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Sun, 22 Oct 2023

आगरा में तैयार हुआ गगनयान मिशन का पैराशूट:कू-मॉड्यूल में 10 पैराशूट लगे, एस्ट्रोनॉट की पृथ्वी पर कराणा सेफ लैंडिंग

इंडियन स्पेस रिसर्च ऑर्गनाइजेशन (ISRO) ने शनिवार सुबह गगनयान मिशन के कू एस्केप सिस्टम की सफल टेस्टिंग की। श्रीहरिकोटा के सतीश धवन अंतरिक्ष केंद्र से सुबह 10 बजे इसे लॉन्च किया गया। इस मिशन में 17 Km ऊपर जाने के बाद सतीश धवन स्पेस सेंटर से 10 Km दूर बंगाल की खाड़ी में कू मॉड्यूल को उतारा गया।

रॉकेट में गड़बड़ी होने पर अंदर मौजूद एस्ट्रोनॉट को पृथ्वी पर सुरक्षित लाने वाले सिस्टम की टेस्टिंग की गई। इसके कू मॉड्यूल में 10 पैराशूट लगे थे जो आगरा के डीआरडीओ की पैराशूट रिसर्च लैब एडीआरडीई में तैयार किए गए थे।

गगनयान मिशन में अंतरिक्ष यात्रियों को ले जाने वाले कैप्सूल की सुरक्षित वापसी के लिए स्वदेशी रूप से विकसित पैराशूट एडीआरडीई के वैज्ञानिकों ने बनाए हैं। एडीआरडीई के पीआरओ प्रदीप पाल ने बताया कि DRDO ने भारत के मानवयुक्त अंतरिक्ष उड़ान कार्यक्रम गगनयान के लिए पैराशूट तैयार किए हैं। इसमें तीन अंतरिक्ष यात्रियों के एक दल को अंतरिक्ष में भेजने की परिकल्पना की गई है।

प्रदीप पाल ने बताया कि कू मॉड्यूल में 10 पैराशूट लगे थे। इनमें दो पैराशूट एपेक्स कवर सेपरेशन के लिए थे। यह कू मॉड्यूल के डिब्बे को सुरक्षित रखता है। इसके अलावा वेग को स्थिर और कम करने के लिए दो ड्रग पैराशूट बनाए गए हैं। ड्रग पैराशूट सहित पायलट पैराशूट प्रणाली के तीन पैराशूटों का उपयोग मुख्य पैराशूट के तीन पैराशूटों को अलग-अलग निकालने के लिए किया गया है। ताकि लैंडिंग के दौरान कू मॉड्यूल की गति को सुरक्षित स्तर तक कम किया जा सके। ऐसा ही आज किया गया। इसे टेस्ट व्हीकल अबॉर्ट मिशन-1 (TV-D1) नाम दिया गया।

बेंगलुरु में हुए थे फिटमेंट परीक्षण

प्रदीप पाल ने बताया कि कू मॉड्यूल को सुरक्षित धरती पर लाने के लिए उसमें लगे सभी 10 पैराशूट का फिटमेंट परीक्षण बेंगलुरु में इसरो की निगरानी में हो चुका है। शनिवार के सफल परीक्षण के बाद भी भविष्य में इसरो दो अन्य परीक्षण करेगा। सभी परीक्षणों में पास होने के बाद ही गगनयान मिशन के तहत तीन अंतरिक्ष यात्रियों को कू मॉड्यूल के साथ भेजा जाएगा।

अब आपको गगनयान कू मॉड्यूल के पैराशूट सिस्टम के बारे में बताते हैं...

10 पैराशूट रहे इस सिस्टम में

गगनयान कू मॉड्यूल के पैराशूट सिस्टम में 10 पैराशूट थे। भविष्य में पृथ्वी की निचली कक्षा से गगनयान अंतरिक्ष यात्रियों के जमीन पर लैंडिंग के लिए पहले चरण में 2 खास पैराशूट यानी अपेक्स कवर सेपरेशन पैराशूट थे। ये

पैराशूट क्रू मॉड्यूल पैराशूट सिस्टम में सुरक्षा कवर की तरह काम करते हैं। एपेक्स कवर क्रू- मॉड्यूल में लगे कई तरह के पैराशूट की बाहरी वातावरण से सुरक्षा करता है।

2 ड्रोग पैराशूट ने किया स्पीड कंट्रोल

इसके बाद पृथ्वी की निचली कक्षा से नीचे धरती की तरफ आते हुए अंतरिक्ष यात्रियों की रफ्तार को कम करने और नीचे उतरने की इस प्रक्रिया को सुरक्षित रखने के लिए 2 ड्रोग पैराशूट भी इस्तेमाल में लाए गए। बता दें कि खुले सिरों वाले एक फनल आकार के डिवाइस को ड्रोग कहा जाता है। ये ड्रोग तेज रफ्तार वाली किसी भी वस्तु की स्पीड को कम करने का काम करते हैं।

फिर 3 खास पायलट शूट का हुआ इस्तेमाल

ड्रोग पैराशूट छोड़ने के बाद 3 खास पैराशूट को अलग-अलग खोलने के लिए 3 पायलट शूट का इस्तेमाल किया गया। ये शूट एक झुका हुआ चैनल या रास्ता है, जिसमें वस्तुओं को गुरुत्वाकर्षण के जरिए चलाया या संचालित किया जाता है। ये लैंडिंग से पहले गगनयान क्रू मॉड्यूल की रफ्तार को एक सुरक्षित स्तर तक कम करने में मदद करता है। धरती पर अंतरिक्ष यात्रियों की लैंडिंग लिए 3 खास या अहम पैराशूट में से 2 ही काफी रहे और तीसरे का इस्तेमाल नहीं किया गया।

