$5 billion in defence exports.

Cover images: PIB, Indian Army, Indian Navy PRO, IAF

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Exporting high-value defence platforms is a significant step towards 'AtmaNirbhar Bharat'

At the inauguration of Defexpo 2020 show in Lucknow, Prime Minister Narendra Modi had set a target of \$5 billion in defence exports in next five years for India and invited private businesses to invest in defence manufacturing in India. Towards this end, the Prime Minister said, that the two defence industrial corridors, one in Tamil Nadu and the other in Uttar Pradesh, would help the growth of medium and small scale industries in their vicinity, provide employment opportunities for the youth and help in the growth of the overall economy with ₹20,000 crore of investment in both these corridors. This, he said, would realise the objective making Asia's third largest economy self reliant in defence manufacturing. For the last few years, the government has been majorly focusing on boosting domestic defence production and has set a target of ₹1.75 lakh crore (\$25 billion) turnover in defence manufacturing by 2025.

In a major move to boost domestic defence manufacturing, the Government, late last year, approved the export of indigenously-developed surface-to-air Akash missile system. The decision to export the missile systems was taken at a Cabinet meeting presided by Prime Minister Narendra Modi. Speaking on the occasion, Defence Minister Rajnath Singh said, "The export of big platforms was minimal. This decision by the Cabinet would help the country improve its defence products and make them globally competitive". Rajnath Singh said the government intends to focus on exporting high-value defence platforms with an aim to achieve a target of \$5 billion in defence exports.

Aero India 2021 provides the ideal platform to boost Indian defence exports as it will showcase Indian defence manufacturing capabilities to the world and bring the Indian manufacturers in the aerospace sector directly in touch with the potential buyers – both foreign OEMs and foreign armed forces. Despite severe restrictions on travel as well as mass gatherings, due to COVID-19, and the postponement of other major global defence and airshows, Ministry of Defence has taken the bold decision to go ahead with the show as it is a perfect platform to support the ultimate objective of 'AtmaNirbhar Bharat'. With strict COVID-19 protocols in place, Aero India 2021 is going ahead as a 'business only' show in a hybrid model – in person as well as virtual, from February 3-5, 2021.

Over the last few months, SP Guide had interviewed all the three Service Chiefs and published these interactions in the special editions of its *SP's Aviation*, *SP's Naval Forces* and *SP's Land Forces*, brought out on the occasions of the IAF Day, Navy Day and Army Day respectively. In case you missed them, these exclusive interviews are being reproduced in this issue of *SP's MAI*. It is important to recap the visions of these leaders, who are responsible for taking our Armed Forces to the next generation of war fighting capabilities, for the benefit of all military professionals.

This issue of the magazine also has an article on Pakistan's problems. The author has highlighted the recent killing of 11 Hazara Shiite miners in Balochistan for which the Islamic State has claimed responsibility. This is just one of the hundreds of incidents of ethnic strife in Pakistan. Much more violence has become almost daily occurrences due to independence movements in Balochistan, Sindh and Pashtunistan.

As always, SP Guide will have a significant presence at Aero India 2021 with special issues of our publications getting distributed at the show. Come visit our booth in Hall-E, Stall: E4.6 for your personal copy of our magazines. Also look out for SP's ShowNews, our Aero India show dailies, for highlights of the event every day.

Wishing all our readers a Happy New Year, we hope that you enjoy reading this issue!



Jayant Baranwal
Publisher & Editor-in-Chief



LT GENERAL
PC. KATOCH (RETD)

Growing Discontent in Pakistan

The recent killing of 11 Hazara Shiite miners in Balochistan for which the Islamic State has claimed responsibility is just one of the hundreds of incidents of ethnic strife in Pakistan. Much more violence has become almost daily occurrences due to independence movements in Balochistan, Sindh and Pashtunistan. The Baloch independence fighters have killed over 350 Pakistani security personnel in addition to some Chinese nationals in Pakistan during 2020. The Tehrik-i-Taliban Pakistan (TTP) has also extracted similar tally of Pakistani army personnel last year. Security of the China-Pakistan Economic Corridor (CPEC) has become a major headache for which China is pressuring Pakistan. On instructions from China, Pakistan is turning Gwadar into a walled city by constructing a fence around it with just one entry and exit points. Few villages have also come inside the fencing. Gwadar Port with presence of Chinese marines will likely be turned into a fortress like the Chinese base in Djibouti.

Debt trapped by China, Pakistan's economy is in poor state. In December 2020, Pakistan returned \$1 billion to Saudi Arabia as the second installment of a \$3 billion soft loan, with Islamabad concurrently reaching out to Beijing for a commercial loan to help it offset pressure to repay another \$1 billion to Riyadh in January 2021. In May 2019, IMF had predicted that Pakistan's future growth rates will be 2.9 per cent - lowest in South Asia. Pakistan's Debt to GDP ratio currently stands at 107 per cent of GDP. The Gross Public Debt has risen from 72 per cent of GDP at \$95 billion (2018) to 87 per cent at \$112.8 billion currently. Total external debts and liabilities have risen from 33 per cent of GDP (2018) to 45 per cent of GDP (2020). Pakistan's worsening macroeconomic position has led to Moody's downgrading Pakistan's debt outlook to "negative."

Prime Minister Imran Khan has been saying that he wants to learn from China how to remove poverty. This gives an impression that as Beijing's disciple all these years he has only learned how to generate more terrorism. Imran has been ignoring calls by Pakistan's combined opposition of 11 political parties for him to resign. Imran is being called 'puppet' of the Pakistan Army who is perceived to have blindly signed on extension of tenure of the Army Chief, demanded by the latter himself. Amid rampant corruption in the country, the latest scandal involves Lieutenant General Asim Salem Bajwa, who was appointed by Imran to oversee the CPEC projects. But none can touch him because, he, his namesake Army Chief General Q.J. Bajwa and Imran Khan would have all amassed millions in the process. One report has detailed irregularities to the tune of \$1.6 billion. In December 2020, the combined opposition was contemplating mass resignations from Pakistan's Parliament and state assemblies, which would create a constitutional crisis.

But above are not all the headaches that Pakistan has to contend

with. According to intelligence reports, there is significant discontent in Pakistan's Mujahid force headquarter in Bhimber, Pakistan occupied Kashmir (PoK). This force is under the administrative control of the National Guards, GHQ, and is headed by an officer from the Punjab region. Pakistan recruits local youth for the Mujahid force, which supposedly is a "reserved force" but the Pakistan army uses them for armed conflicts. Intercepted official correspondence between officers of the Mujahid force reads, "The morale of our men is very low. The commander of the 10 Corps had visited the Bhimber HQ in August and promised that they will be considered as regular troops and we will be treated as equal to the Pakistani regular forces by November 2020, but nothing has happened so far." Media reports that the Mujahid force members are angry over the step-motherly treatment they have been getting from successive Pakistan Army Chiefs despite suffering the maximum loss at the hands of the Indian Army.

About 70 per cent of Pakistani deployment along the Line of Control (LoC) in J&K is from the Mujahid force. They are suffering the maximum casualties on account of Indian retaliation to Pakistan periodically breaching the ceasefire. Yet, Pakistani army passes off Mujahid casualties as "civilians" killed in order to build public opinion against India. In 2015, Afghan National Army sources had revealed that Pakistan had trained three Mujahid battalions to fight in covert mode to support the Afghan Taliban and Haqqanis fighting in Afghanistan - same as Pakistani regular personnel are doing covertly. But notably, personnel of the Mujahid force have no medical insurance or pension and provident fund available to them, which the Pakistan Army regulars get. Besides, the command of Mujahid battalions is always with the Punjab Regiment officers.

Punjabi domination has been the bone of contention across Pakistan especially in the Pakistani army. The example of the Mujahid force is just one example. Same is the case in the Baloch Regiment of the Pakistan army where not only the commanding officers, but bulk officers, in these battalions are either Punjabis or non-Balochis. This is to ensure that troops in these battalions do not get affected by the ongoing China-backed Pakistani genocide against the populace of Balochistan. However, ruthless oppression by government forces has changed the dynamics of the Baloch nationalist movement. Excessive reliance on a coercive state apparatus has increased public alienation and increased popularity of the independence movement. It is a matter of time before discontent within the Pakistani army including against the Punjabi domination comes to a head. A clever enemy can hasten the process through information and psychological operations but that is another issue. **SP**

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



Dassault Systèmes at Aero India 2021: Booth Number A6.6 & A6.8

Digitalization to realize a thriving Aerospace, Defense & Space ecosystem

After almost a year of facing unprecedented disruptions and challenges with grit and resilience, the Aerospace and Defense (A&D) industry has started 2021 with the aim and ambition to revive and rejuvenate itself. OEMs and suppliers will need to accelerate innovation, drive efficiencies and move to the factory of the future to achieve greater agility and efficiency. This requires a new way to conceptualize, design, manufacture, test, certify and sustain new air and space vehicles. At Dassault Systèmes, we stand committed to help the industry with advanced 3D design and engineering solutions powered by our 3DEXPERIENCE platform.

- We are not only helping the Aerospace and Defense industry to design, simulate and manufacture the new generation of advanced aircrafts, but also helping them get ready for the future paradigms such as urban air mobility and vertical take-off/landings.
- We are fueling the transformation of the supply chain in the industry through effective digitalization via cloud, which enables our customers to collaborate and design in a better and faster way. A fully developed and evolved supply chain ecosystem can help the industry break new grounds in its larger goal of Make in India. It means, the full utilization of the potential of virtual twins and application of model based systems engineering (MBSE) in the development of new aircrafts, new defense systems or next generation of commercial and defense ready drones.
- The growing focus of the Government of India on the space sector development will require intelligent use of cloud based 3D design and engineering tools to unleash the full innovation potential for developing the next generation of ingenious rockets and satellites. At Dassault Systèmes, we are working closely with the Government to democratize 3D design and engineering tools through greater accessibility and availability of the technology for upcoming defense corridors, MSMEs and startups in India.
- Apart from the MSMEs, the startups in this industry are also a major drivers of innovation, especially in Drones or Unmanned Aerial Vehicles (UAVs). With the right support, mentoring and enablement, the current generation of startups can go toe-to-toe with the industry veterans and come up with such breakthrough ideas that fits the true definition of 'indigenous'.
- Upskilling and reskilling the Indian engineering talent will be crucial for the ecosystem's future trajectory. Dassault Systèmes is working closely with various State Governments (Karnataka, Andhra Pradesh) to set up dedicated Center of Excellence that

can provide the requisite training to the current and future generation of engineers, in the Aerospace and Defense industry.

