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INDIAN AEROSPACE DEFENCE NEWS

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STRATEGIC FOCUS

VOLUME 1 | ISSUE 4 | 2022-23

F-INSAS



WEPONE TRIALS

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EMPOWERING STRATEGIC MINDS
SINCE 2012

The IADN is a leading independent defence and strategic news and information providing website. It is a 'not-for-profit' 'self-sustaining' 'non-partisan' 'knowledge-building' website providing exclusive, non-partisan and in-depth news and analysis on leading defence, strategic, security and related issues about India.

The IADN was founded in March 2012 by **Mr Shantanu K. Bansal**. The IADN can be called a unique venture which has played an instrumental role in taking defence and strategic issues to a wider audience. Before IADN, the issues related to defence and security were limited to the interest of some scholars and government, the IADN took upon the initiative to enlighten public about prevailing security situation of the country hence assisting the much-needed 'strategic culture' in the country from the grassroots level. Having been inspired by IADN many such news and analysis platforms mushroomed across the open domain.

With extreme efforts, the IADN has been able to transform itself into an open-information and knowledge-sharing platform. Time and again through its unique way of reporting, it has touched upon the minds across the world hence providing a way for better policy orientation in the sector it serves. Today IADN is backed by a strong, ever-growing community of more than 4 Lakh followers hence having a prominent say on leading issues of national interest.

The IADN has a spotless record, it has intact the quality of reporting as it should be. The team of editors, content writers and graphic designers from various backgrounds, represents every region of India- North, South, West and East which reflects the true spirit of India. Our serving/veteran team members have got the opportunity to associate with leading companies, institutions and government organisations.

On the occasion of its 10th year in service, the IADN launched E-magazine called "**IADN Strategic Focus.**" The monthly magazine is a recap of all the happenings in the defence and strategic sector and policy briefs in the form of E-publication.



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IADN UNVEILS EDGE OF FORCE ASTRO UGV

1. Materials and Methods Proposed for Fabrication:

- optional built-in bilge pumps and an IP rating of 65
- rugged, lightweight steel and aluminum build gives it low ground pressure and traction
- The second version of ASTRO will be much heavier and rugged and will be developed using Mil A46100

2. Operating Temperature:

- Plain and Desert Terrain: Min 0° to 05° Max 40 to 45°
- High Altitude and Mountain Terrain: Min (-) 20° to (-) 10° Max 40°

Duties:

- Automated surveillance using the mounted Doppler Radar with inbuilt automated AI-based classification and tracking of targets (EFDCT - Edgeforce Doppler Augmentation and Classification Technology)
- Geofencing of a particular zone/target area based on the mode selected
- GPS and GALILEO support
- Day and night surveillance
- Indoor navigation and mapping

4. Power and Payload Capacity:

- 15 bhp engine with 25° Gradient
- 100 kg load carrying capacity

5. Modules:

- Surround LIDARs
- Doppler Radar
- Stereo Camera - RGB/Thermal
- Single shot 360 Deg Camera for surveillance
- 6hrs battery life in autonomous mode

6. Modes:

- Teleoperated
- Semi-autonomous (Geofencing)
- Autonomous (GPS, VPS, GALILEO)



TO KNOW
MORE



WEAPON TRIALS

DRDO VL SR-SAM TESTED



On 23 August, the DRDO VL SR-SAM (Vertical Launch Short Range SAM) was successfully test fired from an Indian Navy Ship (A Rajput Class destroyer) and neutralised an incoming target.

During the test launch, flight path and vehicle performance parameters were monitored using flight data, captured by various Range instruments such as Radar, Electro-optical tracking system (EOTS) and Telemetry systems deployed by ITR, Chandipur. This is the 4th testing of this system and 2nd testing from a Naval Ship. This system will replace Barak 1 SAM system currently in service with the Indian Navy.

DRDO CANON LAUNCHED LASER GUIDED ATGM TESTED

On 4 August, DRDO Canon Launched Laser Guided ATGM successfully test fired from 120mm rifled gun of Arjun Main Battle Tank. The missiles hit with precision and successfully destroyed the targets at two



different ranges. Telemetry systems have recorded the satisfactory flight performance of the missiles. The all-indigenous Laser Guided ATGM employs a tandem High Explosive Anti-Tank (HEAT) warhead to defeat Explosive Reactive Armour (ERA) protected armoured vehicles. Currently being tested and deployed on Arjun tanks, its planned to be tested from T90S tanks in future too. This missile has superior performance than imported alternatives like Russian INVAR or Israeli LAHAT.

INDIAN ARMY CONDUCTED MULTIPLE FIRINGS OF PINAKA EXTENDED RANGE MBRL



August last week, the DRDO and Indian Army conducted multiple firings of Pinaka Extended Range MBRL system during User Trials in Balasore. The ER version of Pinaka has a range of 45 kilometres. This system will be able to be fired from the existing Pinka regiments thus ensuring quick

equipment. India has residual capacity to manufacture upto 5000 Pinaka Rockets per year.

NEW ACQUISITIONS AND PROCUREMENTS



NOD TO RS 45-CR CRPF PLAN TO GET VEHICLE-MOUNTED JAMMERS FOR VVIP PROTECTEES TO DEFUSE IED THREAT

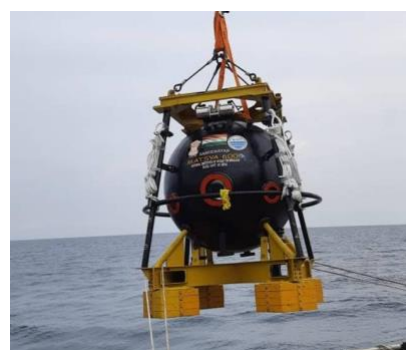
Amid a growing threat from IEDs, particularly remote-controlled ones, the ministry of home affairs has cleared a proposal to buy vehicle-mounted remote-controlled improvised explosive device (RCIED) jammers for VVIP protected. The plan of the Central Reserve Police Force (CRPF), which gives protection to all top leaders, ministers, and dignitaries, such as union home minister Amit Shah, Congress leaders Sonia Gandhi and Rahul Gandhi, Bharatiya Janata Party president JP Nadda, etc, has been approved at a cost of about Rs 45 crore.

TASL HAS STARTED DELIVERING TACTICAL/COMBAT SUPPORT/HIGH MOBILITY TRUCKS TO THE AFRICAN DEFENCE FORCES

TASL has started delivering Tactical and Combat Support Trucks- High Mobility Platforms (HMT) to the African Defence Forces. These trucks are customised as per military requirements and can also carry troops & ammunition and other combat support equipment reports TATA Advance Systems on its Twitter handle.

INDIA'S FIRST MANNED OCEAN MISSION 'SAMUDRAYAN' TO SEND HUMANS IN 6-KM OCEAN DEPTH

India is making considerable efforts to unveil the mysteries tucked in the deep-sea waters. Under the mega ocean mission 'Samudrayan', the nation aims to send a team of experts into the deep sea to carry out various deep underwater studies.



INDIA'S 1ST PASSENGER DRONE, BUILT FOR INDIAN NAVY, CAN CARRY 130 KGS



A start-up in Maharashtra's Pune has created the country's first passenger drone - Varuna. The pilotless drone, developed for the Indian Navy, can carry a payload of up to 130 kgs. The drone has the power to cover 25 kilometres of distance with that

weight. The drone, manufactured by Sagar Defence Engineering Company, is capable of a safe landing even after a technical snag in the air. In case of emergency, the parachute will automatically open and help in a safe landing.

TATA ARM 'WORKING ON CORE TECH THAT WILL MAKE INDIA TRULY SELF-RELIANT IN DEFENCE'; C-295 AIRCRAFT PROJECT ON TRACK

The TATA Advanced Systems Limited (TASL) – the TATA Sons' subsidiary which has emerged as the country's leading private defence manufacturing company, is confident of jointly producing with Airbus more than 40 of the 56 C-295 transport aircraft in India which would be "more affordable globally".

FUTURE BRAHMOS-II MISSILE MAY INCLUDE COMPONENTS FROM TSIRKON HYPERSONIC MISSILE



According to information published by Tass on August 2, 2022, the hypersonic version of the BrahMos cruise missile, the BrahMos-II, will probably have the same performance characteristics as Russia's Tsirkon missile. It would take

up to five or six years before its first flight trials. The hypersonic version is being developed by Russia's Research and Production Association of Machine-Building (NPO Mashinostroyeniya) and India's Defence Research and Development Organization.

