

HAL has already taken what it believes is the first step towards civil aircraft co-production. It already produces the HS-748 and the Dornier 228 turbo prop aircraft under licence, and it is currently subcontracting the manufacture of tailplane assemblies for the BAe ATP aircraft, forward passenger doors for the A-320, landing gears for the Dornier 228, as well as a wide spectrum of piece parts for airframes and engines. HAL has signed a ten-year contract with Aerospatiale to supply 600 forward passenger doors for the A-320 and A-321 aircraft. At a subsequent stage, HAL would like to conclude a co-production agreement for 100-130 seat jets. It has also been reported that the Russian Government has offered HAL a proposal for co-production of a heavy transport aircraft, like the TU-204 or IL-96.

For details on HAL's Advanced Light Helicopter (ALH) program, and its proposal to establish a third party heavy maintenance facility, see respectively, the profile of HAL's Helicopter Division in Appendix N, and the section on Maintenance of Civil Aircraft.

Software Export

On January 25, 1993, BAe and HAL signed an agreement to set up a joint venture to produce specialised software for engineering applications in the aeronautical industry. The joint venture company will use a dedicated satellite and fibre optic links between the computer terminals in HAL Bangalore and BAe's IBM mainframe computer based at Lancashire, England. The software company is 100% export oriented. The company has a paid-up capital of Rs. 60 million, with HAL holding 49%, BAe 40% and the Industrial Credit and Investment Corporation of India 11%.

NATIONAL AERONAUTICAL LABORATORY

NAL, located in Bangalore, functions under the CSIR (Council of Scientific and Industrial Research), Ministry of Science & Technology. Established in 1959, it is one of India's prime institutions engaged in research and development in varied disciplines connected with aeronautics and astronautics. It has an annual budget of Rs. 300 million, employing over 1,300 people. As grants received from CSIR do not meet salary and overhead costs, NAL has placed increasing importance on commercializing its technologies. In 1992-93, NAL earned Rs. 156 million from external projects. Delegates from the equipment division of GEFAS, the French aerospace industry association visited Bangalore in April 1993 for talks with NAL about joint ventures. NAL is currently working on two major aircraft projects and a number of research projects.

One of NAL's strengths is its advanced facilities. The National Trisonic Aerodynamic Facilities (NTAF) of NAL has an indigenously designed and built 0.6 metre transonic wind tunnel (commissioned in 1989), a 1.2 metre trisonic wind tunnel (commissioned in 1967) and has begun a Rs. 1.5 billion project to instal a 2.4 metre high speed wind tunnel. NTAF is funded by its four main users - CSIR, HAL, Indian Space Research Organization (ISRO), and Defence Research and Development Organization (DRDO).

In collaboration with the Indian Space Research Organisation (ISRO), NAL has designed, built and commissioned an 1100 cubic metre acoustic test facility. The facility has already been used for tests on various satellites.

Light Aircraft Trainer (NAL-LA)

NAL visualizes a requirement within India of a new affordable trainer aircraft for use by flying clubs. NAL-LA is a light weight, side-by-side, two-seater ab-initio trainer, with a Continental 125 hp engine. The original engine design was a pusher type, now it is tractor. It has an all composite structure, and a maximum cruise speed of 115 knots. The project proposes to use advanced technology in design and development of the aircraft. It is understood that the preliminary design has been completed and the configuration frozen (no change in shape or design). Detailed structural layouts have been made for most components.

NAL hopes to fly a prototype of this hi-tech trainer by the end of 1993, and to market it by the end of 1994 at a cost of Rs. 2.5 million. The Rs. 20 million development cost is being split 2/3 to 1/3 between NAL and Taneja Aerospace and Aviation Limited (TAAL). It is likely that production will be done by TAAL.

Light Transport Aircraft (LTA)

The LTA is to be a 9-14 seat, multi-role light transport aircraft. It is being designed and built indigenously to specific Indian requirements. NAL completed conceptual and preliminary studies on the LTA in 1989.