As the leader in the sector for over three decades, we, at, Dassault Systèmes work with companies of every size and help them reinvent their operational models, product blueprints and delivery roadmap.

- Build to Operate ISE based on the 3DEXPERIENCE® platform, accelerates meeting production targets and increases manufacturing capacity. The solution offers aerospace OEMs and suppliers the ability to implement lean practices, integrate new technologies and meet demand without sacrificing either quality or schedule.
- Ready for Rate enables flexible production while delivering products with first-time quality, on budget, and on schedule. Aerospace manufacturers can take advantage of the 3DEXPERIENCE® platform to implement lean practices that remove waste in critical areas of manufacturing. Planners can define and validate manufacturing processes down to individual work instructions virtually to eliminate potential issues and waste before they occur.
- Engineered to Fly allows small and medium suppliers to grow their business profitably from bid to delivery. By connecting the dots, the 3DEXPERIENCE® platform reduces complexity to develop new bids, collaborate during product development and facilitate manufacturing ramp-up.
- Reinvent The Sky supports startups, small and medium enterprises and OEMs in developing disruptive solutions: from small, light aircraft to electric vertical take-off and landing, as well as space launchers and satellite propulsion. Companies can accelerate the product lifecycle from concept to certification, and gain significant advantage by being the first on the market with their prototype.
- Co-Design to Target allows Original Equipment Manufacturers (OEMs) to integrate disparate tools, organizations and processes into a single stream to optimize form, fit and function in an integrated System Digital Mock-up (DMU). This System DMU can avoid many of the integration issues that significantly impact the cost and schedule of a program. 

—By Ravikiran Pothukuchi, Director, Aerospace & Defense in India, Dassault Systèmes

Please connect with us on (IN.Mkt.Value-Engagement@3ds.com) with a subject line- 3DS at Aero India 2021



“The era of single services operations has faded and a systems approach, that is, joint integrated operations across multiple domains is the way ahead”

General M.M. Naravane, Chief of the Army Staff, in an interview with Jayant Baranwal, Editor-in-Chief, talks about how the Indian Army continues to face challenges across the spectrum of conflict and is developing its capability and operational readiness in light of these threats

SP's: As we celebrate 50 years of 1971 victory, what are your views on the same? And the way our Army plans for the future?

COAS: The 1971 victory cemented India's position in the global as a responsible and moral power in the comity of nations. By ending the genocide of countless Bangladeshis and assisting them in their right to self-determination, India's humanitarian intervention has been seen as an exemplar for a future template. The swift operations against Pakistani forces, both in the East and the West underscore our forces' professional capabilities and resolve to be morally upright. The 1971 war also showcased excellent inter-services integration and professional civil-military relations, both of which are required for defeating one's adversary soundly.

The Indian Army continuously and consistently trains itself for war. We are all aware of the changing character of war and are preparing for it. By leveraging modern capabilities and emerging technologies, we will emerge victorious.

SP's: Would you like to talk about the Army's role during Covid-19?

COAS: The Indian Army acknowledges the stellar contributions of all Corona Warriors in the country who have fought and defeated this virus steadfastly. The Army has played an important role during Covid-19. We have contributed doctors, nurses and medical staff to a number of civil-run hospitals. Our for-

mations and units in different parts of the country have assisted the local administration in setting up quarantine centres and distributing medical aid and supplies. Our forces have carried out information campaigns and setup medical camps to assist the populace in remote areas. We remain prepared to assist the administration in all respects.

SP's: Modernisation process of the Army?

COAS: Capability Development of the Indian Army is based on a well thought out Long Term Integrated Perspective Plan (LTIPP), which concentrates on modernisation of weapons and equipment. A total of 55 schemes valued at approximately ₹44,000 Crores have been contracted as part of the modernisation since the commencement of the 13th Plan in April 2017. Latest equipment like:

- MRSAM
- ULH
- K-9 Vajra
- Spike (LR) ATGM
- Assault Rifle (Sig Sauer)
- Light Strike Vehicles
- Excalibur Ammunition
- Negev LMG
- Apache AH 64E

are few weapon systems and equipment which have fructified as part of the modernisation drive. Upgradation and overhaul schemes are also

“The 1971 war also showcased excellent inter-services integration and professional civil-military relations, both of which are required for defeating one's adversary soundly”



being given due impetus for keeping the equipment battle worthy and to maintain currency. During the FY 2020-21, a balanced approach to capability building was undertaken, which included significant procurements like BMP-2/2K, Six Pinaka Regiments, Engineer Mine Plough and Mine Plough for Tank T-90. Many important schemes have been contracted and several capability enhancing schemes are ongoing and are at advanced stages of procurement. In addition to acquisitions specific to various arms, projects for Electronic Warfare and communication systems are also being undertaken. Once implemented, these schemes would ensure a robust Army capable to take on any challenge in the envisaged battlefield milieu.

SP's: Has technology per se taken back seat in the context of modernisation?

COAS: Not really. By and by we are trying to go for certain programmes in order to keep up with important advancements. For example, the induction of combat UAVs is progressing as per schedule.

SP's: Is the Indian Army going ahead with the FRCV and FICV programmes?

COAS: Yes, the Indian Army is going ahead with the programmes. At present, we have our thinking caps on for the features and capabilities that we require and there will be some changes in the technical requirements, given the requirements of the future. We are looking at fifteen years hence and it will have to be radical, looking at the Azerbaijani example, the level and shape will change, we just can't add a few kilos to the Tank, it has to be done in a different way keeping the futuristic warfare situation in view.

SP's: What all has been done to protect the men and machines on the border with China during the winters?

COAS: All logistics are taken care of and there is no cause for concern. Special clothes with three layers and heated tents have been purchased for the soldiers, which will be comfortable for temperatures below zero to minus 40 degrees. I was there earlier this month and we could sit in the tent with regular clothing in minus 20-degree temperature. Ration, healthcare, and operational preparedness are intact. The new facilities for troops have Barrel Type shelters, modular shelters, and Vehicle sheds.

SP's: As the Chief of the land based forces, what will be your view if asked who will dominate future wars? Will it be the Army, Navy or Air Force? Who will play conclusive and decisive role?

COAS: It would be fallacious to assume that a single service will dominate future warfare. We have transitioned to an era where war-waging itself has become complex. The era of single services operations has faded and a systems approach, that is, joint integrated operations across multiple domains is the way ahead.

SP's: As COAS, what will be your key message to the soldiers on the front? Your fellow officers in the Army and fellow citizens of the country?

COAS: I convey my best wishes to all citizens of the country and assure them that the Indian Army is capable of addressing all future challenges and that we will spare no efforts to defend

our territorial sovereignty. I have full faith in the capabilities of my officers and troops that they will carry out their tasks with the utmost professionalism. They do not have to worry about equipment and logistics which will be taken care of.

SP's: What is your wish list for the Army and likely key challenges?

COAS: Indian Army faces, and will continue to face operational challenges in the entire spectrum of conflict, whether it be in the conventional or unconventional domains. A thorough analysis of capability voids, in light of the threats posed by our adversaries, guide our capability development & operational preparedness plans.

Our operational preparedness needs to primarily focus on India's desire to ensure stability & dominance along our contested & hostile borders and to effectively counter Proxy War. To retain operational readiness & combat edge, we constantly monitor and review the emerging & future threats to our national security. Our operational requirements continue to guide our procurement of emerging technologies, which act as force multipliers, providing us much needed combat edge over the adversaries. Acquisition of unmanned aerial systems, in consonance with our operational requirements, are part of our Capability Development Plans.

SP's: What are the Army's initiatives to attract the talent and young blood in its stream? And also towards the welfare of army fraternity?

COAS: Efforts are being made to mitigate shortage of officers in Indian Army. However, keeping in view the pyramidal structure of officers cadre of IA, this shortage is to be mitigated by enhanced induction of SSCOs. Accordingly, a proposal to make SSC Entry more attractive is under active consideration. It is envisaged that the existing deficiency of officers would reduce once this proposal is approved by the GoI and implemented.

Following steps have been taken to make Army as an attractive option:

- Interactive Website of Recruiting Dte. The website of Recruiting Directorate www.joinindianarmy.nic.in gives all the info required by a candidate to become an officer. It enables the candidate to know his /her eligibility based on the age and educational qualifications and the timelines for applications.
- Interaction with Target Audience. Interaction with target audience is undertaken in which officers from Recruiting Directorate and Recruiting Organisations visit various Universities and Colleges. 'Know your Army' exhibitions are organised periodically to spread awareness and motivate youth to join the Indian Army. To alleviate the problems of Next of Kin (NoKs), the Army runs various welfare schemes. DIAV has launched an extensive outreach and awareness programmes to contact the NoKs throughout the Nation during the Year of the Next of Kin. The NoKs are unable to get their due grants and entitlements due of incorrect documentation. Towards this end, all the formations have established contact with the NoKs at grass root level and the documentary requirements were fulfilled to assist them in availing the grants and benefits provided by the Government and Army. **SP**

Reproduced from SP's Land Forces Issue 6, 2020, Indian Army Day Special Issue

India's First Indigenously Developed 9mm Machine Pistol

India's first indigenous 9mm Machine Pistol has been jointly developed by DRDO and Indian Army. Infantry School, Mhow and DRDO's Armament Research & Development Establishment (ARDE), Pune have designed and developed this weapon using their respective expertise in the complementary areas. The weapon has been developed in a record time of four months. The Machine Pistol fires the in-service 9mm ammunition and sports an upper receiver made from aircraft grade Aluminium and lower receiver from carbon fibre. 3D Printing process has been used in designing and prototyping of various parts including trigger components made by metal 3D printing.

