



## Indian MRO market to touch \$5.2 bn by 2036: KPMG in India

The Indian fleet size is estimated to grow upto 1,740 aircraft in next 20 years which in other words means more the fleet and as the fleet ages the requirements for advanced checks will continuously increase. On an average KPMG firm estimates MRO market in India to touch \$5.2 billion by 2036.

"Successful implementation of the provisions of the NCAP 2016, along with other structural reforms in the MRO sector, would endow the Indian MRO industry with the capability to generate up to \$975 million in revenues as against the current revenues of \$92 million," it said.

At present according to industry sources 10 percent of the MRO work for domestic scheduled carriers is carried out in India. Indian carriers are dependent on foreign MRO service providers for works like heavy base checks , engine management contracts & component contracts.



However , the National Civil Aviation Policy (NCAP 2016) has provided the much-needed policy support for the Indian MRO sector. The salient feature of NCAP 2016 with regards to MRO are :

- The MRO business of Indian carriers is around Rs 5000 crore, 90% of which is currently spent outside India. In the budget for 2016-17, customs duty has been rationalised and the procedure for clearance of goods simplified. Further incentives proposed in the policy to give a push to this sector:

- MoCA will persuade State Governments to make VAT zero- rated on MRO activities
- Provision for adequate land for MRO service providers will be made in all future airport/heliport projects where potential for such MRO services exists
- Airport royalty and additional charges will not be levied on MRO service providers for a period of five years from the date of approval of the policy

## INR 8000 Crore Contract Signed for Advanced Light Helicopter



The government has cleared a proposal worth ₹8,000 crore to acquire 32 Dhruv advanced light helicopters (ALH). These advanced helicopters have been locally designed & built by state-run aviation Hindustan Aeronautics Limited (HAL). The procurement of these helicopters will substantially boost the maritime security capabilities of the Indian Navy (IN) & Indian Coast Guard (ICG). Of the 32 helicopters to be built by HAL, 16 each would be shared by both the services.

A step ahead by HAL into an era of Performance Based Contracting for Helicopters. "The PBL is the purchase of logistics support as an



integrated, affordable, performance package designed to optimize system readiness and meet performance goals for the product through long-term support arrangements with clear lines of authority and responsibility,” said T Suvarna Raju, CMD, HAL.

The unique feature of this contract is that PBL will support for 5-years for 16 helicopters for ICG. PBL ensures the availability of products to the customer while the responsibility gets transferred to the contractor. The PBL envisages rewards or penalties based on the performance.

The contracts were signed by Mr. V. Natrajan, General manager (Helicopter Division), HAL & Mr. Jayant Sinha, JS & AM (MS), MOD, in New Delhi on 29 March 2017. Senior Executives from HAL, the Indian Navy & the Indian Coast Guard were present on the occasion.

HAL is awaiting for the EASA certification for the civil variant of Dhruv, which on acquiring can led to new market growth for HAL.

The group’s EBIT amounted to €11.3 million (444.2 million) in 2016, an 8% reduction on 2015’s €154.4 million (\$490.8 million). However, sales revenue rose by €5 million (\$48.6 million) from €1.1 billion (\$5.5 billion) to €1.2 billion (\$5.6 billion). In 2016, its investment in projects and resources increased by 40%, totaling €16 million (\$232.9 million).

Outside business increased by 8% to €3.5 billion, while in-house revenues dropped 11.7% - a fact Lufthansa Technik attributed to the finalization of a largescale modification program on the German airline’s long-haul fleet.

The Hamburg-headquartered company also plans to explore more joint venture opportunities in future. In the past year alone, it has established partnerships with GE Aviation on Xeos, a GE9X and GENx-2B-focused engine shop based in Poland, and a Pratt & Whitney geared turbofan engine repair joint venture with fellow German company MTU Aero Engines.

## COLLABORATION & PARTNERSHIPS

### Lufthansa signs a maintenance contract with Joramco

Joramco and Lufthansa signed a contract to provide two of the carrier’s A340’s with base maintenance services at the MRO’s facility in Amman, Jordan. It includes C check as well as cabin modifications. The maintenance activities scheduled to begin during January and to continue through February 2017.

### China Aircraft Leasing Group Buys Universal Asset Management



Aircraft Recycling International, a member of China

### Lufthansa Technik Optimistic After Reduced 2016 Profit



Lufthansa Technik says it remains committed to investing in new innovation projects, maintaining efficiency drives and continuing its internationalization strategy after reporting a reduced earnings before interest and taxes (EBIT) for 2016.



Aircraft Leasing Group Holdings, has acquired 100% of the equity of Universal Asset Management, an aviation services providers based in Tennessee. UAM has nearly three decades of experience managing aviation assets, disassembling aircraft and supplying aftermarket components to commercial aviation.

