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Thu, 21 Feb 2019

Aero India 2019: LCA Tejas gets clearance for induction into IAF, US pitches for Make in India

Eyeing an Indian order, US aerospace major Lockheed Martin on Wednesday showcased its F-21 multirole fighter that it says is configured for the IAF

India's Light Combat Aircraft (LCA) Tejas has received final operational clearance from military aviation regulator Cemilac for induction into the Indian Air Force (IAF) as a weaponised fighter jet, said an official here on Wednesday.

The Centre for Military Airworthiness and Certification (Cemilac) Chief Executive P. Jayapal handed over the "release-to-service" documents to the Chief of Air Staff Air Marshal B.S. Dhanoa at the Aero India air show here.

"It is a major milestone for LCA to get the final operational clearance. The aircraft could fly in many sorties and demonstrated the precision with which it can deliver weapons," Dhanoa told the media.



The aircraft performed air-to-ground attacks and air-to-air refuelling at IAF's Vayu Shakti air display at Pokhran in Rajasthan on February 16, the IAF chief said.

State-run Hindustan Aeronautics Ltd Chairman and Managing Director R. Madhavan said HAL has responded to the request for proposal (RFP) floated by the IAF for 83 LCA Mk-1 with weaponisation.

"The grant of final operational clearance to the aircraft is a landmark moment for aeronautic scientists, industry and businesses," state-run Defence Research Development Organisation (DRDO) Chairman G. Satheesh Reddy told the media.

Lockheed Martin offers India a new F-21 combat jet to be made locally

Eyeing an Indian order, US aerospace major Lockheed Martin on Wednesday showcased its F-21 multirole fighter that it says is configured for the IAF.

"Our F-21 addresses the IAF's requirements and integrates India into the world's fighter aircraft ecosystem," a Lockheed Martin spokesperson told IANS on the margins of the Aero India expo at the Yelahanka air base.

The spokesperson, however, clarified that India was yet to float a request for information or proposal for the new aircraft.

"The F-21 is different, inside and out. It highlights our commitment to deliver an advanced, scalable fighter for IAF," Lockheed Martin's Vice President for business and strategy development Vivek Lall said in a statement.

If Lockheed Martin gets the order, it says it will make the fighter in India with Tata Advanced Systems of the Tata Group.

<https://www.thenewsminute.com/article/aero-india-2019-lca-tejas-gets-clearance-induction-iaf-us-pitches-make-india-97075>

THE HINDU BusinessLine

Thu, 21 Feb 2019

LCA Tejas for IAF gets final operational clearance

The first day of Aero India 2019 is a significant day in the journey of Light Combat Aircraft Tejas MK I for Indian Air Force (IAF), as a formal declaration of Final Operational Clearance (FOC) of the aircraft was made by Secretary Defence R&D and Chairman DRDO Dr G Satheesh Reddy.

The day also witnessed the handing over of FOC Certificate and Release to Service Document (RSD) to the Chief of Air Staff in the presence of Defence Secretary and CMD, HAL.

FOC involves addition of key capabilities to the Initial Operational Clearance (IOC) aircraft which in main are Beyond Visual Range Missile capabilities. Air-to-Air Refuelling, Air-to-Ground FOC earmarked weapons and general flight envelope expansion.

The RSD provides the capabilities, features and technologies that FOC standard Aircraft will have on Induction into IAF. The FOC standard Aircraft drawings have already been handed over to Hindustan Aeronautics Ltd (HAL) to start production after incorporating key changes over the IOC standard Aircraft.

Initial Operational Clearance (IOC) of the aircraft took place in 2013 and IOC standard aircraft were inducted into IAF No. 45 Squadron, in July 2016. The IAF Squadron has since flown over

About 1,500 sorties successfully on the aircraft. It is a proud day for all the agencies involved in the design, development and production of the aircraft i.e., Aeronautical Development Agency (ADA), the autonomous society of DRDO as the design agency and HAL as the manufacturer. Many other DRDO laboratories such as ADE, GTRE, LRDE and CEMILAC , as well as other agencies such as BEL, CSIR, DG-AQA, and private sector agencies have contributed in the journey of LCA.