The weapon has huge potential in Armed forces as personal weapon for heavy weapon detachments, commanders, tank and aircraft crews, drivers/dispatch riders, radio/radar operators, Closed Quarter Battle, counter insurgency and counter terrorism operations etc. This is also likely to find huge employability with



the central and state police organisations as well as VIP protection duties and Policing. The Machine Pistol is likely to have production cost under rupees 50,000 each and has potential for exports.

The weapon is aptly named "Asmi" meaning "Pride", "Self-Respect" & "Hard Work". **SP**

North Korea Shows Off New Submarine-Launched Missiles

North Korea displayed new submarine-launched ballistic missiles under development and other military hardware in a parade that underlined leader Kim Jong Un's defiant calls to expand the country's nuclear weapons program.

State media said Kim took center stage in a parade celebrating a major ruling party meeting in which he vowed maximum efforts to bolster the nuclear and missile programme that threatens Asian rivals and the American homeland to counter what he described as US hostility.

Kim's comments are likely intended to pressure the incoming US government of Joe Biden, who has previously called the North Korean leader a "thug" and accused Trump of chasing spectacle rather than meaningful curbs on the North's nuclear capabilities. Kim has not ruled out talks, but said the fate of bilateral relations depends on whether Washington abandons its hostile policy toward North Korea.

North Korean state TV aired edited footage of the parade which showed thousands of civilians roaring and fireworks exploding overhead as troops rolled out some of the country's most advanced weapons, including submarine-launched ballistic missiles described by the official Korean Central News Agency as the "world's most powerful weapon." The new type of submarine-launched missiles were larger than the ones North Korea previously tested.

The North also displayed a variety of solid-fuel weapons designed to be fired from mobile land launchers, which potentially expand its capability to strike targets in South Korea and Japan, including US military bases there. KCNA said the parade featured other missiles capable of "thoroughly annihilating enemies in a pre-emptive way outside (our) territory." But it wasn't immediately clear whether the description referred to intercontinental ballistic missiles.

North Korea has been developing submarine-launched ballistic missile systems for years. Acquiring an operational system would alarm its rivals and neighbors because missiles fired from under water are harder to detect in advance. **SP**

Iran Tests Long-range Ballistic Missiles

Iran tested long-range ballistic missiles during a military exercise, just days before the Presidential transition in the US. State television reported that Iran's Revolutionary Guards fired long-range

ballistic missiles into the Indian Ocean, following the testing of surface-to-surface ballistic missiles and locally manufactured drones. The long-range missiles have a range of around 1,800 km and are capable of hitting moving targets in the ocean, Reuters reported citing Iran's state television. The missile targets were located in the Gulf of Oman and the northern Indian Ocean.

The state media quoted Revolutionary Guards commander Major General Hossein Salami as saying, "One of our most important defence policy goals is to use long-range ballistic missiles against enemy warships, including aircraft carriers and warships." However, Iran added that it has no offensive intentions and will use the capabilities to respond to hostile acts. According to Reuters, Iran has one of the biggest missile programmes in the Middle East. **SP**

US State Department Approves Potential Arms Sales to Kuwait

The US State Department has approved the potential sale to Kuwait of Apache helicopters and spare parts for the Patriot missile system in two separate deals that could have a value of \$4.2 billion. Kuwait's government had asked to buy eight AH-64E Apache Longbow Helicopters and the upgrade of 16 of their current AH-64D Apache Longbow Attack Helicopters to the AH-64E configuration. If the deal happens, it could have a value of \$4 billion for the helicopters and \$200 million towards spare parts and training for their upgraded Patriot missile defence systems, the Pentagon said in a statement. The Pentagon's Defense Security Cooperation Agency notified Congress of the possible sale but, despite the State Department approval, the notification does not indicate that a contract has been signed or that negotiations have concluded. **SP**



Thales and BDL bringing STARStreak Air Defence System to India

Thales and Bharat Dynamics Limited (BDL), a Government of India enterprise, have signed a Teaming Agreement to work in partnership on the STARStreak Air Defence system with the support of both the Governments of India and the United Kingdom. The Teaming Agreement was signed by Thales and BDL in the presence of UK and Indian Government representatives in a virtual ceremony on January 13th 2021.

In 2017, Thales and BDL had signed a Memorandum of Understanding to assess the opportunity for the transfer of technology for STARStreak. The signing of this teaming agreement confirms a positive outcome from that exploration process. This agreement will also provide the opportunity for BDL to offer a 'Make in India' STARStreak solution to the Indian Government, with a capability that will match the immediate air defence needs of the Indian Army and Air force, and with 60 per cent of the system manufactured in India. Through the agreement, BDL will become a part of the STARStreak global supply chain, providing the opportunity for export of Indian manufactured components to existing and future STARStreak Air



Defence customers, including the UK Armed Forces. It also represents an opportunity for further UK and Indian Industrial co-operation and will cement the ambition for closer collaboration and co-development between the two nations, supporting the ambitions of the governments' recently signed Defence Technology and Industrial Capability Cooperation MoU.

The STARStreak missile system is in service in the British Army and has been procured by defence forces worldwide. The fastest missile in its category, STARStreak is unique due to its three laser-guided darts, which cannot be jammed by any known countermeasure. It has the capability to defeat any air target – even armoured helicopters – as the last line of defence. SP



Theodore Roosevelt Carrier Strike Group Conducts Exercise with Japan

The Theodore Roosevelt Carrier Strike Group (TRCSG) conducted a bilateral maritime exercise with the Japan Maritime Self-Defense Force (JMSDF) on January 15. The exercise, which focused on increasing combat readiness and war fighting excellence, included USS Theodore Roosevelt (CVN 71), USS Bunker Hill (CG 52), USS John Finn (DDG 113), JS Kongo (DDG 173), and JS Asahi (DD 119). This is the first bilateral exercise between the US and Japan of 2021. Working together provided both countries the opportunity to continue to build their capabilities while practicing for the high-end fight.

The bilateral exercise supported the US Navy and JMSDF mission to develop regional capabilities that provide layered defensive options to protect each nation's interests and those of their allies and partners. The participating forces exercised a wide range of capabilities, from maritime security operations to more complex air defence exercises, which demonstrated the inherent flexibility of the two combined forces.

The TRCSG is deployed to the US 7th Fleet area of operations to build partnerships that foster maritime security and to conduct a wide range of operations that support humanitarian efforts and freedom of the seas. The TRCSG consists of USS Theodore Roosevelt (CVN 71), Carrier Air Wing (CVW) 11, the Ticonderoga-class guided-missile cruiser USS Bunker Hill (CG 52), Destroyer Squadron 23, and the Arleigh Burke-class guided-missile destroyers USS Russell (DDG 59) and USS John Finn (DDG 113). SP

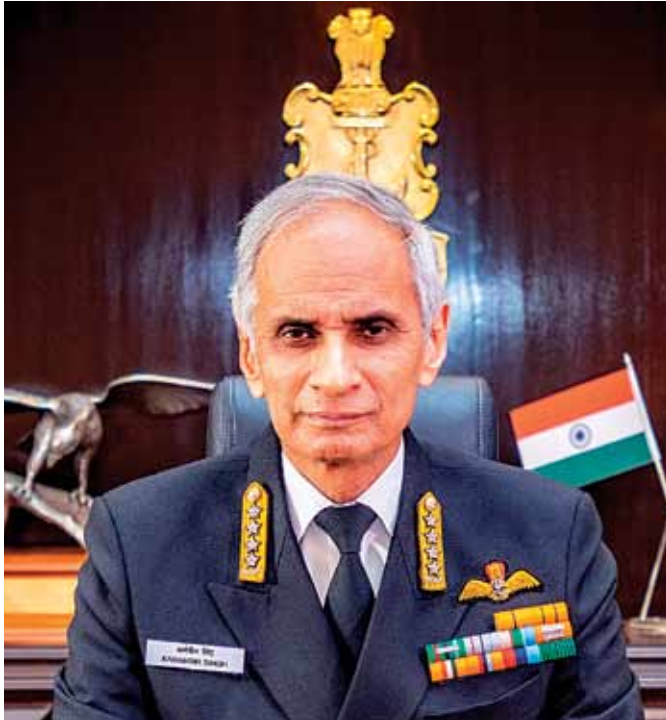
Mission Sagar III - INS Kiltan Arrives at Sihanoukville, Cambodia

Indian Naval Ship Kiltan arrived at Sihanoukville Port, Cambodia on December 29, 2020 as part of Mission Sagar-III. The ship delivered 15 tonnes of Humanitarian Assistance and Disaster Relief (HADR) Stores for the flood-affected people of Cambodia, which was handed over to Cambodia's National Disaster Management Committee (NDMC). This assistance is reflective of the deep people-to-people connect between the two friendly countries.

Mission Sagar-III was part of India's HADR assistance to Friendly Foreign Countries during the ongoing pandemic. This Mission was undertaken in accordance with Prime Minister Narendra Modi's vision of SAGAR (Security And Growth for All in the Region) and reiterates India's position as a dependable partner and the Indian Navy as the Preferred Security Partner and First Responder. The Mission also highlighted the importance accorded to ASEAN countries and further strengthens the existing bonds.



Historically, India and Cambodia share strong cultural ties. The relations have reinforced in recent years due to increasing engagements in all sectors. This visit seeks to fortify the bilateral cooperation between the two countries and contribute towards security and stability in the region. SP



"Our operations shall revolve around two active Carrier Battle Groups, necessitating a force level of three Carriers"

Admiral Karambir Singh, Chief of the Naval Staff speaks to Jayant Baranwal, Editor-in-Chief, in an exclusive interaction on the occasion of the Indian Navy Day 2020

SP's: As our Navy celebrates Swarnim Vijay Varsh to commemorate 50 years of India's victory in the 1971 Indo-Pak war, would you like to share your thoughts on the same and the way our Navy plans for the future?