RUSSIA WILL DELIVER ALL THE FIVE REGIMENTS OF S-400 WEAPONS TO INDIA BY LATE 2023

Russia delivers S-400 air defence systems to India under the schedule approved by the two countries, Head of Russia's Federal Service for Military-Technical Cooperation Dmitry Shugayev told TASS at the Army 2022 international military-technical forum. "The deliveries proceed under the schedule approved by the parties in compliance with the contractual commitments," Shugayev said, replying to a question about the pace of

fulfilling the contract on the deliveries of S-400 air defence weapons to India.

DEFENCE MINISTER HANDS OVER INDIGENOUSLY-DEVELOPED EQUIPMENT TO INDIAN ARMY



Defence Minister of India Shri Rajnath Singh today on August 16, 2022 handed over indigenously-developed equipment and systems to the Indian Army in New Delhi. These include Future Infantry Soldier as a System (F-INSAS), new generation anti-personnel mine 'Nipun', rugged and automatic communication system with enhanced capabilities, upgraded sights system for tanks and advanced thermal imagers. State-of-the art high mobility Infantry Protected Vehicles and Assault Boats were virtually handed over by Raksha Mantri enabling the troops deployed along the borders to respond to any challenge in a befitting manner.

INDIA'S DEFENCE ATTACH GETS UNESCORTED ACCESS TO US' PENTAGON IN MOVE SHOWING TRUST AND COOPERATION



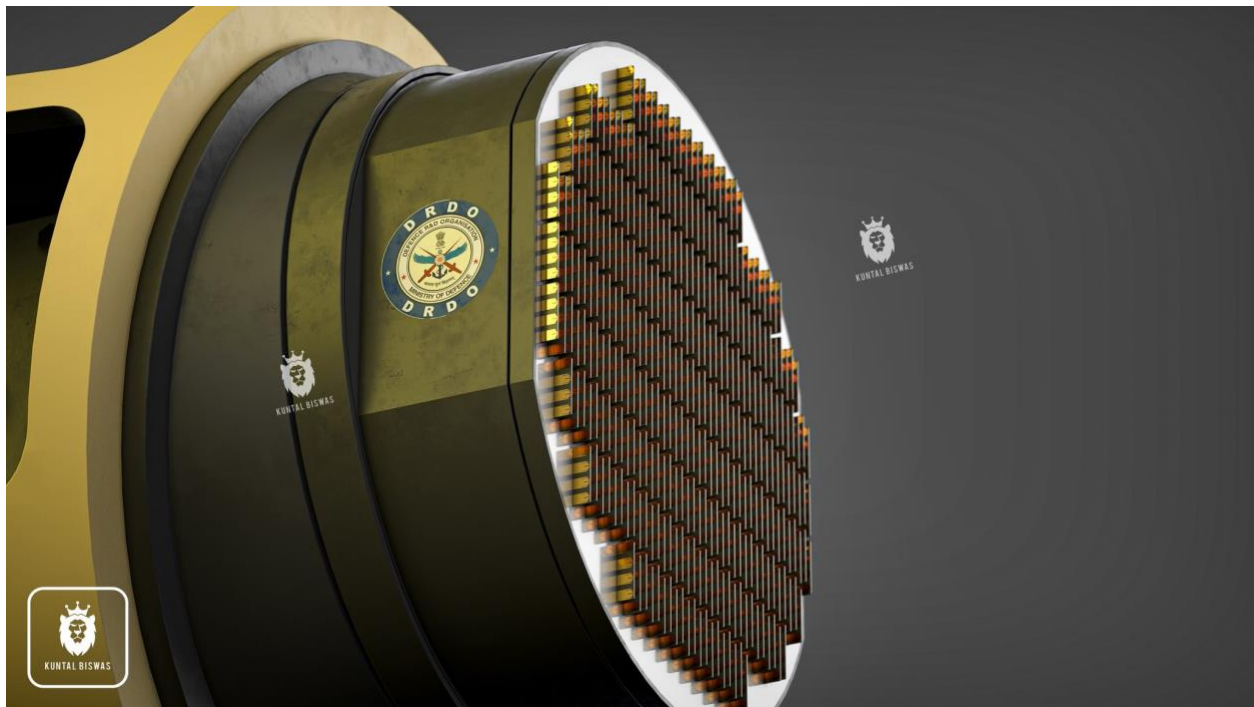
Indian defence attach now has unescorted access to the Pentagon, a top US Defence Department official has said. Such a move is aligned with the trust and cooperation that we share with India, US Air Force Secretary Frank Kendall said on at a reception hosted by India's Ambassador to the US Taranjit Singh Sandhu at India House on Independence Day.

IAF TO SOON GET 5TH GEN ADVANCED FIGHTER JET AMCA, DESIGN REVEALED

Former Chief of Air Staff Air Chief Marshal Rakesh Kumar Singh Bhadauria announced that the development of 5th Generation advanced multi-role combat aircraft has been launched. the prime features are the Diverterless Supersonic Inlet (DSI) and a 3D 'bump' that prevent radar waves from bouncing off the engine blades/turbines, making it a Stealth jet. The jet is seen sporting an Infrared Search and Track (IRST) above the nose cone along with an Active Electronically Scanned Array (AESA) radar, used to enhance medium and long-range detection of targets.



DRDO COMPLETES DEVELOPMENT TRIALS OF UTTAM AESA RADAR

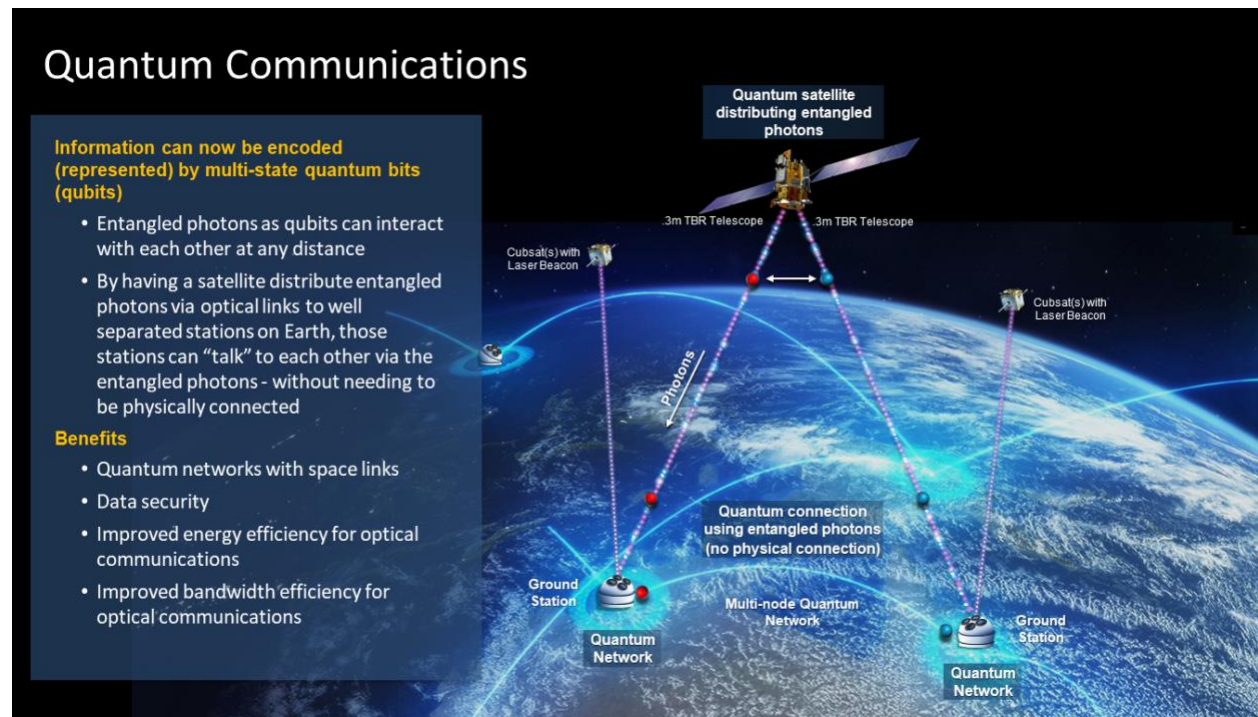


DRDO/LRDE completes the development trails of Uttam MK-1 AESA Radar for Tejas MK-1A. Uttam MK-2 is also being developed for Tejas MK-2 fighter jet. A more powerful variant for Su-30MKI is under development. Better Radars with GaN TRMs for AMCA & TEDBF are also under consideration.

