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THE ECONOMIC TIMES
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Fri, 24 Jan 2020

Republic Day to get many firsts, Dhanush and the Anti Satellite missile to be part of parade

Three army equipment are being displayed for the first time during the parade, Major General Alok Kacker, the Chief of Staff Delhi Area, who is the parade's second-in-command said. The main attraction out of the three would be the Dhanush artillery gun. The Dhanush is a 155mm calibre artillery gun, which has been developed by the OFB

By Shaurya Karanbir Gurung

New Delhi: The ceremonial wreath laying by Prime Minister Narendra Modi on Republic Day on Sunday will be held for the first time at the National War Memorial, instead of at the Amar Jawan Jyoti. This will also be the first time that the recently appointed Chief of Defence Staff General Bipin Rawat will be part of this ceremony.

The CDS along with Defence Minister Rajnath Singh, the Minister of State for Defence Shripad Yesso Naik, the three services chiefs and the Defence Secretary Ajay Kumar will be standing behind the Prime Minister according to the laid down protocol. Previously, the wreath laying ceremony followed by a salute by the dignitaries during Republic Day was held at the Amar Jawan Jyoti, located under the arch of India Gate. The change this time doesn't mean that the Amar Jawan Jyoti will be ignored. Officials said that a wreath will be laid there as well on Republic Day.

There will also be other firsts. The Dhanush artillery gun and the Anti-Satellite missile will be part of the Republic Day parade for the first time this year.

Meanwhile, the focus of the parade this year will as well will be to give adequate representation to women. Captain Tania Sher Gill, an officer serving with the army's Corps of Signals, will be leading an all male marching contingent during the parade. Although she will be the second woman to do this, she was the first woman officer to lead an all male marching contingent during the Army Day parade on January 15.

Major General Alok Kacker, the Chief of Staff Delhi Area, who is the parade's second-in-command said that the wreath laying by the Prime Minister will be at the National War Memorial, instead of the Amar Jawan Jyoti. The memorial was inaugurated by Modi in February last year. Following this, it became the place for wreath laying on all designated events, including Republic Day. The memorial commemorates the soldiers who died in wars and operations, including counter-terrorism, since Independence. The Amar Jawan Jyoti consisting of the eternal flame, the rifle and the helmet, was built for the soldiers who died in the 1971 India-Pakistan war and also honoured those troops who died in action after that.

Kacker added that the three service chiefs, CDS and other dignitaries will be present at the memorial as well. He explained that this is happening for the first time. "This will also be the first time that the CDS will be part of the Republic Day, including the ceremony," another official said.

The post of the CDS was approved by the Cabinet last month and General Bipin Rawat, who was previously the Army Chief, was appointed as the CDS.

Meanwhile, three army equipment are being displayed for the first time during the parade, Kacker said. The main attraction out of the three would be the Dhanush artillery gun. The Dhanush is a 155mm calibre artillery gun, which has been developed by the Ordnance Factory Board. It was inducted into the artillery last year. The army is procuring 114 of them to deploy them along the borders with Pakistan and China. Having a range of 36.5 km, the gun is equipped with an internal navigation system and advance gun sighting system. It is also an all terrain equipment. The gun is

towed by an Ashok Leyland truck and is also equipped with self propelled mode, enabling it to be deployed in areas where it cannot be towed.

The other two equipment being displayed for the first time is the short span bridging system and the 15 m Sarvatra bridge system. The K-9 Vajra self-propelled artillery gun will also be part of the parade. This will be the second time that it is being displayed. Importantly, the Anti-Satellite (ASAT) weapon system will also be part of the parade. An ASAT test was successfully conducted with an interceptor missile against a live orbiting satellite in the Low Earth Orbit in March last year.

https://economictimes.indiatimes.com/news/defence/republic-day-to-get-many-firsts-dhanush-and-the-anti-satellite-missile-to-be-part-of-parade/articleshow/73551690.cms

Firstpost.

