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Outlook
THE FULLY LOADED MAGAZINE

Sun, 29 Dec 2019

DRDO empowered India in 2019 to neutralise live satellite

New Delhi: The Defence Research and Development Organisation (DRDO) empowered India in 2019 by carrying out the country's first anti-satellite (ASAT) missile test -- Mission Shakti -- apart from successfully developing several important projects like Light Combat Aircraft for Indian Navy, Beyond Visual Range Air-to-Air Missile (BVRAAM) Astra from Su-30 MKI platform.

This year, DRDO Chief G. Sateesh Reddy has set a target to achieve self-reliance in missiles, radars, sonars, torpedoes, armaments and early warning systems. He has stated that DRDO intends to have no import for these systems in five years.

DRDO flight-tested Beyond Visual Range Air-to-Air Missile (BVRAAM) Astra from Su-30 MKI platform off the coast of Chandipur in Odisha from September 16 to 19.

The five trials conducted during this period, tested missiles in different configurations. Three missiles were launched in combat configuration with warheads and neutralised manoeuvring targets to establish the end-game capability of the missile. The tests were successful.

The first ever arrested landing of Light Combat Aircraft at INS Hansa, the Indian naval air station in Goa, took place on September 13. The test will pave the way for the indigenous platform to undertake aircraft carrier landing demonstration on board the Indian Naval aircraft carrier Vikramaditya.

DRDO flight tested indigenously developed low weight, fire and forget man-portable anti-tank guided missile on September 11 in Andhra Pradesh. The missile was launched from a man-portable tripod launcher on the target mimicking a functional tank. The test paves the way for the Indian Army to have third generation indigenous anti-tank guided missile.

The research and development organisation also handed over three indigenously designed airborne early warning and control system Netra to the Indian Air Force on September 11 to augment the service's network centric capabilities.

They also flight-tested its state-of-the-art quick reaction surface-to-air missile against live aerial targets from Chandipur on August 4.

On March 27, the country joins a select group of nations with capability to neutralises live satellites in low earth orbit. DRDO carried out Anti-Satellite (ASAT) missile test "Mission Shakti" from Odisha.

A DRDO-developed ballistic missile defence interceptor missile engaged a live Indian satellite orbiting in Low Earth Orbit (LEO) in a "Hit to Kill" mode. The test demonstrated India"s capability to defend its assets in outer space and vindicated the strength and robust nature of DRDO’s programmes. In a landmark occasion, Light Combat aircraft Tejas MK I for Indian Air Force was informally awarded final operational clearance (FOC) on February 20.

DRDO successfully conducted two BrahMos supersonic cruise missiles tests, one each from land and air platforms and as part of the series of flight trials of Pinaka missile system, two test firings were successfully conducted.

(*Disclaimer: This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: IANS*)

https://www.outlookindia.com/newsscroll/drdo-empowered-india-in-2019-to-neutralise-live-satellite/1695626

THE TIMES OF INDIA

Sat, 28 Dec 2019

DRDO reveals 350km XRSAM missile details

By U Sudhakar Reddy

Hyderabad: The Defence Research and Development Organisation (DRDO) for the first time on Friday revealed the details of the XRSAM-IAF (eXtra Long Range Surface to Air Missile) to be developed by the Hyderabad-based Defence Research and Development Laboratories (DRDL).

The DRDO's website stated that XRSAM-IAF is being developed for the Indian Air Force (IAF) as part of Missiles and Strategic Systems (MSS), and added that it will play a vital role in the missile defence system of the country. DRDO said that the XRSAM air missile weapon system will also be able to engage stealth fighters and ballistic missile in the terminal stage.

"The IAF has projected a requirement to induct Long Range Surface to Air Missile System to neutralise Aircraft at Extended Ranges of 250km, Sea Skimming Anti-Ship Missiles, AWACS at ranges of 350km, stealth fighters and ballistic missile in the terminal stage. The entire system shall be designed for transportability. IAF has accepted the configuration," said DRDO on its website.

The XRSAM air missile weapon will have a range of 350km and will also come in canister-based, transportable truck-based launcher system.

The Defence Research and Development Organisation will begin trials in the next three years.

"We need something on these lines, but the missile is only part of the capability. For the ranges mentioned (250-350 km) it is unlikely that a missile will be able to carry its own sensors. A missile is not physically big enough to house the power required for such long-range. The missile will have to integrate with a ground-based long-range detection and tracking system. It may have the autonomous capability for 'terminal guidance' (last 30-40 km or so)," defence historian KS Nair told TOI.

https://timesofindia.indiatimes.com/city/hyderabad/drdo-reveals-350km-xrsam-missile-details/articleshow/73001348.cms

The EurAsian Times

Sun, 29 Dec 2019

How DRDO negated all criticism and got India on the global stage in defence technology?

The Defence Research & Development Organisation (DRDO) has strengthened India's defence capabilities by successfully conducting the country's first anti-satellite (ASAT) missile test apart from other projects like Light Combat Aircraft for Indian Navy, Beyond Visual Range Air-to-Air Missile (BVRAAM) Astra from Su-30 MKI platform off the coast of Chandipur in Odisha. A EurAsian Times report.

Indian DRDO to test 3500 Km Range Submarine Launched Ballistic Missile

About DRDO

DRDO is the R&D wing of Ministry of Defence, Govt of India. It has the vision to empower India with cutting-edge defence technologies and a mission to achieve self-reliance in critical defence technologies and systems. It also aims at equipping our armed forces with state of the art weapon systems.

The DRDO was formed in 1958 from the amalgamation of the then already functioning Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO).

Indigenous Breakthroughs by DRDO

DRDO Chief G. Sateesh Reddy, as EurAsian Times reported earlier, set an ambitious target of achieving self-reliance in missiles, radars, sonars, torpedoes, armaments, and early warning systems in 5 years. This becomes important because even after 60 years of the DRDO formation, India still imports a large share of its defence equipment.

In the year 2018-19, India became the world's second-largest importer of defence equipment, accounting for 13 per cent of the global total, according to the Stockholm International Peace Research Institute.

Light Combat Aircraft (LCA)

The LCA (Navy) is the naval version of indigenously developed Tejas fighter aircraft being developed for the Indian Air Force. In this context, DRDO successfully neutralized manoeuvring targets to establish the end-game capability of the missile. For instance, the first-ever arrested landing of Light Combat Aircraft at INS Hansa was done in Goa.

The DRDO released an ofcial statement which said, "This arrested landing heralds the arrival of true indigenous capability and displays the professional prowess of our scientific community Aeronautical Development Agency (ADA) embedded with design plus build the capability of HAL(ARDC), DRDO and CSIR Labs involved in executing this landmark event".

Netra

Another indigenously built achievement has been the airborne early warning and control system-Netra- which the DRDO handed over to the Indian Air Force. The system played a 'behind the scene' role in the much talked about Balakot surgical strikes in February 2019.

"India is only the fourth country in the world to have developed this advanced system, popularly known as the 'Eye-in-the-sky', for its ability to detect enemy aircraft soon after they are airborne with the help of a radar onboard the aircraft although it is akin to looking for a needle in a haystack", said Dr K Ramchand, a member of the development team.

Mission Shakti

Mission Shakti is the country's first anti-satellite (ASAT) missile test. By launching Mission Shakti, India has entered the elite group of nations (consisting of the US, China, Russia) that have the ASAT weapon.

It becomes an important step towards strengthening Outer space warfare capability. To be specific, it can help in targeting and destroying satellites of the enemy which can completely halt communication systems of a country and during a conflict, this would mean the enemy could fail to use its missiles or drones.

In the test, India targetted a Low Earth Orbit (LEO), thereby achieving the capability to protect itself in outer space. The operation was conducted by using Light Combat aircraft Tejas MK I for Indian Air Force which has got (informally) awarded with final operational clearance (FOC).

Intertial Guided Bomb

India successfully test-fired an indigenously-made 500-kg class "inertial guided bomb" from a Sukhoi jet at the Pokhran test range in Rajasthan. The test has been pegged as a major achievement for the Defence Research and Development Organisation (DRDO) as the guided bomb achieved the desired range and also hit its target with precision.

This 500-kg class precision bomb allows precision targeting from long distances even under adverse visibility conditions. The inertial guidance system is an electronic system that continuously monitors the position, velocity and acceleration of a vehicle, usually a submarine, missile, or aeroplane, and provides navigational data or control without the need for communicating with a base station.