क्रू-मॉड्यूल को सुरक्षित पृथ्वी पर उतारेगा पैराशूट

ADRDE के डायरेक्टर डॉ. मनोज कुमार ने बताया कि क्रू-मॉड्यूल में अंतरिक्ष यात्री को पृथ्वी की निचली कक्षा में एक सप्ताह के लिए ले जाया जाएगा। क्रू-मॉड्यूल को पृथ्वी के वायुमंडल में दोबारा प्रवेश के बाद ADRDE द्वारा विकसित पैराशूट प्रणाली की सहायता से पृथ्वी पर सुरक्षित उतारा जाएगा।

उन्होंने बताया कि प्रणाली में विभिन्न प्रकार के पैराशूट होंगे। सभी पैराशूट पर अलग-अलग परीक्षण किए गए हैं। परीक्षण वाहन की उड़ान द्वारा पहली बार संपूर्ण पैराशूट प्रणाली का परीक्षण किया जाएगा।

सीरीज के पहले टेस्ट में नहीं खुला था एक पैराशूट

गगनयान पैराशूट सिस्टम के लिए इंटीग्रेटेड मेन पैराशूट एयरड्रॉप टेस्ट 18 नवंबर 2022 को झांसी के बवीना में किया गया था। इस टेस्ट को इस तरह के काल्पनिक घटना के साथ किया गया, जिसमें एक मेन पैराशूट खुलने में नाकाम रहा। इसका टेस्ट इसलिए किया गया ताकि जब वास्तव में ऐसा हो तब क्या सावधानी के तौर पर लगाए गए पैराशूट काम करेंगे या नहीं।

ये इस तरह का पहला टेस्ट था, जिसमें गगनयान पैराशूट सिस्टम में भविष्य में होने वाली परेशानियों और नाकामियों की पहले ही उस तरह का माहौल तैयार कर पैराशूट सिस्टम को टेस्ट किया गया। ये इस सीरीज का पहला टेस्ट था।

ऐसे किया गया था ट्रायल

झांसी में सीरीज के इस पहले एयरड्रॉप टेस्ट को करने के लिए 5 टन के क्रू मॉड्यूल के भार (Mass) बराबर ही डमी का इस्तेमाल किया गया था। इसे 2.5 किमी तक की ऊंचाई तक ले जाया गया। इसके बाद इस ऊंचाई से इस पैराशूट को भारतीय वायुसेना के IL-76 एयरक्राफ्ट का इस्तेमाल कर नीचे की तरफ फेंका गया। ये वैसे ही था जैसे आपात स्थिति में किसी भी विमान के पायलट पैराशूट का इस्तेमाल कर ऊंचाई से धरती की तरफ छलांग लगाते हैं।

इसके बाद दो छोटे पाइरो-बेस्ड मोटार पायलट पैराशूट छोड़े गए थे। ये दोनों पैराशूट 7 सेकेंड के अंदर खुल गए। यह परीक्षण को इसरो, डीआरडीओ, भारतीय वायुसेना और सेना की मदद से पूरा किया गया था।

इस टेस्ट के दौरान पूरी तरह से हवा से भरे या फूले हुए मेन पैराशूट ने पेलोड की रफ्तार को कम कर एक सुरक्षित लैंडिंग कराने वाली रफ्तार में ला दिया था। इस परीक्षण को पूरा होने में महज 2 से 3 मिनट का वक्त लगा था। इसके साथ ही ये एयरड्रॉप टेस्ट कामयाब रहा, क्योंकि पेलोड मास सुरक्षित तरीके से धीरे-धीरे जमीन पर उतर गया था।

सेनाओं के लिए पैराशूट तैयार करता है ADRDE

रक्षा विकास अनुसंधान और संगठन (DRDO) की आगरा की लैब "हवाई वितरण अनुसंधान और विकास संस्थापन (ADRDE) सेनाओं के लिए अच्छी क्वालिटी का पैराशूट प्रणाली विकसित करता है।

कई सालों से ADRDE मानव अंतरिक्ष परियोजना के लिए अंतरिक्ष अनुसंधान और विकास संगठन (इसरो) के साथ काम कर रहा है। इसके तहत ही ADRDE ने देश की महत्वाकांक्षी परियोजना "गगनयान" के लिए उन्नत प्रकार के एयरोडायनामिक डीसेलेरेटर प्रणाली को विकसित कर रहा है।

<https://money.bhaskar.com/local/uttar-pradesh/agra/news/parachutes-are-ready-for-gaganyaan-mission-in-agra-132027207.html>

Defence News

Defence Strategic: National/International



Sat, 21 Oct 2023

Navy Gets Delivery of Imphal, its First Warship with Separate Living Spaces for Women Sailors

The Indian Navy has received its latest stealth destroyer, Imphal, which is the first warship with separate accommodation for women sailors. The Indian Navy on Friday received its latest stealth destroyer, Imphal, which is the first warship with separate accommodation for women sailors, officials aware of the matter said. The development comes months after the navy began inducting women as sailors for the first time under the Agnipath recruitment scheme. To be sure, women officers are currently serving on board several warships that have separate berthing facilities for them.