INDIAN ARMY GETS MADE-IN-INDIA DRONE SYSTEMS TO MONITOR LAC

One of the key additions to the firepower of the Indian Army is the new Mini Remotely Piloted Aerial System (RPAS). Defence Minister Rajnath Singh handed over indigenously-developed equipment and systems to the Indian Army in New Delhi on August 16, 2022. These include Future Infantry Soldier as a System (F-INSAS), new generation anti-personnel mine 'Nipun', rugged and automatic communication system with enhanced capabilities, upgraded sights system for tanks and advanced thermal imagers.

INDIAN ARMY SET TO POSSESS QUANTUM COMMUNICATION TECH, JOINS ELITE LIST



The Indian Army is set to possess advanced quantum communication technology, thereby joining an elite list of nations with indigenous quantum tech. The new technology will equip troops with a high-end secured defence system. The technology, developed by QNu Labs, a Bangalore-based deep tech start-up, will help in modern-day war fare as the communication channel created using the Quantum Key Distribution (QDK) system is non-hackable, according to the defence ministry.

KARNATAKA'S NOD FOR NEW AEROSPACE AND DEFENCE POLICY



The State Cabinet on Friday approved the Karnataka Aerospace and Defence Policy 2022-27 with an objective of transforming the state into a defence manufacturing hub. The

new policy comes at a time when aerospace industrial corridors are coming up in neighbouring Tamil Nadu and Uttar Pradesh. The policy also aims to establish Karnataka as the preferred investment destination for aerospace and defence manufacturing by ensuring more incentives and subsidies for manufacturers of components and in a long way serve the purpose of the Defence Ministry's target of 70% self-reliance in weapons by 2027.

IAF WANTS INDUSTRY TO ASSEMBLE ELINT SYSTEM USING COMMERCIAL TECHNOLOGY



The Indian Air Force is seeking a “quick-fix” solution to meet its requirements for generating electronic intelligence (ELINT) and communication intelligence (COMINT) by asking the industry to develop a new vehicle-based system from technology already available in the open market. The system will be developed with commercially available off-the-shelf hardware and software and no development of specialised components is envisaged in the project, according to preliminary information issued by the IAF.

INDIA'S 1ST INDIGENOUS HYDROGEN-FUELLED ELECTRIC BOAT TO BE DELIVERED BY 2023: COCHIN SHIPYARD LIMITED



In a bid to kickstart the country's efforts toward green shipping, India's first indigenous Hydrogen-fuelled electric vessel which is being developed at the Cochin Shipyard Limited (CSL) is expected to be delivered by March-April next year, informed CSL chairman and managing director Madhu S Nair. The construction of the hydrogen-fuelled electric vessel, which is a pilot project is halfway complete with its engineering done and construction, is expected to start very soon, said Nair further adding that the order to purchase the necessary equipment will be done shortly.

ISRO SUCCESSFULLY TESTS GAGANYAAN LOW ALTITUDE ESCAPE MOTOR OF CREW ESCAPE SYSTEM



In another important milestone in the Gaganyaan project, Indian Space Research Organisation (ISRO) successfully carried out

the test-firing of the Low Altitude Escape Motor (LEM) of Crew Escape System, from Sriharikota, Andhra Pradesh, said the officials. "The Crew Escape System (CES) takes away the Crew module of the Gaganyaan mission in case of any eventuality and rescues the astronauts. In case of mission-abort during the initial phase of flight, LEM provides required thrust to CES, to take away Crew Module from the launch vehicle," read a statement by ISRO.

INDIAN NAVY SEEKS DEVELOPMENT OF NEW 'GLIDEFIRE' MISSILE



Indian Navy has unveiled requirements for a new ship-launched surface to surface missile (SSM). The missile, referred to as 'Glidefire SSM', is to be developed under the Make-II category of India's Defence Acquisition Procedure (DAP) 2020. This category involves industry funded project development with no government funding.

DEFENCE R&D TO BE OPENED TO PRIVATE SECTOR FOR HIGH-TECH PLATFORMS

In the background of Russian and Chinese belligerence in Ukraine and Taiwan, the Narendra Modi government will soon open defence research and development to the private sector for



specific platforms to provide competition to the public sector and ensure that armed forces requirements are met in time. In the next meeting of Defence Acquisition Council (DAC), the Narendra Modi government is slated to approve amendments in the Defence Acquisition Procedure (DAP) to allow Indian private sector into defence research and development (R&D) through special purpose vehicles and in collaboration with the defence public sector undertakings (DPSUs).

DRONE FEDERATION OF INDIA (DFI), ARMY DESIGN BUREAU (ADB) SIGN PACT TO DEVELOP HIGH-IMPACT DRONES FOR INDIAN ARMY

Under the MoU, DFI and ADB will collaborate on roadmap planning, research, testing, manufacturing and adoption of drones. Army Design Bureau (ADB) signed a memorandum of understanding with Drone Federation of India (DFI) to develop high-impact drones for Indian soldiers. DFI is an industry body that has Asteria Aerospace, Quidich Innovation Labs, AutoMicroUAS, Aarav Unmanned Systems and Indrones.



HAL DEVELOPING AI-DRIVEN MULTI-ROLE, LONG-ENDURANCE DRONE FOR VIGIL OVER LAC



The Hindustan Aeronautics Ltd (HAL) is working on an AI-driven multi-role, advanced and long-endurance drone for strategic missions in high-altitude areas including along the frontiers with China, people familiar with the development said. The rotary-wing drone will have the capability to carry a load of 40 kgs, including missiles and sensors, and it is being developed considering the requirement of the armed forces to keep a strong vigil over the mountainous areas along the Line of Actual Control (LAC).

RUSSIAN DEFENCE INDUSTRY TEAM TO VISIT INDIA SOON FOR TALKS ON UPGRADING IAF'S SUKHOI FLEET

A Russian defence industry delegation will soon travel to India to carry forward long-drawn-out talks for an upgrade of the Indian Air Force's (IAF) Sukhoi Su-30MKI fleet. This proposed upgrade will include better

radar, a more potent weapons package, a new cockpit system, and the integration of electronic warfare abilities.

ARMY BOOSTS FIREPOWER ALONG LAC, DEPLOYS NEW ASSAULT VESSEL IN PANGONG LAKE



In a big boost to India's military capabilities in Ladakh, the Indian Army has deployed a new assault vessel in Pangong Lake along the Line of Actual Control (LAC) with China. The Landing Craft Assault (LCA) will enhance operations along the LAC. The Landing Craft Assault is much more versatile and has overcome the limitations of launch, speed and capacity. The LCA has enhanced capability to operate across the water obstacles in Eastern Ladakh. LCA has been indigenously developed by Aquarius Ship Yard Limited, Goa, officials said.

DRDO DEVELOPS A FACIAL RECOGNITION SYSTEM THAT CAN PENETRATE MASKS, DISGUISE



The algorithm-based system can be used by security agencies for robust face searches across large repositories and be deployed in public places to recognise anti-social elements. The Indian Army has also developed facial recognition systems such as

Project Seeker and Silent Sentry. When Covid forced everyone to hide behind masks, one lot was happy: the criminals. Now they could find it easier to disappear into the crowd as identifying a person became more difficult. With such a threat, there was talk of the deployment of a facial recognition system that can detect faces with masks or disguises during the pandemic.

IIT-KANPUR TO WORK WITH BHEL TO BOOST R&D, LOCAL MANUFACTURING IN DEFENCE AND AEROSPACE

Indian Institute of Technology (IIT) Kanpur has signed a memorandum of understanding (MoU) with Bharat Heavy Electricals Ltd (BHEL) to collaborate on research and development (R&D), and manufacturing and supplying components, sub-assemblies, and systems to India's defence and aerospace sector.