Such achievements of the DRDO counter the criticism faced by it regarding the delays in approvals, red-tapism, etc. The organisation has indeed played a great role in 2019 to enhance the Indian defence capabilities.

https://eurasiantimes.com/how-drdo-negated-all-criticism-and-got-india-on-the-global-stage-for-defence-technology/

THE NATIONAL INTEREST

Sat, 28 Dec 2019

India's Arjun tank took decades to make. Why?

What was the issue?

By Kyle Mizokami

Key point: Russian state media has reported that India is interested in the Armata as the basis of a new, localized tank

In the mid-1970s, India began development on a totally new, advanced main battle tank that would satisfy the needs of the country's Armored Corps. An impressive combination of firepower, armor protection and mobility, the tank was to be India's first indigenously produced tank—and one of the best in the world. The service date for the tank, known as Arjun, was confidently set for 1985.

Instead, the Arjun suffered a tortuously long development period spanning two centuries. The final result, introduced into the army twenty-six years later than originally planned, is a mess of a tank that not even the Indian Army wants.

The Indian Army's Armored Corps has been in existence for seventy-four years, tracing its roots to the Second World War, and has fought in every one of India's wars with neighbor and rival Pakistan. The Corps has across has sixty-three armored regiments (the equivalent of battalions), spread across eight armored and mechanized divisions and another seven armored and mechanized brigades.

The decision to produce an indigenous Indian tank was made in 1972, shortly after the Indo-Pakistani War of 1971. In 1974, the state-run Defence Research and Development Organisation (DRDO) was tasked with developing the tank. It was to be a forty-ton vehicle, armed with a 105-millimeter gun. It would be small enough to be strategically mobile, capable of being shuttled on internal lines (roads and railroads) to vital sectors along the long border with Pakistan.

DRDO decided to make the tank, called Arjun, a mostly Indian design. The Combat Vehicles Research and Development Establishment, part of DRDO, was to design the hull, armor, turret, gun and running gear. The main gun and engine would be imported. Unfortunately, India's defense-industrial base was nowhere near capable of creating such a vehicle. As if that weren't enough of an obstacle, India's world-famous bureaucracy and red-tape machine was another enemy to progress.

Today, the Arjun Mk 1 is a sixty-two-ton tank, complete with a 120-millimeter gun, advanced composite armor, a 1,400-horsepower turbocharged engine, and advanced fire control and thermal sights. Although the tank's specifications are impressive, the actual product leaves a lot to be desired.

By 2009, thirty-five years after it was originally conceived, Arjun was "ready" for production. Despite shortcomings revealed in testing, the Indian Army was forced to buy 124 Arjuns—enough to equip just two armored regiments—to keep state tank production facilities open. By mid-2015, two years after the purchase was complete, nearly 75 percent of the Arjun force was inoperable due to technical problems.

Arjun's armored protection evolved significantly over thirty-five years. The tank is fitted with Kanchan armor, a locally designed composite blend that is allegedly similar to British Chobham armor. Kanchan is rumored to be capable of shrugging off point-blank shots from the 125-millimeter

gun of Indian T-72 tanks. Arjun is so well protected that its weight ballooned from the original forty-ton specification to sixty-two tons.

This increase in protection came at a cost—decreased tactical and operational mobility. As originally specified, a forty-ton tank with a 1,400-horsepower engine would have an impressive 35-to-1 horsepower-to-weight ratio. Unfortunately, Arjun's weight ballooned from forty to sixty-two tons, with no corresponding increase in engine power. DRDO finally settled on a German-made MTU 1,400-horsepower water-cooled diesel engine, complemented with an Indian supercharger. Arjun's horsepower-to-weight ratio sank to a mediocre 22.5 to 1. The vehicle's weight also means it cannot be used in Punjab and the northern deserts of India in India's "Cold Start" offensive strategy against Pakistan.

The Arjun's development period was so long that major design decisions became completely obsolete. The 105-millimeter gun, perfectly adequate in the 1970s when stacked up against the NATO-standard 105-millimeter L7 gun (the M68 in U.S. Army service), and the 115-millimeter gun of the Soviet T-62 tank, were obsolete by the early 1990s.

In the end, the Arjun ended up with a 120-millimeter rifled barrel gun, capable of firing High Explosive, Armor-Piercing Discarding Sabot rounds, High Explosive Anti-Tank rounds and, perhaps not unusually for a former British colony, High Explosive, Squash Head rounds. DRDO conducted test firings of the Israeli-made LAHAT long-range antitank missile, which offered a high probability of kill against armored vehicles out to six thousand meters, but the round was dropped in 2014. DRDO claims it will develop an indigenous equivalent.

How did Arjun, which took decades to develop, end up being such a disappointment? The tank took so long to develop that technologies not even invented when Arjun was first proposed had to be added to the tank. GPS navigation, laser warning receivers, non-explosive-reactive armor and other innovations were merely research papers in 1974, but by the early 2000s were must-have inventions that added to the tank's complexity, weight and cost.

The inability of DRDO to put its foot down and admit that it could not build the tank on time and on schedule doomed the tank. India's state of the military art was such that a new tank would out of necessity face a prolonged development time. The more the tank project dragged on, the more the tank needed to be redesigned to incorporate new technologies. The tank was trapped for decades in a development death spiral, and the end product is correspondingly mediocre.

DRDO is busy at work designing Arjun Mk II, which will allegedly contain many improvements over the original Mk I. The Indian Army for its part is adamant it wants no part of the Mk II until prototypes perform satisfactorily, and would much rather buy an overseas tank. The army, for now, prefers the Russian T-90 tank and may express interest in the brand new T-14 Armata tank. Russian state media has reported that India is interested in the Armata as the basis of a new, localized tank. Whether that's true remains to be seen.

https://nationalinterest.org/blog/buzz/indias-arjun-tank-took-decades-make-why-108606

Sat, 28 Dec 2019

Dreams hang fire: India's ambitious fifth-gen fighter aircraft faces delay over funding shortage

By Rishikesh Kumar

New Delhi: Earlier this year, the head of the IAF announced the abandonment of a joint project with Russia to produce India' own fifth generation fighter aircraft. India is spending less on research; a paltry 1/12 on R&D what was spent by its arch-rival China this year.

The Indian Defence Ministry has admitted before a parliamentary panel that a shortage of funding has been severely harming country's crucial military projects, including Advanced Medium Combat Aircraft (AMCA).

The ministry added that the DRDO – the state-funded agency responsible for military research and development – needs additional funds to take up new projects in futuristic areas, and high-cost projects.

"The quantum of funds for projects is INR 35,000 million ($491 million approx.) (excluding strategic schemes), which would be consumed to meet the already committed project expenses," the defence ministry admitted.

The projects that will be impacted due to a shortage of funds include Advanced Medium Combat Aircraft (AMCA), Airborne Warning & Control System, the Ghatak combat drone, and the next-gen main battle tank.

Even the availability of funds for the research on military projects continues to decline, as pay and allowances and other non-salary revenue expenditures essentially keeps growing every year. "The amount left for R&D activities is far less," the ministry stated, expressing concern.

Goals for 2025... Pursued at a Snail's Pace

Indian Air Force (IAF) Chief Air Marshal Rakesh Bhadauria has been throwing his weight behind India's domestically produced Advanced Medium Combat Aircraft (AMCA) project, which began in 2009.

In 2018, the government sanctioned $60 million for a detailed design phase, and DRDO aimed to fly the first prototype of the Advanced Medium Combat Aircraft (AMCA) before 2025.

"As for AMCA, it certainly seems to be back [on the agenda], but AMCA will take much longer to develop than is being currently projected," said Amit Cowshish, former financial advisor to the Indian finance ministry.

Expressing apprehension about the slow progress of several projects, the IAF chief, on 16 December, said: "Right now, amid this 'Make in India' and indigenisation (programme), a lot of lip service is being done. Our intentions are very good but practically, the work is going on extremely slowly."

The IAF chief mentioned that the service branch with1,35,000 personnel, would require at least 300 jets, including the AMCA, over the next 16-18 years.

It's Time to Cut to the Chase

Earlier this year, China's state-run media Global Times reported that China has already started work on developing a sixth-generation fighter jet and aimed to make it a reality as early as 2035.

China already has a fifth-generation fighter – the J-20 stealth fighter, which is reportedly a top-of-the-line stealth aircraft, operated by the People's Liberation Army Air Force since last year.

The reason for such swift development lies in spending massively on military research by China.

Indicating the reasons for trailing far behind China in development of defence projects, the ministry noted that comparison to defence funding in countries such as the US, Russia, and China, India's research and development spending is very limited.

