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TO COMPLY... OR NOT?

Lifting the lid on non-mandatory component modification

Profile of Iberia Maintenance

Latest MRO News
from around the world

People on the Move
latest appointments

IBA Analysis **IBA**

A case for modification

All roads led to London last month for the MRO Europe conference where a number of thought provoking issues were debated. Some issues brought to light at the event included the high cost of new aircraft components that will make pooling inevitable and the increase in surplus parts availability that is altering strategies for both airline and MRO providers.

Also, and rather worryingly, the slump in growth in Europe's airline industry will be a drag on the region's aircraft aftermarket, which will grow slower than the world average over the next decade despite measurable expansion in Eastern Europe, forecasts revealed at MRO Europe according to organisers Aviation Week.

Our cover story this month relates to non-mandatory component modifications looking at the thorny issue of when it's acceptable to comply, or rather, not to comply with component modifications and what the consequences are. We interviewed an expert panel who brought together various views and a highly insightful analysis of the issues at hand.

The need to utilise efficient MRO-specific software to derive efficiencies across the entire spectrum of MRO services is getting a greater hearing. In this issue Gabriel Mofaz from software firm PENTAGON 2000 explains how MRO's benefit from the rich sourcing and supply chain features that distributors and parts brokers have driven into the software system,

and generally, how MROs can improve efficiency levels by using new industry-specific software.

In addition, we have all the usual news and a look at who is doing what within the industry. I hope you enjoy the October and look forward to any feedback from you.

Happy reading!

Keith Mwanalushi

Editor



Benefits of a modification may be realised over a longer time frame.

Photo: Iberia

Contents	
MRO and Production News	4
Cover Story: To comply.... or not?	15
Finance News	19
Information Technology	19
Industry Interview: In the hot seat... ..	20
Company Profile: Iberia Maintenance	22
IBA Analysis: Maintenance Cost Benchmarking	24
Other News	25
People on the Move	25

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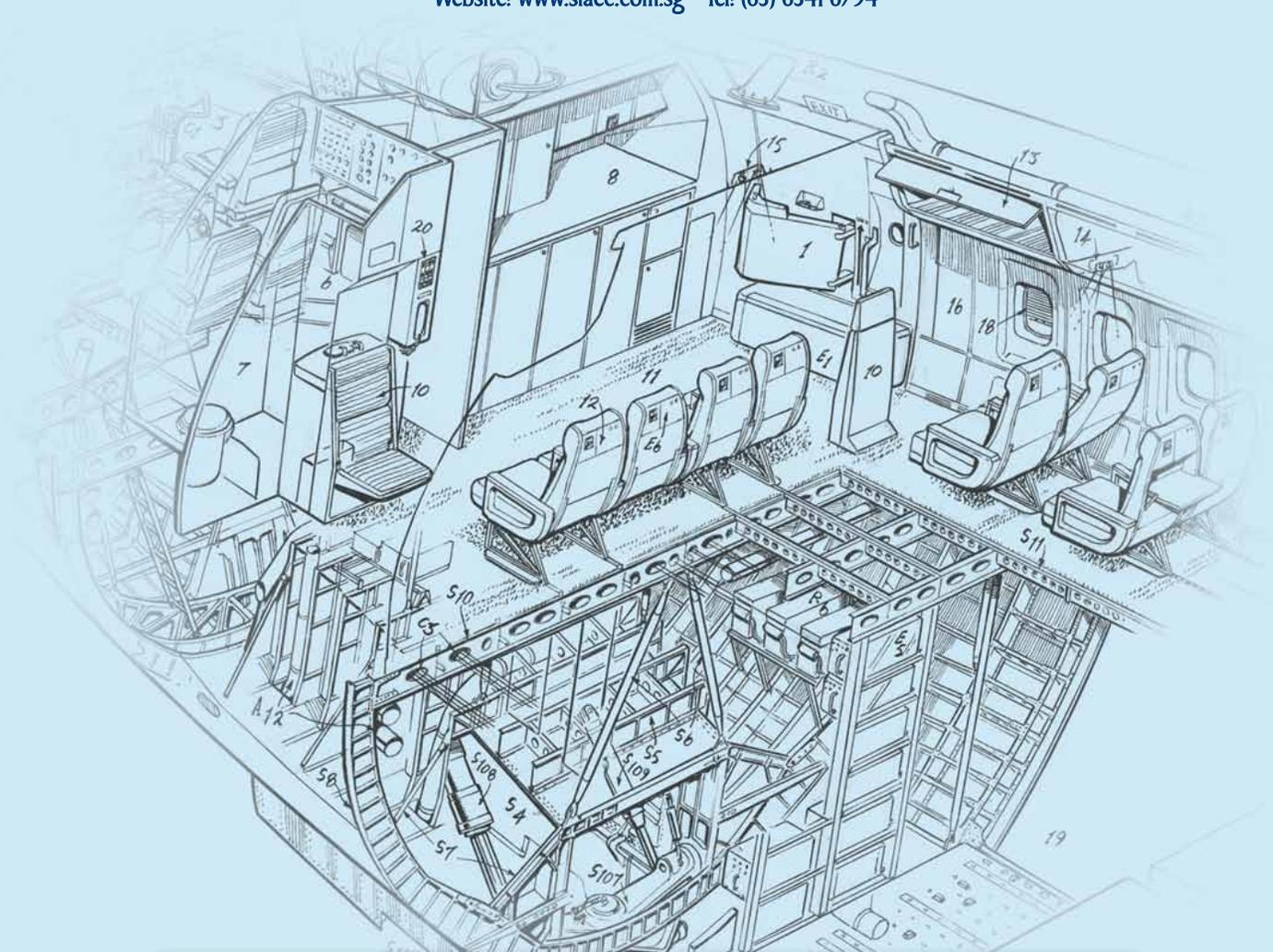
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Bombardier's New Wing Facility in Belfast