<https://www.thehindubusinessline.com/economy/lca-tejas-for-iaf-gets-final-operational-clearance/article26323650.ece>

The Tribune

Thu, 21 Feb 2019

Recce by two IAF copters

Dalhousie: In view of an avalanche advisory issued by the Snow and Avalanche Study Establishment (SASE), Manali, in Pangi and Bharmour of Chamba district in 24 hours, two helicopters of the Indian Air Force (IAF) today took off to carry out a recce of the valley.

DC Harikesh Meena said the recce was part of the recent discussions held with military officials to extend help for rescue operations during avalanche-like situation and other natural calamities,

especially in the snowbound areas of the district. The helicopters, however, could not be able to land in the Pangi valley due to bad weather conditions.

The district administration was in constant touch with officials. — OC

<https://www.tribuneindia.com/news/himachal/recce-by-two-iaf-copters/732202.html>

#SWARAJYA

Thu, 21 Feb 2019

Aero India: DRDO to unveil LCA Tejas Mk.2 model with higher range, larger weapon capacity and more sensors

Bangaluru: Defence Research and Development Organisation (DRDO) is all set to unveil a model of the 'Medium Weight Fighter' (MWF), a name given last year to the Light Combat Aircraft (LCA) Mk.2, at the 2019 Aero India show in Bengaluru, reports *Livefist*.

According to the report, the aircraft was given a new name after the Aeronautical Development Agency (ADA) (which handles the Tejas jet programme) concluded that it was a heavier jet than the baseline LCA Mk.1 and has a significantly greater capacity to carry weapons.

Furthermore, there is also increase in the range and endurance capacity of the fighter jet than its predecessor. Infrared Search and Track sensor has also been introduced in the MWF. The aircraft also features a missile approach warning system.

However, the name change has nothing to do with India's fifth generation stealth concept, known as Advanced Medium Combat Aircraft (AMCA), which is an entirely separate programme.

As per the report, the model being unveiled will likely reflect the air-frame changes that necessitated aircraft's redesignation to a medium weight/Mirage 2000 category. It will have heavier airframe with changes to incorporate the F414 turbofan engine.

<https://swarajyamag.com/insta/aero-india-drdo-to-unveil-lca-tejas-mk2-model-with-higher-range-larger-weapon-capacity-and-more-sensors>

#SWARAJYA

Thu, 21 Feb 2019

Aero India: Indigenous stealth fighter to initially use US engines

By Anantha Krishnan M.

The Advanced Medium Combat Aircraft (AMCA) project of India has gone deep into the detail design phase now. Along with the Aeronautical Development Agency (ADA), hundreds of scientists spread across at least 20 labs of Defence Research and Development Organisation are now engrossed in critical work to find solutions to a number of next-generation technologies that need to be proven.

With the project definition phase (PDP) getting over in 2017, *Onmanorama* can confirm that scientists have already walked some distance designing the AMCA, India's stealth fighter.

ADA, the designer of Light Combat Aircraft (LCA) Tejas, is spearheading the AMCA mission.

The AMCA will be propelled by a US-origin GE F414 engine with a thrust of over 90kN and this will be an interim step by the makers till a higher-thrust engine of 110kN is finalised. The F414 engine, set to power the Tejas Mk-II, will power AMCA as well, till India develops a 110kN engine, possibly in collaboration with a foreign partner.

The current plan is to fly AMCA with the F414 engine for the first six-seven years, in what the designers now term as an 'interim engine' for India's fifth-generation stealth platform. While the design phase has already been sanctioned to commence activities, the final approval for AMCA from the government (Cabinet Committee on Security) is in process.

The plan is to build four prototypes and fly the first one before 2025, which is seven years from now.