CNS: It is, indeed, a proud moment for the nation, as we celebrate 50 years of our triumph in the 1971 war and the liberation. The sacrifices and valour of our heroes forms the bedrock for today's Navy. The blueprint of the modern Indian Navy was conceptualised and shaped by these heroes and pioneers. The success and growth has been possible, in no small measure, due to the foresight and dedication of our predecessors.

The Indian Navy of present, has grown into a significant maritime force from its humble beginning of 33 ships. As the primary manifestation of India's maritime power, the Indian Navy has evolved into a force to reckon with, manned by dedicated and professional men and women. Our modern ships, submarine and aircraft remain on watch around the clock to keep our waters safe from threats arising from and at sea. We have been able to maintain a high operational tempo, responding to strategic and operational challenges.

Notwithstanding budgetary constraints, the Indian Navy is on a steady path to build adequate capacity and capability to safeguard our interests in a highly complex and dynamic strategic environment, which will throw up challenges and disruptors. We aim to negotiate these challenges by remaining agile and striving to be future-proof. We continue to constantly upgrade, modernise and transform our operational, training, administrative and functional infrastructure, and remain abreast of our widening canvas, to cater to emerging operational and functional challenges.

Our focus, therefore, is to induct platforms to achieve a balanced 'force mix' for undertaking Roles, Missions and Objectives in our Areas of Interest and also facilitate Out-of-Area Operations. Towards achieving this, we are following a focussed capability development plan. Further in the future, our operations shall revolve around two

active Carrier Battle Groups, with one carrier under maintenance, thus, necessitating a force level of three Carriers.

SP's: Can you elaborate our Navy's role in achieving the target of \$5 Trillion economy?

CNS: Nearly 90 per cent of India's international trade by volume is sea borne. Blue Economy, which consists of economic activities dependent on marine resources, comprises 4.1 per cent of India's economy and is likely to grow further. A '\$5 Trillion Economy' can be achieved in a safe, secure and stable environment. IN is responsible for overall maritime security and plays a key role in ensuring nation's growth.

IN has been at the forefront of Government of India's modernisation efforts. Till date, 63 Acceptance of Necessity (AoNs) amounting to ₹1.63 Lakh Crore have been accorded to Capital Acquisition Schemes under the 'Make in India' initiative. The cases are being progressed under various categorisations of Buy (Indian - IDDM), Buy (Indian), Buy and Make (India). IN has been supporting the PSUs/ DPSUs/ Private shipyards, which are manpower intensive. The efforts of IN will aid in generation of job opportunities and enable skilling of work force. A substantive part of naval budget is ploughed back into the Indian shipbuilding ecosystem, including number of MSMEs, thereby contributing to the economy. More than 75 per cent of the cost of IAC, for instance, has gone towards indigenous sourcing, boosting the Indian economy. Further, in empirical terms, every rupee spent on shipbuilding has 1.8 time multiplier effect downstream and every person employed at the shipyard generates jobs for six persons in other supporting industries.

SP's: While there has been so much of criticism for the IAC-2, the project which is bound to generate considerable employment for country to say the least. How do you propose to advocate the irresistible requirement of the same? And within what timeline, you would like to see this getting fructified?



CNS: Emergent security scenario dictates Indian Navy has the capability to operate and achieve sea control in two distinct areas of interest which could be widely dispersed on both the seaboard (West and East). This requirement was envisaged and factored in, while drawing up the Maritime Capability Perspective Plan (MCPP). Accordingly, necessity of three aircraft carriers has been projected, so that two carriers could be operationally deputed and one could be under maintenance at any given time. Considerable amount of preparatory work to define the form and fit of the platform meeting Indian Navy requirements has already been completed. The IAC-2 is envisaged to be a 65,000 tonne Carrier with Integrated Full Electric Propulsion (IFEP), capable of doing maximum speed of 30 knots. It would employ Catapult Assisted Take-off But Arrested Recovery (CATOBAR) concept of flying operations with advanced landing and recovery equipment.

Since niche technologies are involved, it is planned to undertake consultancy for certain aspects of design and propulsion. Towards this, RFI has been floated and inputs have been sought from agencies having considerable experience in this field. Whilst budget constraints are often referred to, our planned spread of expenditure indicates that Indian Navy will be able to meet this requirement, in addition to the induction of other planned assets. The Indigenous Carrier programme also gives a significant boost to 'Make in India' and 'AtmaNirbhar Bharat' and the 'Plough Back Effects' of projects of this magnitude to the economy are tremendous. The IAC-2 project would create extensive job opportunities/skill development, infrastructure augmentation, encourage indigenous shipbuilding and business opportunities to MSMEs. This has been experienced in our current Indigenous Aircraft Carrier programme (IAC-1), being built by Cochin Shipyard Limited at Kochi.

As regards the timeline for IAC-2, once the approval of Government of India is accorded, the design process will take approximately three to four years and, thereafter, the construction period could be from 8 to 10 years.

SP's: Would you like to indicate (as candidly as possible) on some of the Must-Wish List of our Navy as of today to be able to meet any kind of threats of any levels for the nation? If you can also indicate on some of the key modernisation programmes currently active and being pursued with full force?

CNS: Modernisation of the Navy is being driven by the core value of Combat Readiness, which is the fundamental reason for our existence, with 'Ordnance on Target' as an important measure of combat effectiveness. Accordingly, capabilities are being created for accomplishing a range of missions across the entire spectrum of threats and challenges. Indian Navy has kept pace with the developing security situation in the region. The 'Must-Wish List' for any Modern Navy would include -

- Satellite based and long range surveillance capability,
- Long endurance sub-surface assets and
- Modern surface fleet ships with effective air defence and shore strike capability.

Towards this, the present force levels are being augmented/modernised according to a laid down long term plan and is being undertaken in an incremental fashion continuously.

Presently 43 ships and submarines are under construction, out of which 41 are being built in Indian shipyards. The first indigenous aircraft carrier is under construction at Cochin Shipyard Limited, Kochi, with likely delivery in later half of 2021. Four destroyers of Project

15B are being constructed at Mazagon Docks and delivery is likely to commence from 2021. Seven frigates of Project 17A Class are under construction at Mazagon Docks and Garden Reach Shipbuilders and their delivery will commence from 2022 onwards. Further, contracts for four Project 1135.6 follow on ships have been concluded in 2018. Contract for 16 ASW Shallow Water Craft has been concluded in 2019.

In addition, 'Acceptance of Necessity' has also been accorded for 38 ships and six Project 75 (I) Submarines. The delivery of four additional P8-I Maritime Reconnaissance Aircraft is scheduled by 2021. Indian Navy has also contracted HAL to deliver 36 aircraft comprising 12 Dorniers (six delivered), 16 ALH and eight Chetak. Further, Acceptance of Necessity has also been accorded for procurement of Naval Utility Helicopters under the Strategic Partnership Model. We are also looking to procure additional P8-I aircraft and high altitude, long endurance Remotely piloted aircraft system (HALE RPAS) to augment our surveillance capabilities.

The Indian Navy holds a mix of weapons, sensors and equipment of varied vintage. Modernisation of existing weapons/sensors/equipment and procurement of new weapons and systems is an ongoing process. On one hand, the obsolescence management and capability enhancement is achieved through Mid Life Upgrade (MLU), where in vintage weapons/sensors/equipment are upgraded through requisite modifications/replaced with more contemporary systems. In addition, procurement of new weapons/sensors/equipment including several indigenous cases under the 'Make in India' initiative have contributed towards efforts to maintain the ideal mix of State-of-the-Art, current and vintage weapon/equipment/sensors.

SP's: Would you like to take us through the challenges that have an ongoing impact on our Navy's capacity build-up task?

CNS: With our limited budgetary allocations, we do face some fiscal challenges in the modernisation process and day-to-day running of the Navy. While our budgetary constraints are being discussed jointly with all concerned

stakeholders, the Navy remains committed to maintaining a high level of operational preparedness and progress its modernisation plans, within the available resources. In the face of shortages, emphasis is being laid on prioritisation, rationalisation and economy of expenditure; in short getting more bang for the buck.

There is also a need to increase the technological base in the country, enhance the capacity and expertise of our public sector shipyards to reduce build-time and also involve the private sector to make good current short-falls in our force levels, in a time-bound manner.

SP's: With 2 leased unarmed drones, do you think the requirements are met? Plans were of 10 armed drones for each service totaling to a total of 30 that too the armed.

CNS: Procurement of the two drones - Sea Guardian, unarmed version of the Predator was under the emergency procurement to enhance surveillance over the Indian Ocean region. These drones are leased for a few years and the maintenance of these drones will be taken care by the American firm. The case for the 30 weaponised versions of the Sea Guardian drones from the US is in progress and Indian Navy will be getting 10 drones with underwater Anti-Submarine Warfare (ASW) capabilities. **SP**

Reproduced from SP's Naval Forces Issue 6, 2020, Indian Navy Day Special Issue



Air Chief Marshal R.K.S. Bhadauria, Chief of the Air Staff has repeatedly conveyed, in action and in words, his support for indigenous programmes like the LCA



"Our challenge is to increase the synergy and cohesiveness to ensure joint operations in true sense"

Air Chief Marshal R.K.S. Bhadauria, Chief of the Air Staff, spoke exclusively to Jayant Baranwal, Editor-in-Chief on the occasion of Aero India 2021. Following are excerpts from the interview -

SP's: How do you find the progress of Indian programmes such as LCH?

CAS: The LCH received Initial Operational Clearance on August 17 and its performance has been validated through requisite trials including in hot and high altitudes. Currently the MoD is in the final stages of negotiating a contract with HAL for delivery of the Limited Series Production (LSP) version of the LCH. These helicopters will allow IAF to be closely involved with the development process of the final product and at the same time build operational experience on the platform. The LCH is being developed specifically to suit the requirements of IAF and IA in Indian terrain and climatic conditions

and will definitely add significant teeth to our arsenal, we are eagerly looking forward to its induction.