Photo: Bombardier

Bombardier officially opens new wing facility in Belfast

Bombardier officially opened its new wing manufacturing and assembly facility in Belfast. Following the addition of close to 1,000 employees to its Northern Ireland workforce over the last two years, Bombardier announced that it will create at least 250 more employment opportunities over the next 12 months, to cater for its expanding aircraft programmes and component repair business. By the end of 2014, this will bring the projected workforce to approximately 6,250. Bombardier's new 600,000-ft² is producing the wings for the CSeries aircraft, which had its successful maiden flight last month. The wings are made using an innovative carbon-fibre composite technology developed by Bombardier engineers in Northern Ireland. This technology enables both material and aircraft weight savings, which contribute to reduced manufacturing cycle times and reduced fuel burn.

FL Technics signs PBH support agreement with Indonesian Cardig Air

FL Technics, a global provider of integrated aircraft maintenance, repair and overhaul services, is further extending its cooperation with Asia-Pacific carriers by signing a PBH-support agreement with Jakarta-based cargo operator Cardig Air. Under the agreement FL Technics will provide spare parts supply for the carrier's Boeing 737-300F fleet. According to the three-year long agreement, FL Technics will provide component, parts and consumables supply as well as other relevant

spare parts support for the carrier's fleet, including its current three Boeing 737-300 freighters and the upcoming fourth Boeing 737-300F which will be delivered to the carrier in autumn 2013. The services will be provided on the Power-By-the-Hour (PBH) basis. Amongst other services, the PBH program will cover stock positioning and management at FL Technics' warehouse in Malaysia, as well as comprehensive component repair support. The services will be provided at Cardig Air's main hub at Halim Perdanakusuma Airport (Jakarta, Indonesia), as well as other locations on the carrier's route map.