Fri, 24 Jan 2020

Indigenous artillery gun system 'Dhanush', Army air defence marching contingent to take part forfirst time in republic day parade

- ***Artillery gun system 'Dhanush' and a marching contingent of the Army Air Defence are set to take part in the Republic Day parade for the first time***
- ***The K9-Vajra, the anti-satellite (A-SAT) test conducted under Mission Shakti, and Air Defence Tactical Control Radar (ADTCR) of the DRDO will also be part of the parade***

New Delhi: India's military might and some of the state-of-the-art assets of the armed forces will be showcased during the Republic Day Parade on Rajpath, with artillery gun system 'Dhanush' and a marching contingent of the Army Air Defence set to take part in the ceremonial event for the first time, officials said on Thursday.


File image of Dhanush artillery gun. Image courtesy: Dhanush/News18

Besides, K9-Vajra, the anti-satellite (A-SAT) test conducted under Mission Shakti, and Air Defence Tactical Control Radar (ADTCR) of the DRDO will also be part of the parade.

India early last year had shot down one of its satellites in space with an A-SAT missile to demonstrate this complex capability, joining the elite club of countries — the US, Russia and China — which have such capabilities.

The Army will showcase many of its state-of-the-art assets during the majestic January 26 parade, and artillery gun systems Dhanush and Short Span Bridge system will make their appearance for the first time during the parade, Chief of Staff, Delhi Area, Maj Gen Alok Kacker, told reporters.

At a press conference, he also said, 16 marching contingents will take part in the parade from the armed forces, paramilitary forces, Delhi Police, NCC and NSS, along with 21 bands.

The 61 Cavalary, consisting of 52 horses, will be marching down the Rajpath as part of the mounted column.

Corps of the Army Air Defence has earlier participated in the Republic Day parade with its vehicular columns, but this time a marching contingent of the AAD will take part in the event for the first time, officials said.

On January 26, trailblazer officer Captain Tania Sher Gill, will lead the all-men contingent of the Corps of Signals, making her "family of faujis" and the nation proud.

The 26-year-old officer of the Corps of Signals, had recently created history by becoming the first woman Parade Adjutant to led all-men contingents during the Army Day function on January 15.

A motorcycle display by an all-women team of the Central Reserve Police Force (CRPF) will be another attraction this January 26 parade.

The prime minister will pay homage to fallen soldiers at the newly-built National War Memorial here on the Republic Day instead of Amar Jawan Jyoti beneath the India Gate arch, officials said.

The iconic memorial in the India Gate complex behind the canopy was inaugurated by Prime Minister Narendra Modi on February 25 last year.

Amar Jawan Jyoti is symbolised by an inverted bayonet and soldier's helmet over it with an eternal flame burning beside it. It was built in 1972 underneath the India Gate arch to commemorate soldiers martyred in the Indo-Pak War of 1971.

Tri-Services chiefs pay respect on occasions of national importance like Independence Day, Republic Day at the Amar Jawan Jyoti.

"Prime Minister Narendra Modi will visit the National War Memorial on January 26 morning before the commencement of the Republic Day Parade, and lay a wreath at the memorial in the presence of the three services chiefs and the Chief of the Defence Staff," a senior official of the Army said. Lt Gen Asit Mistry, General Officer Commanding, Delhi Area, will be the Parade Commander, Maj Gen Kacker will be the Parade Second in Command.

"In the mechanised columns, three T-90 Bhishma tanks, three Ballaway Machine Pikate, one Saravatra Bridge system, one five-metre Short Span Bridge system, three Dhanush gun system, three K-9 Vajra gun system, two transportable satellite terminal (TST), two Akash surface-to-air-missiles, will be showcased," Kacker said.

Leaders of some of the participating marching contingents -- The Grenadiers (Maj Anirudh Nair), Kumaon Regiment (Capt Rahul Singh Kataria), Sikh Light Infantry or SIKHLI (Maj Anjum Gorkha), Para Regiment Centre (Maj Nikhil Kumar Maurya), Corps of Army Air Defence (Capt Vikas Kumar Sahu), were present during the press interaction held here.

