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## India successfully test-fires Agni-Prime missile off Odisha coast



India successfully test-fired its new generation nuclear-capable Agni Prime missile from a defence base off Odisha coast, DRDO sources said. The surface-to-surface ballistic missile has a range of 1000 to 2000 km, it said. The sleek missile of the Agni series was test-fired from a mobile launcher off the Dr Abdul Kalam Island in Odisha at 10.55 am, said a DRDO source. Its trajectory was monitored by sophisticated tracking radars along the coast line. The nuclear-capable missile has been designed and developed by the Defence Research and Development Organisation (DRDO).

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## CURRENT AFFAIRS

### **Defence Secretary Inducts HAL Manufactured ALH Mk-III Helicopters Into Indian Coast Guard**

In a major boost to the ALH Mk-III indigenous Coast Guard programme, three Advanced Light Helicopter (ALHs) manufactured by HAL were inducted into the stables of Indian Coast Guard by Dr Ajay Kumar, Defence Secretary, today. These helicopters which are part of ALH Mk III programme will be positioned in Bhubaneswar, Porbandar, Chennai and Kochi and will be part of different Coast Guard Aviation Squadrons. A virtual program was held simultaneously at the Indian Coast Guard (ICG) Headquarters in Delhi and at Helicopter MRO Division of HAL in Bengaluru. The Director General, Indian Coast Guard, Mr K Natarajan, PTM, TM and Mr R Madhavan, CMD, HAL, were present on the occasion. Speaking on the occasion Dr Ajay Kumar said "The state of the art Helicopters with advanced sensors will enable ICG to take up challenging tasks. This is for the first time Performance Based Logistics is being introduced in Indian Aviation sector which is a modern management practice and will increase operational and maintenance efficiency. The sophisticated helicopters being handed over today will be a game changer for the operational capability of ICG in the times to come". Shri K Natarajan said ICG has been a torch bearer in promoting and inducting indigenous products since formative years of the service. Induction of ALH MK III is a testimony to the ICG's commitment towards "Atma Nirbhar Bharat". HAL has been the most trusted partner in the growth of ICG aviation fleet delivering multi role and highly capable platforms. The induction of ALH MKIII in challenging times bears a testament to the resilience of HAL and ICG. These helicopters will usher a paradigm shift in the capability in ship borne operations and enhance coastal surveillance. Indian Coast Guard is also the first service to have Performance Based Logistics management system introduced in aviation to ensure Helicopter Availability at four bases, he added. Speaking on the occasion, Mr R Madhavan said with this contract, HAL is embarking on a new journey of Performance Based Logistics (PBL). The PBL will assure desired levels of availability of ALH MKIII fleet of ICG for six and half years, a unique feature of this contract and a first of its kind in HAL. These helicopters are equipped with state of the art equipment like Surveillance Radar, Electro Optic Pod, Medical Intensive Care Unit, High Intensity Search Light, SAR Homer, Loud Hailer, Machine Gun and can perform other key roles. Helicopter MRO Division is the nodal agency for execution of PBL contract along with Engine Division and other Sister Divisions of HAL. About PBL: The PBL will provide a One Stop Solution for maintenance of complete Helicopter, Engine and components which encompasses Helicopter/Engine Servicing Task, Rotable Repair Task (RRT), Repair & Maintenance Spares Order (RMSO) etc. As part of PBL, Helicopter MRO Division of HAL will be extending the support from four bases viz. Bhubaneswar, Porbandar, Chennai and Kochi. All necessary infrastructure, repair facility etc are set up at Bhubaneswar and Porbandar, dedicated LRU/ Rotable floats are stocked and On-site support team is identified towards ensuring the availability of Helicopters. Chennai & Kochi are in the final stages. In addition, HAL Aviation Maintenance Software (HAMS), a web based online platform is developed and deployed by Helicopter MRO Division for real time monitoring and operational visibility of fleet through a dedicated leased line network