The Indian Air Force (IAF) is said to be working out the exact numbers for this future fighter, while the AMCA Directorate at ADA is ensuring a robust foundation for this big-ticket desi project.

Model to test stealth

The feasibility study for the AMCA began in 2009 with an initial funding of Rs 90 crore. Last year, about Rs 400 crore came in for the detail design phase (DDP), which is expected to be completed in the next three years. Post that, the AMCA will get on to the crucial development phase: Flight testing and eventually certification.

With India finally ejecting out of jointly making the Fifth-Generation Fighter Aircraft (FGFA) with Russia, there was a stalemate over AMCA for a while and now the flight path seems to have cleared.

"This is for the first time ever in the country we are on a stealth design and the challenges are unique here. However, an advantage is we just have to concentrate on the fifth-generation technologies like stealth since we have already mastered all the fourth-generation technologies through LCA," an official told.

A full-scale model (1:1) of AMCA is being manufactured by VEM Technologies for stealth measurements.

DRDO is also displaying a scaled model of the Advanced Medium Combat Aircraft with audio-visual effects at Aero India 2019.

The 1:1 model will be taken to the Orange facility in Hyderabad or to Defence Laboratory, Jodhpur (DLJ), for testing the stealth features. DRDO's Orange facility was opened in 2015 to test current and futuristic weapon systems under development.

The scientists need to measure stealth features on the modular model being developed by VEM Technologies. Modularity is provided, so that new stealth technologies can be immediately incorporated and validated on the model. Orange can provide radar cross section (RCS) measurements and the pylon system at the facility can lift payloads up to 35 tonnes.

"Earlier, you used to make an aircraft and then check its stealth features. Now, from design stage itself, stealth features are part of the optimisation. It was an afterthought earlier, but in a fifth-generation fighter, stealth gets priority," the official said.

Scientists are hopeful of getting this 1:1 AMCA model ready for tests by the end of this year. Further optimisation of stealth features is under way. This is being done not only by scientists in DRDO and CSIR, but also many academic institutions including IISc in Bengaluru and various IITs.

"Stealth and aerodynamics don't go hand in hand, so you have to guarantee some minimum performance and optimise for stealth," the official said.

AMCA has been designed with multi-disciplinary optimisation (MDO) engineering route with stealth as an optimising parameter. (MDO brings in a number of engineering disciplines while finding solutions to complex problems.)

Loaded with features

Detailed R&D on materials, paints and structures is being undertaken by various labs now. Study is also under way on flight control, avionics, aerodynamics, composite structure and general systems like brakes, hydraulics and fuels systems.

“We hope to have the first flight of AMCA before 2025 with all the stealth features being established by then. With reduced infrared (IR), we are working on the super-cruise abilities that give the aircraft capability to fly at supersonic speeds without the afterburner,” says the official.

Passive sensors, internal weapon bay, advanced integrated avionics, next-generation active electronically scanned array (AESA) radar, 360-degree enhanced situation awareness, integrated vehicle monitoring system (IVHM), serpentine air intake, infrared search and track (IRST), missile approach warning system (MAWS) and diverterless supersonic intake (DSI) are some of the features being claimed by Indian scientists that will make AMCA a powerful fighting machine.

Added features like suppression of enemy air defence (SEAD) and destruction of enemy air defence (DEAD) will also give more teeth to the beyond-visual range (BVR) characteristics of the AMCA.

“Parallel efforts to camouflage the aircraft to achieve visual and IR stealth will continue in the next few years,” adds the official.

As this *Onmanorama* Aero India 2019 special report jettisons into the web space, the AMCA back-room boys are initiating the full-scale engineering development (FSED) plans for AMCA.

India’s home-grown fighter programmes are on inspiring flightpath now, with the scientists gaining confidence in converting dreams into reality at a relatively faster pace. The lessons from LCA will probably act as a ready-reckoner.