"Since, I am leading, my challenge is to make sure the each and every member moves in perfect synchronisation. And, when me march together, it is actually our discipline and team work at display. We march with common heartbeat," said Maj Anjum Gorkha.

https://www.firstpost.com/india/indigenous-artillery-gun-systemdhanush-army-air-defence-marching-contingent-to-take-part-for-first-time-in-republic-day-parade-7948461.html

The Hitavada

Fri, 24 Jan 2020

Maha metro installs 3 bio-digester as part of its green initiative

About 900 litres water is saved per station daily with help of the DRDO-patented technology

Maha Metro Nagpur has installed Bio-Digesters at its Metro Stations as part of its efforts towards conservation of environment. With help of the technology, water used at the stations is recycled for multiple purposes. Use of recycled water ensures saving of water. Bio-Digesters are installed at Khapri, New Airport and Airport South Metro Stations and are in process of being affixed at other locations. As per the study, roughly 30 to 40 per cent or about 900 litres of water is recycled at each station daily. Bio-digester are DRDO patented technology widely used for sewage treatment.

Major highlight of this technology is, very less space is required for treating water; it doesn't need electricity, thus saving on expenses otherwise incurred on power. Also, it doesn't generate any sludge and doesn't have any handling issues. Most important is fact that it attracts lesser capital investment compared to conventional engineering treatments such as Activated Sludge Process. Additionally, it has better performance compared to septic tank treatment. In scientific terms, it consists of bio-digester tank and a specialized bacterial culture called Anaerobic Microbial Inoculum (AMI).

Under controlled anaerobic conditions, specialised bacteria completely degrades sewage into a gaseous by-product. Maha Metro Nagpur has adopted above technology for achieving its environmental commitment of Zero Liquid Discharge. It is planned that sewage generated in operational phases would be treated using this technology. A MoU was executed between Defence Research and Development Organization (DRDO) and Maha Metro for transfer of this technology.

During construction phase, bio-digester treated sewage was only used for land discharge based end uses such as dust suppression. Presently, it is being used for flushing purposes. Sewage which has been recycled after treatment has greatly reduced fresh water demand. It is expected that on account of on site sewage treatment units, Maha Metro shall reduce around 30 per cent of fresh water requirement. The technology would gradually be used in other Metro locations such as stations and depots.

https://www.thehitavada.com/Encyc/2020/1/23/Maha-Metro-installs-3-bio-digester-as-part-of-its-green-initiative.html

DEFENSE WORLD.NET

Fri, 24 Jan 2020

Indian DRDO selects Israeli CONTROP's observation payload for drones

Israel's CONTROP Precision Technologies - specialising in electro-optics and infrared (EO/IR) solutions – has won a tender by India's Defence Research and Development Organisation (DRDO) for the supply of its iSky-50HD systems, for use on unmanned air platforms.

The iSky-50HD is a member of CONTROP's iSky family of lightweight, compact EO/IR observation systems, which have been specifically designed for use in challenging airborne environments. The iSky-50HD features highly-sensitive multi-spectral sensors, which are gyro-stabilized and have advanced image processing algorithms, thereby providing maximum sensor ranges and performance, for a variety of airborne defence applications.

In daily operation around the world since the 1990s, the iSky systems are integrated into a wide variety of UAV, helicopter, fixed-wing aircraft and aerostat platforms.

Hagay Azani, CONTROP's CEO & President said, "The (Indian) DRDO tested several systems and concluded that our technology and pricing was best suited to meet India's defence requirements.

https://www.defenseworld.net/news/26220/Indian_DRDO_Selects_Israeli_CONTROP_s_Observation_Payload_for_Drones

THE HINDU

Fri, 24 Jan 2020

K4 test and new fighter base boost India's Act East Policy

India's decision to test the K4 Submarine Launched Ballistic Missile (SLBM) and to establish a new base of Sukhoi-30 fighter jets not far from the Bay of Bengal coast is adding new teeth to its Act East Policy.