Imphal, constructed by Mazagon Dock Shipbuilders Limited (MDL) in Mumbai, will get the "INS" prefix after getting commissioned. It is the third of the four warships sanctioned under an important project called P-15B aimed at boosting the navy's capabilities in the Indian Ocean region. INS Visakhapatnam and INS Mormugao have already been commissioned. Surat, the fourth one, is under construction "Designed by the navy's Warship Design Bureau and built by MDL, this ship (Imphal) is among the most technologically advanced warships in the world," the navy said in a statement, calling it a potent and versatile platform equipped with state-of-the-art weapons and sensors. The destroyer's induction into service will enhance India's maritime prowess in the Indian Ocean region, it said. The ship has indigenous content of around 75% including its medium range surface-to-air missiles, BrahMos missiles, torpedo tube launchers, anti-submarine rocket launchers and 76mm super rapid gun mount. The destroyer has a displacement of 7,400 tonnes, length of 164 metres and top speed of more than 30 knots. It can carry a crew of 312.

The ship sailed out for maiden sea trials in April 2023 and has since undergone a comprehensive schedule of trials in harbour and at sea, leading up to its delivery in a record time frame of only six months, the statement added. “The time taken to build Imphal and for her trials is the shortest for any indigenous destroyer. The delivery of Imphal is an affirmation of the impetus being given by the government and the navy to the self-reliance campaign.”

Separate berthing areas for women sailors became a necessity after the entry of women into the navy’s personnel below officer rank (PBOR) cadre earlier this year. The navy’s first batch of Agniveers (recruited under the Agnipath scheme), including around 270 women, graduated from INS Chilka, the navy’s training facility in Odisha, and joined service in March 2023. The Agnipath model marked a stark departure from the military’s decades-old recruitment system that ended after the government announced the new scheme last year. It seeks to recruit soldiers for four years, with a provision to retain 25% of them in regular service for 15 more years after fresh screening.

In 2021, the navy assigned four women officers to warships after a hiatus of almost 25 years. The numbers have grown to around 40 since. In a short-lived experiment, women from the navy’s logistics and medical branches were deployed on fleet tanker INS Jyoti in 1997.

Women in uniform are no longer on the fringes but are being assigned central roles on a par with their male counterparts across the three services. They are flying fighter planes, serving onboard warships, commanding front-line units, being inducted in the PBOR cadre, eligible for permanent commission, and undergoing training at the National Defence Academy. The navy has been at the forefront of giving equal opportunities to women, said Commander Prasanna Edayilliam (retd), a woman officer who served the navy for 14 years. “Separate berthing facilities for women sailors in new warships will give them a springboard to launch their careers in a challenging environment. It will also allow the navy to deploy more women on warships,” Edayilliam added. The navy has also completed a review of ranks held by sailors, inherited from the British, and is set to replace them with Indianised designations as part of a larger drive to jettison colonial military traditions, with gender-neutral changes to the ranks also to be announced shortly, as first reported by HT. More than 65,000 sailors will now get new ranks.

Seven ranks in the navy’s PBOR cadre will be redesignated, including three existing titles that are not gender neutral. The ranks that will be made to align with Indian traditions are Master Chief Petty Officer Ist Class, Master Chief Petty Officer IInd Class, Chief Petty Officer, Petty Officer, Leading Seaman, Seaman Ist Class and Seaman IInd Class.

<https://www.hindustantimes.com/india-news/navy-gets-delivery-of-imphal-its-first-warship-with-separate-living-spaces-for-women-sailors-101697821321241.html>



Sat, 21 Oct 2023

अगले साल 50 देशों के साथ युद्धाभ्यास करेगी भारतीय नौसेना, 19 से 27 फरवरी तक विशाखापट्टनम में दिखेगा पराक्रम

भारत फरवरी में आयोजित नौ दिवसीय मेगा नौसैनिक अभ्यास में अपनी बढ़ती समुद्री शक्ति का प्रदर्शन करेगा। तेजी से बिगड़ते वैश्विक भू-राजनीतिक माहौल और हिंद-प्रशांत क्षेत्र में चीन की बढ़ती सैन्य ताकत के बीच इस महाअभ्यास में 50 से अधिक देशों के शामिल होने की संभावना है।

भारत फरवरी में आयोजित नौ दिवसीय मेगा नौसैनिक अभ्यास में अपनी बढ़ती समुद्री शक्ति का प्रदर्शन करेगा। तेजी से बिगड़ते वैश्विक भू-राजनीतिक माहौल और हिंद-प्रशांत क्षेत्र में चीन की बढ़ती सैन्य ताकत के बीच इस महाअभ्यास में 50 से अधिक देशों के शामिल होने की संभावना है।

19 से 27 फरवरी तक 'मिलन' अभ्यास का आयोजन

भारतीय नौसेना के अधिकारियों ने शुक्रवार को बताया कि अगले वर्ष 19 से 27 फरवरी तक विशाखापट्टनम में 'मिलन' अभ्यास का आयोजन किया जाएगा। इस अभ्यास में अमेरिका, जापान, ऑस्ट्रेलिया, फ्रांस, बांग्लादेश, दक्षिण कोरिया, वियतनाम, इंडोनेशिया, मलेशिया की नौसेनाएं शामिल होंगी। आगामी अभ्यास भारत में आयोजित होने वाला अब तक का सबसे बड़ा बहुपक्षीय युद्धाभ्यास होगा।

इसमें बड़े पैमाने पर युद्धाभ्यास, उन्नत वायु रक्षा संचालन, पनडुब्बी रोधी युद्ध और सतह रोधी अभ्यास शामिल होंगे। यह पता चला है कि अरब सागर में होने वाले युद्धाभ्यास में शामिल होने वाले सभी देश अपने मंच और कर्मियों को भेजेंगे। मिलन एक द्विवार्षिक बहुपक्षीय नौसैनिक अभ्यास है। इसे 1995 में भारतीय नौसेना ने शुरू किया था।

