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Mon, 26 Feb, 2018

DRDO successfully test-flies RUSTOM-2 drone

The Defence Research and Development Organisation (DRDO) on Sunday successfully carried out a test flight of indigenous drone Rustom-2 at its Aeronautical Test Range in Karnataka's Chitradurga district, an official statement said.

A medium altitude, long endurance unmanned air vehicle being developed by DRDO for the three defence services, the Rustom-2, with capability to fly for 24 hours at a stretch, can conduct sustained surveillance and can also carry weapons along.

THE ASIAN AGE

Mon, 26 Feb, 2018

Arjun waging all-out war to shed weight

By Sanjib Kr Baruah

The Army said “being heavy tanks, the Arjun MBT has operational restrictions to specific sectors.

New Delhi: The state-of-the-art Arjun Main Battle Tank (MBT) Mk II is facing a challenging task in trying to shed weight from 68.6 tonne to less than 65 tonne.

“So far, by using lighter fitments and making adjustments we have been able to lose only about 1.5 tonne which is far above the Army’s requirement of less than 65 tonne tank. Redesigning and assessments are on,” said a military source familiar with the weight loss effort who did not want to be named.

The Arjun MBT Mk II is an improved version of Mk I and has been developed with 73 tank-fittable improvements of which 15 are major tank-fittable improvements as a result of which an additional tonnage was gained over the Arjun MBT Mk I. But additional weight has resulted in problems relating to agility, mobility and operational employability. That is why it is important to reduce the weight of the tank.

The weight reduction effort is now being undertaken by the DRDO and Combat Vehicles Research and Development Establishment mainly by “redesigning the hull and turret structure by using innovative material to replace the conventional structure”.

The Army had ruled out an agility and mobility test of the DRDO-made Arjun MBT Mk II that was to be pitted against the Russian-made T-90 saying that the Arjun MBT Mk II and T-90 are of different class and weight classifications and their deployment is as per assigned operational roles.

The Army said “being heavy tanks, the Arjun MBT has operational restrictions to specific sectors (like desert and semi-desert stretches in the western front)”. The Arjun MBT Mk II is transportable by rail using wagons that have specifically been made for the tank while the road transport is possible through the 70 tonne trailer being developed.

But the issue, according to a parliamentary panel report, is “the requirement of to strengthen and upgrade culverts, civil bridges etc in the strategic thrust areas at the developed and semi-developed terrains by the government of India in consultation with the Army to facilitate deployment of MBT Mk II beyond the presently envisaged desert and semi desert terrains”.

<http://www.asianage.com/india/all-india/260218/arjun-waging-all-out-war-to-shed-weight.html>

Make in India defence plans still non-starter

As the armed forces grapple with the shortage of state of the art weapon, a Defence Ministry report admits that the NDA Government's ambitious 'Make in India' programme has failed to take off and the procurement process is crippled by various issues. The internal fact-finding report was prepared by Minister of State for Defence Subhash Bhamre.

Flagging issues like lack of accountability, multiple decision-making heads, delayed execution, and no real time-monitoring, the report pointed out that out of 144 proposed deals, only to eight to ten per cent matured within specified timelines. The Defence Ministry on Monday refused to comment on the document.

The report comes at a time when the Indian Air Force (IAF) urgently needs fighter jets to bolster its depleting squadron strength and the Navy desperately requires more submarines and warships to replace its ageing fleet. The Army is facing critical shortage of ammunition besides long range artillery guns to equip itself to fight a two-front war with Pakistan and China.

Mentioning that the Defence deals go through a nine-stage process before the contract is finally inked, the report said that due to duplication of processes, delayed comments and lack of project-based approach, delays are 2.6 times to 15.4 times the deadline.

The report said the 'Make in India' project for manufacturing sophisticated weapons systems ranging from warship, submarines to fighter jets "continues to languish at the altar of procedural delays and has failed to demonstrate its true potential."