According to data published by the Indian defence ministry, China has been spending around $35 billion annually, while India spends only $2.5 billion on defence research. China's spending on defence research is almost equal to India's entire defence budget.

https://sputniknews.com/military/201912271077882395-dreams-hang-fire-indias-ambitious-fifth-gen-fighter-aircraft-faces-delay-over-funding-shortage/

Telangana Today

Sat, 28 Dec 2019

Award for DRDO Scientist

Hyderabad: Dr N Kishore Nath, Scientist-G, Project Director from Advanced Systems Laboratory (ASL), DRDO, Hyderabad, was conferred Mechanical Engineering Design Award by the National Design and Research Forum, Institution of Engineers India, for his pioneering contribution towards Design Development, Production and Deployment of Long-range AGNI-4 system.

This system can be launched from anywhere with two vehicles — Road Mobile Launcher (RML) and Integrated Mobile Systems (IMS), a press release said.

Governor Dr Tamilisai Soundararajan presented the award to Dr Kishore Nath during the 34th Indian Engineering Congress held at HICC, Novotel, on Friday.

https://telanganatoday.com/award-for-drdo-scientist

THE HINDU

Sun, 29 Dec 2019

‘Missile woman’ guides girls to Science

Women opting for science up from 3% to 15%: Tessy Thomas

By R. K. Roshni

Thiruvananthapuram: The increased participation of girls in the National Children’s Science Congress is heartening, according to Tessy Thomas, scientist and Director General of Aeronautical Systems, Defence Research and Development Organisation (DRDO).

She was speaking to *The Hindu* on the sidelines of the congress where she interacted with children during a ‘Meet the Scientist’ programme here on Saturday. This year, nearly 60% of the child scientists taking part in the congress are girls.

Scene in Kerala

Ms. Thomas said the percentage of women joining the science stream had increased from some 3% a few decades ago to 15%. This was because of the importance given to science in academic institutions and the science fraternity. Kerala, especially, was supporting innovations in science at the school level, she said. Achievements by women in institutions such as ISRO, DRDO, and CSIR were inspiring girls to take up science. The percentage of women in the DRDO, Ms. Thomas pointed out, too had gone up. The science field, she said, was very challenging and if committed to learning, women could go far. They should persevere, even when required to go the extra mile when faced with something for the first time in the field. One should not let detractors bother them.

Work begins at home

Encouraging girls to study science should begin from home, Ms. Thomas said, pointing out how her family encouraged her interest in science and mathematics.

Visits from Alappuzha, where she lived, to the Thumba rocket launching station spurred her fascination. During her B.Tech., she studied radar systems as an elective, and when the opportunity for M.Tech. in Guided Missiles came around, she grabbed it.

It was at the DRDO Hyderabad missile labs that she worked with the former President A.P.J. Abdul Kalam, later earning the moniker ‘Missile woman.’ Ms. Thomas recounted how he once introduced her to a large audience of students as ‘Missile lady.’

Development of long-range missile Agni IV, she recalled, involved a quantum jump in technology. Till then the scientists had worked with metallic rocket motor casing but with Agni IV, they came up with composite rocket motor for the first time in the country. It was the result of three years of effort and was something she was very proud of, for it gave an advantage in weight reduction for the Agni IV and V missile.

https://www.thehindu.com/news/cities/Thiruvananthapuram/missile-woman-guides-girls-to-science/article30422562.ece

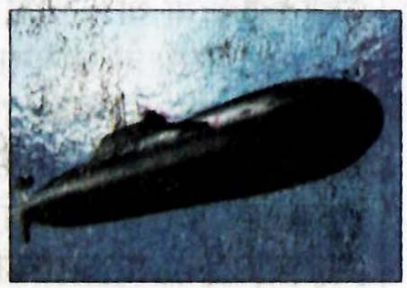
पंजाब केसरी

Mon, 30 Dec 2019

नौसेना के बेड़े में शामिल होंगी 24 नई पनडुब्बियां

नई दिल्ली, (एजेंसी): नौसेना अपने बेड़े में 24 नई पनडुब्बियां शामिल करने की योजना बना रही है। इनमें से 6 परमाणु हमला करने में सक्षम पनडुब्बियां होंगी, जबकि 18 अटैक सबमरीन होंगी। नौसेना ने रक्षा मामलों की संसदीय समिति को यह जानकारी दी।

नौसेना के पास मौजूद वर्तमान बेड़े में शामिल 13 पारंपरिक पनडुब्बियां 17 से 31 साल पुरानी हैं। समिति ने नौसेना की जरूरतों पर संसद के शीतकालीन सत्र में रिपोर्ट पेश की थी। रिपोर्ट के अनुसार, 18 पारंपरिक और 6 परमाणु सक्षम हमलावर पनडुब्बियां शामिल की जानी हैं। वर्तमान में सेना के पास 15 पनडुब्बियां हैं और एक उसने लीज पर ली है। नौसेना के पास इस समय रूस में बनी हुई किलो क्लास, जर्मनी में बनी एचडीडब्ल्यू क्लास और फ्रांस में बनी नवीनतम स्कॉर्पियन क्लास की पारंपरिक पनडुब्बियां हैं। परमाणु पनडुब्बी के तौर पर नौसेना के पास रूस की बनी हुई अकुला क्लास सबमरीन है, जिसे आईएनएस चक्र का नाम दिया गया है।



- इनमें से 6 परमाणु हमला करने में सक्षम जबकि 18 अटैक सबमरीन होंगी

प्रोजेक्ट 75 पर काम कर रही नौसेना

नौसेना 6 नई पारंपरिक पनडुब्बियां बनाने के लिए प्रोजेक्ट 75 पर काम कर रही है। नौसेना इन्हें भारतीय कंपनियों और विदेशी उपकरण निर्माताओं के सहयोग से बनाएगी। इस पर रणनीतिक साझेदारी के हिसाब से काम किया जाएगा।

अरिहंत क्लास पनडुब्बी परमाणु सक्षम

नौसेना ने अरिहंत क्लास की 6 परमाणु पनडुब्बियां बनाने की योजना तैयार की थी। ये पनडुब्बियां परमाणु ईंधन से चलने के साथ, परमाणु हथियारों से हमला करने में भी सक्षम होती हैं। इन पर परमाणु हथियारों को ले जाने वाली मिसाइलें भी तैनात की जानी थीं।

THE ECONOMIC TIMES
WWW.ECONOMICTIMES.COM

Mon, 30 Dec 2019

Indian Navy planning to build six nuclear attack submarines: Navy to Parliamentary panel

The Indian Navy had planned to build six nuclear attack submarines along with the Arihant Class SSBNs which are nuclear-powered submarines equipped with nuclear missiles. The nuclear attack submarines are also planned to be built indigenously in p…

New Delhi: To strengthen its underwater fleet, the Indian Navy plans to build 24 submarines, including six nuclear attack submarines, a parliamentary panel was told.

The Navy also told the panel that Medium Refit Life Certification (MRLC) of submarine Sindhuraj has been held up since the Russian side has not been able to submit bank guarantees and integrity pact due to sanctions imposed by the US.

In its report tabled this month, the Navy stated that there are presently 15 conventional submarines and two nuclear submarines in its fleet.

The Indian Navy has two nuclear submarines INS Arihant and INS Chakra, with the latter being leased from Russia.

Majority of the conventional submarines are over 25 years old. Thirteen submarines age between 17 and 32 years, it said.

"Eighteen (conventional) + six SSN (nuclear attack submarines) are planned...," it stated.

The Indian Ocean Region, the area of operations of the Indian Navy has witnessed rising activities of the Chinese Navy. On its part, the Indian Navy has been revamping its infrastructure, including procuring new ships.

Due to the delay in the submarine construction projects, including the Six Project 75 submarines at Mazagaon Docks, Mumbai, the Defence Ministry has approved Medium Refit cum Life Certification or MRLC of six older submarines, so that the force levels do not decline drastically, the report stated.

With regards to the MRLC of first submarine, work has already commenced in Russia on July 16 and is on schedule.

"Contract conclusion for MRLC of second submarine, Sindhuraj, is held up since the Russian side has not been able to submit requisite bank guarantees and integrity pact as a result of the sanctions imposed by the US Govt on them," it said.

The Navy has also recommended to the Defence Ministry that corporate guarantee of the JSC USC, a 100 per cent Russian government-owned firm, could be accepted and fast-track approval of the competent authority accorded for contract conclusion.