ISRO GETS CREW MODULE FROM HAL FOR FIRST DEVELOPMENT LAUNCH OF GAGANYAAN



The Indian Space Research Organisation (ISRO) has showcased two space equipment built by Hindustan Aeronautics Limited (HAL), to be used in the first unmanned development launch of India's manned space mission, Gaganyaan. Announced by the Indian central space agency earlier today, this is the second crew module fairing (CMF) that ISRO has taken delivery of for Gaganyaan.

The CMF is a protective structure that surrounds the actual housing for India's to-be space scientists, built to withstand extreme conditions of heat, pressure and atmospheric friction. The structure will be tasked with keeping astronauts safe during the egress, ingress and landing procedures of the Gaganyaan mission.

RUSSIA WANTS TO BUILD NEXT GENERATION TANKS, SUBMARINES WITH INDIA



Underlining it is the only country in the world which can actually do a complete Transfer of Technology (TOT) in hi-tech defence equipment, Russia has said it wants to build the next generation armoured vehicles and submarines in joint collaboration with India. Russia also said despite the ongoing war with Ukraine that has prompted international sanctions, it has stood by its contractual obligations and delivery of all systems, including the S-400 air defence system, as per schedule. The delivery of the second regiment of the S-400 system is already underway.

AIR FORCE AT RAJASTHAN BORDER GETS NEW ANTI-DRONE GUNS, JAMMERS



The Indian Air Force has received a new hi-tech anti-drone system in the border areas of Rajasthan with the help of which, dealing with Pakistani drones will now be easier, Dainik Bhaskar reported. Anti-Drone Gun has arrived with the Air Force. The Air Force also

has an Anti-Drone Jammer which will jam the GPS connection of Pakistani drones. The nodal centre for anti-drone operation will be made at Bikaner Air Force Station. Drones are often sent to the Indian side for espionage and drug, arms, and ammunition smuggling by Pakistan. By the time the villagers inform the security agencies of spotting drones in the area, many times the Pak drones return home after doing their job.

UTTARAKHAND TO HAVE INDIA'S FIRST OBSERVATORY TO MONITOR SPACE ACTIVITY



The Digantara, a space sector start-up of India, is going to set-up India's first commercial space situational awareness observatory in the Garhwal region of Uttarakhand, to track objects as small as 10 cm in size orbiting the earth. The space situational awareness (SSA) observatory will assist in tracking any activity in space including that of space debris and military satellites hovering over the region. At present, the United States is a dominant player in monitoring space debris. It has observatories in multiple locations with commercial companies providing additional inputs from across the world.

INDIA TO UPGRADE DEFENCE ALONG LAC; IN ADVANCED STAGE OF TALKS WITH US FOR PROCUREMENT OF MQ-9B DRONES



India is in the advanced stage of talks with the US government to procure MQ-9B drones to upgrade the overall surveillance apparatus along the Line of Actual Control (LAC) with China and in the Indian Ocean. Aiming to upgrade the overall surveillance apparatus along the Line of Actual Control (LAC) with China and in the Indian Ocean, India is in the advanced stage of negotiating with the US to procure 30 MQ-9B Predator armed drones at a cost of over USD 3 billion, people familiar with the development informed



AMETHI UNIT ALL SET TO MAKE AK-203 RIFLES

The manufacture of the AK-203 assault rifles by the Indo-Russian joint venture at Amethi, Uttar Pradesh is set to begin by year-end

and the manufacturing equipment required for it will be dispatched from Russia shortly, according to a senior official of Kalashnikov, the Russian company which manufactures the rifles. The production was originally scheduled to begin early this year. "Training of Indian workers of the factory will begin shortly and the manufacturing process will reach 100% indigenisation in three years," the official who did not wish to be identified said. He stated that earlier issues with regard to the ammunition for the rifles have been resolved.

CENTRE FOR TESTING STRATEGIC ELECTRONICS, DRONES TO COME UP IN CHENNAI



The Tamil Nadu Industrial Development Corporation (TIDCO) is planning to set up a centre for testing strategic electronics, and drones in the Kancheepuram district of Chennai. As per reports, the centre that is being set up on 10 acres of land at Vallam Vadagal will consist of Greenfield

testing infrastructure, including electromagnetic compatibility or electromagnetic interference (EMI/EMC) testing.

ENERGY SECURITY: INDIGENOUS HYDROGEN FUEL CELL BUS DEVELOPED BY CSIR, KPIT LAUNCHED IN PUNE

Union Minister Jitendra Singh on Sunday launched an indigenously developed hydrogen fuel cell bus developed by the Council of Scientific and Industrial Research (CSIR) and private firm KPIT Engineering Limited in Pune. The Union Minister of State for Science and Technology on the occasion said PM Narendra Modi's 'Hydrogen Vision' aims to make the country "Atmanirbhar" (Self-Reliant).



INDIAN ARMY CALLS GARUDA AEROSPACE EXPERT TEAM FOR DRONE MODIFICATION



The Indian Army has asked the technical team of Chennai-based drone maker Garuda Aerospace to modify drones for security needs, said a top company official. "Garuda Aerospace has created

significant traction by deploying drones for unique applications to support the Indian Army and now will be using multiple purpose drones for strategic and tactical operations," Garuda Aerospace Founder and CEO Agnishwar Jayaprakash said. The army has expressed keen interest to utilise Garuda Aerospace's expertise and technical knowledge in the field of drone technology to use drones more effectively in modern day warfare, he said.

EYE ON CHINA THREAT, ARMY LAUNCHES PROJECT ZORAWAR TO DEPLOY LIGHT TANKS FOR MOUNTAIN WARFARE



With the "increased threat" from China along India's northern borders "likely to remain in the foreseeable future", the Army is launching Project Zorawar – the induction of indigenous light tanks for quicker deployment and

movement in high altitude areas. These tanks will be used to counter Chinese deployment of a large number of similar armoured columns along the Line of Actual Control (LAC).

INDIAN NAVY RECEIVES FIRST-EVER FULLY INDIGENOUS AK-630 GUN AMMO



The Indian Navy received indigenously-produced 30mm gun ammunition. A Navy official described it as a "milestone". "First ever 100 per cent indigenous 30mm HE gun ammunition for the services has been produced by M/s Economic Explosives Ltd, Nagpur," the official said. Satyanarayan Nuwal, CMD of the Solar Group, handed over the first consignment of the ammunition to Vice Chief of Naval Staff Vice Admiral SN Ghormade. "It is the first time that the services have placed an order on Indian private industry for delivery of complete gun ammunition and the same was completed successfully within a short time period of 12 months," the official said.

NEW GENERATION SURVEILLANCE EQUIPMENT USED TO FOIL INFILTRATION BID IN J&K'S URI: ARMY

New generation surveillance equipment, including aerial and ground-based sensors, and weapons were used to track and neutralise three terrorists during an anti-infiltration operation along the Line of Control (LoC) in Jammu and Kashmir's Uri sector on Thursday, the Army has said.

Talking to reporters in north Kashmir's Baramulla, General Officer Commanding of the Army's 19 Infantry Division Major General Ajay Chandpuri said the operation was launched following credible inputs from various sources, including the military intelligence, the Jammu and Kashmir Police and the Army's own sources on the ground.

INDIAN ARMY ENHANCES ITS MILITARY CAPABILITIES, INDUCTS SWARM DRONE SYSTEMS



The Indian Army has enhanced its drone capabilities by inducting swarm drone systems that can be used during both offensive and defensive operations. The drone technology has proved to be a force multiplier in military operations, as evident from its application in various recent conflicts across the world. Even in our context, the recent incidents along the borders have seen a noticeable increase in drone-related incidents.

ADA TO ACQUIRE ANTI-G SUITS FROM SAFRAN

Anti-gravity suits are designed for an elite group of airmen and astronauts who fly at super, blood-blocking speeds. Safran AeroSystems military



protection equipment includes individual life rafts, anti-G suits, life jackets, combat jackets and immersion suits which is suitable for all types of environments and aircraft. A G-suit, or anti-G suit, is a flight suit worn by aviators and astronauts who are subject to high levels of acceleration force (g). It is designed to prevent a black-out and g-LOC (g-induced loss of consciousness) caused by the blood pooling in the lower part of the body when under acceleration, thus depriving the brain of blood. Black-out and g-LOC have caused a number of fatal aircraft accidents.