Observing that there is lack of synergy between the three Services, which is impacting critical capability requirements, the document says various departments of the Defence Ministry also "appear to be working in independent silos" driven by their interpretation of policy and procedures.

Quoting an example, it says once the proposed deal enters the Request for Proposal (RFP) stage when the competing vendors are asked to submit their bids, the average time taken to clear files is 120 weeks which is six times more than rules laid down by the Ministry in 2016.

Claiming that the armed forces "continue to view the Acquisition Wing (of the Defence Ministry) as an obstacle rather than a facilitator," it stressed the need for a "tectonic change in mindset of the Ministry officials and the need of the hour is assigning responsibility and accountability."

During the technical trials and evaluation stage when the weapon systems of the competitors are put through field tests, the report states "the average time taken is 89 weeks, which is three times more than authorised."

Similarly, the Cost Negotiation Committee (CNC) stage is delayed about 10 times more than permissible timeframe due to the Defence Ministry not able to benchmark costs with global standards. It is more so when an item is procured for the first time or involved Transfer of Technology, it says.

After going through such a long-drawn procedure, the deal can be cancelled by the Finance Ministry or the Cabinet Committee on Security (CCS), the report says adding the Finance Ministry or the CCS is not aware of the Defence Ministry's plans.

Rafale deal led to big loss for national interest: AK Antony

By CL Manoj

AK Antony initiated talks for the purchase of Rafale fighter aircraft as defence minister in the United Progressive Alliance government (2004-14).

Speaking in detail for the first time after the Rafale controversy erupted, Antony told CL Manoj in an interview about the process of selection and negotiation. Following the National Democratic Alliance government's subsequent decision to buy 36 of the Rafale jets from France, he queried the administration's "national security" argument for not revealing the per-aircraft purchase price. He also defended his actions during the Rafale talks in the wake of comments by current defence minister Nirmala Sitharaman. Edited excerpts:

You have been guarded on the broader aspects of the Rafale fighter jet deal, especially on the current government's decision to purchase 36 planes from France. What are your views?

As a former defence minister, I usually avoid commenting on defence issues concerning the government. However, given the controversy about the NDA government's decision to purchase 36 Rafale aircraft from France and, since the present government has made a habit of commenting on many decisions of the previous government, I am now compelled to speak. More so since, as the defence minister of the UPA cabinet, I had initiated the negotiations on the Rafale matter. In my opinion, the terms of the NDA government purchasing 36 Rafale aircraft have led to a big loss for our national interest and a big profit for Dassault (which makes the Rafale).

Why do you think that?

The UPA government had made four conditions while issuing the request for proposal (RFP) for the purchase of 126 Rafale fighter jets: One, India will purchase 18 aircraft from France and then Hindustan Aeronautics Ltd (HAL) will be licensed to manufacture the remaining 108 jets. Two, there will be complete transfer of technology to India.

Three, there will be 50%, instead of the usual 30%, offset obligations; and four, the agreement will have the lifecycle cost clause.

However, the present government, while deciding to purchase 36 Rafale aircraft from France, has completely given up on the first two conditions. It is a very costly omission, and as a result, our national interest has suffered a big loss because India has squandered away a golden opportunity to acquire top-class global fighter jet manufacturing technology. So, the NDA government's decision has also weakened our self-reliance in defence preparedness.

Besides, HAL has lost the opportunity to get the licence to manufacture the Rafale, something that would have provided our PSU (public sector unit) with not only the capacity to build these fighter jets for India, but also for exporting them in future. With this, ironically, this government has also abandoned what could have been a boost for the 'Make in India' theme.

Are you also alleging financial loss for India?

It is for the government to spell out the financial details of its Rafale deal. Since this government has abandoned the two key conditions — technology transfer to India and licence for HAL for production of 108 Rafale jets — the purchasing price per Rafale should have been much cheaper. Instead, we hear the purchase deal is on a much higher price per aircraft. This also leads to another very important question.

What is that?

