

More slip-ups than achievements for HAL

The stated vision of HAL (Hindustan Aeronautics Limited) is to become a significant global player in the aerospace industry. Read the vision statement a second time and you would realise that something important is missing.

■ by (Rtd.) Wg Cdr DP Sabharwal

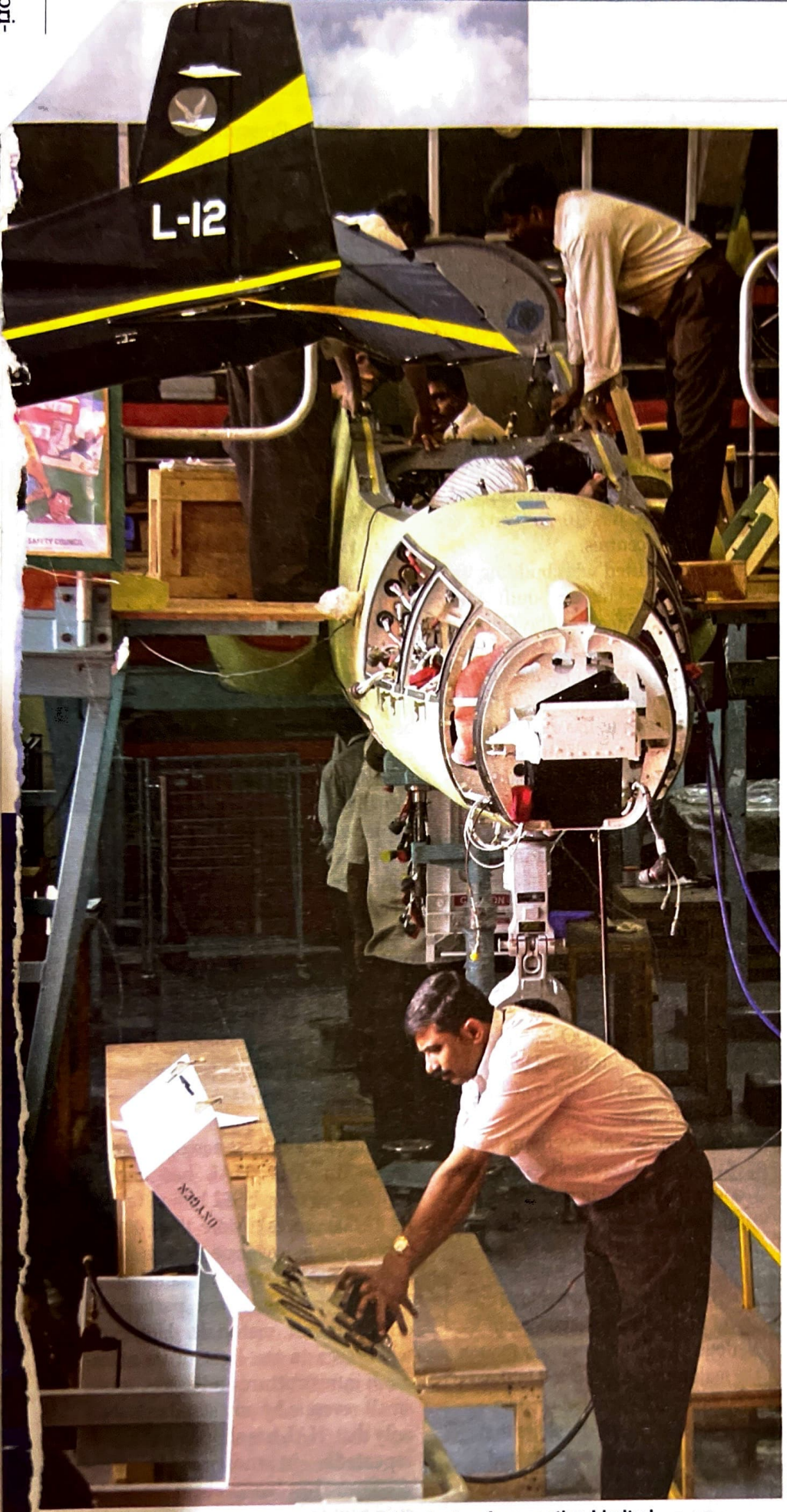
'Imported robotic machine installed to drill holes to scale up quality and speed' reads the news-item published in one of the leading national dailies on 11 December under the heading *'Team LCA gears up for increased orders.'* This machine can drill a hole on the wing skin in just over a minute as compared to about 30 minutes when the drilling is done manually. However, even this machine cannot do the complete job. Out of around 8000 holes that need to be drilled, the machine can manage just 66% while the remaining would have to be done manually. However, that would change and we will soon have more efficiency' the report quotes HAL division General Manager. Such a state of affairs in an aircraft factory that is celebrating its Platinum Jubilee this year speaks of itself.