<https://www.theweek.in/news/india/2019/02/20/aero-india-indigenous-stealth-fighter-engine.html>

The Tribune

Thu, 21 Feb 2019

Ordnance Factory to make 114 Dhanush

Kolkata: The Ordnance Factory Board (OFB) has received the “bulk production clearance” (BPC) from the Army and Ministry of Defence for supplying 114 number of ‘Dhanush’, the first-ever indigenous 155mm x 45 calibre artillery gun.

The weapon, according to a PIB (Defence Wing) press release issued here today, is the first long-range artillery gun to be produced in India and is a major success story of the ‘Make in India’ initiative”.

The gun is equipped with inertial navigation-based sighting system, auto-laying facility, on-board ballistic computation and an advanced day-and-night direct firing system. The self-propulsion unit makes the gun easily manoeuvrable in mountainous terrains.

‘Dhanush’ has been mechanically upgraded to fire standard NATO 155 mm ammunition and can accommodate both boll bags and the bi-modular charge system (BMCS). ‘Dhanush’ has also been electronically upgraded to improve firing accuracies and compatibility with various kinds of ammunition.

The performance of ‘Dhanush’ has been evaluated under arduous conditions in several phases. The guns have travelled extensively in towed and self-propelled mode in all terrains, including desert and high altitude areas, with each gun clocking over 1,600 km.

Such an extensive exercise was carried out by the user for the first time for any gun system under the process of induction.

'Dhanush' is the product of joint efforts by the OFB and the Army with contributions from the DRDO, DGQA, DPSUs such as Bharat Electronics Limited, PSUs such as SAIL and several private enterprises.

First Indigenous artillery gun

- The Ordnance Factory Board will make 114 first indigenous 155mmX45 calibre artillery guns
- According to officials, it is the first long-range artillery gun to be produced in India and is a major success story of the 'Make in India' initiative.

<https://www.tribuneindia.com/news/nation/ordnance-factory-to-make-114-dhanush/732084.html>

The Tribune

Thu, 21 Feb 2019

Lockheed offers new F-21 fighter jet

UK suggests collaboration on next-generation plane

By Ajay Banerjee

Bengaluru: The US aerospace giant, Lockheed Martin, announced a new fighter jet programme specifically for India's needs at the Aero-India on Wednesday.

The company says the F-21 addresses the Indian Air Force's unique requirements and integrates India into the world's largest fighter aircraft ecosystem. It has said it would produce the plane in India with Tata Advanced Systems.

On being asked how the new jet was different from the F-16, Dr Vivek Lall, vice president of strategy and business development, Lockheed Martin Aeronautics, said, "The F-21 is different, inside and out. The plane will be our response to the expression of interest invited by the Ministry of Defence for manufacturing 114 fighter jets."

The company manufactures the F-16 jet, the F-22 stealth jet and also the F-35 joint strike fighter. Lall, on being asked if the company could also offer the F-35 fighter jet, said an offer for that can be made by the US Government, but the route to F-35 can pass through the F-21.

"The new jet (F-21) highlights our commitment to delivering an advanced, scalable fighter aircraft to the IAF," the company said, adding it makes for an unprecedented Make-in-India opportunity.

Meanwhile, the UK made a new offer that would propel India into the next league. Sir Dominic Asquith, the British High Commissioner to India, said, "We want this strong relationship to continue. Future defence technologies are increasingly going to be delivered by collaborative programmes, in which India has the potential to take its place."

On being asked if the offer was to collaborate for the Tempest, a sixth generation jet, Savraj Sidhu, from the combat air acquisition team of the Ministry of Defence of the UK, said, "We are going to have exploratory talks on India's future combat requirements." He answered 'yes' when asked if India could be offered to join the Tempest programme.

The Tempest programme is being led by BAE systems. Sir Andrew Pulford, senior military adviser to the BAE, said the first flight of the plane was expected in 2023.