INDIAN NAVAL FLAG WILL SOON REPLACE TO MARK THE END OF “COLONIALISM”



According to the initial reports, Indian Government will soon replace the St. George's Cross with new naval ensign to discontinue the epoch of British influence in Armed Forces. The new flag will unveil on country's first indigenous aircraft carrier INS Vikrant.

IADN UNVEILS EDGE FORCE ASTRO UGV

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- Geofencing of a particular zone/target area based on the mode selected
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- 15 bhp engine with 25° Gradient
- 100 kg load carrying capacity

5. Modules:

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- Doppler Radar
- Stereo Camera - RGB/Thermal
- Single shot 360 Deg Camera for surveillance
- 6hrs battery life in autonomous mode

6. Modes:

- Teleoperated
- Semi-autonomous (Geofencing)
- Autonomous (GPS, VPS, GALILEO)



TO KNOW
MORE



IADN BRIEFS

FROM MEN INTENSIVE TO A TECHNOLOGICALLY DEVELOPED FORCE: RECENT CHINESE MILITARY REFORMS

Mr Shantanu K. Bansal

The People's Liberation Army (PLA) has been rapidly improvising since the Gulf War period, 'from men intensive to a technologically developed force'. As China celebrates its 76th Independence Day in the coming month, here is the analysis of China's recent military reforms.

Inspiring from overwhelming military superiority exhibited by the U.S. forces; the Gulf War 1991 marked a momentous shift in Chinese national military strategy with subsequent issuance of "*The Military Strategic Guidelines for the New Period*" by the CPC and PLA in 1993. The Serbia- Kosovo conflict of 1998-99 also made a point for Chinese to indulge more in the military modernization. (1)

It seems there are also wide-ranging repercussions over Chinese mind which has led to the aggressive development of its military force capability. One reason can be due to China's defeat at the hands of the British during the First Opium War (1839-1842).



SHANTANU K. BANSAL

Founder of IADN. He has more than 10 years of experience in research and analysis. An award-winning researcher, he writes for the leading defence and security journals, think tanks and in-service publications. He has been a senior consultant to the Army Training Command (ARTRAC), Shimla and Helicopter Training School (HTS), Hyderabad.

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Scholar like Richard Harris notes that *the Chinese have one very broad generalization about their own history: they think in terms of 'up to the Opium war' and 'after the Opium war'; in other words, a century of humiliation and weakness to be expunged.* (2)

Since 1990s, China is steadily transforming PLA from a defensive force to an expeditionary force with U.S. been the prime objective. As PLA is becoming a more offensive force, China has a vision to transform its military to a force which can fight and win any conflict by 2050. Since, India is the only land neighbour with whom a conflict is possible due to number of border disputes and growing stature of India in world politics these modernization programmes has direct implications on India's defence and security.

Doctrinal Shift

The PLA's Three Levels of Conflict

Level of Conflict	Informed by
War (战争)	Strategy (战略)
Campaigns (战役)	Campaign Methods (战役法)
Battles (战斗)	Tactics (战术)

The National Defence White Paper of China published in the year 2019 which majorly addressed U.S. as threat and India got very little attention. The 2015 White Paper gave

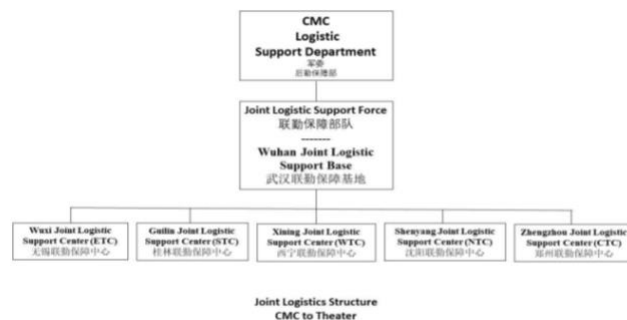
directive to the PLA to prepare for "winning local wars under high-technology conditions", it further directs the PLA to "win informatized local wars" with emphasis on struggle in the maritime domain. These phrases have been adjusted twice, once in 2004 and again in 2015 Defence White Paper which is largely taken from 1993 guidelines to PLA. Chinese military science sources describe key modernization efforts as driven by an "information system-based system-of-systems" approach, akin to U.S. network-centric warfare program. (3)

The 2013 Lectures on the Science of Army Campaigns provides updated PLA thinking on campaigns. An informationized military would experience

greater offensive advantages than in the past in conducting sudden, concealed indirect attacks with dispersed forces to disrupt the cohesion of the enemy's defensive system. Informationized systems like the reconnaissance, communications, navigation and positioning systems can support concealed assembly, deployment, manoeuvre and attack. Today, China has in place the full spectrum of space military capabilities to fight and win local wars under informationization conditions as enunciated by its leaders in past. (4)

Such modernized force could better conduct three-dimensional manoeuvre and multi-directional feints to confuse and stress the defender, seize key terrain, and achieve a deep attack against the enemy. PLA also believes that informationized logistics and equipment support can overcome many of the difficulties posed by the complex environment. Ultimately, the PLA seeks to turn itself into a modern, network-enabled fighting force, capable of projecting sustained power far throughout the Pacific region.

Reforming Higher Defence Management



In 2016 the four semi-autonomous General Departments (responsible for operations, political work, logistics, and armaments/equipment) were disbanded and replaced by 15 functional departments, commissions, and offices within the Central Military Commission (CMC) which is the highest decision-making body in Chinese military affairs, it directly comes under the

President of PRC. These changes align the military's top body to its post reform structure and underscore key themes of jointness, party loyalty, and anti-corruption.

As part of Xi Jinping Anti-corruption drive, over 40 high-level PLA officials, including two Vice Chairman of the CMC faced anti-corruption probes under an unprecedented anti-graft campaign in the past years. Western Analysts note that this campaign was basically to ensure loyalty towards Xi Jinping and the party in the top military hierarchy.

Theatre Commands

China decided to transform the Seven Military Regions and form it into five theatre Commands. On 1 February, 2016, President Xi Jinping officially inaugurated five theatre Commands: North, South, East, West and Central. This primarily means optimising forces available to Effect-based Operations (EBO) in a coherent manner.

PLA is moving toward a command structure more closely resembling the U.S. military. PLA restructuring has drawn comparisons to the U.S. military's reforms as part of the Goldwater-Nichols Department of Defence Reorganization Act of 1986. Many experts refer to these reforms as "Goldwater Nichols with Chinese characteristics".

Increasing Defence Budget

China committed \$59 Billion in its Defence sector in 2008, this increased to \$175 Billion in 2018. In a decade time China increased its defence budget by almost 3 times besides modest GDP growth on average in this decade. In 2019, China's defence budget was three to four times larger than that of India's which stood to 1.19 Trillion Yuan (\$177.6 Billion), making it the highest spender on defence sector in the world just after the U.S. China has increased its defence budget by 7.5 per cent in 2019, hiking it to \$177.61 Billion from last year's \$165 Billion.

Overseas Military Bases



On January 11, 2017, China elucidated its position on Asia Pacific security through its first white paper on its positions and policies on Asia-Pacific security cooperation. Between 2000 and 2014 in the transport and storage sectors, China committed \$126 Billion. Today, nearly two-thirds of the world's 50 major ports are either owned by China or have received some Chinese investment.

A study of July 2017 reported that China had doubled investment in acquiring overseas bases in 2016-17 to US \$ 20 Billion. China has sealed long-term port deals that span the globe, including in Australia, Cambodia, Indonesia, Malaysia, Brunei, Myanmar, Bangladesh, Sri Lanka, Pakistan, Djibouti, Tanzania, Mauritius, Namibia and Greece. Sri Lanka and a Chinese State-Owned Enterprise (SOE) signed a 99-year lease for Hambantota Port in Sri Lanka following similar deals in Piraeus, Greece, and Darwin, Australia. (5)

These deals were signed with stated purpose of commercial gains rather military utility. To India's concern China has sealed deal for ownership of ports in IOR with Pakistan, Djibouti, Myanmar, and Bangladesh.

Military Industrial Complex

CHINESE MILITARY AND SECURITY EXPORTS

Where Is China Exporting PSCs and Weapons?