It is also reinforcing lines of contact with China's Belt and Road Initiative (BRI) — a giant connectivity project on land and sea.

The 3,500-km range K4 missile, which can be launched from Arihant class nuclear submarines, add a new dimension to India's second strike capability—the ability to carry out a retaliatory nuclear attack after absorbing an initial strike by an atomic weapon. The newly acquired heft to carry out a crushing nuclear counterattack with an Intermediate Range Ballistic Missile (IRBM), from a concealed underwater platform, steels India's nuclear deterrent.

Nuclear triad :

India has been developing its nuclear triad, enabling launch of atomic weapons from land, air and sea, following the 1998 atomic tests.

The K4's 3,500 km reach, which can cover the entire Pakistan and the industrial heartland of China, helps in providing assured deterrence in the region, which includes the 10-nation Association of South East Asian Nations (ASEAN) and other territories in the West Pacific.

Symbolically, the K4's launch from the Andhra Pradesh coastline in the Bay of Bengal resonates India's Act East Policy of raising New Delhi's diplomatic and military profile in the Indo-Pacific. The ASEAN centered Act East Policy covers the Malacca Straits—the critical link and trade artery between the Indian Ocean and the Pacific, as well as areas that lie beyond, including some of the island territories in the Pacific.

In the West Pacific, China has also been beefing up its nuclear deterrent to counter the accumulation of forces under the United States' Indo-Pacific Command, in Guam, Okinawa in Japan, South Korea and Australia. China's Jin class nuclear submarines deploy Jl-12 SLBMs, which have a range of 7,400 km.

In tune with its economic rise, China has also been open about enlarging its footprint in the Indian Ocean, with a base in Djibouti. Besides, it is developing the port of Gwadar in Pakistan in the Arabian Sea and Kyaukpyu in Myanmar in the Bay of Bengal, under the BRI flag.

India, on its part, has built the deep water port of Sittwe in Myanmar, while Japan, which also has points of friction with China, is constructing the Matarbari deep water port in Bangladesh, in accordance with Tokyo's India backed Free and Open Indo-Pacific strategy.

Shortly after the visit of Chinese President Xi Jinping to Myanmar last week, the paths of China's BRI and India's Act East Policy are intersecting again. Government sources told The Hindu that Chief of the Naval Staff Karambir Singh is heading to Myanmar to finalise transfer of one of India's Kilo Class submarine.

Sukhois in Thanjavur airbase :

The unveiling of the Thanjavur airbase last week, where the Su-30 multi-role fighter jets have been deployed, has also reinforced the military dimension of India's Act East Policy. Analysts say that with mid-air refuelling, the Sukhoi would bring the Malacca straits within its strike range. Besides, the Su-30 fighters will deploy the deadly BrahMos supersonic cruise missiles-a highly potent joint venture enterprise of India and Russia.

As part of the Act East Policy, Thailand and Philippines are in talks with India to buy BrahMos missiles, the sources said. Philippines had raised a missile unit which, in future, will operate the BrahMos. Thailand is also in talks to join India's coastal surveillance radar chain. Several Indian Ocean littoral states like Maldives, Seychelles, Mauritius and Sri Lanka are already a part of this initiative. Of late, India has signed a series of logistics agreements that extend the Indian military's reach.

Apart from the Thanjavur base, the Arakkonam naval air station and the tri-service Andaman and Nicobar Command—both deploying the Navy's P-8I planes--are important spurs of the Act East Policy. These state-of- the-art planes can monitor traffic along the Indian Ocean sea lanes, through major choke points, as well movement of submarines and warships in the area.

THE ASIAN AGE

Fri, 24 Jan 2020

'Up for it if women given combat role'

She points out that women started getting inducted in the Army since 1993 and "we have come a long way"

By Pawan Bali

New Delhi: Captain Tania Shergill, who will be leading the Army's Corps of Signals on Republic Day, said if women are given a combat role in the Indian Army "we are up for it."