No wonder, India had to import 'Basic Trainer Aircraft' for the Indian Air Force from Switzerland, a small country with an area of just 41,285 sq km (less than that of Punjab which is 50,362 sq km) and a population of just 82 lakh, almost half of Delhi which stands at 1.68 crore.

The hurt becomes even more intense and deeper in the light of the fact that the core-competency of HAL had been in the area of trainer aircraft. As per the aviation experts, it was indeed a day of shame for the country in general and HAL in particular when HAL failed to meet the Indian Air Force requirement for the basic trainer, and the contract had to be signed with Switzerland.

History

Hindustan Aeronautics Limited (HAL) is an aerospace company that exists to meet Indian defence forces requirements. It is one of the 17 Navaratna companies of India. The Navaratna (talisman composed of nine precious gems) status to Central Public Sector Enterprises was first given in 1997. A government company qualifies for this status based on six parameters which include net profit, net worth, total manpower cost, total cost of production, cost of services and profit before depreciation, interest and taxes. However, in



Hawk production at Hindustan Aeronautics Limited.

Tejas

It is another sad story of missed targets and both cost and time over-runs in a big way. Light Combat Aircraft programme began in the 1980s to replace Indian Air Force's ageing MIG-21 fighters. The state-of-the-art LCA aircraft was designed by Aeronautical Development Agency (ADA) and was to be produced by HAL. There was a requirement of 200 single-seater fighters for the Indian Air Force and an additional 40 aircraft for the Indian Navy to replace its Harriers, and Sea Harriers.

The first flight of LCA took place in January 2001. However, it was only after an agonising long delay of 10 years that the aircraft was cleared in January 2011 and that too for restricted use by the Indian Air Force pilots. It received the second of three levels of operational clearance after almost another three years in December 2013. It was only in January 2015, that the first Tejas LCA was officially inducted into the IAF, with final operational clearance (FOC) yet to be realised by late 2015, and is yet to happen. The first Tejas squadron is expected to be operational only during 2017-2018. Where other manufacturing countries take months to get various fly-worthy clearances and certificates, it is taking HAL years. And going by the report of Comptroller and Auditor General (CAG) of India released in May 2015, the aircraft does not meet specified requirements even in many of the primary areas: it is reported to have increased weight, reduced speed and reduced internal fuel capacity. The shortcomings in few of the other aspects are lack of electronic warfare capabilities, radar warning receiver, countermeasure dispensing system and non-compliance of fuel system protection. Most of these issues are expected to be rectified in the future Mark II version. When that would happen is anyone's guess.

2010, the government established an even higher 'Maharatna' category, which is awarded to a company that generates an average annual net profit of over Rs 2,500 crore for three consecutive years. As on 30 September 2015, there are 7 Maharatna companies. HAL is not one amongst them, though it is much older than all these seven Maharatna companies.

The growth of the Hindustan Aeronautics Limited is synonymous with the growth of aeronautical industry in the country over the past

75 years. The beginning of present-day HAL was made on 23 December 1940 when 'Hindustan Aircraft Company' was incorporated under the Mysore Companies Act as a private limited company as a result of the initiatives and vision of Walchand Hirachand, who wrote to the then Rulers of Baroda, Gwalior and Bhavanagar for encouragement and help but without any success. His efforts, however, bore fruits when the proposal was encouraged and supported by the Young Jayachamarajendra Wadiyar, Maharaja of Mysore State who agreed to invest 25 lakhs and gave initial 700 acres of land free of cost.