To be made in India

- Lockheed Martin says the F-21 fighter jet addresses the IAF's unique requirements and it will produce the plane in India with Tata Advanced Systems
- "The new jet (F-21) highlights our commitment to delivering an advanced, scalable fighter aircraft to the Air Force, the US aerospace giant said.

<https://www.tribuneindia.com/news/nation/lockheed-offers-new-f-21-fighter-jet/732095.html>

Nirmala invites investors, says local defence industry growing

Bengaluru: Defence Minister Nirmala Sitharaman today inaugurated the 12th edition of Aero India 2019 and reeled out impressive figures to show that domestic defence industry was growing and even exporting, though in small numbers.

In the backdrop of an impressive air display to mark the inaugural, the minister said, "I hope Aero India will provide a platform for greater interaction of the domestic defence industry with the foreign industry."

She said to foreign vendors, "Come join us. This is a captive market, there is robust supply chain." She listed how around 10,000 MSME and SME were making assemblies and sub-parts in the aviation and military equipment sector. More than 600 Indian companies and more than 200 foreign companies are here.

Sitharaman said, "India has established itself as a hub with proven capabilities of manufacturing and export of world-class aerospace components." Giving figures, she said during the past four years and current financial year (between 2014-15 to 2018-19), 150 contracts worth about Rs 1,27,500 crore have been signed with Indian supplier for the procurement of defence equipment.

During the same period, the government accorded acceptance of necessity to 164 proposals, worth around Rs 2,79,950 crore. She said the Ordnance factories and public sector undertakings produced goods worth Rs 58,163 crore in the last fiscal. Around 40 per cent of the production is outsourced to the private sector. She listed examples of global companies working in India and added that the defence investor cell was set up in January, 2018 and over 350 industries have been facilitated to date.



Defence Minister Nirmala Sitharaman gets a memento from the Russian team at 'AERO India 2019' in Bengaluru on Wednesday

<https://www.tribuneindia.com/news/nation/nirmala-invites-investors-says-local-defence-industry-growing/732189.html>



Rostec displays military strength at Aero India

At the ongoing Aero India 2019, Rostec State Corporation is showcasing over 200 pieces of advanced civil and military equipment at the military air base Yelahanka in Bangalore.

India is Rostec's strategic region of presence. Contracts signed last year between Russia and India, stipulate unprecedented volumes of Russian military equipment supplies and the launch of manufacturing operations at Indian enterprises.

Rosoboronexport's 2018 portfolio of Indian orders has grown to \$10 billion. "Russia and India have built up extensive expertise in bilateral industrial cooperation, and now they are delivering joint projects for the 'Make in India' programme, with the key focus on the military sector. Russia is a country that has been supporting 'Make in India' from the word go. We are bringing to Aero India 2019, more than 200 pieces of equipment for civil and military use. It may well be that some of them will eventually be manufactured in India," said Victor Kladov, Rostec's Director for International Cooperation.

Rostec continues work on a major programme to develop and promote civil-use products under its Strategy 2025, looking to enhance operational efficiency, raise the share of civil-use products in its revenues to 50 per cent and penetrate the rapidly growing global markets, including India.

<https://www.dailypioneer.com/2019/vivacity/rostec-displays-military-strength-at-aero-india.html>



Thu, 21 Feb 2019

100-jet order needed to build Rafales in India: Dassault

Interacting with reporters on the opening day of Aero India 2019, Dassault Aviation CEO Eric Trappier said the current order for 36 planes was not enough for the plane maker to set up a production line or manufacture Rafale parts in India

By Rahul Singh

Bengaluru: The US aerospace giant, Lockheed Martin, announced a new fighter jet programme specifically for India's needs at the Aero-India on Wednesday.

French aircraft maker Dassault Aviation on Wednesday said it would be in a position to set up a production line for Rafale jets in the country only if India placed an order for at least 100 fighters. Interacting with reporters on the opening day of Aero India 2019, Dassault Aviation CEO Eric Trappier said the current order for 36 planes was not enough for the plane maker to set up a production line or manufacture Rafale parts in India.