**Source:** <https://hal-india.co.in/>

### **DRDO successfully test fires enhanced version of Pinaka rockets**

The Defence Research and Development Organisation (DRDO) successfully test-fired an extended range version of indigenously developed "Pinaka" rocket at Integrated Test Range (ITR) in Chandipur off the coast of Odisha, official sources said on Friday. Altogether 25 Enhanced Pinaka Rockets were test-fired in quick succession against targets at different ranges on Thursday and Friday. The 122 mm Caliber rockets were launched from a Multi-Barrel Rocket Launcher (MBRL), an official said. "All the mission objectives were met during the launches. The enhanced range version of Pinaka Rocket System can destroy targets at distances up to 45 kilometres," a source said. In order to check the accuracy of the rockets hitting the target, all the flight articles were tracked by various Range instruments. The rocket system has been developed jointly by Pune based Armament Research and Development Establishment

(ARDE) and High Energy Materials Research Laboratory (HEMRL) with manufacturing support from Economic Explosives Limited, Nagpur. The development of the Enhanced Pinaka system was taken up to achieve longer range performance, sources said Defence Minister Rajnath Singh congratulated DRDO and the Industry on the successful launch of Enhanced Pinaka Rockets. Secretary, Department of Defence R&D and Chairman DRDO, Dr G Satheesh Reddy also commended the efforts of the teams involved in the successful trials of the rockets.

**Source:** <https://www.deccanherald.com>

## **Induction of Rafale aircraft into Indian Air Force by 2022, says IAF Chief**

IAF Chief RKS Bhadauria on Saturday said the induction of 36 Rafale aircraft into the Indian Air Force would take place by 2022. The IAF is absolutely on target with respect to the Rafale induction plan, he said while responding to a reporters' query on timeline for receiving all the 36 fighter jets from France. "The target is 2022. It is absolutely on target. I mentioned earlier. Except for one or two aircraft, minor delays because of Covid related issues, but, in fact, some deliveries have been ahead of time. So, broadly, we are absolutely on target on the Rafale induction plan. On the operationalisation plan, you are aware, we are fully operational.. So, in terms of time, we will be absolutely on time," he told reporters after reviewing the Combined Graduation Parade (CGP) at the Air Force Academy in Dundigal here. In 2016, India had signed an inter-governmental agreement with France to procure 36-Rafale jets at a cost Rs 59,000 crore. Defence Minister Rajnath Singh had in February said the country would have the entire fleet of the fighter aircraft by April 2022. Asked for his assessment on the situation in eastern Ladakh on the Indo-China border, the IAF Chief said talks are on between the two sides and the first attempt is to continue with the parleys and carry out the disengagement at the "balance friction points." "The first attempt is to continue with the talks and do the disengagement at the balance friction points. And, of course, follow it up with de-escalation," he said. "However, in parallel, the ground realities are being monitored closely. Whatever is the reality across, in terms of current leftover locations, deployments, any changes, that is being monitored closely and whatever actions are required on our part, we are taking, Bhadauria said. On Phasing out MIG 21s from the fleet, Bhadauria said the current squadron of the aging aircraft will take place in the next two to three years depending on their life and they will be replaced by Light Combat Aircraft. "As far as the phase out plan is concerned for this current squadron of MIG 21, there is a plan... In another 2 to 3 years they are being phased out depending on them as soon as they get to their life. There is already an induction plan.. You are aware four Squadrons of LCA have been ordered. They will start inducting in the three and half years from now. So that is the plan in terms of these squadrons phasing out and LCA is replacing them," he said. According to him, these aircraft were upgraded in 2005 to 2010 and a lot of effort was put in to keep the flights fly-worthy. Earlier, addressing the Combined Graduation Parade, he said the IAF is undergoing a monumental transformation with infusion of niche technologies and combat power in every facet due to rapidly evolving security challenges coupled with rising geopolitical uncertainty in the neighbourhood and beyond. Noting that the last few decades have clearly established the critical role of air power in achieving victory in any conflict, he said it is in this backdrop that IAFs ongoing capability enhancement assumes tremendous significance.

