

Aviation opportunities in the air Cleared For Takeoff

With Airbus & Boeing spreading wings, Bangalore & Hyderabad are fast emerging as global hubs for aviation engineering, technology & services, says Anirvan Ghosh

BANGALORE, the joke goes, is the only place where Boeing ranks above Airbus—because the former's office is situated one floor above the latter's in the spanking new glass building on the Old Madras Road. While it's not too hard to guess where the joke originated from, on the ground, the competition to be the number one supplier to Indian carriers is quite intense, with Airbus currently in the lead.

If the turf war for the skies is heating up, then Bangalore is the battlefield royale. The city's rapid emergence as a centre for aviation and aerospace technologies can be attributed not only to the large number of scientific organisations and educational institutes in the city, but also its IT horsepower that is acting as the wind beneath the wings of aviation giants.

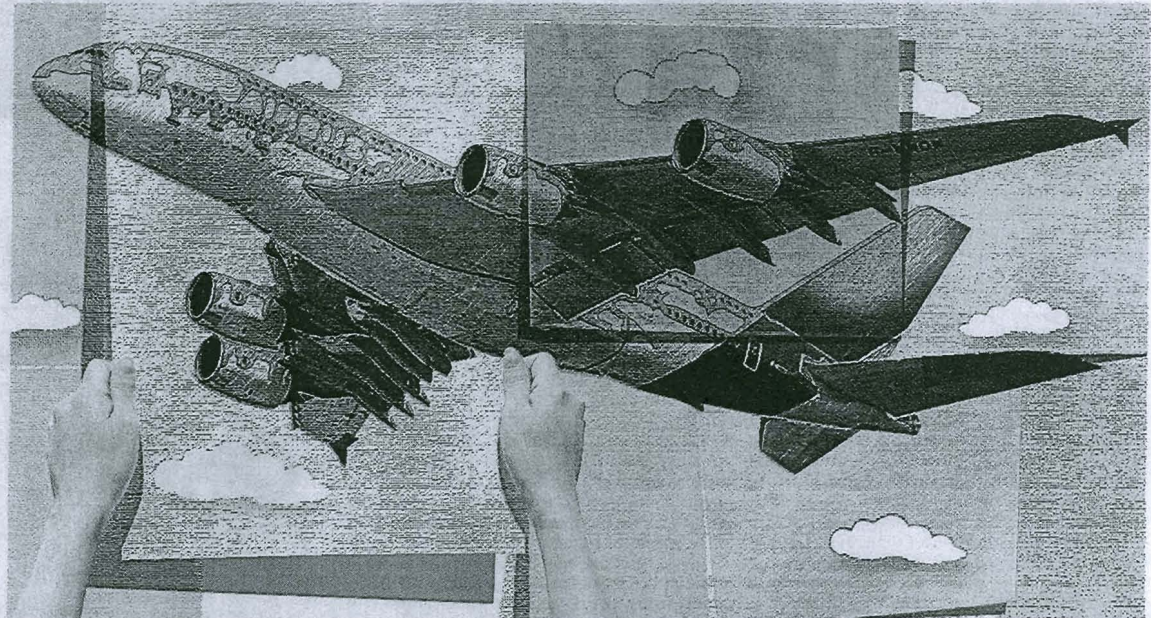
Airbus, for example, has had an engineering centre in Bangalore since October 2007. Its engineers, hired from some of India's top engineering schools, are working on cutting-edge technology that would give Airbus a decisive advantage in the air. The current strength of the centre is around 120, but will grow to 400 people soon. Boeing, not to be left behind, has set up a research and technology (R&T) centre in Bangalore, which now coordinates the work of more than 1,500 engineers working on projects across various vendors such as Infosys, HCL, TCS and Wipro.

"There is a big push at the top level to grow business in India in three to four years," Jean-Francoise Safouret, head of operations at Airbus Engineering Centre India (AEI) says. Airbus plans to outsource about 40% of its aircraft design to local companies here. And while it has similar engineering centres in Russia and China, Airbus says the bulk of work will now be done from India. India is the fastest growing market for Airbus, with 68% of its future plane orders coming from this country. Airbus, whose best-known recent models include the double-decker A380, and the forthcoming A350 XWB, is geared up to challenge the Boeing Dreamliner. The Dreamliner is touted as the most energy-efficient aircraft ever and Boeing has an order backlog of 37 Dreamliners to be delivered to Air India and Jet Airways, according to Dinesh Keskar, president, Boeing India.

While these two aviation giants go nose to nose, what's surprising is that both have outsourced many aspects of their pet projects to the same vendor, QuEST Global, a Bangalore-based engineering company. QuEST is currently working on both the upcoming Boeing Dreamliner and Airbus A350 XWB.

Small Indian companies have been rapidly going up the value chain in aerospace for the last couple of years. Public sector units such as HAL, National Aeronautics Laboratory (NAL) and others, for the first time, invited private sector participation in design and engineering activities. Previously, these activities were largely done in-house—only manufacturing of components and subsystems was outsourced. Now, the complete system design is being outsourced, points out Prof HS Jamadagni, who has worked on such technologies at the Indian Institute of Science (IISc).