भारतीय नौसेना ने आंध्र में किया सुरक्षा अभ्यास

पूर्वी नौसेना कमान के नेतृत्व में आंध्र प्रदेश के नौसेना अधिकारी ने काकीनाडा में अपतटीय विकास क्षेत्र की सुरक्षा के लिए अभ्यास 'प्रस्थान' 2023 का आयोजन किया। यह अभ्यास ओएनजीसी के रिग जहाज प्लेटिनम एक्सप्लोरर और वेदांता लिमिटेड के आरजी फिक्स्ड आयल प्लेटफार्म पर आयोजित किया गया था।

इस अभ्यास का उद्देश्य आकस्मिकताओं से निपटने में प्रतिक्रियाओं का पूर्वाभ्यास करना और ओडीए में सुरक्षा तंत्र की प्रभावकारिता की जांच करना था। इस अभ्यास में भारतीय नौसेना, तटरक्षक बल, आयल आपरेटर, बंदरगाह प्राधिकरण, राज्य मत्स्य विभाग और समुद्री पुलिस ने भाग लिया।

<https://www.jagran.com/lite/news/national-indian-navy-will-conduct-exercises-with-50-countries-from-19-to-27-february-2024-in-visakhapatnam-23561485.html>



Sun, 22 Oct 2023

Rajnath Singh Launches Army Project to Draw Lessons from Ancient Indian Texts

Defence minister Rajnath Singh on Saturday launched army's Project Udbhav (or origin), which seeks to draw on treatises such as Chanakya's Arthashastra, Kamandaka's Nitisara and Tamil poet-saint Thiruvalluvar's Thirukkural for lessons on statecraft, strategy, diplomacy and warfare from ancient Indian philosophy, officials aware of the matter said.

The scope of the project covers how Indian warrior kings defeated Mughal invaders, the officials said. Singh launched the project during the inauguration of the Indian Military Heritage Festival. Army chief General Manoj Pande, IAF chief Air Chief Marshal VR Chaudhari and other senior officials were present. Lieutenant General Tarun Kumar Aich, deputy chief of army staff (strategy), said the project was an endeavour to revisit the roots of India's ancient military thoughts. The move comes against the backdrop of a flurry of efforts by the government to encourage "Indianisation" in areas including education, health and science. "The objective is to synthesise ancient wisdom with contemporary military practices, forging a unique approach to address modern security challenges," an army statement said. It's a collaboration between the army and think tank United Service Institution of India. Arthashastra underscores the importance of strategic partnerships,

alliances and diplomacy, aligning with modern military practices such as international cooperation and soft power projection, it said. “Chanakya’s teachings on statecraft and warfare are studied by various institutions the world over. Similarly, the wisdom of Thirukkural advocates ethical conduct in all endeavours including warfare. This aligns with modern military codes of ethics of just war and principles of Geneva Convention.” Apart from ancient texts, the project entails revisiting prominent military campaigns and leaders. “The empires of Chandragupta Maurya, Ashoka and Cholas flourished during their times. There is the example of the Ahom kingdom too, which successfully ruled for 600 years, repeatedly defeating the Mughals. The naval battle of Saraighat in 1671, led by Lachit Borphukan, stands as a stellar example of the use of clever diplomatic negotiations to buy time, employ psychological warfare, focus on military intelligence and exploiting the strategic weakness of the Mughals,” the statement said.

The tenets expounded by the ancient knowledge system were put to practice by Chhatrapati Shivaji and Maharaja Ranjit Singh who defeated numerically superior Mughal and Afghan invaders, it added.

<https://www.hindustantimes.com/india-news/rajnath-singh-launches-army-project-to-draw-lessons-from-ancient-indian-texts-101697895505618.html>



Sun, 22 Oct 2023

HAL Plans a New Business Division to Push Exports, Says Chairman

HAL has proposed setting up the vertical under a CEO-ranked officer, who will report directly to the chairman of the state-run company.

Aircraft maker Hindustan Aeronautics Ltd (HAL) plans to soon create a new business division to push exports as it pursues opportunities to sell fighter jets and helicopters to several countries, chairman and managing director CB Ananthakrishnan said.

HAL has proposed setting up the vertical under a CEO-ranked officer, who will report directly to the chairman of the state-run company. It is eyeing exports to countries including Argentina, Nigeria, Egypt and the Philippines, which are interested in the light combat aircraft (LCA) Mk-1A and the advanced light helicopter (ALH).

“Many leads have come in and our products have attracted the attention of global customers. But somehow, we have not been able to convert these leads into orders. The restructuring is aimed at addressing this and getting a toehold in new markets,” Ananthakrishnan said.

The restructuring will involve creating a new position of CEO, marketing, who will steer exports, he said.

In the existing corporate structure, marketing comes under HAL’s director of operations, who fills many key roles and concentrating exclusively on exports is not possible. “We felt the need for an exclusive focus on exports as we have products that can meet the needs of many countries,” the HAL chief said.

HAL recently came close to winning a \$920 million contract to supply 18 fighter jets to Malaysia, but was pipped by Korea Aerospace Industries earlier this year. “We believe the LCA was better

(than KAI's FA-50), but we lost the deal. It was a setback. We are now looking ahead and expecting some breakthrough orders soon," he said.