The company started with an authorised sum of Rs 4 crores with the aim of manufacturing aircrafts in India. In March 1941, the Government of India became one of the shareholders in the Company holding one-third of its paid-up capital and subsequently took over its management in 1942 with the escalation of World War-II. Then, in collaboration with the Inter Continental Aircraft Company of USA, it commenced its business of manufacturing of Harlow Trainer. Curtiss Hawk Fighter and Vultee Bomber Aircraft.

After the war was over, the company was placed under the administrative control of Ministry of Industry & Supply. As India gained independence in 1947, the management of the company passed over to the Government of India, and in January 1951, it was placed under the Administrative control of Ministry of Defence.

Hindustan Aeronautics Limited got its present name on 1 October 1964 when the parent company joined the consortium formed by the Indian Air Force Aircraft Manufacturing Depot at Kanpur, then manufacturing Avro aircraft (HS-748) under licence and the group that was set up to manufacture MiG-21 under licence at the new factories planned in Koraput and Nasik.

Positive side

Presently HAL has a total of 21 production divisions in various parts of the country though major chunk is located in the aeronautical capital of India. Bengaluru has nine divisions that include aircraft, engines and overhaul divisions.

There are four divisions under MiG complex (two each at Nasik and Koraput), four accessories divisions (Lucknow, Kanpur, Korwa and Hyderabad) and four helicopter divisions (Bengaluru and Barrackpore). In addition, it has 10 Research & Development centres.

HAL is credited with building the first military aircraft in South Asia. Under the guidance of the German engineer Kurt Tank, HAL designed and produced the first fighter aircraft HF-24 christened Marut. Currently, HAL is involved in the design, fabrication and assembly of almost everything connected with aviation, namely aircraft, helicopters, jet engines, accessories and spare parts. The complete work can be divided into three major areas.

- Production of various aircraft, helicopters and engines, both indigenous and under license such as SU-30, Hawk-advanced jet trainer, Light Combat Aircraft (LCA), Dornier DO-228 aircraft, Advanced Light Helicopter (ALH-Dhruv) and Cheetah Helicopters.
- Maintenance and overhaul of aircraft, helicopters and engines to cover the life cycle requirement of all the old and few of the new products. Presently, 13 types of aircraft/helicopters and 17 types of engines are being overhauled. In addition, facilities exist for repair/overhaul of various accessories and avionics fitted on aircraft to Russian, Western and Indigenous designs.
- Collaboration with several international and domestic aerospace agencies. HAL has obtained several multi-million dollar contracts from leading international aerospace firms such as Airbus, Boeing and Honeywell to manufacture aircraft spare parts and engines.