Credits: Forum on the Arms Trade

From 2011 to 2015, China sold \$8.4 billion worth of arms, overtaking long-established arms exporters France (\$8 billion) and Germany (\$6.7 billion), although it still lags the leaders: the US (\$47 billion) and Russia (\$36.2 billion). China's share in the international arms exports market has risen from 3.6% in 2006-10 to 5.9% in 2011-15. (6)

China's long-ailing Military-Industrial Complex (MIC) appears to have successfully transformed itself and is finally delivering relatively advanced weaponry to PLA. U.S. DoD 2019 Report on China's military Power notes that PLA initiated defence-industrial reforms in 2016 that aimed to reduce bureaucracy, develop a more structured Research and Development

(R&D) and production decision-making apparatus, streamline developmental timelines, promote innovation, and institutionalize Civil-Military Integration (CMI).

Within an industrial context, the latter entails establishing a formal relationship between China's defence and civilian industrial bases to develop a technologically advanced, domestically reliant, and internationally relevant defence-industrial complex. Key components of the initiative include the establishment of widely distributed "science cities," industrial parks, and high-tech zones—most near China's defence-industrial corporations and commercial industrial centres, large cities, and provincial capitals harbouring significant R&D and manufacturing capabilities to facilitate efficient logistics and supply.

For instance, Chinese company NORNICO is one of the largest arms manufacturers in the world with a total asset of about 290 billion Yuan (USD 46 billion), while the employees total around 2,79,600. The NORINCO group an arms manufacturer ranked 161th in the list of 2013 Fortune Global 500.

China's Science and Technology (S&T) priorities and Civil-Military Integration (CMI) goals clearly indicate that China intends to achieve military advantage from key technologies such as quantum computing and communications, hypersonic, artificial intelligence, big data applications, cloud computing, 3D printing, Nano-materials, and biotechnology etc. The S&T Commission under CMC created the Science, Technology and Industry for National Defence (CSTIND).

It is reported that this Commission would integrate developments in the civilian sector with defence and have its focus on self-reliance and innovation. In 2017, the Central Military-Civil Fusion Development Commission, under the leadership of Xi Jinping himself, established the Cyberspace Security Military-Civil Fusion Innovation Centre.

Not just defence, China's police alone will be spending an extra \$30 billion on new gear. U.S. Department of Defense and U.S. Congress on Chinese military and economic power states that thousands of Chinese private companies have become a non-negligible force in the security field which has the ability to dominate global security market. They offer smartphone surveillance equipment, facial-recognition technology, deep packet inspection gear, application filtering, CCTV, biometrics and other key security technologies.

Establishment of PLASSF

The PLA sees space, cyberspace and the electromagnetic domain as critical 'strategic frontiers' and the



'commanding heights' of

future warfare. PLA is concentrating on 'information operations' that include cyber warfare, electronic warfare and Information warfare. The establishment of the PLA Strategic Support Force (SSF) in 2015 integrated the PLA's space, cyber, electronic and information warfare capabilities in order to enhance its capability to achieve dominance in these new commanding heights of future warfare as part of its unrestricted warfare strategy of China to use legal warfare, public opinion warfare, psychological warfare, economic warfare, financial warfare, and other asymmetric/irregular components of warfare.

In particular, the PLASSF will advance the PLA's capability to provide information support to joint operations. That is, it is responsible for engaging in intelligence, surveillance and reconnaissance within the space, cyber, and electromagnetic domains, acting as an "information umbrella" for the PLA as a whole the SSF would thus serve as a critical enabler of the PLA's ability to project power, not only to conventional but

perhaps also in support of nuclear forces. It may also ensure counter-space, cyber and EW attacking capabilities.

Unsurprisingly given the perceived dominance of offensive attacks in this domain, the PLA is believed to prefer seizing the initiative through a first strike. Increasingly, the PLA considers cyber capabilities a critical component in its overall integrated strategic deterrence posture, alongside space and nuclear deterrence.

In 2015 China's Defence White Paper also called to expedite the development of a Cyber Force. Besides cyber domain, China has one of the most diverse space based ISR capabilities second to just U.S. and one of its stated missions includes achieve near-real time image and



Xi Jinping Conferring Military Flag

communication coverage of earth. China's space missions perpetually help the PLA 'informatization' dream. China's Space White Paper, December 2016 states *"to explore the vast cosmos, develop the space industry, and build China into a space power is a dream we pursue unrelentingly."*

Establishment of PLA Rocket Force

At the end of 2015 the missile branch of the People's Liberation Army (PLA), the Second Artillery Corps was formally elevated to a full service and renamed as the Rocket Force (PLARF). It is part of a sweeping drive to improve the PLA's joint operations, command and control, and combat effectiveness.

Establishment of PLA JLSF

In September 2016, PLA announced the creation of another quasi-service called the PLA Joint Logistics Support Force (JLSF). President Xi Jinping stated that the JLSF should serve as the "main force" in "strategic battle

support missions” and urged it to better integrate civil and military logistics support into joint operations. Organizationally, the JLSF has subordinate Joint Logistics Support Centres (JLSCs) in each of the five new Theatre Commands.

Reduction of PLA Troops



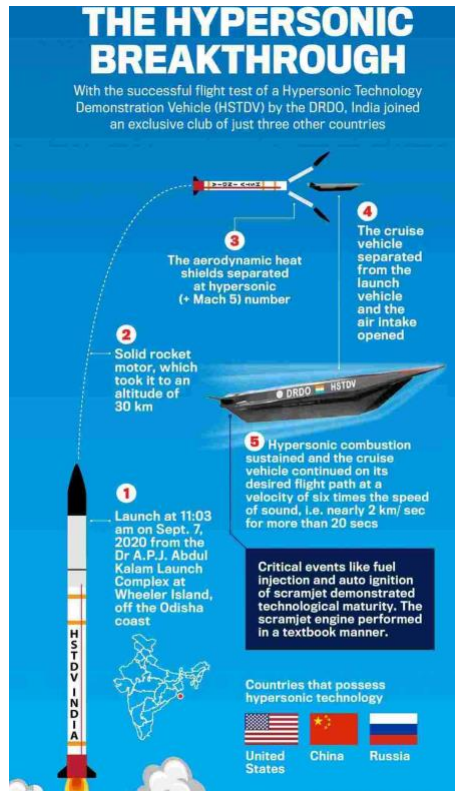
On 3 September, 2015 Chinese President Xi Jinping announced that the PLA Ground Forces (PLAGF) will reduce 300,000 troops. China, in recent years, has resorted to major reforms of its military, which included giving priority to expand its Navy and Air Force to enhance its influence beyond the borders, while cutting down three lakh troops of the PLAGF. PLA Navy, Air Force, Rocket Force and Strategic Support Force - now together make up more than half of the Chinese military, overtaking the Army, which has traditionally been the dominant unit of the PLA. Reportedly, Xi Jinping has aimed to cut PLAGF strength to half, this move will possibly make Indian Army as the largest ground force in the world. Also, the PLA in recent times has started providing greater focus on improving training infrastructure of PLA in order to make it more effective force by updating training methodologies and focus on practicing real scenarios of battlefield.

