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Aerospace sector: ready for take off with Saras?

India's first indigenously built short-haul civilian aircraft Saras is ready to make its maiden test flight. The 14-seater light aircraft successfully completed low-speed and high-speed taxi trials near Bengaluru last week, according to top sources at the National Aeronautical Laboratory (NAL). Saras can be used in a variety of roles such as air ambulance, maritime patrolling and border surveillance operations. The development of the twin-turboprop engine aircraft has been so plagued by problems - its second prototype crashed in 2009, killing the three-man Indian Air Force (IAF) test crew - that the project had been all but written off. And for years, NAL was silent about its intention to give the aircraft a new lease of life. But the engineers and scientists who spent years to bring Saras off the drawing board never really gave up and worked quietly behind the scenes to resurrect the aircraft.

According to NAL Director Jitendra Jadhav, the investigation into the 2009 accident had cleared NAL, a Council for Scientific and Industrial Research laboratory, of any design deficiencies and, instead, blamed "procedural deficiencies" for the crash. He said NAL had made "more than 10 modifications since the accident, and will evaluate the performance of the plane's systems during its test flights." With an endurance of five hours and service ceiling of 10 kilometres, the aircraft can cover more than 1,600 km at a maximum speed of 425 kmph. When Saras finally takes to the skies, it will carry with it the hopes of the country's aviation industry - for at stake is the very revival of India's national civil aircraft development (NCAD) programme.

Started in 1996, the NCAD project, too, seemed jinxed from the word go, with its Russian designers pulling out of the effort. The pitch was further queered when the US slapped sanctions on India in the wake of the 1998 nuclear tests. The project never recovered from these twin blows and was virtually shelved, leaving India's aviation industry with no major aircraft development programme to speak of, never mind the licence production of several aircraft types in the country under contracts with foreign companies, where no transfer of technology (ToT) was involved.

The Hindustan Aeronautics Limited (HAL) manufactured planes like the HS 748 and the Dornier 228 under licence. But in the absence of any ToT worth its name, this merely meant the transfer of production lines by the foreign firms involved. In any case, it didn't help the domestic industry that HAL was more focused on the manufacture of military aircraft and had little time for its domestic civil aviation obligations. The Indian Navy (IN), for instance, has placed an order with HAL for a dozen Do-228 aircraft maritime surveillance and patrol aircraft, while the IAF has ordered 14 Do-228 aircraft, spare engines and a simulator from the state-run company. Add to this the glaring absence of private participation in India's limited civilian aircraft manufacturing sector and it is easy to see why the country has yet to take any major strides in this domain.

The completion of flight trials and certification of Saras and activation of its production lines alone will not change this inertia in the system. But it

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will infuse new energy into India's civil/military aircraft manufacturing sector and prompt it to get off this 'hamster wheel' of always depending on licence production. Hopefully, government agencies like HAL, NAL, the DRDO and the Aeronautical Development Agency (ADA) will show some serious resource and research synergies so that a new roadmap could be chalked out. Only then would projects be realised within minimum, if realistic, time frames, instead of sinking under the weight of too many bells and whistles.

Private participation

Experts unanimously suggest a public-private partnership for these agencies to refresh their R&D capabilities and realise new technologies that would translate into the production of new aircraft. On its part, the government should provide technology development funding so that these agencies could partner with private entities to augment manufacturing. Since investment from abroad is crucial for the growth of the domestic industry, it is imperative to provide investors with the best possible business environment, including access to skilled manpower, favourable offset policies and relaxed tax norms.

Opening the civil aerospace sector door wider to private players is certainly a game-changing strategy, as Reliance Defence's JV with the Ukraine-based state corporation Antonov to build 80-seater aircraft in India with ToT proves. The manufacturing facility would be located at Reliance Aerospace Park at Mihan in Nagpur.

Meant for military, para-military and commercial use, the aircraft would initially be assembled from knocked-down kits, with completely indigenous production expected by 2033. The joint venture also envisages a tie-up with HAL to manufacture low-cost passenger aircraft for connecting hundreds of small cities in the country as envisaged by the Regional Connectivity Scheme (RCS) announced last year.

The NAL, too, has completed design and feasibility studies on a Regional Transport Aircraft (RTA), which can carry more than 80 passengers. The agency is now reportedly in talks with some private entities to fund the project. The airplane's short take-off capability would be ideal for operating from smaller airports. To facilitate this, the government is expected to give the green light for rebuilding around 350 unused airstrips across the country. Thanks to the top-notch Maintenance, Repair and Overhaul (MRO) facilities for civil and military aircraft in the country, India is an acknowledged fount of engineering and design services. The new 'Make in India' initiative provides the country an excellent opportunity to build on this by sprucing up its aerospace manufacturing capabilities. And to finally shrug off the dubious distinction of being the only country that can make and fire rockets for inter-planetary missions, but still cannot develop, build and fly its own aircraft.