The government must clarify whether the pending Defence Acquisition Council agreement with four conditions was scrapped before the prime minister visited France and finalised the purchase of 36 Rafale

fighter jets. If not, it amounts to a gross violation of defence procurement procedures (DPP). The government must clarify on this.

Why do you think the government has settled for purchasing just 36 Rafale fighter jets instead of the originally planned 126?

While it is for the government to explain that, I am sure a mere 36 fighter jets will not meet the requirements of the Indian Air Force (IAF), especially in view of India's two-front security threat. Let me explain. When the IAF approached the earlier government with the request for acquiring more fighter jets because of its then sanctioned strength of 42 squadrons (average 18 aircraft per squadron), most of them belonged to the MiG series, which were very old and were in for a gradual phase-out.

When the UPA-I government (2004-09) assumed office, the IAF had also cited the likely fall in its squadron strength to 33 in 2017 and the delay in the Tejas project as additional urgency for speeding up the purchase of fighter jets. So, in 2007, we issued the RFP for purchase of 126 Medium Multi-Role Combat Aircraft (MMRCA) with the conditions (cited above).

How did you zero in on the Rafale?

There were six bidders — two American companies (General Dynamics and Boeing), the Russian MiG, the Swedish Gripen, the Eurofighter Typhoon and the Rafale of Dassault. The American and Russian companies failed to qualify for the technical requirements of the IAF and, of the remaining three, Rafale emerged as L1 (lowest bid).

Defence minister Nirmala Sitharaman recently said the UPA government had not finalised the Rafale deal and that you, as the then defence minister, “took back the files” when negotiations for the Rafale during the last three years of the UPA government led to a 300% upward revision of the price quoted. Your response?

It was unethical on part of the defence minister to merely say I “took back the files” and then choose not to state the full facts, including what I had noted on the files. Since the defence minister has spoken selectively, let me state the full facts.

After our negotiations with Rafale and before moving the Cabinet Committee on Security (CCS), I had — as per the norm — approached the finance ministry for financial approval. The finance ministry said the lifecycle cost clause in the agreement was a new concept and thus not acceptable to them. Simultaneously, I also received representations from many others, including some responsible then-Opposition (BJP) leaders, objecting to the lifecycle cost clause. All this (happened) while IAF was intensifying its push for early acquisition of the fighter jets.

As our government's term was coming to an end, and as I could not have moved directly to the CCS without finance ministry clearance — had I, it would have led to a major controversy — and, as IAF was pressing for early purchase, I decided to call the files and made a clear noting to the effect that the final proposal must be sent to the CCS only after the dispute over the lifecycle cost clause is settled.

So, it was not a case of “taking back the files” but making clear notings on the file on future directions.

Why were you insisting on the lifecycle cost clause?

Because IAF was insisting on that clause. Let me ask, did the present government scrap the lifecycle cost clause while agreeing to purchase 36 Rafale planes?

There is also a controversy about an Indian private firm reportedly getting the offset contract for the Rafale deal?

The government must state who has got the offset contract in its Rafale deal and whether that company fulfils the criteria, set by the defence procurement procedures, to have a credible track record in defence production — in this case, in fighter jet production.

The government insists that revealing the purchase price per Rafale jet would compromise India's national security. As a former defence minister, do you agree with this argument?

For long, all defence purchases in India were done behind the iron curtain. The tendency of many governments in the past was to stonewall questions on defence deals by citing national security. We too followed that trend during UPA-I.

But the fact is by the time the UPA-II government (2009-14) assumed office, the transparency norms in governance had set in thanks to our landmark Right to Information (RTI) Act.

That is why during the UPA-II regime, as then defence minister, I had disclosed in Parliament the pricing details of many defence purchases, including that of the Admiral Gorshkov aircraft carrier, upgrade cost of Mirage fighters and that of the Sukhoi deal. Let me remind this government that transparency is the mantra in India now and secrecy walls are fast crumbling.