Argentina is a likely customer for both LCA Mk-1A and ALH; Nigeria is looking at LCA Mk-1A, and so is Egypt; and the Philippines has shown interest in ALH, Ananthakrishnan said. The South American country needs 15 new fighters, Nigeria is looking for 16-18 jets, Egypt has projected a requirement for 20 aircraft, and the Philippines needs up to 20 helicopters.

Argentine Air Force teams have visited HAL and flown both LCA and ALH, and Indian officials held discussions with Nigerian president Bola Ahmed Tinubu on the possible sale of fighter jets to the African country during his visit to Delhi for the G20 Summit in September.

"We will offer a package to our foreign customers. Apart from selling aircraft, we will help them develop the local industry ecosystem so that they can take care of basic repairs and maintenance. HAL will involve the private industry in these countries," Ananthakrishnan said.

Success in exports has been elusive for HAL despite having good products, including LCA and ALH, said Air Marshal Anil Chopra (ret'd), director general at the Centre for Air Power Studies.

"The new vertical should have technical and commercial teams to address the whole gamut of issues including the capabilities of the platforms, delivery timelines and life-cycle costs," Chopra said. "That's how global aircraft makers operate for the best outcomes. The next step should be setting up front offices in select target countries."

India has set a defence export target of ₹35,000 crore by 2024-25, which experts believe is within the country's reach. India's focus on boosting exports comes alongside a big thrust on indigenisation of weapons and systems.

Military exports have risen sharply, and imports have recorded a drop on the back of policy initiatives and reforms. Exports grew 23 times between 2013-14 and 2022-23 from ₹686 crore to ₹16,000 crore, while the spending on imported weapons and systems dropped from 46% of the total expenditure in 2018-19 to 36.7% in December 2022, according to defence ministry data.

India exports military hardware to more than 85 countries, with around 100 domestic firms involved. This includes missiles, artillery guns, rockets, armoured vehicles, offshore patrol vessels, personal protective gear, a variety of radars, surveillance systems and ammunition.

India exports bulletproof jackets to 34 countries, including Australia, Japan, Israel and Brazil, ammunition (ranging from 5.56mm to 155mm) to around 10 countries including the United Arab Emirates, Egypt, Indonesia and Thailand, fast interceptor boats to Mauritius, Seychelles and the Maldives, and defence electronics to countries like the US, the UK and France.

India has taken several measures in the past four to five years to boost self-reliance. These include imposing phased bans on import of weapons, creating a separate budget for buying locally made military hardware, increasing foreign direct investment from 49% to 74% and improving ease of doing business. India is eyeing a turnover of ₹1.75 lakh crore in defence manufacturing by 2024-25.

On October 4, India slapped an import ban on 98 weapons and systems, including futuristic infantry combat vehicles, ship-borne unmanned aerial systems, medium-range precision kill systems, radars, sensors, and equipment for fighter jets, maritime surveillance planes, warships, helicopters and tanks.

The fifth positive indigenisation list, released by defence minister Rajnath Singh, took the number of major defence items placed under an import ban during the past three years to 509.

<https://www.hindustantimes.com/india-news/hal-plans-a-new-business-division-to-push-exports-says-chairman-101697912358847.html>

India Sends Medical Supplies, Disaster Relief Aid to War-torn Gaza via Egypt

Days after Prime Minister Narendra Modi spoke to Palestinian President Mahmoud Abbas to convey condolences over the loss of civilian lives at the Al Ahli Hospital in Gaza City, India on Sunday sent its first humanitarian aid for the beleaguered residents of Gaza via Egypt.

“India sends humanitarian aid to the people of Palestine. An IAF C-17 flight carrying nearly 6.5 tonnes of medical aid and 32 tonnes of disaster relief material for the people of Palestine departs for El-Arish airport in Egypt,” the Ministry of External Affairs’ official spokesperson, Arindam Bagchi, posted on ‘X’ (formerly Twitter).

“The material includes essential life-saving medicines, surgical items, tents, sleeping bags, tarpaulins, sanitary utilities, water purification tablets among other necessary items,” he posted.

Responding to the aid, the Palestinian Ambassador to India, Adnan Abu Alhaija, told The Indian Express: “I would like to thank the Government of India for this initiative. Yesterday, only 20 trucks entered Gaza. Before the siege, there were nearly 500 trucks carrying goods to Gaza and that was not enough.” “So, after 15 days of siege, nothing entered Gaza, we need a lot, and let me say this border should be opened as soon as possible. All this humanitarian aid to the people, including water, electricity, medicine, petrol and oxygen should go to Gaza as soon as possible... All our hospitals are (facing) lack of medicine and oxygen, and petrol for the generators,” he said.

He said the Palestinian Authority had not specifically asked for aid, and it was part of “India’s initiative”. “We are looking for political support from India to Palestine for ending the siege of Gaza, so that all this humanitarian aid is sent to Gaza as soon as possible,” he said.

The first humanitarian aid convoy of 20 trucks entered the besieged Gaza Strip on Saturday, through the Rafah crossing with Egypt, even as Israel’s bombardment continued. It included food supplies and medicines but no fuel, which aid groups say is “absolutely critical” for Gaza’s 2.3 million residents. Meanwhile, Israeli air raids continued on Saturday across the Gaza Strip, including in the south, where Israel had earlier asked its residents to relocate. On Thursday, in his first phone conversation with Abbas since the October 7 Hamas attack on Israel and the retaliatory Israeli strikes that have sent tensions soaring across West Asia, Modi had reiterated India’s “long-standing principled position on the Israel-Palestine issue”. “Spoke to the President of the Palestinian Authority H.E. Mahmoud Abbas. Conveyed my condolences at the loss of civilian lives at the Al Ahli Hospital in Gaza. We will continue to send humanitarian assistance for the Palestinian people. Shared our deep concern at the terrorism, violence and deteriorating security situation in the region. Reiterated India’s long-standing principled position on the Israel-Palestine issue,” Modi had posted on ‘X’.