SP's: How satisfied you are with the LCA the Tejas?

CAS: LCA is a product of indigenous efforts towards building a potent fighter aircraft with contemporary capabilities. "Tejas" is the first advanced Fly-by-Wire fighter aircraft designed, developed and manufactured in India. The aircraft has excellent flying qualities and all pilots who have flown this machine echo this sentiment. The onboard sensors and weapons capability is being progressively improved and it is going to be a potent platform for the IAF for many years to come.

IAF is satisfied with the planned enhancements in LCA Mk 1A which will provide us with requisite contemporary combat capability.

SP's: Off late, we do believe our Air Force has not been very satisfied with the progress of this programme. What all changes and improvements have been introduced if that's case?

CAS: Like all new inductions, the LCA had its own share of teething problems. However, HAL, ADA and the IAF have worked together to overcome them. We are happy that the FOC configuration has begun to roll out with improved weapons capability, enhanced flight envelope, inflight refuelling capability and advanced features for low speed handling. There are always complexities in any program of this nature and IAF is proactively involved as part of the larger team effort to set up appropriate eco system.

SP's: Which of the 3 service, according to you, will be the major players in terms of conquering any possible conflicts and concluding the success for the country? Who will dominate the future wars?

CAS: Each service brings a unique set of capabilities to the battle-space. We have to understand that no one service can win the war on its own. Our challenge, as is the challenge for most modern armed forces, is to increase the synergy and cohesiveness to ensure joint operations in true sense, so as to bring to bear the desired effect, when required.

Air Power would play a very significant and critical role. Future threat scenarios would also be shaped by low cost disruptive technologies. Therefore, over and above the requirement of maintaining robust conventional capabilities for conventional conflicts, we have to prepare adequately to fight timeless and borderless wars against faceless enemies jointly. This requires the three services and the other security agencies to 'train, equip and fight together'.

SP's: What sort of involvement of space is to be expected in coming times?

CAS: Over a period of time, military capability has become heavily dependent on space based assets. Space based applications are used for enhancing accuracy of weapons, Electronic Warfare, ISR, navigation and communication to name a few. Space domain which includes Anti- Satellite weapons, jamming, spoofing and other non destructive weapons like DEWs, EMP etc will play a major role in future conflict scenarios. With the formation of Defence Space Agency (DSA) and Directorate of Special Projects (DSP), space based military operations, in addition to space based communications, cartography and weather monitoring will get more impetus. Safeguarding our own space assets from any adversary action (covert or overt) will be the key area of focus, towards which having a robust Space Situational Awareness (SSA) setup is an inescapable necessity. The latest reforms by Government of India in the space sector will aid in ensuring that the interests of armed forces are met through greater participation from private sector.

SP's: How long have we progressed towards space wars?

CAS: With the formation of DSA and DSP, fundamental foundation has been laid down by Government of India. These agencies will strive towards establishing a robust space security arrangement for meeting any space based contingencies that arises in future. Success of Mission Shakti in March 2019 has demonstrated India's prowess with respect to Direct Ascent Anti-Satellite capability and highlighted the fact we are at par with other space faring nations in terms of orchestrating space based fire power. Notwithstanding, the domain is ever evolving and efforts are underway to seamlessly integrate the existing three mediums (land, sea & air) with space and cyber to weave a secure and robust web of net centric operations. Current Geo-political situations demand us to accelerate our space related



(Top) CAS proceeding for sortie on HTT- 40
(Middle) CAS onboard LCH for a sortie
(Above) CAS with the test team of HTT- 40 after the flight

projects. The indigenous capability of our space programme is a strength that needs to be rapidly translated into capability to bridge the gap with our adversaries. **SP**

Full interview of the CAS can be read in SP's Aviation Aero India 2021 Special issue

Boeing Super Hornet Demonstrates Ski-jump Launch Capability

Boeing and the US Navy proved recently that the F/A-18 Super Hornet can operate from a “ski jump” ramp, demonstrating the aircraft’s suitability for India’s aircraft carriers. The demonstrations showed that the Super Hornet would do well with the Indian Navy’s Short Takeoff but Arrested Recovery (STO-BAR) system and validated earlier simulation studies by Boeing.

“The first successful and safe launch of the F/A-18 Super Hornet from a ski jump begins the validation process to operate effectively from Indian Navy aircraft carriers,” said Ankur Kanaglekar, India Fighter Sales lead for Boeing. “The F/A-18 Block III Super Hornet will not only provide superior war fighting capability to the Indian Navy but also create opportunities for cooperation in naval aviation between the United States and India.”

The Indian Navy is evaluating its fighter options. If it selects the Super Hornet, it would benefit from billions of dollars invested in new technologies by the US Navy and others. Those technologies include advanced networking, longer range through conformal fuel tanks, infrared search and track, and a new advanced cockpit system.

Boeing’s advanced aircraft and services will play an important role in mission-readiness for the Indian Air Force and Indian Navy. Boeing is focused on delivering value to Indian customers with advanced technologies and is committed to creating



sustainable value in the Indian aerospace sector – developing local suppliers and shaping academic and research collaborations with Indian institutions. Boeing has strengthened its supply chain with 225 partners in India and a joint venture to manufacture fuselages for Apache helicopters. Annual sourcing from India stands at \$1 billion. Boeing currently employs 3,000 people in India, and more than 7,000 people work with its supply chain partners. **SP**

Greece to Boost Military, Get French Rafale Jets in 2021

Greece said it will take delivery of 18 French-made Rafale fighter jets in 2021 as part of a major 11.5-billion-euro (\$14.5-billion) drive to modernise its armed forces amid tension with neighbor Turkey. Prime Minister Kyriakos Mitsotakis said the agreements would be finalised with the French government and defence contractor Dassault Aviation shortly. Annual spending on defence is being hiked by more than a third in 2021 to 5.4 billion euros (\$6.5 billion) despite a deep recession triggered by the pandemic this year.



Greece and fellow NATO member Turkey remain at odds over boundaries and undersea natural gas rights in the eastern Mediterranean, a dispute that intensified this year and raised concerns among western allies of a potential military

confrontation. Greece has forged closer military ties with traditional allies France and the United States and expanded collaboration with Israel, Egypt, and other countries in the region.

Details of Greece’s military overhaul were announced after the summer, a five-year programme that will include weapons upgrades for all three branches of the armed forces and the hiring of an additional 15,000 personnel. The program includes plans to purchase new frigates, anti-submarine warfare helicopters and drones, as well as an upgrade of Greece’s entire fleet of F-16 jets by 2027 in partnership with

US defence firm Lockheed Martin. Military spending was cut back during a major financial crisis that started over a decade ago but Greece is again facing acute financial problems due to the pandemic. **SP**

Iran Tests Drones in Military Exercise

Iran conducted exercises featuring a wide array of domestically produced drones, days after the anniversary of the US killing of a top Iranian general by a drone strike in Iraq.

Iran and the regional forces it backs have increasingly relied in recent years on drones in Yemen, Syria, Iraq and the Strait of Hormuz at the mouth of the Gulf. Iran’s armed forces tested combat drones used as bombers, interceptors and in reconnaissance missions in the two-day exercises in central Semnan province, the semi-official Fars news agency said.

“The fingers of our heroic armed forces are on the trigger, and if enemies commit the slightest mistake, the armed forces will surely respond fiercely,” said Mohammad Baqeri, Chief of Staff of the Armed Forces, quoted by state media.

Foreign Minister Mohammad Javad Zarif said that (former) US President Donald Trump may be trying to find an excuse to attack Iran or Israel might try to provoke a war. Israel rejected the allegation.

The exercises coincided with increased tensions between Iran and the United States two weeks before President-elect Joe Biden takes office. Biden aims to revive a nuclear agreement with Iran abandoned by Trump, though diplomacy is expected to be tricky.

Beyond surveillance, Iranian drones can drop munitions and also carry out a “kamikaze” flight when loaded with explosives and flown into a target, according to a US official who spoke to Reuters.

Iran has developed a large domestic arms industry in the face of international sanctions and embargoes barring it from importing many weapons. Western military analysts say Iran sometimes exaggerates its weapons capabilities, though concerns about its ballistic missiles contributed to Washington leaving the nuclear pact. **SP**

Cabinet Approves Procurement of 83 Light Combat Aircrafts for IAF

The Cabinet, under the Chairmanship of Prime Minister, has approved procurement of 73 LCA Tejas Mk-1A fighter aircrafts and 10 LCA Tejas Mk-1 Trainer aircrafts at the cost of ₹45,696 Crore along with Design and Development of Infrastructure sanctions worth ₹1,202 Crore.

Light Combat Aircraft Mk-1A variant is an indigenously designed, developed and manufactured state-of-the-art modern 4+ generation fighter aircraft. This aircraft is equipped with critical operational capabilities of Active Electronically Scanned Array (AESA) Radar, Beyond Visual Range (BVR) Missile, Electronic Warfare (EW) Suite and Air-to-Air Refueling (AAR) would be a potent platform to meet the operational requirements of Indian Air Force, IAF. It is the first “Buy (Indian-Indigenously Designed, Developed and Manufactured)” category procurement of combat aircrafts with an indigenous content of 50 per cent which will progressively reach 60 per cent by the end of the programme.

The Cabinet has also approved infrastructure development by IAF under the project to enable them handle repairs or servicing at their base depot so that the turnaround time would get reduced for mission critical systems and would lead to increased availability of aircraft for operational exploitation. This would enable IAF to sustain the fleet more efficiently and effectively due to availability of repair infrastructure at respective bases.



Under the Atmanirbhar Bharat abhiyaan, India is continuously growing in its power to indigenously design, develop and manufacture advanced cutting edge technologies and systems in the Defence Sector. The manufacturing of Light Combat Aircraft by Hindustan Aeronautics Limited, HAL will give a further push to Atmanirbhar Bharat initiative and boost indigenisation of defence production and the defence industry in the country. About 500 Indian companies including MSMEs in the design and manufacturing sectors will be working with HAL in this procurement. The programme would act as a catalyst for transforming the Indian aerospace manufacturing ecosystem into a vibrant Atmanirbhar - self-sustaining ecosystem. **SP**

Hawk-i Successfully Test Fires Smart Anti Airfield Weapon

In a big boost to the indigenous Hawk-i programme, HAL successfully test fired a Smart Anti Airfield Weapon (SAAW) from the Hawk-i aircraft off the coast of Odisha. The indigenous stand-off weapon developed by Research Centre Imarat (RCI), DRDO is the first smart weapon fired from an Indian Hawk-Mk132.