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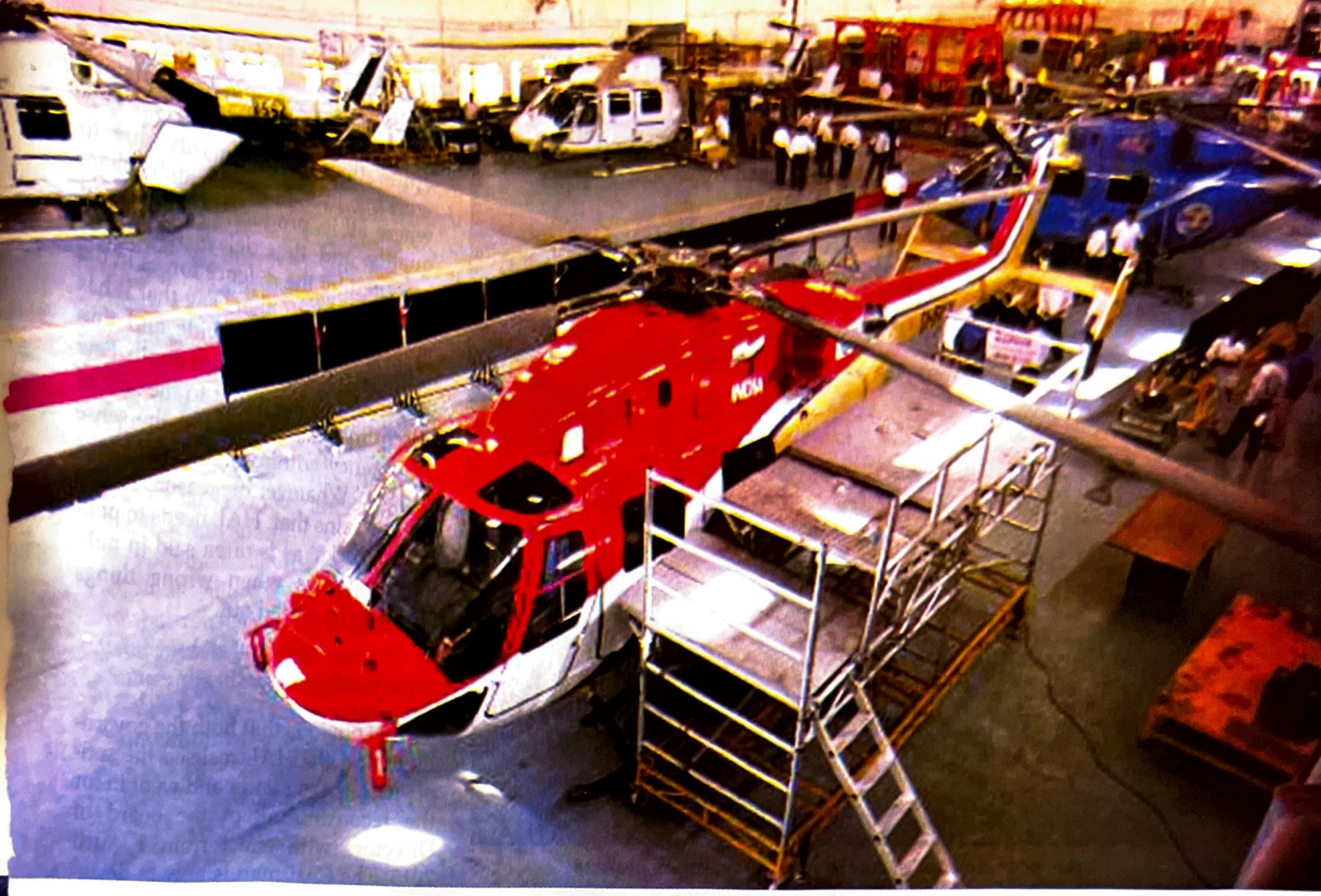
Although HAL has not been actively and effectively used for developing newer models of fighter jets, except for the HF-24 mentioned earlier, the company has played a crucial role in modernisation of the Indian Air Force. Almost all aircraft inductions over the last 50 years have been handled by HAL, primarily in the role of assembling the aircraft that arrived from foreign countries in the knocked-down condition.

Flip side

One of the largest aerospace companies in Asia, HAL has annual turnover of over US$2 billion (about Rs 12,000 crores). More than 40 per cent of this revenue comes from international deals to manufacture aircraft engines, spare parts, and other aircraft materials. However, when seen in the light of its mammoth infrastructure and assets, it is a small revenue by any standards. Not only that, HAL has slipped and failed repeatedly in most of its programmes. Just two of them would be sufficient to highlight this aspect.



The workshop of Hindustan Aeronautics Limited.

Trainer aircraft

As mentioned in the beginning, India had to import 'Pilatus PC-7' basic trainer aircraft from Switzerland to enable the Indian Air Force to continue training its *ab-initio* pilots. The deal for 75 aircraft cost the exchequer Rs 4,000 crore. The entire delivery was completed in a record 42 months period during which the aircraft fleet has flown more than 40,000 hours enabling more than 80,000 sorties for the trainee pilots. Without this aircraft, the Indian Air Force pilot strength would have been adversely affected, thus seriously hampering war preparedness.