Pratt & Whitney and Nordic Aviation Capital sign long-term Fleet Management Programme

Nordic Aviation Capital A/S signed an agreement for a long-term Fleet Management Programme with Pratt & Whitney Canada, in support of their P&WC powered aircraft. Nordic Aviation Capital continually strives to develop creative business solutions to support its clients and assist them to manage costs and maintain profitability. "In partnering with Pratt and Whitney Canada we have developed a Fleet Management Program which allows us to offer several key benefits to our customers, including engine maintenance cost control, basic unscheduled engine repairs (BUER) and relaxed engine redelivery conditions," said NAC Chief Commercial Officer Jim Murphy. "One very important factor is that these additional services and benefits will be available to any Nordic Aviation Capital customer, including smaller airlines, which haven't been able to take advantage

of Fleet Management Programs in the past."

LED HelioJet cabin lighting now certified for Airbus A320 family

The first joint development of Lufthansa Technik and SCHOTT – the LED cabin lighting solution HelioJet – can now be experienced in normal airline operations: it has received a Supplemental Type Certificate (STC) from the European aviation authority EASA for the A320 aircraft family, and is currently used for continental flights in an Airbus A319. HelioJet delivers white light for extremely homogeneous and pleasant cabin lighting in passenger aircraft. Another advantage of the system is a significant reduction in maintenance costs.

Transaero to purchase passenger seats for nine B777-200 aircraft

Transaero Airlines, the first private airline in the Russian Federation, has signed with Aviointeriors, Italy, a LOI to purchase passenger seats for nine B777-200 aircraft, which soon will be part of the airline's fleet. Transaero selected Venus, Perseus and Columbus Three seat models respectively, for their B777 First, Business and Economy Class. According to the LOI, the seat retrofit program will start in April 2014 to be concluded within the end of the year.



Transaero Business class seat "Perseus"

Photo: Aviointeriors

CIRCOR Aerospace celebrates grand opening of Corona, California Machining Center

CIRCOR Aerospace celebrated the grand opening of their Corona, California Machining Center of Excellence on Friday, September 20th. The state of the art machining facility holds the critical ma-

chining processes for the West Coast fluidic control, actuation, and landing gear product lines. Completed in June of 2013, the new facility has 72,000ft² of manufacturing floor space. CIRCOR's two Corona facilities feature a combined footprint of over 187,000ft² and include Engineering, Design, Research and Development, Manufacturing, and Assembly and Test.

Flying Colours breaks ground on Phase 1 of a \$3.5m expansion plan

Flying Colours Corp. the Canadian completions, refurbishment and maintenance specialist has broken ground on the first phase, of a three phase expansion plan, at its Peterborough, Ontario headquarters. An investment of over \$3.5m will expand the company's footprint and increase its large cabin completion and maintenance capabilities at its Peterborough Airport facility. With the steel framework now in place, 20 000ft² is being added to one of the company's existing three hangars. The existing hangar is currently accommodating a long term project that will see eight Bombardier CRJ 200 regional airliners converted to 16 seat corporate shuttle configura-



Rendering of expanded Flying Colours Corp. facility

Photo: Flying Colours

tions. This is the first executive shuttle configuration programme Flying Colours has undertaken and reflects the company's ambitions to widen its offering to the aviation market place. Phase one is due for completion in the first quarter of 2014, and whilst large enough to accommodate wide body aircraft, the new building will initially be utilised to increase Flying Colours Corp.' refurbishment and maintenance capabilities for pre-owned large cabin size aircraft, particularly on the Bombardier Global and Challenger 870

families. It is anticipated that the additional space will also be used for a number of special mission programmes including the fulfilment of a multiple aircraft contract for modifications to seven CRJ 700/CL870 airframes destined for Asia. The new structure will be equipped to handle refurbishment projects, avionics installations and upgrades, heavy maintenance projects and full interior completions. Phases two and three, which are expected to complete in 2015, will incorporate further additional hangar space of ap-