The US has imposed sanctions on Moscow citing several reasons ranging from annexation of the Crimea region of Ukraine to Russia with the recent one being the Countering America's Adversaries Through Sanctions Act (CAATSA).

"The Russian side indicated M/s L&T as their preferred partner for undertaking MRLC of the third Submarine Sindhuratna in India," it added.

https://economictimes.indiatimes.com/news/defence/indian-navy-planning-to-build-six-nuclear-attack-submarines-navy-to-parliamentary-panel/articleshow/73017759.cms

the pioneer

Mon, 30 Dec 2019

CDS can hold post till 65 yrs as Govt amends Army Rules

New Delhi: Ahead of the expected announcement of the name of the first ever Chief of Defence Staff (CDS), the Government has amended rules putting the maximum age limit of 65 years for the CDS to serve in the post. At present, the Services chiefs retire at the age of 62 or a tenure of three years, whichever is earlier.

Since the CDS will be senior most four-star general and above the three Chiefs, the Government can give him an extension up to the age of 65 years, an official gazette on Sunday said. It also said the step was taken after amending the Army Rules 1954.

The gazette notification said, “Provided that the Central Government may, if considered necessary, in public interest, so to do, give extension of service to the Chief of Defence Staff for such period or periods as it may deem necessary subject to the maximum age of 65 years.” Moreover, the same rule of three years or age of 65 years will be applicable to the CDS as in the case of the Services Chiefs.

Incidentally, the Cabinet Secretary, who is the senior most bureaucrat in the Central Government, also retires at the age of 62. The Government has the right to give him or extension of service.

The Government is likely to name the new CDS on Monday or Tuesday. Army Chief General Bipin Rawat, who retires on December 31, is the front runner for the new post. If he is selected for the top job, he will get more years as the CDS since he is retiring after completing three years but is yet to attain the age of 62.

Army Chief General Bipin Rawat is the senior most chief amongst the three Chiefs.

The Union Cabinet on Tuesday had approved the landmark reform in defence by clearing the creation of the post of CDS. The CDS, a long pending need to keep pace with modern day warfare world over, will act as single-point military adviser to the Government in higher defence management besides ensuring synergy amongst the three Services in terms of operations and optimum utilisation of resources.

The CDS will function as the Principal Military Adviser to the Defence Minister and also as the Permanent Chairman, Chiefs of Staff Committee (COSC).

First among equals among service chiefs, the CDS will be responsible for rationalising weapons procurement procedures besides integrating the operation of the armed forces. However, he will not exercise any military command over the three Chiefs of the Army, Navy and Air Force.

He will be under the ambit of the Right of Information Act. Most of the developed countries including the permanent members of the United Nations Security Council (UNSC) have CDS for ensuring jointness and synergy.

The Prime Minister in his speech from Red Fort on August 15 this year had made the important announcement about the creation of the CDS and said time has come to enhance coordination among the three services to deal with security challenges facing India.

https://www.dailypioneer.com/2019/page1/cds-can-hold-post-till-65-yrs-as-govt-amends-army-rules.html

The Tribune
VOICE OF THE PEOPLE

Sun, 29 Dec 2019

How CDS can integrate the services

Army, IAF, Navy are set for a more streamlined system of reporting and decision-making with approval of the post of Chief of Defence Staff. The CDS has got a 3-year timeline to bring about 'jointness' in operation, logistics, training. Since salaries and pensions can't be cut, another key task is optimal utilisation of budget and infrastructure

By Ajay Banerjee

New Delhi: For years, the Indian armed forces have been conducting 'joint exercises', but all the while the three services — Army, Air Force and the Navy — never got 'integrated' to have commonality of logistics, operations, maintenance, transport, training, support services or even communication networks.

Over the past few decades, the Army, IAF and Navy have grown as three separate verticals with sparse 'horizontal links'. With no commonality, each service had its own wings doing the same things separately on communication, maintenance, logistics, operations, support services, etc, 'wasting' crores of rupees annually in manpower and literal triplication of effort. This is unlike the way other modern-day armed forces have evolved in the past five decades or so.

Newly minted contours for the post of Chief of Defence Staff (CDS), announced by the Narendra Modi government, set a timeline on sorting out some vital issues that are 'holding back' integration and jointness of forces.

The directive is 'transformational' in nature that looks to alter structures not in tune with modern times where technology is playing a bigger role. The forces now need to live up to the political will and 'integrate' with each other.

Modern-day forces like the US or China have integrated theatre or joint commands. It ensures that all resources of the air, land and naval forces are placed under the command of a single person assigned to a geographical area demarcated on military and strategic needs.

China has a total of five commands, while India, despite having lesser number of force and lesser territory, has 19 collectively across the three services.

The time-bound three years

This is actually the nuts and bolts of the order. The CDS has been given a three-year timeline to bring about jointness in operations, logistics, transport, training, support services, communications, repairs and maintenance.

The government is clear, it wants the CDS to facilitate "restructuring of military commands for optimal utilisation of resources by bringing about jointness in operations, including through establishment of joint/theatre commands".

Vice Admiral Sekhar Sinha (retd), a former Chief of the Navy's Western Command, brings out a suggestion: "Right now one doable change is to have cross-appointment of Brigadier and Major General-level officials in the three services. Post them across services in operational divisions." Tweak the policy to make a 'Joint Service Operational appointment' mandatory. CDS is the first step, theatre commands are a distance away, he adds.

Old system cannot continue

One of the key roles of the CDS, as per the order, is "promoting jointness in procurement, training and staffing for the services through joint planning and integration of their requirements".

Lt Gen KJ Singh (retd), a former Western Army commander, says the appointment of CDS is a welcome step but has a caveat. “Military runs on command, the CDS would have no operational command over the forces.”

He suggests: “Let us have a pilot project to have one joint command in the eastern front. We have had an example of the joint command at Andaman and Nicobar Islands. After the CDS, let’s have one more, learn from lessons, and iron out the issues.”

Air Vice Marshal, SJ Nanodkar (retd) says “theatre commands appear inevitable but with the present force structure, it is an overkill”. In his opinion, a re-alignment of the boundaries of commands of all the three services is needed to bring about geographical convergence. “A theatre command would need huge restructuring in the services and support organisations,” he points out.

Onus is on CDS now

At present, the services are literally weighed down by bulging ‘establishment’ costs — a euphemism for salaries and pensions. The salaries and pensions of the three services and the civilians work out to be Rs 2,31,700 crore for the fiscal ending March 31, 2020 and now form 53.7 per cent of the Rs 4,31,011-crore budget. In other words, salaries and pensions take up much more share than the Rs 1,08,248 crore allocated this fiscal for new equipment and running expenses.

Salaries and pensions cannot be reduced, but optimal utilisation of budget and infrastructure is the target. The government has tasked the CDS with ensuring “optimal utilisation of infrastructure and rationalise it through jointness among the services”.

The CDS has been tasked to evaluate out-of-area plans, enhancing use of indigenous equipment and prioritising the weapons and equipment procurement of each service as per the available budget.

This would mean the budget will be told to the forces and the CDS, a military man, will assign funds, said a senior functionary, adding that the era of blaming all ills on the ‘babus’ or the politician are over.

Though the CDS would have no operational control over the services, the newly-created tri-services divisions on cyber and space will be under the CDS, who will be part of the Defence Acquisition Council and Defence Planning Committee.

Cutting the flab

During the late 1990s, the then Army Chief Gen VP Malik decided to suppress 50,000 manpower (mostly from non-field force) over a period of three years, provided the money saved would be given to the Army for capital purchases.

PM Narendra Modi in 2015 stressed how “modernisation and expansion of forces at the same time is a difficult goal”.

Then Defence Minister Manohar Parrikar set up a committee headed by Lt Gen DB Shekatkar (retd), which suggested 99 points for structural changes in the Army — cutting down flab and reducing revenue expenditure. The Ministry of Defence in 2017 accepted 65.

The armed forces have absorbed a fair amount of technological developments to rightsize the forces. For now, the path is clear, new equipment does not mean a corresponding rise in personnel strength.