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TECHNOLOGY FOCUS

DRDO TO CONDUCT SCRAMJET COMBUSTOR TEST SOON

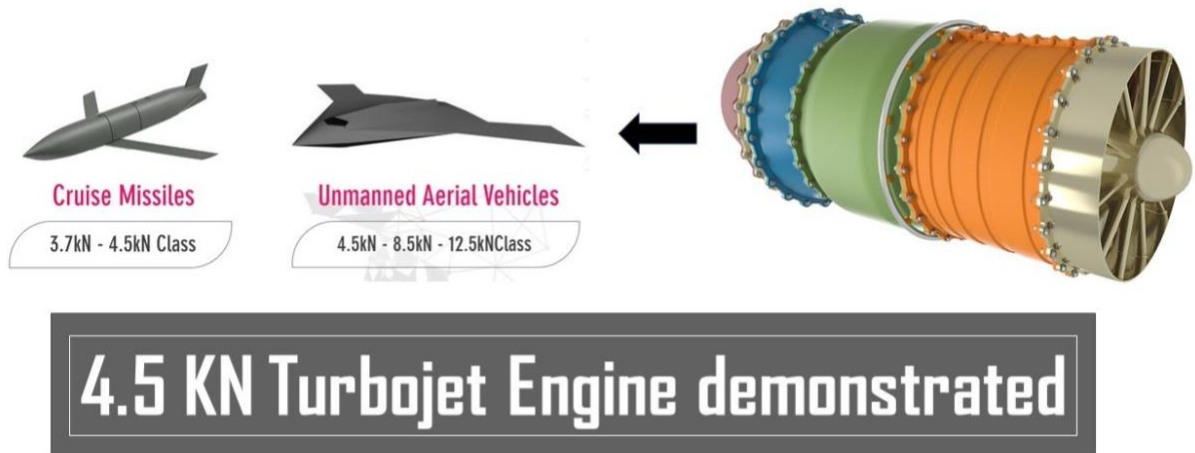


The DRDO soon to conduct Scramjet Combustor testing in high-speed reaction flow using hydrocarbon based vitiated air heater test assembly. A Full-Scale combustor will test for 100s and a sub-scale version will test for 400s. Flow speed up to Mach 2.5. Test will conduct at NAL High enthalpy facility. The HSTDV is an unmanned scramjet demonstration aircraft for hypersonic speed flight. It is being developed as a carrier vehicle for hypersonic and long-range cruise missiles, and will have multiple civilian applications including the launching of small satellites at low cost. The HSTDV program is being run by the DRDO.

INDIGENOUS RF POWER AMPLIFIER BY IIT ROORKEE AND DRDO

A joint R&D activity between the Defence Electronics Application Laboratory (DEAL) Defence Research & Development Organization (DRDO) and the Indian Institute of Technology Roorkee (IIT-Roorkee) has resulted in developing indigenous radio frequency power amplifiers to meet the futuristic requirements of Programmable Radios being developed by DEAL, DRDO. The research group led by Professor Karun Rawat at IIT Roorkee, and a group of Scientists and Engineers led by Pinaki Sen from DEAL, DRDO have designed these amplifiers to be simultaneously able to fulfil the high-efficiency requirements (for thermal management) and good linearity for signal fidelity.

INDIAN START-UP ACHIEVES BREAK-THROUGH IN AERO ENGINE DESIGN WITH DIGITAL TWIN



This Indian DeepTech start-up has recently achieved a breakthrough in the design of State-of-the-Art Aero-Engines for Cruise Missiles and Large UAVs recognized by DPIIT "Startup India" program. With a team of 35 engineers including Chief Engineers with Global OEM experience and expertise, PhDs and talented graduates from Global Universities including students from IITs, Paninian has embarked on this challenging journey of designing and developing state of the art Aero-Engines also known as Turbofan Engines to power our critical Defence needs.

INTERNATIONAL RELATIONS

RUSSIA PROCURING IRANIAN DRONES



As per the sources by United States, Russia has started procuring Iranian combat drones. "Russian transport aircraft loaded the 'Unmanned Aerial Vehicle' at an airfield in Iran and subsequently flew from Iran to Russia over several days in August," said Pentagon spokesman.

ETHIOPIA'S TIGRAY REGION AT HEAT AGAIN

The capital region of Tigray has been hit by continuous air strikes by government forces against the rebel army of Tigray People's Liberation Front (TPLF). According to the reports, the strikes had directly hit hospitals in Tigray region while number of casualties remained unknown.

JAPAN TO DEPLOY CRUISE MISSILE TO COUNTER CHINA

As per the sources, Japan is considering to deploy long range cruise missile that can cover range of around 1000 km. The cruise missiles will be an upgraded version of already existed missiles which were earlier covering area of 100 km only. The upgraded missiles will be capable to hit Chinese coastal areas as per the sources.

CRISIS CONTINUE IN OCCUPIED BALOCHISTAN

The occupied state of Balochistan has badly hit by floods and now the region is struggling with health crisis with no international support. Flood

causes heavy casualties in Balochistan. Along with this, people are struggling with food and medical arrangements while international authorities remain silent on the issue.

IRAN TOOK HOLD OF UNITED STATES' UNMANNED NAVAL DRONE VESSEL



Iran has recently seized United States' Naval Vessel from the Gulf waters and later released it by Pentagon's intervention as per the reports. "The US naval drone, equipped with an array of sensors, radars and cameras, was in international waters collecting navigation and other unspecified data, the 5th Fleet said in a statement".

FINLAND EXPORTS ARMoured VEHICLES TO SLOVAKIA

Finland will export 76 AMV-XP armoured vehicles to Slovakia against the agreement of 447 million dollars. The agreement has followed by the latest aggressive developments around Ukraine borders.

TAIWAN TO RAISE ITS DEFENCE BUDGET FOLLOWING THE CHINESE AGGRESSION



After China's aggressive military drills near Taiwan, Taiwan has announced a sharp increase in its defence budget (approximately 13.7 billion) to procure new fighter jets and updated naval equipment. Taiwan has already been purchasing fighter jets and warships but the procurement after Chinese drills speeded up.

UK AND USA JOINTLY WORKING ON CREATION OF DEFENCE SYSTEM TO COUNTER CHINESE AND RUSSIAN THREATS

To halt Russian and Chinese aggression, UK and USA are creating a Defence System which will be capable enough to counter hypersonic missiles although the project is still in an infancy state and needs time for further research and development.

MIKHAIL GORBACHEV, THE LAST SOVIET UNION LEADER DIES AT THE AGE OF 91



Mikhail Gorbachev has died at the age of 91 in Moscow Russia. Gorbachev served as the last leader of Soviet Union and known as the pillar of peace deal with west. The major contribution of Gorbachev is ending of cold war with United States.

INDIA OPPOSES THE EXPANSION OF CPEC PROJECTS TO THIRD COUNTRIES

While expressing the security concerns, the MEA spokesperson Arindam Bagchi stated that India strongly opposes the expansion of CPEC to any third country as it threatens India's sovereignty. In a response to the matter, he said, "We have put out a clear statement where we brought up two major points. One is about the activity in POK which is against the sovereignty and territorial integrity of India. We object to this. And the

second is that any third country must not enter as it is a breach of India's sovereignty."

THAILAND TOP COURT SUSPENDS COUP LEADER TURNED PM GENERAL PRAYUTH PENDING TERM LIMIT REVIEW

Thailand's Constitutional Court on Wednesday suspended Prime Minister Prayuth Chan-ocha from official duties after it decided to hear a petition to review his legally mandated eight-year term limit. Former army chief Prayuth took power in 2014 when he led a coup to overthrow an elected government. He became a civilian prime minister in 2019 after an election held under a military-drafted constitution.

The main opposition party has petitioned the Constitutional Court to review his legally mandated eight-year term limit, arguing that he should leave office this month because his time as junta chief should count towards his term.

US APPROVED 1.1 BN USD ARMS SALE TO TAIWAN



The proposed deal includes a radar system to track incoming strikes and anti-ship and anti-air missiles. It comes after US House of Representatives Speaker Nancy Pelosi last month became the most senior US official in 25 years to visit Taipei. The Chinese embassy in Washington called on the US to revoke the deal or face "counter-measures".

MYANMAR'S AUNG SAN SUU KYI GIVEN 3 MORE YEARS FOR ELECTION FRAUD BY THE MILITARY JUNTA

Myanmar's deposed leader Aung San Suu Kyi has been found guilty of electoral fraud and sentenced to three years in jail with hard labour, a sentence that adds to the 17 years in prison that she was already handed for other offences. She denies all the allegations against her.

CHINA GIFTS 150 VEHICLES TO CAMBODIAN MILITARY



China has donated a new fleet of 150 vehicles to Cambodia for use to transport dignitaries at the upcoming ASEAN and ASEAN Plus summit and to assist the Kingdom's Ministry of National Defence with its military archive works. The Cambodian Defence minister General Tea Banh said the donation once again showed the "ironclad" bonds friendship between the two nations.

MILITARY EXERCISES



EXERCISE PITCH BLACK 2022

An IAF contingent including Su30MKI and a C17 Globemaster reached Australia for the multinational Aerial Exercise. This includes air forces from UK, Germany, Indonesia, Australia, USA, etc. IAF Su30MKI refuelled with Airbus A330MRTT of French Airforce in this exercise. Eurofighter Typhoon, F35, F16, F15, F18 were the other aircrafts in this exercise.