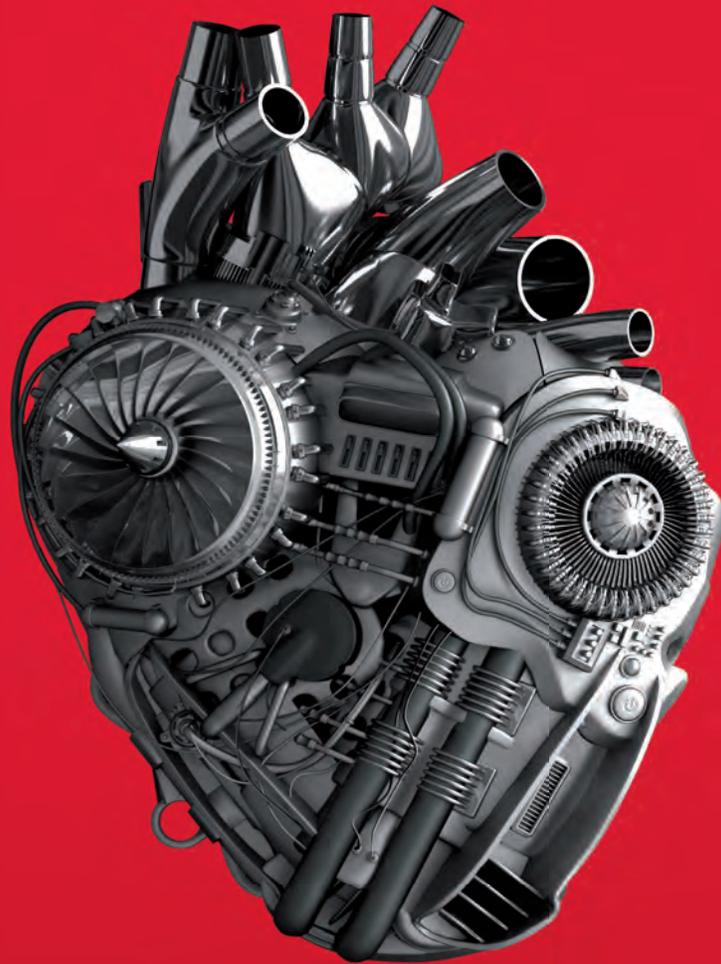
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proximately 45,000ft² and will incorporate an additional large cabin hangar, increased shop space for maintenance and interior workshops, and a new down draft paint facility.

Airbus develops presence in Malaysia with new services

Airbus is set to develop its presence in Malaysia with the expansion of its joint venture maintenance unit Sepang Aircraft Engineering (SAE) and the establishment of a new Airbus Customer Services Centre. The developments are the first in a series of projects that will see the manufacturer increase its footprint in the fast-growing South East Asian region and provide more support services for operators of its aircraft. The initiatives in Malaysia were announced at a ceremony at the SAE premises at Kuala Lumpur International airport on October 2nd, to launch construction of a second hangar at the facility. The new hangar at SAE, which specialises in the maintenance and overhaul of Airbus single aisle aircraft, will have a floor area of 13,000 m² and will be capable of accommodating three A320 Family aircraft for major maintenance checks. This will be in addition to the existing hangar, which can accommodate six single aisle aircraft at any one time. The new Airbus Customer Services facility, 100 per cent owned by Airbus, will be located adjacent to SAE. It will be an expansion of the manufacturer's global network of offices providing 24/7 specialised major aircraft engineering and repair services. Existing offices offering this support are located in Toulouse, Wichita and Beijing.

AFI KLM E&M to maintain test aircraft for Safran

AFI KLM E&M has been selected by Safran to support its test aircraft used to develop new systems. The contract includes maintenance of the aircraft during the test phases performed by Safran and all Part 145 modification embodiment and maintenance work.

Globus entrusts Boeing 737 NG APUs to Epcor

EPCOR, AFI KLM E&M's pneumatic systems and APU subsidiary, has signed a contract with Russian carrier Globus. The long-term agreement covers the repair and overhaul of the GTCP 131-9B type Auxiliary Power Units (APUs) equipping the carrier's fleet of Boeing Next-Generation 737 aircraft. Globus had already called on the services of AFI KLM E&M in the framework of an engine support contract for this same fleet.