Revisiting the idea of chief of defence staff

- Kargil review panel spoke about the need to have a CDS
- Matters meandered along as services got bogged down in turf wars as the 13-lakh strong Army looked the dominant force to the other two, which are each less than 1.5 lakh in numbers
- PM Modi, in 2015, said: “Major powers are reducing forces, relying more on technology, we are seeking to expand the size. Modernisation and expansion of forces at the same time is an unnecessary goal”

- Defence Minister Parrikar set up Lt Gen Shekatkar panel. It listed 99 points for structural changes in Army — cutting flab and reducing revenue (maintenance) expenditure
- It suggested how to enhance combat potential of forces, re-balance expenses. It listed steps to trim, redeploy, integrate manpower
- Expenses 'could be cut by Rs 25,000 cr over 5 yrs'. MoD in 2017 accepted 65 of 99 suggestions

Agreed upon by mod

- Cutting expenses, as suggested by the panel and agreed upon by the Ministry of Defence, included the reorganisation of signals, engineering corps and ordnance
- Monitoring companies, including merger of engineering units and signals units
- Army postal establishments in peace stations were shut down
- All 39 military farms were also shut down

Big-ticket buys out of the ambit

The Department of Military Affairs (DMA), which will be headed by the Chief of Defence Staff, will do procurement exclusive to the services. However, capital acquisitions, or big-ticket equipment and weapons procured from foreign and Indian sources, would not be under its domain.

All big ticket acquisitions will continue to be under the Department of Defence, headed by the Defence Minister. The Defence Secretary, an IAS officer, is the administrative head. This way, the government has kept the price negotiation process done for such weapon deals under the civil bureaucracy and not with the DMA, headed by the CDS, a uniformed military man.

The Director General Acquisition would function under the Department of Defence, not the DMA. The DG is the key person to coordinate with foreign and Indian entities. Also, there is no change to Government of India Rules of Business Allocation 1961, which vested the authority for Defence of India with the Defence Secretary.

https://www.tribuneindia.com/news/how-cds-can-integrate-the-services-18622

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Positives & negatives, let's all make it work

The Group of Ministers, post Kargil review, had elaborated four roles for CDS. All these have been incorporated in the charter, along with op control of tri-service entities like space and cyber. These would give the Chief of Defence Staff a modicum of control over the three services

By Air Vice Marshal Manmohan Bahadur (Retd)

The word CDS — Chief of Defence Staff — raises passions of varied kind in any discussion, but now that the government has announced the appointment, the right thing would be to move ahead and make it work. Even though the terms and conditions, responsibilities and span of control of the CDS have been promulgated, they appear to be just the outline, with the fleshing out yet to be done.

The Group of Ministers, post the Kargil review, had elaborated four roles for the CDS. First, that he should be the principal military adviser to the Raksha Mantri. Second, to exercise administrative control over strategic forces; third, enhance the efficiency and effectiveness of the planning and budgeting process through intra and inter-service prioritisation of acquisitions and lastly, ensure required jointness amongst the three services. A point to remember is that no operational control of the war fighters was envisaged for the CDS, with that mantle staying with the service chiefs. All these have been incorporated in the charter of the CDS, along with op control of tri-service entities like space and cyber that were not at the forefront when the Kargil review was done. These are all for the good and would give the CDS a modicum of control over the three services. There are, however, three issues that need looking into.

First, as expected, the CDS would be a four-star officer; what is a good surprise is that a new Department of Military Affairs (DMA) has been created. The CDS would offer military advice to the Raksha Mantri but would have no direct access to the Prime Minister unlike in the US, where Chairman Joint Chiefs of Staff is the principal military adviser to the President, the Secretary of Defense and their National Security Council. This is an issue that needs looking into since matters military are in a league of their own in the governance of a country and the PM, after all, is the executive head of the nation.

Second, while transferring to the CDS various entities like the three services, Territorial Army, etc, which presently are with the Defence Secretary in the Department of Defence (DoD) vide the Transaction of Business Rules, the Coast Guard has been left out. Considering that coastal security is a vital task, the Coast Guard too should have been placed under the CDS to ensure seamless security of our long coastline and huge EEZ.

Third, the task of 'procurement exclusive to defence services' has been transferred to the CDS, but without capital acquisitions. This undercuts one of the most important charge of the CDS — equipping the three services in a timely manner to meet envisaged challenges.

So, as things stand, the CDS can only do inter se acquisition prioritisation "…based on the anticipated budget". This leads to two inferences. The positive one is that it would give the CDS indirect control on how the three services would shape up to meet the anticipated challenges. The negative aspect is that the financial purse strings would remain with the Defence Secretary, who would control the acquisitions by virtue of the fact that he would still be the chief accountant of the MoD and that the DG Acquisitions would continue to be 'under his command'. In a doctrinal sense, the absence of 'ownership' of the acquisition process would continue to plague the system and, just as at present, no one entity would be accountable for the capability-building process; this is a fatal kink. Just to give one example, can blame be pinned on anyone of why the IAF lost the Beyond Visual Range edge in

air-to-air combat, seen on February 27 over Naushera this year — a fact spoken about by no less than the then Air Chief in the Military LitFest at Chandigarh recently?

If total 'ownership' of building capability (prioritisation and budget utilisation) devolves on the CDS, then he automatically comes firmly into the driver's seat in the following manner. First, planning how the services, together, are going to address various contingencies and conflicts that may arise in future; so, the major sticking point, that of each service fighting its own war, is taken care of. Second, once jointly thought-through plans are drawn up, the capabilities, and hence the acquisitions required by each service get prioritised (under tutelage of the CDS) to execute the envisaged war tasks. Third, since service chiefs would still be the executors of the war plans, the core competencies of each service would be utilised optimally, with the CDS having a bird's eye view enabling him to make the required changes in a joint manner; prioritisation and budgetary expenditure, thus, would fall in place. Sadly, as pointed out earlier, the two have been split, leaving no one entity having 'ownership' of the process.

Can all this be achieved without an overhaul of the higher defence organisation, which includes the Department of Defence, which is under the Defence Secretary? While the DMA under the CDS would have military and civilian personnel, there is no word in the notification on the inclusion of military specialists in the DoD; this goes against the basic grain of integration as the Defence Secretary would still have vital roles to perform in keeping the services fighting-fit. This would be possible only if the DoD has its own civilian cadre of defence specialists; this requirement of permanence to build specialisation applies equally to civilians who come into the DMA.

Inducting military expertise

The critical importance of specialisation in a technical service is amply visible in the Indian Railways where the Railway Board does not have a single bureaucrat and is staffed only with experts; ISRO and DRDO are also configured in a similar manner, as is the MEA (where there are only IFS officers). As author Anit Mukerjee, while discussing civil-military relations in his recent book The Absent Dialogue, puts it, "Appointment to a post does not make for instant expertise!" He adds that in the MoD, "there is Defence Wisdom Deficit", alluding to the fact that an IAS officer from any other ministry, be it agriculture or power, road transport or social welfare, arrives one fine day and starts taking decisions on matters military. This does not happen in mature democracies; the civil servants in the UK MoD are permanently in the ministry while the US has a specialised Defence Acquisition Corps in which are posted personnel trained by their Defence Acquisition University. So, inducting military expertise is an imperative in the DoD if the combination of the two principal advisers, civilian and military, is to deliver the expected results. Their major task would be to ensure that the aspect of 'capability' that the services want, and 'processes' that the MoD insists on (rightly), are seamlessly dovetailed for timely execution of plans.

Capability building requires money, a lot of it. So, it is good that that the CDS would be a member of policy-making bodies like the Defence Planning Committee and the Executive Council of the Nuclear Command Authority. Hopefully, the capability accretion requirements of the services would get their due importance in terms of financial allocations in the tussles within the government in the guns versus butter debate.

The government has taken the first important step of going ahead and announcing the setting up of the CDS. It is imperative that all involved — civilians, uniformed personnel and politicians — avoid turf wars and keep an open mind, as many changes/additions would be required to fine-tune the implementation of the concept. All must put their shoulders to the wheel to make it succeed for the nation's good.

(The writer is Additional Director General, Centre for Air Power Studies, New Delhi; views are personal)

https://www.tribuneindia.com/news/positives-negatives-let%E2%80%99s-all-make-it-work-18623

the pioneer

Mon, 30 Dec 2019

Blueprint for national security

With immediate neighbours possessing significant capabilities and militaries that are modernising rapidly, India needs to beef up its national security apparatus

By Anil Gupta

From election to election, year to year, we Indians have got used to living with hopes for the better. Every new year begins with a lot of expectations but usually ends in dismay. However, of late, there has been a change in this trend. We have a Government in place, which not only believes in flagging issues of national importance but also walks the talk by attempting a closure of issues, no matter how controversial. It doesn't want to "sleep over the problem." Another year is on the horizon and people expect changes that would not only make their lives better but take our nation to greater heights so that it can occupy its just place among the comity of nations. A secure India, both at the borders and in the hinterland, is the desire of many Indians because only a safe and secure nation can concentrate on development that is needed to make a quality difference.