In his first reaction to the Gaza hospital incident, Modi had posted on ‘X’: “Deeply shocked at the tragic loss of lives at the Al Ahli Hospital in Gaza... Civilian casualties in the ongoing conflict are a matter of serious and continuing concern. Those involved should be held responsible.” This was perceived as a message to both Israel and the Hamas. Modi’s call to Abbas came days after he spoke to Israeli Prime Minister Benjamin Netanyahu to extend solidarity. Following his conversation with Netanyahu, Modi had posted: “People of India stand in solidarity with Israel in this difficult hour... India strongly and unequivocally condemns terrorism in all its forms and manifestations”. Later, Delhi, in its first official statement on the conflict, sought to balance its

position. “We have strongly condemned the horrific terrorist attack on Israel, and we believe the international community must stand together in combating terrorism in all its forms and manifestations,” MEA spokesperson Bagchi said. “As regards Palestine, we have reiterated our longstanding position of advocating the resumption of direct negotiations towards establishing a sovereign, independent and viable State of Palestine living within secure and recognised borders, side by side at peace with Israel,” he said.

“We have also expressed our concern at the civilian casualties due to the ongoing conflict. We also remain concerned about the humanitarian situation. We would urge the full respect and strict observance of international humanitarian law,” he said. The phone call to Abbas was perceived as a balancing act. For Delhi, the diplomatic challenge was to balance between the many sides in West Asia where India has deep strategic ties with Israel on the one hand, and Saudi, UAE, Qatar, Iran and Egypt – to name a few – on the other hand.

<https://indianexpress.com/article/world/israel-hamas-war-india-sends-medical-supplies-disaster-relief-aid-to-war-torn-gaza-via-egypt-8995292/>

The Tribune

Sat, 21 Oct 2023

India Offers Zambia Military Equipment

The Indian government has offered indigenous military equipment to Zambia. Defence Secretary Giridhar Aramane held a meeting with Zambia’s Permanent Secretary, Ministry of Defence, Norman Chipakupaku.

The Ministry of Defence said Aramane highlighted the performance capabilities of Indian defence industries in varied operations. The Zambian Permanent Secretary appreciated the advancement of Indian defence industries and said that he looked forward for support through high-quality and cost-effective equipment for the modernisation of Zambian defence forces. “Both sides also agreed to explore opportunities for collaboration in manufacturing of small arms, ammunition and other defence equipment in Zambia,” the MoD said.

<https://www.tribuneindia.com/news/india/india-offers-zambia-military-equipment-555110>



Sun, 22 Oct 2023

Following Galwan Clashes, China Ramped up Troop Presence, Infra along LAC in 2022, Says Pentagon

China has maintained constant military presence while boosting infrastructure at the Line of Actual Control (LAC) since the June 2020 clashes between Chinese and Indian troops in Ladakh’s Galwan Valley, according to a Pentagon report that offers crucial insights into Beijing’s growing military capabilities and activities in the region.

In its latest annual report to the U.S. Congress, the Department of Defense said there was an increased deployment of Chinese troops along the LAC in 2022. The deployments will likely

continue through 2023, it said. The details come as India and China prepare for their fourth consecutive winter at the LAC in eastern Ladakh since the start of the Ladakh standoff. The 20th round of military talks between the two sides earlier this month failed to yield any substantive forward movement. As reported earlier by The Indian Express, the Indian Army, as part of its winter posture in the region, is planning an overall redeployment of troops along the LAC while maintaining a strong domination using the latest surveillance devices and helicopters.

The LAC is divided into three sectors: the eastern sector, which spans Arunachal Pradesh and Sikkim; the central sector in Uttarakhand and Himachal Pradesh, and the western sector in Ladakh. According to the Pentagon report, the Chinese deployment in the western sector of LAC includes one border regiment supported by two divisions of the Xinjiang and the Tibet Military Districts, with four combined arms brigades (CAB) in reserve. Three light-to-medium CABs have been brought into the eastern sector from other theatre commands, while three additional CABs have been deployed in the central sector, the report said.

“Although some elements of a light CAB eventually withdrew, a majority of the deployed forces remained in place along the LAC,” it added. A CAB integrates various arms including artillery, infantry, armoured and others to jointly fight a battle. The report also said that in 2020, after the Galwan clashes, China deployed the PLA’s Special Operations Forces (SOF) from its Tibet Military Region, even though the SOF units “lacked real-world combat experience.”

On infrastructure buildup along the LAC through 2022, the report said China has built underground storage facilities near Doklam (where Indian and Chinese soldiers faced off in June 2017 after Chinese Army tried to build a road), while new roads have been built in all three sectors of the LAC. It also mentions new villages in the disputed areas in Bhutan, besides a second bridge over the Pangong Lake (Ladakh), besides a dual-purpose airport and multiple helipads. The report said that while India and China have held multiple rounds of military and diplomatic talks to resolve the issues along the LAC in the last three years, with some amount of disengagement achieved at four friction points, overall progress has been minimal as both sides resisted losing perceived advantages on the border.

“In addition to continued PLA deployments at the LAC on the Indian border, the PLA conducted multiple “around the clock” large-scale exercises in training areas throughout the country to include joint operations in response to the US and Taiwan actions in 2022,” it added.