"An order for 100 jets is required for setting up a production line. That's the business plan," he said. Dassault Reliance Aerospace Ltd (DRAL) has built cockpit sections and fuel tanks of Falcon 2000 business jets at Nagpur but the company has no plans to manufacture Rafale parts if India caps the order at 36. DRAL, Dassault's joint venture (JV) with Anil Ambani's Reliance Group, plans to assemble Falcon 2000 business jets at its Nagpur facility by early 2022 for international customers.

"DRAL has started with Falcons. To give work to a company, we need to have a business plan; 36 Rafales are not good enough for transfer of technology," he said. The first locally built cockpit section of the Falcon 2000 business jet was displayed at the air show.

Air Vice-Marshal Manmohan Bahadur (ret'd), additional director general, Centre for Air Power Studies, said it did not make economic sense for original equipment manufacturers (OEMs) to set up full facility for manufacturing if the order is small. "The OEMs will not get returns on investment. Hence, there has to be a break-even order," Bahadur added.

DRAL is assembling components for the Falcons and will eventually roll out the jets from a 150,000 square-foot production line as part of an offset commitment under the Rafale deal that requires Dassault to source components worth 50% of the contract value locally.

Asked why Dassault chose the Reliance Group that has no experience, Trappier said, "I have the experience and I am transferring the technical knowhow." Asked if the controversy swirling around the ₹59,000-crore jet deal could dent the company's chances of winning more orders, Trappier said the Rafale is not a scandal and Dassault could deliver more planes if the Indian government wanted. He said the company was also pursuing an Indian project to build 114 fighter jets locally.

"You always have to look to the future. We have been here for the last 60 years and plan to be in India for the next 60 years," he said. On the Comptroller and Auditor General report that held that the deal for 36 Rafale jets was 2.86% cheaper than a previous one for 126 jets, Trappier said that according to his evaluation, the new deal was 9% cheaper. That was the same claim made by the Indian government.

"We gave our pricing to the French government, which passed it on to the Indian government," he said. He said the first Indian Rafale would be delivered in September 2019 and the remaining 35 over the next three years at the rate of one plane per month. The National Democratic Alliance government's decision to enter into a government-to-government deal with France to buy 36 Rafale warplanes was announced in April 2015 with the deal signed a little over a year later.

In the run-up to the 2019 elections, the Congress has repeatedly attacked the government over the issue, accusing it of awarding the deal for 36 Rafale fighters to Dassault (at a higher price, it claimed) so as to benefit Anil Ambani's Reliance Group. The government, Anil Ambani's company and Dassault have rubbished the allegations.

Congress spokesperson Priyanka Chaturvedi said: "This vindicates the Congress claim that the manufacturing of Rafale was deliberately taken away from HAL to benefit some private businessman in the form of offset contracts. Now even if manufacturing is brought into India, the same businessman would stand to gain at the expense of HAL..."

<https://www.hindustantimes.com/india-news/100-jet-order-needed-to-build-rafales-in-india-dassault/story-YeWZdfMEE10zH30r06JweL.html>



Thu, 21 Feb 2019

'Flying is risky, but we are trained and resilient': IAF's Sarang team aerobats to TNM

As air displays at AeroIndia 2019 paid tribute to Wing Commander Sahil Gandhi, the Sarang Helicopter Team spoke to TNM about their journey and the challenges they face on the job

By Theja Ram

Aero India 2019 kicked off on Wednesday with three jets -- Jaguar, Sukhoi-30 Mki and Tejas -- paying tribute to Wing Commander Sahil Gandhi, who lost his life during a practise sortie ahead of the show.

Sahil Gandhi was a part of the 12-member Surya Kiran Aerobatic Team, known for flying its Hawks in close formations. The team, however, did not perform on Wednesday. But several displays paid tribute to the deceased wing commander, including the Sarang Helicopter Display Team.