AEI redelivers fourth B737-400SF to ASL Aviation Group

Photo: AEI

AEI redelivers fourth ASL B737-400SF 11 pallet conversion

Aeronautical Engineers (AEI) reported the redelivery of the fourth B737-400SF aircraft to the ASL Aviation Group. The aircraft is being ferried to Dublin where it will enter service with Air Contractors. This is the fourth of six contracted freighter conversions undergoing modification at Commercial Jet's (CJI) Miami and Dothan facilities. N286AL, MSN 25261 is a high gross weight B737-400SF 11 Pallet freighter and has a maximum range of about 2,800 nm and the ability to carry payloads of up to 48,000 lbs. ASL has reported exceptional in service reliability on the first three AEI B737-400SF's.

Lufthansa Technik Malta expands overhaul capacity

Lufthansa Technik Malta (LTM), a subsidiary of Lufthansa Technik, is expanding its hangar capacity for maintenance and overhaul work on Airbus widebody aircraft. With the addition to the smallest of the three hangars in Malta, which has been used to date only for narrow-body aircraft, the building will be able to accommodate aircraft up to the size of an Airbus A330 or A340. The additional, flexible maintenance dock in the enlarged hangar means that engineers and mechanics at the company's site at Malta International Airport in Luqa can work on up to three widebody aircraft simultaneously.

Bombardier Aerospace breaks ground on new Moroccan manufacturing facility

Bombardier Aerospace celebrated the opening of the Midparc Casablanca Free Zone, in Nouaceur, with a symbolic groundbreaking on the site of the future Bombardier manufacturing facility. In January 2013 Bombardier began operating out of a transitional facility located at the Mohammed V International Airport in Nouaceur in the Greater Casablanca region, where

the company is currently producing simple structures including flight controls for the CRJ Series aircraft, and will employ over 100 workers by the end of December 2013. Construction of Bombardier's 150 000 ft² permanent facility began earlier in September 2013, and is scheduled to be completed around mid-2014. Bombardier Aerospace intends to invest approximately \$200m in equipment, buildings and start-up costs. By the end of 2020, employment at the Morocco facility is expected to reach 850 skilled and trained workers.

AAR to add third line of maintenance at Duluth MRO

AAR has ramped up a third line of maintenance to support Air Canada's fleet of commercial aircraft as part of a multiyear agreement to perform maintenance, repair and overhaul (MRO) at its Duluth repair station. The expansion solidifies AAR's position in the region and moves the Company closer to its goal of employing as many as 225 people at the facility. The Company currently employs 276 and has 40 openings. AAR reopened the once-abandoned hangar last November with one line of maintenance and added a second line of maintenance in March for the commercial carrier.

Boeing Shanghai signs first 777 heavy maintenance contract

Boeing Shanghai Aviation Services has been awarded its first 777 heavy maintenance contract through an agreement with Russia-based Orenair. Boeing Shanghai will perform a C-check on one of Orenair's 777-200ERs in October 2013. Boeing Shanghai received U.S. Federal Aviation Administration and European Aviation Safety Agency authorization to conduct 777 maintenance services in 2012. The maintenance, repair and overhaul (MRO) company has previously completed several cabin reconfigurations and multiple A-checks on 777-300s for other customers.

Honeywell supports Air China's growing fleet with customized aftermarket solutions

Honeywell Aerospace (HON) has strengthened its strategic relationship with Air China, signing an agreement to provide services to Air China that will optimize the safety, efficiency and performance of its growing fleet of wide-body aircraft. Under this agreement, Honeywell will provide repair and maintenance on the 331-350 Auxiliary Power Unit (APU) for 53 new and existing Airbus A330 aircraft and six Airbus A340 aircraft. As part of the agreement, Honeywell will provide Air China with customized service and maintenance solutions. The tailored aftermarket solutions, coupled with predictive trend monitoring and diagnostics (PTMD), will provide engineering expertise and support resources that will allow Air China to better manage and predict maintenance spending, while optimizing APU on-wing time and reducing downtime costs.

REVIMA expands Landing Gear LRU Support Services

REVIMA, a leading Landing Gear MRO service provider is reinforcing its Support Services for Line Replaceable Units (LRU): 100% of A320 Landing Gear Hydraulic & Electrical accessories can now be tested, repaired or overhauled in house at REVIMA. Overall more than 75% of LRUs installed on Landing Gears supported by REVIMA are repaired in house for improved cost and TAT control.