Flagging China’s advancement efforts to evolve into a world class military”, the report said the PLA is aggressively developing capabilities to provide options for Beijing to “dissuade, deter, or, if ordered, defeat” third-party intervention in the Indo-Pacific region, and to conduct operations deeper in this region as well as globally China, with an overall defence budget of \$229 billion, has also sought to improve its proficiency as a joint force to conduct the full range of “land, air, and maritime as well as nuclear, space, counterspace, electronic warfare (EW), and cyberspace operations”, the report said. Beijing, it said, demonstrated its new long-range fire capability in the PLA’s response (China had launched extensive military drills) after the August 2022 US Congressional Delegation (CODEL) visit to Taiwan. According to the report, in 2022, the People’s Liberation Army Navy (PLAN), the largest navy in the world with an overall battle force of over 370 ships and submarines and more than 140 major surface combatants, launched its third aircraft carrier, CV-18 Fujian.

PLAN Aviation and the People’s Liberation Army Air Force (PLAAF) together constitute the largest aviation force in the Indo-Pacific region, which is rapidly catching up to western air forces, the report said, adding that PLAAF continues to modernise with the delivery of domestically built aircraft and a wide range of unmanned aerial systems.

China is also developing new intercontinental ballistic missiles (ICBMs) that will significantly improve its nuclear-capable missile forces and will require increased nuclear warhead production. Since 2020, when the Ladakh standoff began, both India and China have deployed tens of thousands of additional troops in the region. And with talks yielding no substantive development so far, both sides have also significantly ramped up infrastructure — for sustenance and quick mobilisation of troops to the LAC

<https://indianexpress.com/article/india/following-galwan-clashes-china-ramped-up-troop-presence-infra-along-lac-in-2022-says-pentagon-8994076/>

Science & Technology News

mint

Sat, 21 Oct 2023

Gaganyaan Mission Test Flight Highlights: Test Flight Module Touches Down in Bay of Bengal

Gaganyaan Mission Test Flight highlights: Indian Space Research Organisation (ISRO) successfully executed the Test Flight Abort Mission, for the Gaganyaan mission on Saturday after the first test flight was aborted at 8:45 am due to a problem in the engine ignition.

ISRO Chief S Somanth said the planned lift off the TV-D1 rocket could not happen following an anomaly that will be analysed. He said that the engine ignition of the TV-D1 rocket did not happen over time. The space agency then said that the errors have been identified and corrected and the second launch was scheduled for 10:00 Hrs today. And at 10 am, ISRO successfully launched the test vehicle from Sriharikota today. Chairman Somanath expressed happiness and said, "I am very happy to announce the successful accomplishment of Gaganyaan TV-D1 mission".

<https://www.livemint.com/science/news/gaganyaan-mission-launch-today-live-updates-isro-test-flight-for-astronaut-mission-sriharikota-spaceport-satish-dhawan-11697821140515.html>

The Indian EXPRESS

Sun, 22 Oct 2023

Gaganyaan: Launch to Splashdown, ISRO Clears Key Step towards Human Space Mission

Setting the stage for its planned mission, Gaganyaan, to take Indian astronauts into space by 2024, the Indian Space Research Organisation successfully carried out Saturday, after overcoming a technical glitch, a crucial test of the crew escape system. The launch of the mission, Flight Test Vehicle Abort Mission (TV-D1), scheduled for 8 am, was delayed due to weather factors and a snag in the rocket's ignition detected at 8.45 am put the mission on hold. However, scientists quickly

identified and corrected the “anomaly” and return to the launchpad at the Satish Dhawan Space Centre at Sriharikota for a launch at 10 am.

The Test Vehicle, a rocket developed by ISRO to test various systems for its first human space mission Gaganyaan in a two-year time frame, launched smoothly. And culminated with a perfect execution of the abort mission with the crew escape system separating from the rocket at an altitude of approximately 17 km. Gaganyaan aims to send humans into space on a Low Earth Orbit of 400 km for three days and bring them safely back to the Earth. The crew module made a successful splashdown in the Bay of Bengal around 10 km from the coast of Sriharikota at the programmed velocity and in the nominal time of a little over nine minutes after lift-off.

“This launch takes us one step closer to realising India’s first human space flight program, Gaganyaan. My best wishes to our scientists at ISRO,” Prime Minister Narendra Modi posted on X. The crew module was recovered by the Indian Navy using a dedicated vessel and diving team later in the day. “The Crew Module in the safe hands of @indiannavy,” ISRO said on social media Saturday evening. “We have had full accomplishment of the TV-D1 mission. The purpose of this mission was to demonstrate the crew escape system through a test vehicle demonstration in which the vehicle has gone up to a Mach no. (1.2 Mach) — which is the speed of sound — and initiated an abort condition for the Crew Escape System mission,” ISRO chairman S Somanath said soon after the splashdown.

“The Crew Escape System took the module away from the test vehicle and subsequently the operation of the separation of the Crew Module from the Crew Escape System occurred with parachutes opening and the crew module touched down in the sea. The required velocity has been very much accomplished. We have got confirmation of the data for all of this,” the ISRO chairman said. Somanath also explained the launch going into hold mode in the final second of the countdown at 8.45 am. “After going through the nominal lift-off process, there was a hold issued by the ground computer which is called the Automatic Launch Sequence (ALS) computer which detected a sort of non-confirmation for the engine to continue with the thrusting for further go. This happened due to an anomaly in the system. We could identify it very fast and correct it,” the ISRO chairman said. “To make the stage ready again, it took some time to refill the gases. After this was done we went through the proper Automatic Launch Sequence which checked every health component of the vehicle and finally the mission computer and the ground check up computer authorized the launch for take-off,” Somanath said.