“Flying is a risky business and at times such instances happen. We are all trained and emotionally resilient to be able to move on and cope with it. Life goes on, we cannot stop and there will be lessons drawn on how to go about things when such instances occur. That is how it is,” says Wing Commander Girish Komar, who has been with the team for eight years.

TNM spoke to a few members of the Sarang Helicopter Display Team about their journey and the challenges they face on the job:

Tell us about your journey with the Sarang display team.

Wing Commander Girish Komar: I have been with Sarang with eight-and-a-half years now. I had a tenure earlier with four years prior to this and this is my second innings. It was very exciting when I was inducted into the team. I was way too young then and way too junior and just had over 5 years’ experience in flying after being commissioned. It was a matter of pride for me to have been selected because all the pilots are selected through a small selection process after helicopter pilots volunteer to be a part of it. Thereafter they are selected for the team. It was a matter of pride for me to be selected at such a young age. The selection process is based on basic flying skills and the close formation flying skills. It is also about whether you are a team player and how well you gel and how professionally sound you are. All those aspects are looked into.



Squadron Leader Sneha: My brother is in the armed forces and when I used to see him in the uniform, I wanted to be a part of it too. I love flying and I am not afraid. It is thrilling and my love for flying drove me to volunteer for the Sarang team. It is every helicopter pilot’s dream.

At any given point, do any of you feel scared?

Squadron Leader Janpriya: No, we don't ever feel scared because we go through an established method of training and we learn how to fly during this process. Yes, there is a little apprehension when you fly for the first time but it's more thrilling than scary. Currently, we have enough experience to fly and just feel the adrenaline. Initially, there was a lot of adrenaline, but now it’s not so much. I have gotten used to it.

Squadron Leader Sneha: You get rid of those at training level. When a person becomes qualified, the person is able to handle all contingencies and become independent. It is a part of training. Every year we have two to three new members who keep rotating. Three years ago, before that I was flying Chetak Cheethas. Second Aero India. It is very thrilling. It is a lot more exciting in the cockpit, even more than it is when watching a display.

What are the challenges you face in aerobatic formations?

Wing Commander Girish Komar: There are a lot of challenges. For aerobatic formations you need to know every single member of your team thoroughly and the one who is flying next to you extremely well. Everything is done in coordination and one small error by anyone is not acceptable. Failure is not an option. We have thorough briefings and the training is pretty rigid and there is no room for doubt when we fly.

How much practice goes into pulling off a stunning display?

Wing Commander Girish Komar: There is a syllabus for each person and each person has to go through that and gradually, with increasing level of difficulty he or she is introduced to a sketch and is also introduced to a display campaign. That's when we are introduced to flying as an independent candidate. Everyone is with varied in experience. This is in terms of flying hours. The syllabus will take about 25 to 30 hours of flying time to attain a level of perfection and that after attaining a certain qualification. It contains a good amount of flying to reach that level.

What are the risk factors involved in close formations?

Wing Commander Girish Komar: Flying is a risky business. Birds fly but for a human being to fly it is not natural and we are doing something unnatural and there are various safety measures attached with our aircraft which are out in place to ensure our safety. Our task is to control the aircraft at such a close proximity, which is a challenge.

What goes into planning an aerobatic display?

Wing Commander Girish Komar: We have to plan the design, check the safety aspects, practise it and we try it out with a single aircraft and then move on to three. We always have to practise our moves before we introduce it. In AeroIndia, we had never performed the heart manoeuvre before but we had in other air displays so we decided to add that this time. There is a lot of maintenance which these aircraft require and we have about 35 technicians to just handle the four Sarang choppers. Each aircraft will require servicing based on the number of flying hours and so on.

What are the challenges you face during rescue missions?