Capt. Shergill, a fourth-generation Army officer, is the first Indian woman officer who lead an all-men contingent on Army Day on January 15 this year.

She points out that women started getting inducted in the Army since 1993 and "we have come a long way". "Things in Army happens gradually. Nothing happens overnight. So I am very sure, in the near future, things are only going to get better and we are going to get more opportunities," Capt. Shergill told this newspaper in an interaction.

On women breaking the last bastion and wearing combat fatigues she said: "It all depends on the seniors in the hierarchy. Whatever opportunities that will be given to us, we are up for it."

She said that getting into Army was a dream come true. "Ever since I was a little child I have always seen my father wearing a uniform and I used to get passionate about it. I always used to think that one day I want to earn a uniform for myself also," she said.

She joined Officers Training Academy (OTA), Chennai, in April 2016 and was commissioned on March 2017.

"Lady cadets as well as gentleman cadets are trained equally for one year in our respective academy. The physical standards are something you have to, come up to. The academy makes you mentally tough," said Capt. Shergill.

On leading the contingent on Republic Day, she said that you feel proud whether you are male or female officer. "You feel proud when your Corps gives you an opportunity to command a regiment. It gives you a sense of responsibility and you feel worthy. You feel grateful and blessed."

About process of getting selected for the Army and Republic Day Parade, she said that officers had come to signals training centre out of which we were selected to lead the contingent. She said that her parents are "very proud" of her leading the contingent at the Republic Day.

https://www.asianage.com/india/all-india/240120/up-for-it-if-women-given-combat-role.html

The Tribune
VOICE OF THE PEOPLE

Fri, 24 Jan 2020

Lt Gen Joshi is Chief of Northern Command

New Delhi: Lt Gen YK Joshi, a hero of the Tiger Hill battle during the 1999 Kargil conflict, was appointed next Northern Command chief on Thursday. He will replace Lt Gen Ranbir Singh.

Lt Gen Joshi, in the past, commanded Leh-based

14 Corps. As a Lt Colonel, he led his unit —13 JAFRIF — to victory over Pakistan in 1999 and captured Tiger Hill.

He was awarded Vir Chakra, the third highest battle honour in the country. Then Army Chief Gen VP Malik had personally congratulated the unit. He has served in the Directorate General of Military Operations, handling China, and has served in Beijing as India's defence attache.

Capt Vikram Batra laid down his life in the battle. Gen Joshi, then a Lt Col, was commanding his battalion. The battalion under him earned two PVCs, eight Vir Chakras (including for himself), 14 Sena Medals and the title of the "Bravest of the Brave".

Gen Joshi has a rare distinction of having commanded a brigade and a division in eastern Ladakh, facing China, under 14 Corps.

https://www.tribuneindia.com/news/lt-gen-joshi-is-chief-of-northern-command-30821

The Tribune
VOICE OF THE PEOPLE

Fri, 24 Jan 2020

Pak conducts successful training launch of nuclear-capable ballistic missile

Islamabad: Pakistan on Thursday conducted a successful training launch of nuclear-capable surface-to-surface ballistic missile 'Ghaznavi', which can strike targets up to 290 kilometers.

"The training launch was part of Field Training Exercise of Army Strategic Forces Command aimed at rehearsing operational readiness procedures during day and night," the Inter-Services Public Relations (ISPR), the media wing of the army, said in a statement.

The 'Ghaznavi' missile is capable of delivering multiple types of warheads upto a range of 290 kilometers, the statement said.

The launch was witnessed by Lt Gen Nadeem Zaki Manj, Director General Strategic Plans Division, Commander Army Strategic Forces Command, senior officers from Strategic Plans Division, Army Strategic Forces Command, Scientists and Engineers of the strategic organisations, according to the state-run Radio Pakistan.

"Director General Strategic Plans Division appreciated the operational preparedness of Army Strategic Forces Command for displaying a very high standard of proficiency in handling and operating the weapon system," the statement said.