“I am very happy that our team could understand that in case of any anomaly how things can be rectified and come back as fast as possible,” he said. “This is a big training for the entire team here to prepare for the Gaganyaan program. I am very happy the launch could take place within the allocated launch window. We will come back with more analysis and data for this mission on recovery of the crew module. We are (getting) visuals from the sea and the drone cameras, The ISRO chief added.

The mission director, S Shivakumar, said three experiments in the mission had all performed well. “The test vehicle, the crew module, the crew escape system, everything has been demonstrated in the first attempt except for the hitch which was not a problem at all,” he said.

The Gaganyaan program director and executive for crew module realization, R Hutton, called today’s test a major milestone and a “great motivator.”

“In the Gaganyaan mission the most important aspect is the safety of the crew...this has been demonstrated in this mission where we have simulated an abort and the crew escape system carried the crew module away like a bird takes away its chicken to a safe place,” Hutton said. “Though the Gaganyaan vehicle is robust and very reliable... we cannot leave anything to chance and, after all,

if any malfunction happens there has to be a system in the launch vehicle which is called the crew escape which will take the crew module away to safety,” he said.

Earlier in the morning, the countdown for the launch had entered the final second for lift-off when the rocket seemed to stall on the launch pad — when the countdown from 10 had reached down to 1. The launch was announced as being put on hold by the mission control. Somanath was heard telling scientists that the launch “will not be possible today”.

“Engine ignition did not take place. The Automated Launch Sequence started as planned but did not complete. The launch will be scheduled after correcting the anomalies,” he announced

The abort mission was carried out by ISRO before its full-fledged unmanned test flight into space and back for the crew module on ISRO’s human-rated LVM3 rocket (an upgraded version of its heavy lift GSLV Mk III rocket) planned in 2024.

The TV-D1 is the first of two abort missions to test crew safety mechanisms for the Gaganyaan mission. The new test vehicle is a low-cost basic rocket built by ISRO for the exclusive purpose of testing systems instead of waiting for PSLV and GSLV launches to test systems.

The new rocket is expected to help the space agency avoid the large costs it would incur otherwise in testing the crew module for the human space flight program which has a budget of around Rs 9000 crore. As ISRO prepares for its maiden human spaceflight or the Gaganyaan mission the space agency has put safety of the crew as the central objective of the mission. This has resulted in ISRO convincing the Union Government that a 2022 deadline (set by PM Modi on August 15, 2018) would have to be relaxed in order to ensure a safe and successful mission.

The crew module is at the heart of a human space mission and it needs to be safe to carry astronauts, under very high heat and pressure conditions, into space. It requires a reliable escape mechanism in the event of an emergency. In today’s TV-D1 mission the Crew Module was empty but in an actual human mission the capsule is where the astronauts are “contained in a pressurized earth like atmospheric condition.” The TV-D1 mission had an unpressurised version of the crew module. “This unpressurised CM version has to have an overall size and mass of actual Gaganyaan CM. It houses all the systems for the deceleration and recovery. With its complete set of parachutes, recovery aids, actuation systems and pyros,” ISRO said.

The module used in the flight on October 21 has been used to “capture the flight data for evaluation of the performance of various systems,” ISRO said.

Indian Navy units recovered the crew module from the Bay of Bengal after the splashdown. The recovery operation was a result of extensive planning, training of Naval divers, formulation of SOPs and joint communication by combined teams of Indian Navy and ISRO, officials said.

<https://indianexpress.com/article/technology/science/launch-to-splashdown-isro-human-space-mission-8993979/>

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ISRO Prefers Woman Fighter Test Pilots for its Manned Mission, Possible in Future, Says Somanath

ISRO prefers woman fighter test pilots or female scientists for its much-awaited human space flight programme Gaganyaan mission and it is possible to send them in the future, the space agency

chief S Somanath said on Sunday. He also said ISRO would send a female humanoid – a robot that resembles a human - in its unmanned Gaganyaan spacecraft next year. The ambitious mission aims to send humans into space on a Low Earth Orbit of 400 km for three days and bring them safely back to the Earth.

"No doubt about it...but we have to find out such possible (women) candidates in the future," Somanath told PTI over phone in response to a query. His statement came a day after the ISRO successfully launched its TV-D1 test vehicle ahead of the human space flight mission Gaganyaan. said the manned mission is expected by 2025 and that it will be a short duration mission."Right now, the initial candidates are to be from Air Force fighter test pilots...they are a bit different category. Right now, we are not having women fighter test pilots. So, once they come, that is one route," the Chairman said. The second option was when there would be more scientific activity, he said.

"Then, scientists will come as astronauts. So, at that time, I believe that more possibilities for women are there. Currently, possibilities are lesser because there are no women fighter test pilots," Somanath explained.

To a question, he said the ISRO's target is to put a fully operational space station by 2035.

ISRO had successfully launched TV-D1 test vehicle ahead of the human space flight mission Gaganyaan on Saturday.

After overcoming initial hiccups including delays, the space agency successfully launched the test vehicle with payloads related to the country's ambitious Gaganyaan programme.

Scientists simulated an abort situation for the Crew Escape System to carry the Crew Module of the test vehicle out as they made a splash into the Bay of Bengal with planned precision.

<https://economictimes.indiatimes.com/news/india/isro-prefers-woman-fighter-test-pilots-for-its-manned-mission-possible-in-future-says-somanath/articleshow/104626867.cms>