“HAL has been focusing on the Atmanirbhar Bharat campaign. The Company owned Hawk-i platform is being extensively used for certification of systems and weapons developed indigenously by DRDO and CSIR labs” said R. Madhavan, CMD, HAL.

The aircraft flown by HAL test pilots Wing Commander P. Awasthi (Retd) and Wing Commander M. Patel (Retd) executed the weapon release in a text book manner and all mission objectives were met. The telemetry and tracking systems captured all the mission events confirming the success of the trials.

Arup Chatterjee, Director, Engineering and R&D, HAL said HAL is indigenously enhancing the training and combat capability of Hawk-i. HAL is in discussions with Indian Armed Forces for integration of various weapons on Hawk platform.

The Hawk-i is HAL's internally funded programme offering the Indian Armed Forces an upgrade and combat capability for the Hawk, transforming it into an Advanced Jet Trainer providing training on sensors and weapons in peacetime into a potent combat platform during conflict.

The SAAW is an aircraft launched, advanced, precision strike weapon of 125 Kg category used to attack and destroy enemy airfield assets such as radars, bunkers, taxi tracks, runways within a range of 100 kms. SAAW has been earlier successfully test fired from Jaguar aircraft. **SP**

Indian Air Force and French Air and Space Force Conclude Exercise Desert Knight 2021

The Indian Air Force and French Air and Space Force participated in Exercise Desert Knight 2021 at Air Force Station Jodhpur. A first of its kind bilateral exercise (Ex DK-21), Rafale aircraft from both sides along with Su-30 MKI and Mirage 2000 aircraft of the IAF undertook complex missions including Large Force Engagements. Combat enablers included AWACS, AEW&C aircraft of the IAF as well as A400M and A330 based MRTT (Medium Range Tanker and Transport) aircraft of the FASE. Both Air Forces exercised in realistic settings with an aim to enhance operational capabilities and interoperability. The exercise provided an opportunity to share best practices and evolve operational concepts; particularly for effective combat employment of the Rafale fleet.

Chief of Defence Staff, General Bipin Rawat visited Air Force Station Jodhpur on January 21, 2021 and interacted with participating forces. He also flew on-board the MRTT along with Major General

Laurent Lherbette, the FASF contingent leader where he was given an overview on conduct of the exercise and witnessed air-to-air refuelling operations by IAF & FASF fighters.

On January 23, 2021, Chief of the Air Staff, Air Chief Marshal R.K.S. Bhadauria visited Air Force Station Jodhpur along with the Ambassador of France to India, H.E. Emmanuel Lenain. The Distinguished Visitors were received by Air Marshal S.K. Ghotia AOC-in-C South-Western Air Command. CAS interacted with members of IAF and FASF contingents. He expressed his appreciation on the complexity of operations conducted and interoperability achieved by participants within a short span of 4 days. He also commended the planning, operational and maintenance staff from both sides for smooth and safe conduct of the exercise. CAS wished the FASF contingent the very best for the next phase of their Skyros deployment. **SP**



(Top: Left to Right) CDS General Bipin Rawat visited Air Force Station Jodhpur; CAS Air Chief Marshal R.K.S. Bhadauria visited Air Force Station Jodhpur; Major General Laurent Lherbette, the French Air and Space Force contingent leader takes a ride on IAF aircraft;
(Middle: Left to Right) Su-30 MKI, Mirage 2000 and Rafale fighter aircraft of the IAF; Rafale being refuelled;
(Above: Left to Right) A Rafale aircraft of Indian Air Force; Su-30 MKI aircraft of Indian Air Force; French A400M tactical aircraft

PHOTOGRAPHS: IAF



LT GENERAL
P.C. KATOCH (RETD)

Indigenous Tactical Drones

The Chinese aggression in 2020 has spurred the government to equip the Army with tactical drones. News reports of July 22, 2020 had revealed that the Defence Research and Development Organisation (DRDO) was providing indigenously-developed drones called 'Bharat' to the Indian Army amid the ongoing standoff in Eastern Ladakh. According to DRDO sources this agile and light but powerful drone works autonomously at any location with great accuracy and "the unibody biomimetic design with advance release technology is a lethal combination for surveillance missions". Bharat drone is equipped with Artificial Intelligence (AI) to differentiate between friends and foes and then respond accordingly. Capable of surviving in extreme cold, the surveillance equipment has been developed keeping in mind extreme weather conditions along the LAC. Bharat has been developed by DRDO's Chandigarh-based Terminal Ballistics Research Laboratory (TBRL). Bharat provides real-time video transmission during the mission and can detect persons hidden under forest cover. Equipped with advanced night vision, its stealthy design ensures that its signature remains undetected by enemy radars. Importantly, it is also capable of operating in swarms.

The combat swarm drone demonstration on Army Day Parade 2021 saw drones engaging multiple targets that brought home the realities of new age warfare. The complexities of future battlefields will witness more agile and lethal drones in swarms. Since August 2020, 75 indigenous tactical drones have been inducted in phases into the Indian Army to boost Army's surveillance capabilities and undertake targeted strikes to assist troops on the ground. Now the Army has signed a \$20-million (₹140 crore) contract with the Indian startup company ideaForge Technology Private Limited to supply SWITCH tactical drones for high altitude deployment. ideaForge is an IIT Bombay incubated company which has earlier also supplied tactical drones to Indian Armed Forces. According to Ganapathy Subramaniam, Executive Chairman of ideaForge, a combination of world-class technology and a deep understanding of customer requirements has resulted in ideaForge bagging this contract against global competition.

Before being selected, SWITCH from ideaForge underwent trials in Ladakh with other indigenous and global firms competing in the trials. These also included Elbit Systems, Dynamatic Technologies, Tata Group and VTOL Aviation India Private Limited. However, SWITCH from ideaForge was the only tactical drone that met the stringent operational requirements of the Indian Army. Following the successful trial, Ankit Mehta, Chief Executive Officer of ideaForge said, "SWITCH UAV is the culmination of insights and knowledge we have gained over years of experience in helping the Indian forces operationalise UAVs in their ranks. It is a testimony of the fact that our systems are built like a bird and tested like a tank. Our sys-



SWITCH tactical drones from ideaForge Technology

tems are fully ready to serve nations that seek to protect their territorial sovereignty."

As per the contract, ideaForge is required to supply the SWITCH drones within one year. The number has not been disclosed but is likely to be around 100. The SWITCH drone, weighing 6.5 kg, is capable of 2-hour endurance and surveillance up to 15 km and can be launched from altitudes of 4,000 meters above mean sea level. Of the fixed wing vertical takeoff and landing (VTOL) variety, SWITCH can be deployed at high altitude and harsh environments for day and night surveillance for intelligence, surveillance and reconnaissance (ISR) missions. It is man-portable and has the highest time on target compared to any other drones in its class. The drone can be operated with support from the Ground Control Station consisting of a high-range communication box, a hand-held controller for full camera control, and laptop/tablet for live video streaming and pre-flight checks.

DRDO's Rustom-II finally undertook a successful flight in October 2020 after being delayed for months-years including a crash. Rustom-II MALE drone is based on the Rustom-H unmanned combat air vehicle and features light airframes. It has a length of 9.5 meters and an empty weight of 1,800 kg. It is equipped with mid-set, high aspect ratio wings spanning 20.6 meters. The tail section is configured with a high-mounted horizontal tail plane with a traditional T-type vertical stabilizer. It can fly in autonomous or manual mode. The onboard flight control system allows UAVs to

execute missions autonomously using waypoint navigation. The manual mode of operation is performed by an operator of the ground control station. It can fly at a maximum speed of 225 km/h and can bear up to 24 hours. It has the capability to operate on the line of sight range of 250 km. The drone has a maximum flight of 35,000 feet above sea level.

The Chinese aggression in 2020 has indirectly served as blessing in disguise for India waking up to battlefield realities like drones. It is a pity that countries like Iran and Turkey are far ahead in drone

technologies despite having been under sanctions. Government must also take the blame for being fixated with DRDO and not giving enough opportunities to the private sector. ideaForge has supplied drones to the military earlier also. There is no reason the contract accorded to the firm now was not given in years preceding the Chinese aggression considering our vast borders and to meet Army's ISR requirements. There is more than enough technical expertise in the private sector compared to the DRDO, in addition to far better work culture and dedication to meet timelines. **SP**

Raytheon Maritime Surveillance Systems Flight Tested on GA-ASI SeaGuardian for Japan Coast Guard

Japan's Coast Guard recently completed successful flight testing of Raytheon Intelligence & Space (RI&S) maritime surveillance technologies onboard a General Atomics Aeronautical Systems, Inc. (GA-ASI) SeaGuardian Remotely Piloted Aircraft (RPA). RI&S provided its SeaVue Expanded Mission Capability (XMC) radar and AN/DAS-4 Multi-spectral Targeting System for the tests, which were conducted in the Hachinohe, Aomori Prefecture, Japan, between October 15 and November 10, 2020.

The tests validated the wide-area maritime surveillance systems support for the Japan Coast Guard to carry out missions for search and rescue, disaster response and maritime law enforcement.

"Our advanced intelligence, surveillance and reconnaissance solutions can aid the Japan Coast Guard to perform their duties effectively in alignment with Japan's maritime security priorities," said Barbara Borgonovi, Vice President of Intelligence, Surveillance and Reconnaissance Systems for RI&S. "Through our partnership with GA-ASI, SeaVue XMC and DAS-4 contribute to SeaGuardian's



critical role to help operators make decisions faster. Our wide-area surveillance technologies have proven track records that can be tailored to any mission in the maritime environment."