India has embarked on the path of becoming a superpower. This is why it needs to tread the path of strategic alliances carefully, keeping in mind the nation's interests. We have succeeded in unifying the world to fight the menace of global terrorism but are yet to see a world that is free of it. To my mind, the fight against terrorism must continue in 2020, both at home and abroad. For us to be taken seriously worldwide, we need to establish India as a military power from a military force. We need to prepare ourselves to meet the twin threats emancipating from China and Pakistan, through capability and capacity-building. Terror threat in our immediate neighbourhood as also back home must continue to be our main focus area in the immediate future.

In order to negate Pakistan's nuclear blackmail, there is a need to regain the conventional edge over its armed forces through modernisation of our own. Development versus security is a dilemma faced by every developing nation but the ones, which have not compromised on security, have emerged stronger in the given time space. The success story of modernisation of China's People's Liberation Army (PLA) and its unparalleled economic growth is a classic example. We need to spend at least 2.5 to three per cent of our Gross Domestic Product (GDP) consecutively for a decade to modernise our armed forces.

Without a strong military, no nation can claim to be a formidable power. The existing deficiencies and future requirements to cater to newer conventional and non-conventional threats need to be beefed up. Procurement procedures need to be made efficient and accountable. We also have to be prepared to meet the challenges from the neighbourhood. Any instability in the neighbourhood will effect India as well. We need to develop capability for regional intervention as well as for regional and maritime projection. India, being an emerging power, needs to cater to multiple contingencies and, hence, have multiple options. Adequate deterrence capabilities across all spectrums — from sub-conventional to nuclear — will make us a perfect military power.

Pakistan, with its failing economy and China being cautious of its international image, will increasingly resort to hybrid warfare, which emphasises on tactical level and grey-zone conflicts and incorporates a long-term strategic dimension in international disputes. Such type of operations occasionally pass the threshold of war. Response to this type of a warfare is not purely military but collective, including political and economic. Thus, there is a need to be prepared across different spectrums and spheres to meet growing challenges. Hybrid warfare and grey-zone conflicts are usually considered to be synonymous but they are not. On the one hand, India has to ward off China's "unrestricted warfare" threat, particularly in the North-east and in our neighbourhood. On the other

hand, we face hybrid threat based on unconventional means and employment of non-state actors, particularly in our northern and western borders.

While the former closely approximates the grey-zone conflict with strategic intent, the latter resembles the hybrid warfare based on tactical and operational level acts, basically aimed at fragmenting our country. Thus, in 2020, the Government must concentrate on formulating protocols and procedures to meet the challenges posed by these twin threats.

A beginning has been made with the much-anticipated appointment of a Chief of Defence Staff (CDS). Not only the selection but even the concept of CDS is nascent and would need time to stabilise. "Purplisation" of the Indian armed forces would not be that easy. The Government needs to be complimented for taking the bold decision and setting the process in motion. The much-needed reforms in the Defence Ministry to curb the widening gulf between the bureaucrat-led Ministry and the armed forces, whose professional advice is generally overruled by generalist bureaucrats, is the next bold step the Government needs to take.

Perfect harmony and professional respect will be needed between the three service heads and the CDS for the idea of "first among the equals" to succeed. Also, a clear line will have to be drawn between the charters of CDS and the National Security Advisor (NSA). The idea to succeed would need unbridled support from the political hierarchy, which so far needs to be more inclined towards the bureaucracy.

To stake our claim as a formidable power, we have to ensure that we have enough means militarily, and otherwise, to ensure protection of our vital national interests and security objectives. There is a need to identify weaknesses and gaps in our security structure and take measures to plug them. For this, the need is to formulate a national security doctrine, which is long overdue. In the absence of a doctrine, various organs of the Government and other stakeholders are unable to prepare a coordinated response to meet threats and challenges to our national security. From the doctrine will flow the national security strategy, which will enable different stakeholders in the Government to carry out an "ends versus means" analysis and prepare the perspective plans for their respective Ministries. 2020 is the year when the much-awaited national security doctrine may see the light of the day.

Internal security situation in the country appears to be moving towards normalcy. Certain peripheral militant groups are trying to raise their ugly heads to undermine peace, tranquillity and communal harmony. Popular Front of India (PFI) is developing into a potent threat and its political wing, Social Democratic Party of India (SDPI), has a significant following in the Southern States and is spreading its wings in the Eastern States, too. Growing links between the PFI and various illegal immigrant organisations is another cause of concern. PFI also has a big hand in growing radicalisation in South India. As far as Jammu & Kashmir is concerned, Pakistan will continue to be an irritant till it is forced to give up the policy of State-sponsored terrorism. Defence Minister Rajnath Singh, while addressing the passing out parade of Gentlemen Cadets at Indian Military Academy, Dehradun, comprehensively summed up the deep State of Pakistan, "Besides following terrorism as State policy, several non-State actors have become much powerful in that country and State actors have been reduced to mere puppets."

While Pakistan would continue to foment trouble, the Over Ground Workers (OGW) network, which is deep-rooted in the State, will have to be brought under control in order to root terrorism/militancy. The entire ecosystem in Kashmir is very badly subverted. OGWs are a major part of this system but very difficult to identify and segregate. They have infiltrated every organ of the State. Most of them have a dual face. They are hardcore nationalists when in a gathering that demands so, and are die-hard sympathisers of *jihadis* when away from that environment. They are the masters of the art of "biting the hand that feeds them." The present relative calm prevailing in Kashmir cannot be taken at its face value. A crackdown on the OGWs in 2020 is mandatory for lasting peace, the ultimate aim, for which Article 370 has been abrogated.

https://www.dailypioneer.com/2019/columnists/blueprint-for-national-security.html

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India-US strategic partnership registers rapid growth in 2019

The strengthening of the strategic partnership was reflected in the India-US Joint Statement issued at the conclusion of their second 2+2 dialogue towards the end of the year. The two nations signed a key pact to facilitate transfer of defence te...

Washington: India-US strategic partnership witnessed rapid growth in 2019 with the two sides inking a crucial deal to facilitate transfer of defence technology and their leaders - President Donald Trump and Prime Minister Narendra Modi - meeting a record four times post-May elections, displaying growing ties between the world's two largest democracies.

The strengthening of the strategic partnership was reflected in the India-US Joint Statement issued at the conclusion of their second 2+2 dialogue towards the end of the year, which was definitely the key highlight of 2019.

The two countries signed a key agreement to facilitate transfer of defence technology during the second 2+2 meeting in December in Washington, which was attended by their foreign and defence ministers.

For the comfort of Trump, who scans all relationships through the lens of trade, the bilateral trade has increased and in the second half of the year figures started appearing that projected a substantial decline in bilateral trade deficit in the coming years.

Even though the two countries could not resolve their long-pending trade disputes or a minor trade deal still eludes them, this is no longer an irritation in the bilateral relationship and it is most likely that India's GSP provisions might be restored soon.

In the year gone by, India placed orders worth billions of dollars of state-of-the-art military equipment from the US, started new tri-services exercise 'Tiger Triumph', which will now be an annual affair, signed one more foundational agreement and accelerated the pace of the Defense Technology and Trade Initiative (DTTI).

The co-operation between India and the US has reached a new level when it comes to the Indo-Pacific region. The two countries are working with other like-minded partners in the Indo-Pacific to ensure that there is freedom of navigation and peace in the resource-rich region where China has been trying to spread its influence.

The US is happy that India, though reluctant initially, is now helping giving an institutional shape to Quad - an informal consultative mechanism. Japan and Australia are the other two countries of this grouping.

The US also supported India's stand on Maldives as New Delhi took the lead to ensure that a third country does not interfere in its internal affairs.

There has been an unprecedented level of cooperation between India and the US on counter-terrorism front this year.

As 40 security personnel were killed in a ghastly terrorist attack in Pulwama in February, United States was the first country which said that India has the right to self-defend itself.

Even as India was in the middle of its election season, the US went ahead, worked with its partner countries like Britain and France to ensure that China lifts its veto hold from designating Pakistan-based Jaish-e-Mohamad chief Masood Azhar as a global terrorist by the UN Security Council.

While it has expressed strong concerns over human rights issues, religious freedom, internet blackout and detention of political leaders in Kashmir, the Trump Administration has refused to put India at par with some of the non-democratic countries on these issues as was the case in the past.