Squadron Leader Sneha: You need to have confidence and faith in your team mates. Rescue missions are the thing for helicopter pilots and that is our basic job. Rescue people, provide relief or reach wherever we are supposed to on time. We have been trained to do it and it is not difficult. During Kerala floods, the weather was detrimental and the number of people stranded and the window of opportunity available was in a restrictive place.

What was the most difficult rescue mission?

Wing Commander Girish Komar: It was the Navalgund flash flood in 2009. There was a village where we were supposed to rescue a few daily wage workers and their children. They were stuck in between water and thorny bushes. There were infants. We could not make a landing there because of heavy flowing water and winching was extremely difficult because of the thorny bushes. Kerala floods come close. The coconut and palm trees were taller than the homes and it was very difficult to ascertain where the houses were and winching was very difficult too. But we did our best and rescued as many people as we could.

<https://www.thenewsminute.com/article/flying-risky-we-are-trained-and-resilient-iafs-sarang-team-aerobats-tnm-97076>



Thu, 21 Feb 2019

‘Missing man’ formation marks tribute to IAF pilot Sahil Gandhi

A Rafale aircraft of the French air force also made a low pass during the flying display as a mark of respect to Gandhi, who hailed from Haryana’s Hisar. A radio call given by the French pilot announcing this was broadcast over the PA system on the ground

By Rahul Singh

Bengaluru: The Indian Air Force (IAF) on Wednesday conducted a memorial fly-past at the Yelahanka air base for Wing Commander Sahil Gandhi, a day after the fighter pilot was killed in a mid-air collision between two British-origin Hawk advanced jet trainers while practising aerobatic manoeuvres for the five-day Aero India-2019.

Three IAF fighter jets — a Sukhoi-30 fighter flanked by a Jaguar and a Tejas light combat aircraft — flew the time-honoured “missing man” formation to honour Gandhi at the inaugural fly-past of Asia’s biggest air show.

“The formation pays tribute to the fallen pilot. If he was alive, he would have been flying too in the finger four formation,” said former IAF chief Air Chief Marshal Fali Major.

Gandhi, 37, was part of the IAF’s renowned Surya Kiran Aerobatic Team (SKAT), which consists of the country’s finest pilots trained to perform complex stunts. Two other pilots injured in the twin Hawk crash - Wing Commander VT Shelke and Squadron Leader TJ Singh - are recuperating in an IAF hospital.

A Rafale aircraft of the French air force also made a low pass during the flying display as a mark of respect to Gandhi, who hailed from Haryana’s Hisar. A radio call given by the French pilot announcing this was broadcast over the PA system on the ground. Captain Nativel Babouc, who flew the Rafale in a low pass to honour Gandhi, said, “It was my way to pay homage to the fallen pilot. We fighter pilots are one big family no matter which country we come from.”

IAF chief Air Chief Marshal BS Dhanoa said it was too early to say what went wrong and only an investigation would reveal the cause of the accident. The jets were in a mirror manoeuvre – one flying inverted above the other – seconds before the collision that has become the major talking point at the 12th edition of the air show. While SKAT is not taking part in the air show any longer because IAF wants to pinpoint the reasons for the accident, the display team’s Hawks were seen parked outside an apron near the main runway of the air base.

Defence minister Nirmala Sitharaman declared the air show open, asserting that it intended to put India on the global map as “a runway to a billion opportunities”.

The IAF’s Sarang helicopter display team performed a string of breathtaking manoeuvres amid cheers and applause from the spectators, including ministers from foreign countries, and top military officials including the three service chiefs.

Another highlight of the biennial show was a fly-by performed by a B-52 Stratofortress bomber that came from the Andersen Air Force Base in Guam.

Of the seven fighter jets competing for an Indian programme to build 114 planes locally under the strategic partnership (SP) model, only Rafales, F-18s and F-16s were part of the flying display.

<https://www.hindustantimes.com/india-news/missing-man-formation-marks-tribute-to-iaf-pilot-sahil-gandhi/story-ksQOEWb0YTawEOK4cOHg5N.html>