The SeaVue XMC radar provides enhanced wide-area surveillance by identifying targets of interest rapidly and efficiently, such as small maritime vessels. SeaVue MR delivers expanded capabilities including small-target detection at longer ranges and higher altitudes, and a software-defined digital architecture to add new functionality without changing hardware.

The DAS-4 sensor suite offers operators next-generation electro-optical surveillance in high-definition and full-motion video to identify and engage targets with pinpoint accuracy. The flight tests support the Japan Coast Guard's policy on Strengthening Maritime Security System. The policy calls for modernized maritime technologies to protect Japan's sovereignty. **SP**

Indian Army Demonstrates Drone Swarms During Army Day Parade



The Indian Army carried out a live demonstration of Drone Swarming capability using 75 indigenously designed and developed drones which executed an array of Artificial Intelligence (AI) enabled simulated offensive missions and close support tasks during the Army Day Parade held on January 15, 2021.

This demonstration is a recognition of the Indian Army's steady embrace of emerging and disruptive technologies to transform itself from a manpower intensive to a technology enabled force to meet future security challenges. The Indian Army is investing heavily into Artificial Intelligence (AI), Autonomous Weapon Systems, Quantum Technologies, Robotics, Cloud Computing and Algorithm Warfare in order to achieve a convergence between the Army's warfighting philosophies and military attributes of these technologies.

The Indian Army has undertaken a wide array of technology initiatives in coordination with Dreamers, Startups, MSMEs, Private Sector, Academia, Defence Research and Development Organisation (DRDO) and Defence Public Sector Undertakings (DPSUs). One such project is the Artificial Intelligence (AI) Offensive Drone Operations which has been incubated with an Indian Start Up. This project symbolises the beginning of the Indian Army's tryst with autonomy in weapon platforms and showcases the Army's commitment towards merging the cutting edge of digital technologies with its human resource. **SP**

Fluke ii900 Sonic Industrial Imager Turns Sound Waves into Real-time Image

New to quickly and accurately pinpoint compressed air, steam, gas and vacuum leaks at a glance

Identifying leaks of compressed air, steam, gas and vacuum. Widespread among industrial plants, expensive to produce, easy to leak, difficult to locate, used across all types of manufacturing and process plants. Generally, requires purchasing or rental of an expensive sound cameras or hiring an outside consultant. The alternative is scan point-by-point, listening for potential leaks, using a long-range sensor and get close, swap ultrasonic sensors, confirm it is a leak, pinpoint leak source, which is extremely time consuming and also requires expert, trained, experienced “ears” to listening to and recognising the leak sound pattern.

The new Fluke® ii900 Sonic Industrial Imager enables maintenance teams to quickly and accurately locate air, steam, gas and vacuum leaks in compressed air systems. The straightforward, intuitive interface allows technicians to isolate the sound frequency of the leak to filter out background noise. In a matter of hours, the team can inspect the entire plant – during peak operations.

Using SoundSight™ technology, this industrial imager offers a new way to locate issues using sound. Leak identification is simple, a SoundMap™ is displayed in color over a visual image of the equipment allowing for fast visual location. With the visual image, it is easy to scan a large area quickly and even possible identify leaks from a distance.



The ii900 comes complete with Imager; AC power supply and battery pack charger (including universal AC adapters); two rugged lithium ion smart battery packs; USB cable; rugged, hard carrying case; two rubber array covers; adjustable hand strap and adjustable neck strap. SF6 gas detection training tools, including a step-by-step instructional video, are also available on the company website. **SP**

Vice President Inaugurates Two New Facilities at Dr A.P.J. Abdul Kalam Missile Complex



India's Vice President M. Venkaiah Naidu has praised the DRDO scientists and engineers for taking India very close to self-reliance in missile technology with their hard work, dedication and perseverance. The Vice President made these remarks while addressing the scientific community after inaugurating two new facilities at Dr A.P.J. Abdul Kalam Missile Complex in Hyderabad. The Vice President also visited the Exposition of Technologies by Missile Complex Laboratories and said that he was elated to see the indigenous products. “I felt reassured about the security and capability of the

country given the tremendous progress made by DRDO scientists in developing self reliant missile technology”, Venkaiah Naidu said. He expressed confidence that Scientists and Technologists of DRDO with their caliber and commitment will make India so self-reliant that Atma Nirbhar Bharat will attain a position where the world will be *Bharat Par Nirbhar* (dependent on India).

Emphasising the importance of Atma Nirbhar Bharat, the Vice President said that self-reliant technologies give boost to the local industry, generate employment opportunities and earn valuable foreign exchange.

Referring to the limitations faced by India in having access to high end missile technology of developed countries prior to the signing of Missile Technology Control Regime (MTCR) in 2018, Venkaiah Naidu said that DRDO turned this crisis into an opportunity by developing a range of indigenous missile systems. He expressed his happiness over the fact that India is now trying to shift its status from being one of the largest importers of defence products to one of the top exporters of defence items.

Referring to the rapidly changing technological landscape, the Vice President asked DRDO to redefine its focus on strategic defence technologies and outsource activities which can be carried out by capable private sector participants. He was happy that DRDO has set up 8 advanced technology centers to carry out research on futuristic military applications. **SP**

AeroVironment Acquires Arcturus UAV



AeroVironment Inc., a global leader in unmanned aircraft systems, and Arcturus UAV, Inc., a privately-held leading provider of Group 2 and 3 unmanned aircraft systems (UAS) and services announced that they have entered into a definitive agreement under which AeroVironment will acquire Arcturus UAV for a total purchase price of \$405 million. The transaction, which was unanimously approved by the respective Boards of Directors, is expected to accelerate AeroVironment's

strategy to drive profitable growth and value by expanding into attractive adjacent segments and by broadening its capabilities and customer footprint.

Upon completion of the transaction, key members of the Arcturus UAV Executive Management team will remain in leadership positions. The transaction is expected to close during fourth quarter of AeroVironment's fiscal year 2021, subject to customary closing conditions and regulatory approvals. At close, Arcturus UAV will operate as a wholly-owned subsidiary of AeroVironment.

Arcturus UAV is a leading supplier to the USSOCOM, supporting its \$1.4 billion MEUAS III and IV programmes, and one of four awardees selected for funded development and demonstrations supporting the US Army's FTUAS programme, a potential billion dollar, next-generation UAS programme. Arcturus UAV's products include the JUMP-20, a multi-mission, medium endurance vertical takeoff and landing (VTOL) system requiring no launch equipment or runway and the T-20, a multi-mission, medium endurance catapult-launched system. Arcturus UAV sells its products directly to end users and delivers COCO services. All Arcturus UAV systems have the ability to carry a broad range of payloads, including standard EO/IR gimbals as well as 3-D mapping, SAR, LIDAR, communications relay, COMINT and SIGINT payloads. **SP**

KNDS Moves Towards Further Integration

Five years after the merger of Krauss-Maffei Wegmann and Nexter Systems under the joint holding KNDS, the Group's governance is being restructured. With this new structure, the owners of the Franco-German manufacturer of military land systems – the French state holding company GIAT Industries and the German family-owned company Wegmann & Co GmbH – are continuing on the path they forged in 2015 advancing in defined milestones towards the creation of a leader in its field.

The shareholders have decided to streamline the governance structure by establishing a single Board of Directors replacing the existing supervisory and management boards. After a first phase where the two subsidiaries got to know each other under the management of two co-CEOs and started building the company, it is time now to enter into the next phase of integration and development. The new structure will enable more efficient and coherent management of the KNDS companies and optimum leveraging of their potential and synergies.

The future board of directors of KNDS will comprise ten members including the CEO of KNDS. Unanimously, the shareholders have appointed Frank Haun to assume this role. Frank Haun has served as CEO of Krauss-Maffei Wegmann since 2003. He played a crucial role in designing and building KNDS in 2015 and has been instrumental in the success of the company since 2015 as Co-CEO.

The intention of the two shareholders is that the Chairman of the Board of Directors will be Philippe Petitcolin, presently CEO of Safran. Petitcolin will bring to the company his deep and successful experience of industrial operations and international cooperations, including the defence industry. Petitcolin will take his position on March 1st, succeeding Christian Jourquin.

The new KNDS management also requires new appointments in management positions in the operational companies Nexter Systems and Krauss-Maffei Wegmann. The new CEO of Krauss-Maffei Wegmann will be Ralf Ketzel while the new CEO of Nexter Systems will be announced in the coming weeks. **SP**

Onweb Secures Investment from SoftBank and Hughes Network Systems

OneWeb, the Low Earth Orbit (LEO) satellite communications company jointly owned by the UK Government and Bharti Global, announced that it has secured additional funding from SoftBank Group and Hughes Network Systems bringing OneWeb's total funding to \$1.4 billion. In connection with the investment, SoftBank will gain a seat on the OneWeb Board of Directors. Hughes is an investor through its parent company EchoStar, and also an ecosystem partner, developing essential ground network technology for the OneWeb system.

The capital raised to date positions the Company to be fully funded for its first-generation satellite fleet, totaling 648 satellites, by the end of 2022. OneWeb's mission is to deliver broadband connectivity worldwide to bridge the global digital divide by offering everyone, everywhere access including to the Internet of Things (IoT) future and a pathway to 5G. OneWeb's LEO satellite system includes a network of global gateway stations and a range of user terminals for different customer markets capable of delivering affordable, fast, high-bandwidth and low-latency communications services. In December 2020, OneWeb launched 36 new satellites, built at its Airbus Joint Venture assembly plant in Florida, USA, bringing the Company's total fleet to 110 satellites, all fully-functioning and benefitting from International Telecommunication Union spectrum priority. **SP**

Northrop Grumman to Sell IT and Mission Support Business

Northrop Grumman and Veritas Capital have announced that Peraton, an affiliate of Veritas, has signed a definitive agreement to acquire Northrop Grumman's federal IT and mission support services business for \$3.4 billion in cash. The transaction is expected to close in the first half of 2021, subject to regulatory approvals and customary closing conditions. In 2020, this Northrop Grumman business, in aggregate, is expected to generate approximately \$2.3 billion in revenue. Northrop Grumman expects to use the sale proceeds primarily for share repurchases, to offset dilution from the transaction, and for debt retirement.