**Source:** <https://www.deccanherald.com>

## TECHNOLOGY

### **DMRL makes high pressure compressor discs for aero-engines**

Defence Research and Development Organisation (DRDO) has established the near isothermal forging technology to produce all the five stages of High-Pressure Compressors (HPC) discs out of 'difficult-to-deform' titanium alloy using its unique 2000 MT isothermal forge press for use in aero-engine technology. The technology was by Defence Metallurgical Research Laboratory (DMRL), DRDO's metallurgical laboratory here and with this development, India has joined the

league of limited global engine developers to have the manufacturing capabilities of such critical aero-engine components. The technology has been transferred to Mishra Dhatu Nigam Limited - MIDHANI to meet the bulk production requirements. About 200 HPC disc forgings pertaining to various compressor stages have been jointly (DMRL & MIDHANI) produced initially and were successfully supplied to Hindustan Aeronautics Limited (E), Bengaluru for fitment into Adour Engine powering the Jaguar/Hawk aircrafts, said an official release. The Adour engine is overhauled by HAL (E), Bengaluru and like in any aero-engine, the HPC drum assembly has to be replaced after a specified number of operations or in case of damage. The annual requirements of these high value HPC discs are quite large, warranting indigenisation. Apart from DMRL and HAL (E), various agencies such as MIDHANI, Centre for Military Airworthiness & Certification - CEMILAC and Directorate General of Aeronautical Quality Assurance - DGAQA worked in unison to establish this crucial technology.

**Source:** <https://www.thehindu.com/>

## BUSINESS

### **Army wants futuristic main-battle tanks in mega 'Make in India' project**

The Army now wants advanced “shock and awe” capabilities in the shape of futuristic main-battle tanks, with a wide array of weapons, missiles and protection systems as well as “niche” technologies like “artificial intelligence” and “see-through armour” for the crew. The Army has sought the response of foreign armament companies or OEMs (original equipment manufacturers) for the proposed mega “Make in India” project for induction of 1,770 “future ready combat vehicles (FRCVs)” in a phased manner. The global RFI (request for information) specifies the Army expects induction of the FRCVs by 2030 under the “strategic partnership” route with “comprehensive” technology transfer, including detailed design manufacturing knowhow, to the Indian partner. The FRCVs will remain in service for the next 40-50 years as the Indian Army’s main battle tank, it says. In conformity with the “emerging future threat spectrum and technological advancements”, the new “state-of-the art” and “technology-enabled” tank should be able to operate in varied terrains like high-altitude areas, plains, riverine and deserts, adds the RFI. The RFI is sure to once again trigger the long-standing raging battle between the Army and DRDO over the indigenous Arjun tanks. The Army has for long resisted induction of the “extra heavy” Arjun tanks, which it contends has “maintenance and spares” issues. The defence ministry in February had accorded the preliminary approval for the procurement of 118 improved Arjun Mark-1A tanks for Rs 8,379 crore. The 118 Arjuns will add to the first 124 such tanks inducted by the Army well over a decade ago, even as the DRDO remains keen to go in for a Mark-II version. At present, the mainstay of the Army’s armoured regiments is the Russian-origin T-90S tanks. The force has so far inducted 1,200 of the 1,657 T-90S tanks being licensed produced by the Heavy Vehicles Factory (HVF) at Avadi. “The FRCVs, in turn, are supposed to be a replacement for the Army’s 2,400 older T-72 tanks. The plan is to induct them in phases to ensure upgrades can take place with technological advancements in warfare. The see-through armour, for instance, is for 360-degree situational awareness of the crew through cameras, sensors, digital mapping systems,” said an Army officer. The RFI states that while enemy tanks will continue to be the primary target, the FRCVs should incorporate systems to negate ISR (intelligence, surveillance and reconnaissance) systems as well as counter new “aerial” threats like UCAVs (unmanned combat aerial vehicles), loitering munitions and the like. The FRCVs should have advanced “multipurpose smart munitions” both for main and secondary armaments, with gun tube-launched anti-tank guided missiles. The secondary armaments should include multiple weapons for anti-aircraft, counter-UAV and ground roles, with different calibers assisted with remote-control weapon stations, says the RFI.

**Source:** [Times of India](#)

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