The Administration says that India being a vibrant democracy with a strong civil society, free press, independent judiciary has enough institutional mechanisms to handle such issues. However, it has made it clear that its eyes are not off the lid and is concerned about some of the recent developments. Throughout the year, including during the 2+2 dialogue or the 26/11 terror attack anniversary, US asked Pakistan to take sustained and irreversible actions against terrorist networks operating from its soil.

While the historic 'Howdy, Modi' event - where Trump joined Modi in addressing a huge crowd of 50,000 Indian-Americans - in September was primarily an occasion to showcase people's power of the world's two largest democracies, months later it now appears that a section of the Democrats are having a second thought on the bipartisan support as they believe that post August 5 when India revoked special status of Jammu and Kashmir, secularism, human rights and freedom of religion in India is being challenged.

For the record, 'Howdy, Modi' event was attended by top Democratic leadership as well. But, no doubt, the proponents of such a view, led by Indian-American Congresswoman Pramila Jayapal and progressive legislatures, do not reflect the view of Democratic Party leadership led by House Speaker Nancy Pelosi, who is a die hard supporter of India-US relationship.

However, certainly in the months to come, the bitter domestic political divide is likely to widen these initial cracks in this bipartisan support that the India-US relationship has enjoyed over the last two decades, at least since the Clinton Administration and continued through the successive two administrations of presidents George Bush and Barack Obama.

But for this sour note, the India-US strategic relationship progressed at a much faster pace than in any three years of the Trump Administration.

While differences continued to exit on the way forward in Afghanistan, the White House kept New Delhi in the loop on its peace initiatives. Bitter from its past experiences, the Trump Administration did not fall into the trap or rhetoric of Pakistan.

As reflective in its statements, either in the public or before Congressional committees, the Trump Administration has shown a better understating of India's position on Kashmir post August 5.

https://economictimes.indiatimes.com/news/politics-and-nation/india-us-strategic-partnership-registers-rapid-growth-in-2019/articleshow/73016339.cms

दैनिक जागरण

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चीन के सहयोग से बना पाक का लड़ाकू विमान उड़ान को तैयार

इस्लामाबाद, प्रेट्र : पाकिस्तान ने अपने पहले स्वदेशी लड़ाकू विमान जेएफ-17 को शुक्रवार को सार्वजनिक किया। चीन के सहयोग से बना यह विमान दो सीटों वाला है। पाकिस्तानी वायुसेना प्रमुख एयर चीफ मार्शल मुजाहिद अनवर खान ने कहा, इस विमान को रिकॉर्ड पांच महीने में तैयार किया गया है। यह जल्द ही पाकिस्तानी वायुसेना में शामिल होकर उसका मुख्य लड़ाकू विमान बनेगा।

पहली खेप में आठ जेएफ-17 लड़ाकू विमान बनाए हैं। पाकिस्तान एयरोनॉटिकल कॉम्प्लेक्स (पीएसी) और चाइना नेशनल एयरो टेक्नोलॉजी इंपोर्ट एंड एक्सपोर्ट कॉर्पोरेशन (सीएटीआइसी) मिलकर इस विमान का निर्माण कर रहे हैं। पहले तैयार विमानों को सार्वजनिक करने के लिए इस्लामाबाद के निकट कामरा स्थित एयरक्राफ्ट मैन्युफैक्चरिंग फैक्ट्री में भव्य समारोह आयोजित किया गया। इसमें पाक वायुसेना प्रमुख एयर चीफ मार्शल खान, चीनी राजदूत याओ जिंग व चीन के विमानन उद्योग के कार्यकारी उपाध्यक्ष हाओ झाओपिंग शामिल हुए।

THE ECONOMIC TIMES
WWW.ECONOMICTIMES.COM

Sun, 29 Dec 2019

Pakistan rolls out first batch of dual-seat fighter jets manufactured in collaboration with China

To mark the occasion, a grand ceremony was held at the Aircraft Manufacturing Factory in Kamra near Islamabad on Friday, the Pakistan Air Force (PAF) said in a statement

Islamabad: Pakistan has rolled out the first batch of its indigenous dual-seat fighter jets, manufactured in collaboration with its all-weather ally China.

To mark the occasion, a grand ceremony was held at the Aircraft Manufacturing Factory in Kamra near Islamabad on Friday, the Pakistan Air Force (PAF) said in a statement.

Pakistan's Air Chief Marshal Mujahid Anwar Khan, Chinese Ambassador Yao Jing and Aviation Industries of China Executive Vice President Hao Zhaoping were present on the occasion.

The first batch of eight dual-seat JF-17 aircraft was manufactured by the Pakistan Aeronautical Complex (PAC) in collaboration with the China National Aero-Technology Import & Export Corporation (CATIC).

Air Chief Khan congratulated the PAC and the CATIC on completing the fighter jets in a record time of five months.

He said the serial production of the dual-seat variant was a landmark development for the JF-17 programme and a true manifestation of the everlasting Sino-Pak friendship.

Khan said the JF-17 Thunder was the backbone of the PAF.

Chinese Ambassador Yao said the JF-17 was a testimony of the friendship and mutual cooperation between China and Pakistan.

The PAC and the CATIC also signed an agreement for co-production of Chinese commercial aircraft, the statement said.

https://economictimes.indiatimes.com/news/defence/pakistan-rolls-out-first-batch-of-dual-seat-fighter-jets-manufactured-in-collaboration-with-china/articleshow/73005817.cms

THE TIMES OF INDIA

Sat, 28 Dec 2019

Russia says it has deployed first hypersonic N-capable missiles

Moscow: Russia deployed its first regiment of hypersonic nuclear-capable missiles on Friday, the defence ministry said, a move which President Vladimir Putin has boasted puts his country in a class of its own.

Defence minister Sergei Shoigu has informed Putin of the deployment, his ministry said in a statement, which did not say where the missiles were located.

The new system, called Avangard, comprises a hypersonic glide vehicle which is designed to sit atop an intercontinental ballistic missile, one of several new types of weapons touted by Putin as being ahead of their time.

Putin has said that Russia's new generation of nuclear weapons can hit almost any point in the world and evade a US-built missile shield, though some Western experts have questioned how advanced some of the weapons programmes are.

Putin said on Tuesday the Avangard system could penetrate both existing and any future missile defence systems. "Today, we have a unique situation in our new and recent history. They (other countries) are trying to catch up with us. Not a single country possesses hypersonic weapons, let alone continental-range hypersonic weapons," said Putin.

Hypersonic glide vehicles are boosted aloft on a rocket to heights of between 40 km and 100 km above the earth before detaching to glide along the upper atmosphere towards their target, say researchers.

Control surfaces on glide vehicles mean they can steer an unpredictable course and manoeuvre sharply as they approach impact. They also follow a much flatter and lower trajectory than the high, arching path of a ballistic missile.

That makes them much harder to detect early with radar, giving missile defences less time to respond, say researchers.

https://timesofindia.indiatimes.com/world/europe/russia-says-it-has-deployed-first-hypersonic-n-capable-missiles/articleshow/73002474.cms

दैनिक जागरण

Sat, 28 Dec 2019

चीन ने अपना सबसे भारी और उन्नत संचार उपग्रह छोड़ा

बीजिंग, प्रेट्र : चीन ने शुक्रवार को अपने सबसे उन्नत और सबसे भारी संचार उपग्रह छोड़ा। इस उपग्रह को लेकर उसका सबसे बड़ा रॉकेट लांग मार्च-5 अंतरिक्ष के लिए रवाना हुआ। यह रॉकेट दूर अंतरिक्ष के रहस्यों को जानने के लिए विकसित किया गया है।

शिजियान-20 नाम का उपग्रह नई संचार तकनीक का परीक्षण भी करेगा। वह शुक्रवार रात ही कक्षा में स्थापित हो गया। दक्षिणी चीन के हेनान प्रांत में स्थित वेनचांग स्पेस लांच सेंटर से छोड़ा गया शिजियान-20 आठ हजार किलोग्राम से ज्यादा वजन का है। यह चीन का सबसे भारी कृत्रिम उपग्रह है। इसका निर्माण चाइना एकेडमी ऑफ स्पेस टेक्नोलॉजी ने किया है। चीन का सबसे ताकतवर रॉकेट लांग मार्च-5 25 हजार किलोग्राम का वजन लेकर पृथ्वी की नजदीकी कक्षा तक जा सकता है, जबकि 14 हजार किलोग्राम वजन लेकर दूरस्थ कक्षा में जा सकता है। इस बड़े उपग्रह की सफल लांचिंग के बाद चीन की मंगल ग्रह को लेकर बनी योजना पर काम तेज हो जाएगा। मंगल ग्रह के लिए चीन 2020 में उपग्रह छोड़ेगा।

हेनान स्थित वेनचांग स्पेस लांच सेंटर से लांग मार्च-5 रॉकेट को उपग्रह शिजियान-20 के साथ प्रक्षेपित किया गया • रायटर

Mail Online

Sat, 28 Dec 2019

China launches a test of the 'world's most powerful rocket' as part of its planned mission to send a probe and rover to Mars in 2020

By AFP and Ryan Morrison

- ***China is one of four countries that are planning to send missions to Mars in 2020***
- ***The others are the USA, a joint Europe/Russia mission and a UAE orbiting probe***
- ***The launch is a test of 'key technologies' that will help China's space ambitions***
- ***China also plans to launch the first parts of its new space station in the next year***

China has launched one of the world's most powerful rockets in a major step towards its planned mission to send a rover to Mars in 2020.