"This divestiture allows us to drive value and reflects our strategy of focus on growing core businesses where technology and innovation are the key differentiators," said Kathy Warden, Chairman, Chief Executive Officer and President, Northrop Grumman. "We expect to create compelling value to our shareholders through this transaction and execution of our capital allocation strategy." On closing, Veritas expects to combine the Northrop Grumman business with Peraton, a Veritas portfolio company that provides mission critical technology solutions to government customers. SP

Private Investor Group Purchases SilverSky

A private investor group completed the purchase of the cyber security provider, SilverSky, on November 3rd, 2020. Two cyber security industry veterans who participated in the early evolution and scaling up of SilverSky have purchased the Company from BAE Systems in an investor and management-led buyout. Richard Dobrow, past CEO of Perimeter eSecurity (later renamed SilverSky) along with Cary Conrad, former President of Integralis AG (sold to NTT Communications Corp.) led the initiative to acquire the

Company along with support from members of the current management team. Richard will assume the role of the Company's Chairman & CEO while Cary will lead business development initiatives.

SilverSky, focused on managed security services (MSS), managed detection and response (MDR) and cloud cyber security, has successfully operated since 1997 and now serves more than 3,000 customers on a global basis. The Company provides comprehensive commercial cyber security services focused on organisations with strict security and compliance requirements such as banks, credit unions and other financial institutions. The Company also has a solid presence in other security-aware markets such as healthcare and insurance. The Company has revenues in excess of \$50 million and specialises in teaming with organisations where the cost of compliance to their individual industries' best practices outweighs their ability to deliver without a focused cyber security and compliance specialist like SilverSky. SP

Teledyne to Acquire FLIR Systems

Teledyne Technologies and FLIR Systems jointly announced that they have entered into a definitive agreement under which Teledyne will acquire FLIR in a cash and stock transaction valued at approximately \$8.0 billion.

Under the terms of the agreement, FLIR stockholders will receive \$28.00 per share in cash and 0.0718 shares of Teledyne common stock for each FLIR share, which implies a total purchase price of \$56.00 per FLIR share. The transaction reflects a 40 per cent premium for FLIR stockholders based on FLIR's 30-day volume weighted average price as of December 31, 2020.

As part of the transaction, Teledyne has arranged a \$4.5 billion credit commitment to fund the transaction and refinance certain existing debt. Teledyne expects the acquisition to be immediately accretive to earnings, excluding transaction costs and intangible asset amortization, and accretive to GAAP earnings in the first full calendar year following the acquisition. SP

Lockheed Martin To Acquire Aerojet Rocketdyne

Lockheed Martin announced it has entered into a definitive agreement to acquire Aerojet Rocketdyne for \$56 per share in cash, which is expected to be reduced to \$51 per share after the payment of a pre-closing special dividend. This represents a post-dividend equity value of \$4.6 billion and a total transaction value of \$4.4 billion including the assumption of net cash.

As part of approving the transaction, Aerojet Rocketdyne announced a special cash dividend, revocable at its option through the payment date, of \$5 per share to its holders of record of common stock and convertible senior notes (on an as-converted basis) as of the close of business on March 10, 2021, and payable on March 24, 2021.

"Acquiring Aerojet Rocketdyne will preserve and strengthen an essential component of the domestic defense industrial base and reduce costs for our customers and the American taxpayer," said James Taiclet, Lockheed Martin President and CEO. "This transaction enhances Lockheed Martin's support of critical US and allied security missions and retains national leadership in space and hypersonic technology. We look forward to welcoming their talented team and expanding Lockheed Martin's position as the leading provider of 21st century warfare solutions."

With 2019 revenue of approximately \$2 billion, nearly 5,000 employees, and 15 primary operations sites across the United States, Aerojet Rocketdyne is a world-recognised aerospace and defence rocket engine manufacturer. Aerojet Rocketdyne has deep customer relationships and significant demand for its innovative technologies. The proposed acquisition adds substantial expertise in propulsion to Lockheed Martin's portfolio, and expands on the solid foundation built by Lockheed Martin and Aerojet Rocketdyne over many years. Aerojet Rocketdyne's propulsion systems are already a key component of Lockheed Martin's supply chain and several advanced systems across its Aeronautics, Missiles and Fire Control and Space business areas.

The transaction is expected to close in the second half of 2021 and is subject to the satisfaction of customary closing conditions, including regulatory approvals and approval by Aerojet Rocketdyne's stockholders. Lockheed Martin has a history of successful integrations and will work to efficiently deliver the many strategic and financial benefits of this transaction. A transition team will be formed to allow for a seamless integration and ensure continuity for customers, employees and other stakeholders. SP

Violent Mob Breach the US Capitol

Supporters of President Donald Trump caused chaos in the US capital on January 06 when a pro-Trump mob broke into the US Capitol, some wielding lead pipes, zip ties, explosives and chemical irritants. Law enforcement said they were caught off guard. John Sandweg, a former acting Director of Immigration and Customs Enforcement said, "This was just a stunning failure." Malcolm Nance, a former US intelligence and counterterrorism officer who runs a nonprofit that monitors far-right extremist online networks, said warnings of possible violence at the Capitol were apparent on social media.

Before Congress convened to count and debate Electoral College votes that confirmed President-elect Joe Biden's victory in the November election, Trump supporters flooded social media sites known for far-right conspiracies to make plans to converge on the city. Among those who descended on the Capitol were known white supremacist figures. The Department of Homeland Security issued a report last October dubbing white supremacist extremists "the most persistent and lethal threat in the homeland." Five people died from Wednesday's violent insurrection, including a Capitol Police officer.

Given the level of animosity surrounding this year's joint session of Congress, during which Republicans in both chambers objected to the counting of key battleground states where Trump lost to Biden, Nance and Sandweg said the Department of Homeland Security could have designated it as a "national special security event." That would have allowed the Secret Service to take the lead in coordinating security. With some confusion about what actually happened, the country has been left



to speculate as to why Capitol Police may have eschewed offers for assistance from other law enforcement agencies and the National Guard in the days before the attack. For many, including racial justice activists, the police's lax preparation is one example in a long history of disproportionate treatment of white and Black demonstrators.

The siege prompted widespread criticism around the world, the resignations of three top Capitol security staff, including Capitol Police Chief Steven Sund, as well as at least 10 Trump administration officials. Several Capitol police have been suspended and others are under investigation. **SP**

Hackers Access Finland MPs' Emails Accounts

The Finnish Parliament cyber-attack took place around the same time Russian hackers breached the Norwegian Parliament's email system. The Finnish Parliament said that hackers gained entry to its internal IT system and accessed email accounts for some Members of Parliament (MPs).

Government officials said the attack took place in the fall of 2020 and was discovered this month by the Parliament's IT staff. The matter is currently being investigated by the Finnish Central Criminal Police (KRP). In an official statement, KRP Commissioner Tero Muurman said the attack did not cause any damage to the Parliament's internal IT system but was not an accidental intrusion either. He said the Parliament security breach is currently being investigated as a "suspected espionage" incident.

But while government officials didn't mention it, the incident is eerily similar to a similar hack disclosed in a neighboring Scandinavian country. Earlier this fall, Norway's Parliament disclosed a similar breach of its internal email system, with hackers accessing some officials' email accounts.

This month, after a months-long investigation, the Norwegian police secret service (PST) attributed the intrusion to APT28, a group of hackers linked to Russia's military intelligence service, the GRU. A recent Microsoft report highlighted a recent trend in APT28

tactics towards targeting email accounts with credential stuffing and brute-force attacks. **SP**

New Zealand Central Bank Data System was Breached

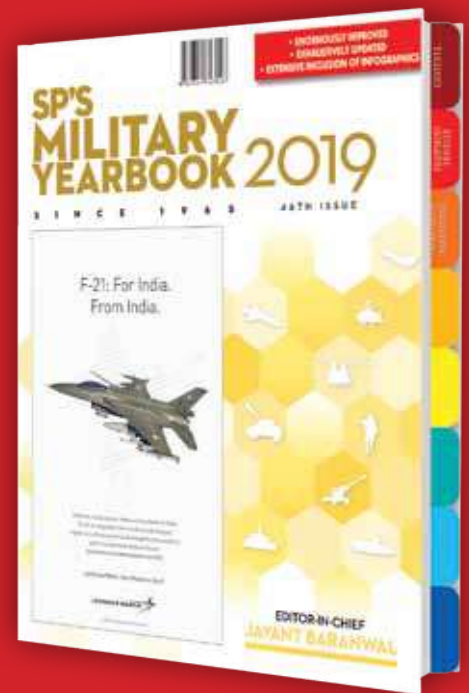
The Reserve Bank of New Zealand said that it was responding with urgency to a breach of one of its data systems. A third-party file-sharing service used by the central bank to share and store some sensitive information was illegally accessed, the bank said in a statement. RBNZ Governor Adrian Orr said the breach had been contained but added it would take time to understand the full implications of this breach. "The nature and extent of information that has been potentially accessed is still being determined, but it may include some commercially and personally sensitive information," Orr said in a statement.

In August, the operator of New Zealand's stock exchange was hit by cyber attacks. InPhySec, an independent cyber security firm tasked with reviewing the cyber attacks, said the volume, sophistication and persistence of the attacks were unprecedented for New Zealand. In a November 2019 Financial Stability report, the RBNZ warned that the frequency and severity of cyber security incidents were on the rise in New Zealand. In February of last year, the bank said in a report that the expected cost of cyber incidents for the banking and insurance industry was between NZD80 million (\$58 million) and NZD140 million per year. **SP**

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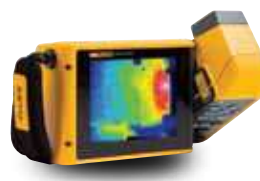
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