He also "expressed full confidence in the robust Strategic Command and Control System and the capability of Strategic Forces", it said.

President Arif Alvi, Prime Minister Imran Khan and the three services chiefs "congratulated the nation on this landmark achievement," it added.

Pakistan test-fired 'Ghaznavi' on August 29, 2019 also, days after India revoked Jammu and Kashmir's special status on August 5.

India and Pakistan have been at odds after New Delhi abrogated the provisions of Article 370 of the Constitution to revoke Jammu and Kashmir's special status and bifurcated it into two union territories.

Pakistan reacted strongly to India's decision and downgraded bilateral ties and expelled the Indian envoy.

India has categorically told the international community that the scrapping of Article 370 was an internal matter. It has also advised Pakistan to accept the reality and stop all anti-India propaganda.— PTI

https://www.tribuneindia.com/news/pak-conducts-successful-training-launch-of-nuclear-capable-ballistic-missile-30535

The Indian EXPRESS

Fri, 24 Jan 2020

Indian space candidates in their 30s picked for multiple missions, says Russian expert

According to the Russian expert, the task of picking the final Indian candidates was no different from such selections in other countries

By Johnson T A

Bengaluru: The health condition of the four IAF test pilots shortlisted to be an astronaut on ISRO's first ever human space flight by 2022 was evaluated for not just one but multiple missions spanning 5-10 years, according to a top cosmonaut who headed a Russian bio-medical team that helped pick them.

"We were selecting an Indian astronaut to be in the profession for a long time — not just one mission but many missions," Oleg Valeriyevich Kotov said on the sidelines of a conference on Human Spaceflight and Exploration Thursday.

"We try to evaluate the health status of individuals for space flights over a long period of time. We are looking at the health of a candidate and providing a prognosis for the next few years — five years or 10 years. We are not selecting candidates for just one short mission,'' said Kotov, whose team helped the IAF shortlist the Indian candidates for the Gaganyaan mission from 60 to four.

Kotov, 54, is a cosmonaut and aerospace medicine expert with 526 days of experience in space between 2007 and 2014, including six space walks. He was a flight engineer on a mission to the International Space Station in 2007 and a commander for ISS missions in 2010 and 2013. He has been a leading doctor for 18 years at the Yuri Gagarin Cosmonaut Training Centre at Star City in Russia.

According to the Russian expert, the task of picking the final Indian candidates was no different from such selections in other countries.

"The Indian candidates were not very different from what we see in other parts of the world. They have to be very motivated, very strong, very healthy with very high psychological resistance. They have to be open, communicative, very friendly — and smiling is always good," said Kotov, who is now responsible for the bio-medical programme of the ISS.

Keeping in mind that the astronauts should be available for multiple missions over time, the Indian candidates chosen to undergo generic training at the Yuri Gagarin centre from this month fall in the 32-35 years age group, he said.

"All candidates who I saw were high-quality because they were selected after a preliminary process by doctors on the Indian side using material that we provided. The candidates that came up for selection fit into a certain criteria already laid out," he said.

According to Kotov, the final selection was more "complicated" since it involved evaluation of bio-medical parameters on an individual basis.

"It is not a simple system with a checklist where you pick a candidate if they match the checklist. We follow an individual approach for every candidate. It is about understanding the health system of the individual. We do not have people who are 100 per cent healthy. It is impossible to find a 100 per cent healthy person around the world because everyone has small deviations — not illness but deviations in anatomy," Kotov said. After their training at the Yuri Gagarin centre, the candidates will return for mission-specific training to India.

https://indianexpress.com/article/technology/science/russian-expert-indian-space-candidates-in-their-30s-picked-for-multiple-missions-6232351/

The Indian EXPRESS

Fri, 24 Jan 2020

Gaganyaan: International collaboration key in manned mission

ISRO will provide a bulwark of technologies and systems for the Gaganyaan mission, but there will be key contributions from Russia and France - Russia will help with the selection of astronauts, while France will help with its expertise in space medicine

Bengaluru: The first-ever Indian mission to send a man into space on board the GSLV Mk III rocket, scheduled to be launched around the year 2022, will not be a purely Indian endeavour but will involve collaboration with international space agencies, keeping in nature with modern space exploration efforts. ISRO will provide a bulwark of technologies and systems for the Gaganyaan mission, but there will be key contributions from Russia and France – Russia will help with the selection of astronauts, while France will help with its expertise in space medicine.