Even the ministry of defence is now under RTI ambit. Therefore, in the larger interests of transparency, the government must clear the air by placing before the people all the details, including the per-aircraft price of the 36 Rafale jets purchased from France. Let the people judge who was right and who was wrong.



Tue, 27 Feb, 2018

Army makes important changes in CR forms, grading not to be shown to officers

By Man Aman Singh Chhina

The Army HQs has justified the change made in the CR form now by saying that there has been a trend of 'inflationary' reporting in the CRs. This means that officers were being given higher grades which appeared unrealistic.

In a major policy change pertaining to the Confidential Reports (CRs) of Army officers, the Military Secretary's (MS) branch has announced that the box grading received by an officer from his immediate appraiser will not be shown to him/her henceforth. The MS Branch of the Army Headquarters has notified these changes in a policy letter issued on February 20, 2018 and addressed to all Commands of the Army. The letter, accessed by The Indian Express, states that the several changes in the CR form will come into effect from June 1, 2018.

As per the new policy the grading given to an appraisee by his appraiser, known as the Initiating officer (IO) in Army parlance, will now not be shown to him. 'The IO/FTO (First Technical Officer) box have been shifted from the 'open portion' to the 'closed portion', the letter states. It was in early 1990s that a policy change took place and the grading given to an officer in his CR was made available to him to see before he signed his CR form. The Army HQs has justified the change made in the CR form now by saying that there has been a trend of 'inflationary' reporting in the CRs. This means that officers were being given higher grades which appeared unrealistic.

The letter states, "Aspects of inflationary trend in CRs and onerous responsibilities of reporting officers in ensuring objective assessment have been reiterated from time to time. However, it has been observed that inflationary trend in CRs continues to exhibit a steady rise,". The policy letter adds that the issue came up for discussion in the Army Commander's Conference held last year and thus the changes in the CR forms were being incorporated.

Lt Gen HS Panag (ret'd), former Northern and Central Army Commander said that there has been experimentation with the 'open' versus 'closed' system in the past too but there has not been an optimum result. "We have not been able to bring down inflationary reporting with the open system because of a lack of

moral courage to tell the appraisee the truth regarding his performance. However, I doubt that a partially closed system, as it seems to have been recommended now, will also work,” he said.

Another important change which has been made in the CR form is in grading of certain personal qualities of the officers. These were known as ‘Star Qualities’ due to an Asterisk mark on them, signifying their importance. The special mark emphasising their importance has now been removed. This change will only be for officers above six years of service to the rank of Colonel.

Amendments have also been made in the chain of reporting for officers (Major to Colonel) of technical arms and services. Henceforth, if the IO /FTO and the Reviewing Officer or Higher Technical Officer (HTO) are the same then no figurative assessment will be made and only a pen picture of the assessee will be given. For officers of the rank of Brigadier and above, the box grading has been removed from the technical report in the CR forms.

In another important move amendments have been made in nthe form to achieve uniformity in recommendations for important career courses like Higher Command (HC), Higher defence Management Course (HDMC) and National Defence College (NDC). This has bene done because in internal assesments of the CRs it has been observed that a number of the reports were kept under observation due to incomplete or incorrect endorsement. This changes have also been made for the Command and Staff stream endorsement.



Tue, 27 Feb, 2018

India, US defence tech initiative meet held

A number of Joint Working Groups spanning varied projects have been established under DTTI on both sides, which have identified various projects for the Armed Forces

As part of Indo-US Bilateral Defence Cooperation, the Eighth Defence Technology and Trade Initiative (DTTI) Inter Agency Task Force Meeting was held here on Monday. The meeting was co-chaired by deputy chief of Integrated Defence Staff Vice Admiral A K Jain and Acting Director, International Cooperation, Matthew Warren.

The DTTI was initiated as an idea by former US Secretary of Defence Ashton Carter in 2012. The aim is to bring sustained leadership focus to the bilateral defence trade relationship and create opportunities for co-production and co-development of defence equipment. A number of Joint Working Groups spanning varied projects have been established under DTTI on both sides, which have identified various projects for the Armed Forces. The Working Groups meet regularly to discuss and take forward the projects.