Parts for the landing gear and other components made at QuEST's facility at Krishnarajapuram are now integral parts of several Airbus and Boeing models, earning it Rs 400 crore in revenues last year, despite the battering the airline sector took from rising fuel prices and costs as well as the economic slowdown. QuEST Global has a manufacturing facility in Bangalore, that does precision machining. "We also have an SEZ in Belgaum, where we have expanded our manufacturing to include additional precision machining capabilities, sheet metal work, and aerospace special processing (through a JV with Magellan Aerospace)," says Bejoy George, chief marketing officer. Walking through the facility, one can see equipment for landing gears, the nose and casing for the main engines being built. The QuEST Global SEZ in Belgaum is an attempt to create an aerospace supply chain cluster, where many companies would set up their aero manufacturing units, catering to various aspects needed to build a complete aerospace subsystem. Apart from QuEST Global, there are a few



MUKESH

more units coming up within the same SEZ. "We are doing cutting-edge work for Boeing and Airbus. Despite the delay in the Dreamliner's launch, we are fully prepared to supply once Boeing begins delivery," says Aravind Melligeri, co-founder and chairman of QuEST. With a 600-strong workforce, the company is now looking to raise fresh funds to the tune of \$50 million (approximately Rs 250 cr).

In the next few years, more SEZs have been planned around the Bangalore belt. QuEST Global SEZ in Belgaum is already operational; Bangalore International Airport (BIAL) has announced plans to setup an Aerospace SEZ in the Bangalore Airport premises and the Karnataka government too plans to set up an Aerospace SEZ.

What QuEST is doing on the manufacturing side, HCL Technologies is doing on the software side. Again with customers such as Boeing and Airbus, this company has designed software codes that will run the most critical of processes, like flight navigation, control and avionics. Around

RAPID EMERGENCE OF THE 2 CITIES CAN BE ATTRIBUTED NOT ONLY TO LARGE NUMBER OF SCIENTIFIC ORGANISATIONS AND EDUCATIONAL INSTITUTES IN THE CITY, BUT ALSO THE IT HORSEPOWER

40% of the work is being done at the Bangalore centre. Also, the company is working to reduce testing time for the aircraft, which has already been delayed by a couple of years. HCL is also working for other aircraft makers such as Bombardier and Embraer and aircraft engine makers such as GE, Rolls Royce and Pratt and Whitney. Working with such partners has allowed the company to test more and more complicated codes.

According to G Rao, corporate V-P and head (engineering and R&D services), HCL Technologies, the company is now working across the entire aerospace value chain, which includes prime contractors, system suppliers, equipment suppliers and component makers. The company has also developed a new Flight Test Computing System (FTCS) that will be used for flight tests of the new Dreamliner. The system will enable up to five airplanes to be tested simultaneously against one another.

Rao expects the aerospace R&D market to grow by around 30% in the next couple of years,

with India's ability to utilise the defence offset policy being a key factor, apart from the availability of talent here. The government's offset policy requires foreign military aircraft and defence equipment manufacturers to locally source components worth 30% of contracts (i.e. worth Rs 300 crore or more). India may buy at least \$100-billion defence equipment over the next 15 years, according to estimates by the CII.

The good thing here is that more companies are aiming for big defence contracts. Take for example SLN Technologies or SEC Industries in Hyderabad. Both took off by supplying small parts to DRDO, based on which they were selected to make more complex equipment for Indian missile programme. They progressed to making the material for, and testing of, vital workings of the Chandrayaan Mission. And now they are ready to be "preferred suppliers" to not just Indian PSUs engaged in defence, but also to private companies such as Boeing and Airbus. "Bangalore and Hyderabad-based firms have developed strong expertise in designing projects for the Moon mission, which involved cutting-edge aviation and aerospace technologies," explains Chandrayaan project director M Annadurai.

The augmentation in the skill sets of smaller firms has improved the prowess of our own PSUs as well. At the Centre for Airborne Systems, DRDO's sprawling facility in Bangalore, Dr Dipankar Banerjee explains the latest technology they are working on with players like SEC—a new generation of manned and unmanned combat aircraft.

Bangalore is also where the Mahindra Group is seeking to do a 'Nano' for the country's aviation manufacturing industry by developing a low-cost range of light civilian passenger aircraft. The company, which acquired two Australian aviation companies—Gippsland Aeronautics and Aerostaff Australia—last month, will begin manufacturing 2-18 seater light aircraft at its factory in the city. These aircraft will be cheaper to buy and run than foreign brands. The company got the idea to work on a light aircraft for India after a review of the country's airport facilities. They discovered that while there are merely 50-60 airports in urban areas, India has around 400 landing strips that lie close to remote tourist spots and near industrial zones like ports and refineries, presenting a huge untapped opportunity, according to Hemant Luthra, president, Mahindra Systech, of which Mahindra Aerospace is a part.



WE ARE DOING CUTTING-EDGE WORK FOR BOEING AND AIRBUS.

AIRBUS. DESPITE THE DELAY IN THE DREAMLINER'S LAUNCH, WE ARE FULLY PREPARED TO SUPPLY ONCE BOEING BEGINS DELIVERY

ARAVIND MELLIGERI
CO-FOUNDER & CHAIRMAN OF QUEST



THERE IS A BIG PUSH AT THE TOP LEVEL TO GROW BUSINESS IN INDIA IN THREE TO FOUR

YEARS. AIRBUS PLANS TO OUTSOURCE ABOUT 40% OF ITS AIRCRAFT DESIGN TO LOCAL COMPANIES HERE. AROUND 68% OF OUR FUTURE PLANE ORDERS ARE COMING FROM INDIA

JEAN-FRANCOISE SAFOURET
HEAD, OPERATIONS, AIRBUS ENGINEERING CENTRE INDIA



THE DREAMLINER IS TOUTED AS THE MOST ENERGY-EFFICIENT

AIRCRAFT EVER AND BOEING HAS AN ORDER BACKLOG OF 37 DREAMLINERS TO BE DELIVERED TO AIR INDIA AND JET AIRWAYS

DINESH KESKAR
PRESIDENT, BOEING INDIA