How such a serious situation was allowed to develop by HAL is beyond the scope of this article. However, it would be pertinent to go back into history. Just after Independence, it was decided in October 1948 to go for a primary trainer for pilot training for both the Indian Air Force and the civilian flying clubs. The policy remained in force for many decades and HAL produced the following trainer aircrafts.

- The first trainer aircraft development programme HAL took was that of 'Hindustan Trainer No 2' or 'HT-2' totally designed, developed and manufactured in India by Indians and for Indians. It took less than four years for the aircraft to move from the drawing boards to become the elementary trainer aircraft for the Indian Air Force replacing Tiger moth. As a shoot-out of this aircraft, HAL designed and built Pushpak for the flying clubs and then Krishak for the Indian Army's air observation post (AOP) role.
- HPT-32 Deepak was the next primary trainer manufactured by HAL. It had its first flight in January 1977 and served the Indian Air Force for almost three decades as the basic trainer aircraft subsequent to HT-2. The intended replacement of Deepak aircraft designated as HTT-40 never materialised. As per a press release in September 2012, the Indian Air Force indicated its rejection of HTT-40 for two reasons. Firstly it was nowhere on the horizon to be inducted and secondly the aircraft cost was double that of the Pilatus PC-7, a proven aircraft already in service worldwide. Hence the induction of Pilatus aircraft from Switzerland.
- HJT-16 Kiran has been the intermediate jet trainer designed and manufactured by HAL used by the Indian Air Force for second stage of training of pilots after they have completed the basic training on HPT-32. First version Mk I was inducted in 1968 whereas the improved version Mk II



A former secretary, Defence Production reviewing projects of Hindustan Aeronautics Limited.

was inducted in the Air Force in 1985. It was to be replaced by HJT-36 Sitara. However, 13 years after the first prototype took to the skies, the intermediate jet trainer Sitara project has gone into a tail-spin and has failed to meet the performance and safety standards and is indefinitely on hold. There are no signs of this aircraft entering the service in the near future.

The story of replacement of basic trainer aircraft Deepak by Pilatus was once again repeated when HAL failed to produce advanced jet trainer to replace ageing Kiran aircraft. The British made Hawk Mk 132 (first version flew almost 40 years back in 1976) were formally inducted in to the Indian Air Force in February 2008. The seriousness of the problem and the unending wait for the HAL designed and produced advanced jet trainer that never materialised, can be gauged from the fact that it was probably the most protracted procurements in India's history, two decades having elapsed between the initial interest shown in the Hawk aircraft procurement and the final contract signing in 2004. The IAF received 24 aircrafts direct from the manufacturers while a further 42 Hawks were assembled by HAL under licence. Another aspect that does not speak well for aviation giant HAL is that the maintenance of the Hawk fleet over the next 30 years would be undertaken not by it but by General Electric Aviation of UK.

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Experts have different opinions for such a dismal state of HAL. Few opine that it is primarily due to working in a protected atmosphere where all its produce, irrespective of quality and time-delays had to be accepted by the defence forces in the years gone by. Others say that it has spread its wing too wide and thin without the much needed depth. Few old-time insiders point to the lack of discipline, dedication and the sense of urgency within the file and ranks of HAL. Whatever the reasons be, the fact remains that 'HAL needs to pull-up its socks' as is often said in military parlance when wrong things needs to be sorted out.

Reshuffle

It is obvious that both the government and the HAL realised the seriousness of the matter and went in for the reconstitution of the board of Directors with effect from 1 April 2015. The Chairman is now re-designated as Chairman & Managing Director (CMD). The revised structure consists of a total of 14 directors; five whole time directors that include CMD, two government nominee and seven independent directors. It is hoped that the sorry state of affairs would take a turn for the better.

The stated vision of HAL is 'to become a significant global player in the aerospace industry'. Read the vision statement a second time and you would realise that something important is missing. It would have been in order if the time-frame to 'become a significant global player' had been specified. It is worth mentioning that many countries much smaller than ours and with much lesser resources have reached as well as breached the sky as far as producing and exporting aircraft is concerned. It is high time the monolith HAL picks up speed and delivers the projects on the drawing-boards and on the shop-floors within the mentioned time-frames and budgetary allocations. ■