## LHT/MTU joint venture for PW1000G MRO



Lufthansa Technik and MTU Aero Engines are planning to set up a 50/50 joint venture MRO company for the Pratt & Whitney PW1000G family of geared turbofan engines. The new facility will be up and running by 2020 and will have a workforce of over 500 employees. By 2020, a total amount of around €150 million will be invested into the new location. In terms of annual capacity, the facility will be designed to accommodate over 300 shop visits of GTF engines for the Airbus A320neo Family and other aircraft. The search for a globally competitive location in or outside Europe will be completed within a few months' time.

## MRO Achievements around the World

### Etiihad Airways Engineering becomes first Middle East MRO to win POA from EASA

Etiihad Airways Engineering received the Part21G Production Organisation Approval (POA) by the

## INSIDE INDIA

### AAR To Service IndiGo A320 Landing Gears

AAR, a global leader in aviation aftermarket services, has engaged in a landing gear contract on A320s with Interglobe Aviation Limited (IndiGo), India's largest airline by passengers. Over a five year period the contract will cover up to 49 landing gear full ship sets including assemblies and subassemblies.

### Airbus to set up MRO facility for EC725 choppers in Goa

Goa has been chosen by Airbus to set up a maintenance, repair & overhaul (MRO) facility for the EC725 helicopter, provided it wins over INR 2000 cr Coast Guard contract.

While Goa will serve as the main location, infrastructure will be created & maintained at four other Coast Guard bases across India to deliver the service. The MRO activities will comprise of scheduled & unscheduled maintenance activities which come within the ambit of intermediate & depot-level maintenance, which is also known as 2<sup>nd</sup> & 3<sup>ed</sup>/4<sup>th</sup> level of maintenance.

The facility, close to the Indian Coast Guard's main center of operations, is planned as part of Airbus' offer to equip the Indian Coast Guard with 14 EC725 for its Twin Engine Heavy Helicopter (TEHH) requirement & the foreseeable future needs for a helicopter of this category by the Indian armed forces, industry sources said.

European Aviation Safety Agency (EASA) making it the first organization in the Middle East to receive such an approval.



modification work on 10 Air China-operated Airbus A330-200s.

Following modification, the jets were converted with a different cabin configuration in business and economic classes. The aircraft entertainment systems, seat powering systems and passenger services systems were also modified during the scheduled C-check layover.

### Lufthansa Technik Wins 2017 MRO Laureate



Lufthansa Technik won Aviation Week Network’s MRO Laureate for pioneering digital transformations in the civil aviation aftermarket. Other MRO Laureate finalists included EasyJet, GE Aviation and Latam Airlines.

In 2016, the company launched its Condition Analytics platform, which combines condition monitoring with predictive maintenance in one integrated tool to make component maintenance, repair and overhaul (MRO) more predictive.

Through Condition Analytics, Lufthansa Technik reduced technical delays for an airline by 25% by identifying contradictory results from height sensors that caused an autopilot landing system to fail. Data analysis identified which sensors needed to be replaced before they failed, thus solving the problem, increasing aircraft reliability and preventing operational disruptions. Lufthansa Technik’s platform shows a fleet’s health and predicts outages for any aircraft type—so it is OEM-agnostic and can be used for mixed fleets.

### Lufthansa Technik Logistic Service names new CEO

Lufthansa Technik named Andreas Tielmann as the new CEO of Lufthansa Technik Logistik Services

Ethihad Airways Engineering can now manufacture interior parts such as seat covers, carpets, curtains, decals and markings along with composite and other cabin structures and release them with a EASA Airworthiness Certificate. This will allow installation of these parts onto aircraft registered in Europe or in any country recognizing EASA certificates, such as the UAE and many countries in the Gulf.

Ethihad Airways Engineering is an AS9110 certified organisation and already holds EASA 145 approval, together with EASA 21J approval for designing and undertaking minor and major changes and repairs. The company is the Middle East’s leading aviation maintenance, repair and overhaul (MRO) provider.

### GA Telesis Receives CAAC Approval For CFM56-5B/7B, CF6-80C2B

GA Telesis Engine Services (GATES) has received certification from the Civil Aviation Administration of China Aviation (CAAC) for CFM56-5B/7B & CFM56-80C2B.

GATES has been previously approved by EASA , FAA , Transport Canada Civil Aviation (TCCA) & General Authority of Civil Aviation in Saudi Arabia (GACA).

### Ameco Completes A330-200s Cabin Modification

Ameco, China’s largest mainland MRO with a turn around time of seven day finished cabin layout



(LTLS). Former CEO Christian Langar is moving to Lufthansa Technik as Head of Digital Fleet Solutions.