The fact that the US has declared India as a major defence partner under the National Defence Authorisation Act in 2017 has given an impetus to the DTTI. Vice-Admiral Jain brought out that India’s defence industry was in a growing stage and looking to acquire niche technology in manufacturing defence weapons and equipment. This will also give a boost to India’s flagship ‘Make in India’ initiative.

The US co-chair, Warren, highlighted that defence cooperation between the two countries is continuing to make progress. Both sides understand the importance of DTTI in this respect and it is a good forum for mutual cooperation to take ahead the defence ties between the two sides, he said.

Tue, 27 Feb, 2018

China deploys J-20 stealth jet fighter, names India as threat

This is perhaps the most authoritative portrayal so far of Indian air power as a threat to China

By Ajai Shukla

With China's air force deploying its "latest stealth jet fighter" – the J-20 Chengdu – one of the provocations could be the Indian Air Force (IAF) deployment of its top-of-the-line Sukhoi-30MKI fighter in Assam, near the disputed Sino-India border.

The English language website "China Military Online" – an official People's Liberation Army (PLA) news outlet – quoted an expert to state on Monday that the J-20 has been urgently operationalised because of the threat posed by the US, Japan, South Korea and India.

This is perhaps the most authoritative portrayal so far of Indian air power as a threat to China. China Military Online states it is "Authorized by the Central Military Commission of the People's Republic of China (PRC) and sponsored by the Chinese People's Liberation Army (PLA) Daily.

"The J-20, which is China's first stealth fighter, made its maiden flight in 2011. It was first unveiled at China's Zhuhai Air Show in 2016 and began delivery to the PLAAF in March 2017.

Assuming it has no major flaws, this is an incredibly fast development trajectory, especially compared to the American F-35 Lightning II stealth fighter. On February 9, an official statement on the Weibo account of the PLA Air Force (PLAAF) had revealed that the J-20 had been deployed with combat units.

Meanwhile, China is developing a second stealth fighter, the FC-31, which will fly off PLA Navy aircraft carriers. Beijing also hopes to target the international market with the FC-31. The J-20 is a twin-engine, multi-role fighter that has an exceptionally long range and can fly faster than 2,000 kilometers per hour. Its radar-scattering airframe, constructed from advanced, radar-absorbing materials makes it hard to detect at long ranges. In wartime, experts assess that the PLAAF would use the J-20 to strike enemy "force multiplier" aircraft like refuelling tankers, reconnaissance aircraft and airborne command posts.

Alternatively, it could be used for "stealth strikes", slipping past enemy radars to attack high-value targets, warships or communication facilities. While the J-20 is unquestionably the PLAAF's most advanced fighter, aerospace experts also point to significant weaknesses.

The South China Morning Post, a reputed Hong Kong newspaper, has reported that China is still struggling to develop the Xian WS-15 engines (codenamed Emei) that the J-20 was built to fly with.

As a stop-gap, the J-20 is flying with the less powerful WS-10B Taihang engine, compromising its performance. Mirroring India's struggles with the Kaveri engine, Chinese scientists have failed to crack the challenge of developing "single crystal" turbine blades that can withstand the extreme temperatures in the combustion chamber of a high-performance fighter. The Post concluded that the J-20 would only enter mass production when the WS-15 is performing suitably, which could take as long as eight years.

Meanwhile, the US Air Force has begun deploying the F-35 in Japan's Kadena air base. Japan, which has a F-35 production plant in-country, has 42 F-35s on order. South Korea will get its first F-35s this year, with 40 due to be delivered by 2021. Singapore too seems likely to opt for the F-35. Experts believe this rising threat might have rushed Beijing into prematurely introducing the J-20 into service.

As this newspaper first reported (February 15, IAF looks to buy fifth-generation F-35 fighter) the IAF too has begun weighing the advantages of buying the US fifth-generation stealth fighter.