The 'Long March 5' rocket left the Wenchang launch site on the island of Hainan on Friday carrying a Shijian 20 test satellite.

It launched at 12:45 GMT and the satellite was sent into its planned orbit after 33 minutes, according to Chinese news agency Xinhua.

The success of the Long March 5 launch gets the Chinese space programme back on track after a previous attempt in July 2017 failed mid-launch.

It was a test of 'key technologies related to future space missions', according to the China's National Space Administration.

The Asian powerhouse is one of four countries planning a mission to Mars in 2020 as July is the point when Mars and Earth are in the best position relative to each other for a landing on the Red Planet.

Other countries launching for Mars including the USA, a joint Europe/Russia mission and the first Mars mission by the United Arab Emirates.

The USA is sending the Mars 2020 rover, Europe and Russia are working together to launch the Rosalind Franklin rover and the UAE are sending an orbiter.

With China there will be three vehicles from Earth searching for ancient Martian life by 2021 when they are all expected to land.

China also hopes to launch the core module of its new manned low Earth orbit space station in 2020 from the Long March 5 rocket.

'The rocket is tasked with important missions,' Wu Yanhua, the deputy head of China's National Space Administration, told CCTV last week.

'It will be tasked with a series of key missions including launching China's first Mars probe, the Chang'e-5 lunar probe and a core module for the manned space station.'

More than a million people watched an online livestream of the launch and crowds gathered near the island launch site cheered as the rocket blasted off into the night sky, videos posted on social media showed.

'Fat Five,' the rocket's nickname, was a trending topic on the Twitter-like Weibo social media platform.

China successfully launched the first Long March 5 in November 2016, which it said at the time was the most powerful launcher it had yet developed.

The Long March 5, which is capable of carrying up to 25 tonnes, is comparable in capacity to the US-made Delta IV Heavy and Russia's Proton-M.

The latest launch is of the third version of the rocket, the second version was supposed to put the Shijian 18 experimental communications satellite into orbit but it failed on launch.

Its failure delayed plans by China to use the rocket in a mission to collect lunar samples in the second half of 2017.

Beijing has invested billions of dollars in its space programme in an effort to catch up with its rival the United States and affirm its status as a major world power.

China now spends more than Russia and Japan on its civil and military space programmes, and in 2003 became only the third nation to put a human into orbit.

In January China became the first nation to land a probe on the far side of the Moon.

The Chang'e-4 lander - named after the Moon goddess in Chinese mythology - released a rover in the Moon's South Pole-Aitken Basin shortly after New Year.

In November China completed a test of its Mars exploration lander, ahead of its first mission to the Red Planet slated for 2020.

China will also seek to build an international lunar base, possibly using 3D printing technology, in the future, Wu said in January.

China's space programme has alarmed the US, which fears that Beijing will threaten its dominance in space.

The White House announced the creation of a new military arm called the Space Force, with President Donald Trump calling space 'the world's newest warfighting domain.'

WHAT IS THE FUTURE OF CHINESE SPACE EXPLORATION?

Officials from the Chinese space agency have said the country will return to the moon by the end of 2019 with the Chang'e-5 mission.

This will collect rocks from the near side of the moon and return them to Earth for further study.

Chang'e-6 will be the first mission to explore the south pole of the moon.

Chang'e-7 will study the land surface, composition, space environment in a comprehensive mission, it was claimed, while Chang'e-8 will focus on technical surface analysis.

China is also reportedly working on building a lunar base using 3D printing technology.

Mission number eight will likely lay the groundwork for this as it strives to verify the technology earmarked for the project and if it is viable as a scientific base.

China's space agency the China National Space Administration (CNSA) also say they want to travel to mars by 2020.

https://www.dailymail.co.uk/sciencetech/article-7830373/China-launches-powerful-rocket-boost-2020-Mars-mission.html

Business Standard

Sun, 29 Dec 2019

Mars 2020 rover to seek ancient life, prepare for human missions: NASA

The rover has been constructed in a large, sterile room at the Jet Propulsion Laboratory in Pasadena, near Los Angeles, where its driving equipment was given its first successful test last week

Pasadena (US): The Mars 2020 rover, which sets off for the Red Planet next year, will not only search for traces of ancient life, but pave the way for future human missions, NASA scientists said Friday as they unveiled the vehicle.

The rover has been constructed in a large, sterile room at the Jet Propulsion Laboratory in Pasadena, near Los Angeles, where its driving equipment was given its first successful test last week.

Shown to invited journalists on Friday, it is scheduled to leave Earth in July 2020 from Florida's Cape Canaveral, becoming the fifth US rover to land on Mars seven months later in February.

"It's designed to seek the signs of life, so we're carrying a number of different instruments that will help us understand the geological and chemical context on the surface of Mars," deputy mission leader Matt Wallace told AFP.

Among the devices on board the rover are 23 cameras, two "ears" that will allow it to listen to Martian winds, and lasers used for chemical analysis.

Approximately the size of a car, the rover is equipped with six wheels like its predecessor Curiosity, allowing it to traverse rocky terrain.

Speed is not a priority for the vehicle, which only has to cover around 200 yards per Martian day -- approximately the same as a day on Earth.

Fuelled by a miniature nuclear reactor, Mars 2020 has seven-foot-long articulated arms and a drill to crack open rock samples in locations scientists identify as potentially suitable for life.

"What we're looking for is ancient microbial life -- we're talking about billions of years ago on Mars, when the planet was much more Earth-like," said Wallace.

Back then, the Red Planet had warm surface water, a thicker atmosphere and a magnetic force around it, he explained.

"And so it was much more conducive to the types of simple single cell life that evolved here on Earth at that time," Wallace said.

Once collected, the samples will be hermetically sealed in tubes by the rover.

The tubes will then be discarded on the planet's surface, where they will lie until a future mission can transport them back to Earth.

"We are hoping to move fairly quickly. We'd like to see the next mission launched in 2026, which will get to Mars and pick up the samples, put them into a rocket and propel that sample into orbit around Mars," said Wallace.

"The sample would then rendezvous with an orbiter and the orbiter would bring the sample back to the Earth." Samples should reach Earth "in the course of a decade or so," he added.

To maximize its chance of unearthing traces of ancient life, Mars 2020 will land in a long dried-up delta called Jezero.

The site, selected after years of scientific debate, is a crater that was once a 500-yard-deep lake.

It was formerly connected to a network of rivers that flowed some 3.5 to 3.9 billion years ago.

The crater measures just under 30 miles across, and experts hope it may have preserved ancient organic molecules.

The Mars 2020 mission also carries hopes for an even more ambitious target -- a human mission to Mars.

"I think of it, really, as the first human precursor mission to Mars," said Wallace.

Equipment on board "will allow us to make oxygen" that could one day be used both for humans to breathe, and to fuel the departure from Mars "for the return trip."

The ambitions come as a new space race hots up, with Beijing increasingly vying to threaten US dominance.

China on Friday launched one of the world's most powerful rockets in a major step forward for its own planned mission to Mars next year.

NASA's Mars 2020 will remain active for at least one Martian year, which is around two years on Earth.

But Martian rovers have frequently exceeded their intended lifespans -- its predecessor Curiosity landed on Mars in 2012 and is still trundling around the planet's Mount Sharp region.

https://www.business-standard.com/article/pti-stories/mars-2020-rover-to-seek-ancient-life-prepare-human-missions-119122800087_1.html