Under a space cooperation agreement signed in 2015 by Prime Minister Narendra Modi and Russian President Vladimir Putin, the Russian space agency Roscosmos will shortly begin the training of four Indian IAF test pilots – chosen by Russian and Indian experts to be the first Indian astronauts – at the Yuri Gagarin Cosmonaut Training Centre at Star City, Russia.

The Yuri Gagarin centre, which has trained astronauts from over 30 countries, will provide generic training for Indian astronauts in areas like the basics of a manned flight, control systems, space navigation, design principles and space engineering before they return for mission-specific training.

ISRO and the French space agency CNES will be collaborating on medical systems for the Gaganyaan mission, including emergency medical systems on board the spacecraft.

In 2018, CNES president Jean-Yves Le Gall and ISRO chairman K Sivan had announced the creation of a French-Indian working group on human spaceflight in continuation with a commitment made by President Emmanuel Macron during a visit to India.

"CNES and ISRO will combine expertise in the fields of space medicine, astronaut health monitoring, life support, radiation protection, space debris protection and personal hygiene systems", which will all play a key role in the Gaganyaan mission, say ISRO and CNES officials.

https://indianexpress.com/article/technology/science/gaganyaan-international-collaboration-key-in-manned-mission-6232349/

THE ASIAN AGE

Fri, 24 Jan 2020

Diversify selection of crew: Astronauts to ISRO

Sultan Al Neyadi of the UAE mooted the idea of change in the selection process of crew members

By B.R. Srikanth

Bengaluru: Astronauts from across the world held out a message for ISRO, urging the latter to introduce new criteria for the selection of crew and diversify the selection process so as to help doctors, scientists, engineers and the like to make the cut.

The message for change in selection criteria emerged at a discussion among astronauts from France, Germany, USA and UAE and a lone cosmonaut from Russia held in Bengaluru Thursday as part of the international symposium on "Human Spaceflight & Exploration: Present Challenges & Future Trends".

Sultan Al Neyadi of the UAE mooted the idea of change in the selection process of crew members. "Being an engineer helped me a lot as we have the mindset to deal with equipment and communicate with colleagues who are working in different modules. I know that many people think that pilots are the most favourable candidates for a space flight, but everyone provides inputs to have a successful flight," he said.

He was backed by a French astronaut Jean-Francois Clervoy who said, "If all the crew members are pilots, they will think the same way about a problem but if the crew members are doctors, engineers or scientists, such a diverse combination will increase the possibility of evolving innovative solutions. Russia took the initiative to diversify the crew from pilots to engineers but NASA, with the Space Shuttle programme, got scientists and even scuba divers to join the crew."

Woman engineer to be part of Gaganyaan crew soon

Emphasising that the 'Gaganyaan' mission will mark the beginning of India's ambitions plans to build its own space station, Air Commodore Ravish Malhotra (Retd), who along with Wing Commander Rakesh Sharma (Retd) was picked for the joint Indo-Soviet space expedition in 1984, says sooner than later women engineers of ISRO will make it to space on board an Indian rocket.

Air Commodore Ravish Malhotra (Retd) told That Asian Age that with the crew capsule designed to seat three members, a woman engineer of the Indian space agency would make the cut soon. "With so many women engineers working in ISRO, I am sure that an engineer will take the third seat (in the crew module)," he said.

https://www.asianage.com/india/all-india/240120/diversify-selection-of-crew-astronauts-to-isro.html