‘Space suits’ to warn of depression in astronauts

Can monitor symptoms of poor mood and give feedback

Scientists are developing ‘happy space suits’ that can monitor symptoms of depression in astronauts, and provide real time feedback to improve the atmosphere of the spacecraft as well as boost the occupants’ mood.

Depression is a major problem in space, as astronauts can be adversely affected by factors like insufficient exercise, excessive exposure to light and lack of sleep, according to researchers from Florida Polytechnic University (FPU) in the U.S.

The technology, called Smart Sensory Skin (S3), will monitor vital signs and even their tiny changes in astronauts through wireless sensors that will then send an immediate response to improve the “atmosphere”, and adjust the astronauts’ environment to fit their individual needs.

Oxygen levels

The adjustments include changes in temperature, light exposure, light colour, and oxygen levels.

“It’s vital for astronauts to be mentally healthy during missions and right now there’s no active, real-time solution to help them when they feel stressed or anxious,” said Arman Sargolzaei, professor at FPU.

The eventual product will incorporate the wireless sensors into astronaut clothing, so that physicians on Earth can also monitor the person’s pulse rate, blood pressure and joint angles.

Similar technology already exists, but it is cumbersome, often uncomfortable, and data collection is passive. This means the data must be reviewed by a physician and the user can only make appropriate actions after recommendation.

The new active technology would also be made ergonomic to reduce distractions and increase mission effectiveness.



NASA's drone-like quadcopter may explore Titan, say scientists

NASA is exploring a plan that could see a drone-like quadcopter buzz above the surface of Saturn's largest moon Titan, scientists say. The Dragonfly project would take advantage of Titan's dense, calm atmosphere to fly from site to site as it measures and analyses the massive moon's chemistry, geology, and potential for life. "There Is something very 'simple' about having a little drone flying around Titan," said Catherine Neish, professor at University of Western Ontario in Canada.

"It's clever in a way that people were not expecting and, I think, it is audacious and exciting - and realistic," said Neish, part of a team led by Elizabeth Turtle at Johns Hopkins Applied Physics Laboratory (APL) in the US. Turtle's proposal for a rotorcraft to investigate Titan was recently selected by NASA as one of two finalists for the US space agency's next New Frontiers mission, the researchers said.

The craft is modelled after drones on Earth, and would have four pairs of stacked rotors that would enable it to zip across Titan geography that has intrigued and mystified scientists for decades. Unlike conventional, slow-moving rovers on Mars, Dragonfly would be able to explore across hundreds of kilometres,

researchers said. It will scout for geologic points of interest and take valuable measurements of surface, sub-surface and atmospheric conditions, they said.

The team said Dragonfly would be about two metres long, with multiple rotors that enable good control of the vehicle and built-in mechanical redundancies. For many years, people thought to explore Titan by balloon, rover or small airplane but each has limitations that include mobility, durability, range and effective control. The atmospheric conditions of Titan - with its orange-brown haze of methane and nitrogen - obscure high-resolution views and have made the moon largely inscrutable.

The veil lifted only in part in 2005 when the Huygens probe (part of the Cassini mission) produced some images of the surface. Those were enough to tantalise researchers but not enough to show more than a glimpse of the whole. With solar power unavailable because of both Titan's distance from the sun and its dense atmosphere, Dragonfly would be plutonium-powered, using a Multi-Mission Radioisotope Thermoelectric Generator.

That is the same power source as used by the Mars Curiosity rover and the Cassini space probe. It could fly several kilometres on a single 'Titan overnight' charge and potentially cover hundreds of kilometres during a Titan day (equivalent to 16 Earth days). Dragonfly would spend less time flying than taking science measurements during its two-year mission.

Its main tasks would be sampling for organic chemistry and habitability; monitoring atmospheric and surface conditions; shooting and transmitting images of landforms; and conducting studies of the moon's seismology, researchers said.