RIMPAC 2022

INS Satpura entered Pearl Harbour in Hawaii, USA on 02 Aug 22 on completion of the sea phase of RIMPAC-22, a multilateral exercise conducted over 22 days off Hawaii, USA. The ship participated in Anti-Submarine, Anti-Ship and Anti-Air Warfare exercises with multi-national navies in the Pacific Ocean during the sea phase apart from undertaking cross-deck landings of Indian Naval helicopter on foreign warships and replenishment at sea. INS Satpura's participation in RIMPAC-22, 9000 Nautical Miles away from Indian coast stands testimony to the Indian Navy's capability to operate in any part of the world. RIMPAC-22 is one of the largest multilateral naval exercises in which the Indian Navy participates and the exercise this year has witnessed participation from 26 countries comprising 38 surface ships, 09 land forces, 31 unmanned systems, 170 aircraft and over 2,500 personnel.

INDIA-FRANCE MARITIME PARTNERSHIP EXERCISE (MPX)



INS Tarkash on her North Atlantic deployment conducted refueling with French Fleet Tanker FNS Somme. This was followed by joint air operations with the maritime surveillance aircraft Falcon 50 participating in multiple simulated missile engagements and air defence drills. The successful conduct of these surface and aerial exercises symbolise the high degree of professionalism and interoperability that exists between the two navies.

VAJRA PRAHAR 2022



This was the 13th edition of joint exercise which went for 21 days. The venue this time was Special Forces Training School (SFTS), Bakloh (HP). The US contingent was represented by personnel from the 1st Special

Forces Group (SFG) and Special Tactics Squadron (STS) of US Special Forces and the Indian Army contingent was formed by drawing Special Forces personnel under the aegis of SFTS.

INDIA OMAN JOINT MILITARY EXERCISE AL NAJAF IV



The India Oman Joint Military Exercise Al Najaf IV was a platoon level 13 day joint exercise. The aim of the exercise was to achieve inter-operability and to acquaint each other with operational procedures and combat drills in a Counter Terrorism environment under United Nations mandate. Both the contingents jointly took part in the validation exercise which included establishment of Mobile Vehicle Check Post, Cordon and Search Operations, Heliborne insertion, Room Intervention drills and effective employment of ICV in Counter Terrorism environment.

EXERCISE UDARSHAKTI 2022

The bilateral exercise, Ex UDARASHAKTI between the Indian Air Force (IAF) and the Royal Malaysian Air Force (RMAF) culminated at the RMAF Air Base Kuantan on 16 Aug 2022. Spanning four days, the exercise saw the two Air Forces work in cohesion through a series of complex aerial combat drills in multiple domains and exercise settings. The exercise was characterised by the display of a high degree of professionalism by all participants. India participated with Su30MKI while Malaysia with Su30MKM.

VINBAX 2022

Vietnam-India Bilateral Army Exercise VINBAX 2022 concluded at Chandimandir with an impressive display of Multi Agency Humanitarian Assistance in Disaster Relief (HADR) demonstration and an equipment display showcasing the Make in India and Atmanirbhar Bharat initiatives. The exercise had commenced on 01 August and was focused on deployment of Army Engineer and Medical teams in UN Peacekeeping operations. What made the exercise unique was the fact that it was the first time ever that the Vietnam People's Army (VPA) was undertaking a Field Training Exercise with any foreign Army. The fact that Vietnam chose India for this honour speaks volumes about the value the two countries place on their mutual relationship.

SPECIAL HIGHLIGHT



IAF PARTICIPATION IN EXERCISE PITCH BLACK 2022 AT DARWIN, AUSTRALIA

An Indian Air Force contingent reached Australia for participating in Exercise Pitch Black 2022 scheduled to be held from 19 Aug 22 to 08 Sep 22 in Darwin. This is a biennial, multi-national exercise hosted by the Royal Australian Air Force (RAAF). The exercise focused on Large Force Employment warfare. The last edition was conducted in 2018.

The 2020 edition of the exercise was cancelled due to the COVID-19 pandemic. This year's exercise saw the participation of over 100 aircraft and 2500 military personnel from various air forces. The IAF contingent, led by Group Captain YPS Negi, comprises over 100 air warriors, deployed with four Su-30 MKI fighter and two C-17 aircraft.

IADN UNVEILS EDGE FORCE ASTRO UGV

1. Materials and Methods Proposed for Fabrication:

- optional built-in bilge pumps and an IP rating of 65
- rugged, lightweight steel and aluminum build gives it low ground pressure and traction
- The second version of ASTRO will be much heavier and rugged and will be developed using Mil A46100

2. Operating Temperature:

- Plain and Desert Terrain: Min 0° to 05° Max 40 to 45°
- High Altitude and Mountain Terrain: Min (-) 20° to (-) 10° Max 40°

3. Duties:

- Automated surveillance using the mounted Doppler Radar with inbuilt automated AI-based classification and tracking of targets (EFDACT - Edgeforce Doppler Augmentation and Classification Technology)
- Geofencing of a particular zone/target area based on the mode selected
- GPS and GALILEO support
- Day and night surveillance
- Indoor navigation and mapping

4. Power and Payload Capacity:

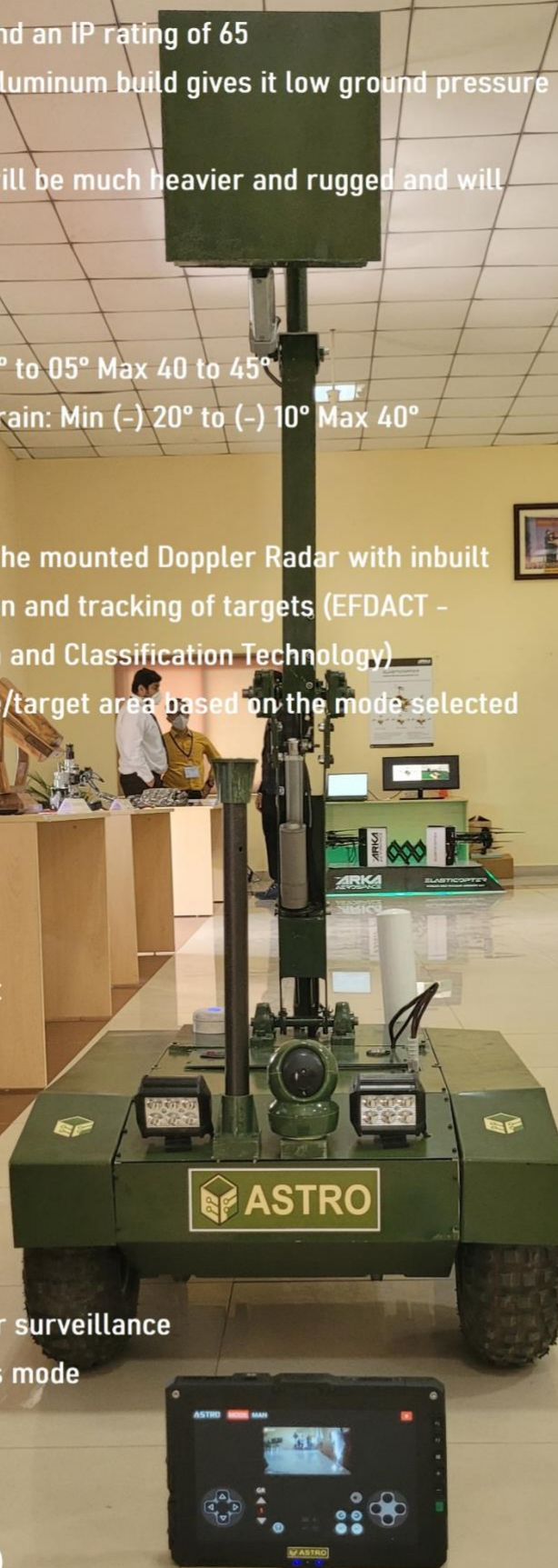
- 15 bhp engine with 25° Gradient
- 100 kg load carrying capacity

5. Modules:

- Surround LIDARs
- Doppler Radar
- Stereo Camera - RGB/Thermal
- Single shot 360 Deg Camera for surveillance
- 6hrs battery life in autonomous mode

6. Modes:

- Teleoperated
- Semi-autonomous (Geofencing)
- Autonomous (GPS, VPS, GALILEO)



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