Andreas Tielmann joined Lufthansa in 1998 as project coordinator in the Department of Business Development followed by being Project manager for the establishment of Lufthansa Technik Component Services in Dallas , in 2000 as Group Leader in Hydraulic Equipment Maintenance , then Head of the Business Area Development Department. In 2006, he was appointed as Director of Aircraft Base Maintenance. He became head of Landing Gear Overhaul product area in 2010. Since 2012 he has led the Aircraft Systems Product Division with prime focus for all technical services on landing gear and the engine casings.

### **GE Aviation Wales to be the MRO site for GE9X**

GE Aviation Wales site will act as GE MRO for the GE9X jet engine. The Nantgarw overhaul facility, based in the north of Cardiff, has been chosen to lead the company’s global ‘Entry into Service’ readiness programme. GE Aviation Wales was selected based on its wealth of technical expertise and its track record of continuous improvement.

GE said that the site, which employs more than 1,400 people, will also benefit from a £5 million (\$6.13 million) investment from the Welsh Government to help towards the total £20 million (\$24.55 million) investment, over the next 5 years to equip and upskill the facility to be ready to maintain the GE9X fleet when it enters service.

### **National Aircrew Crisis – U.S Air Force**

A confluence of circumstances in the Air Force has “birthed a national aircrew crisis,” the service’s manpower chief warned the House Armed Service Committee’s military personnel subcommittee.

One of the factors include 26 years of high operational tempo, commercial industry’s demand

for pilots and “cultural issues that affect the quality of life and service for our airmen.” Lt. Gen. Gina M. Grosso, Air Force deputy chief of staff for manpower and personnel services said. She acknowledged



money is a primary factor in the squeeze on military pilot ranks. Major airlines hired more than 4,100 pilots last year, and the average pay increase for commercial pilots was 17 percent.

Grosso said a 2015 exit survey revealed reasons the Air Force is losing talent include “too many duties unrelated to flying, inability to maintain work-life balance, and availability of civilian jobs, in that order.” She further added that the Air Force is working to improve retention through a number of “nonmonetary programs” to improve quality of life, ranging from reducing additional duties to outsourcing some routine administrative tasks in operational squadrons which would allow aviators to focus on their primary duty.

### **A320neo PW1100 GTF Engine Issues**



In February ,two A320neo planes of budget carrier GoAir made emergency landings due to the engine issues. In January , an IndiGo plane had to abort take-



off at the last minute at Mumbai airport after one of its engines developed snag during taxiing.

Bangalore Aviation has traced problems to three root causes :

1. Combustion chamber failures, 25% degradation in coastal environments
2. Number 3 bearing failures
3. Main Gear Box (MGB) failures

All three issues are in the knowledge of, and are being actively addressed by the engine manufacturer, including:

- improved combustion chambers currently under test, expected to be delivered by September 2017
- re-design of the bearing compartment and retrofits expected by April 2017
- a re-working of the Trouble Shooting Manual (TSM) and Master Minimum Equipment List (MMEL) which would need approvals from the US Federal Aviation Administration (FAA).

Airbus is working along with the engine makers , the Indian Authorities and airline customers on the snags faced by P&W engines operated by IndiGo & GoAir. Aftermath, the DGCA had directed IndiGo & GoAir to carry out inspections of the engines once they complete 1,000 hours of flying, instead of 1,500 hours as recommended by P&W. the Civil Aviation watchdog has also called for repeat inspections every 500 hours thereafter.

With the ongoing delivery challenges and current issues on PW engines fitted on A320neos , it is learnt that Tata-Singapore Airlines joint venture, Vistara and Air India has selected the CFM LEAP engines to power their A320NEOs.

## Ameco Develops Trent 700 Engine Thrust Reverser Capability

Ameco has successfully completed its first thrust reverser repair for Rolls Royce Trent 700 engine. Ameco becomes the first MRO shop to own this capability in China. With developing its aircraft related component capability Ameco enables the

repair work on the thrust reversers for International Aero Engines V2500-V5, CFM International CFM56-5B and CFM56-7B. Apart from the thrust reverser, Ameco is capable of the repair work on the other aircraft-related components such as inlet duct and radome for most of Boeing and Airbus series.

## FEAM to become first U.S. based MRO as Boeing GoldCare line maintenance supplier

FEAM Maintenance/Engineering has signed a multiyear agreement with Boeing as the first US based MRO to provide GoldCare line maintenance services. The strategic partnership calls for FEAM to provide full handling line maintenance support on new B737 MAX aircraft under its EASA 145 authorization on behalf of Boeing's GoldCare portfolio of global aftermarket support services.

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