To address continued growth in the Landing Gear, Auxiliary Power Unit MRO and parts trading business in the Middle East and Asia-Pacific, the Revima Group announced the creation of two new offices in Dubai and in Hong-Kong, with responsibilities for new business development and customer support in these regions. These new locations come in addition to the 2 US offices created in March 2013.

Monarch Aircraft Engineering extends heavy maintenance agreement with Thomson Airways

Monarch Aircraft Engineering (MAEL) has extended its heavy maintenance agreement with Thomson Airways. The extension to the long term agreement will see MAEL's highly experienced engineering team perform medium and heavy C Checks on Thomson Airways' Boeing 757 and Boeing 767 aircraft at its maintenance facilities within the UK.

SR Technics signs new contracts with Aeroflot, Aigle Azur and Finnair

SR Technics, part of the Mubadala Aerospace MRO network, has signed a contract with Aeroflot to install the Airbus ALNA V2 (AirLine Network Architecture) on three of the airline's Airbus A330-200 aircraft. The In-flight Entertainment and Connectivity (IFEC) system installation will be carried out alongside scheduled C-Checks, thus optimizing aircraft down time and maximizing Aeroflot's utilization of the aircraft. Under the agreement the work will be completed in the fall of 2013, with all modification and maintenance activities being completed out of SR Technics' headquarters in Zurich. The ALNA V2 system is the first line fit connectivity solution to be developed by an aircraft manufacturer. The platform allows passengers to use their own wireless communication devices such as mobile or smart phones and laptops on board, in the same way they would use them on the ground. Furthermore, SR Technics has signed a contract with French Airline Aigle Azur, based in Orly, to provide C-checks on two Airbus A319 aircraft. The aircraft will be inducted in November and December of this year, and the work will be completed out of SR Technics narrowbody Center for Excellence in Malta.

SR Technics and Finnair are deepening their cooperation and have signed an extension to the existing agreement for Integrated Component Services (ICS) for the airline's five new Airbus A321 aircraft until 2022. The new contract builds on the close cooperation with Finnair for Component Services for its Airbus and Embraer fleets and Engine Services for its A320 and A340 fleets. Most recently, the two companies signed a contract for heavy maintenance visits on two of the airline's A320 aircraft.

Turbomeca and Avincis Group sign global support contract

Turbomeca (Safran) and Avincis Group reported the signature of a global support contract that covers engines operated by Inaer, Bond Air Services, Bond Offshore Helicopters and Australian Helicopters. This agreement further enhances the strengthening relationship between Avincis and Turbomeca. This agreement includes the incorporation into Turbomeca's Support By the Hour (SBH) programme for the Inaer fleet in addition to the Bond fleet, which already benefits from the SBH service. The agreement now covers approximately 180 engines of which there are 14 different engine variants.

AJW Aviation signs A320 repair management PBH contract with Allegiant Air

AJW Aviation has signed a three year repair management power-by-the-hour agreement with Las Vegas based airline, Allegiant Air. The comprehensive support contract is for Allegiant's new fleet of A320 family aircraft, three of which have already been delivered. Significant fleet growth is planned as this highly successful, low-cost airline increases routes and frequencies across the United States.



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Technology moves quickly, and at Fokker Services it is our policy to stay ahead of the game. We design and launch more than 300 aircraft modifications every year, believing that even an already functioning product can be improved on. In recent years Apple has captured the hearts of the consumer with their innovative thinking.

Combined with the history and experience at Fokker, the development of such an innovative yet simple solution felt like a natural progression. Airline operators today are under a lot of pressure to meet growing demands. Products must be efficient, safe, cost effective, user and environmentally friendly; The EFB solution for iPad® application is ticking all the boxes.

The EFB solution for iPad® is EASA certified (Class 2 Type B) and requires no expensive ICT infrastructure. Easy installation ensures aircraft can be converted with very limited downtime at a cost that is incomparable to anything else on the market. An added benefit of the application is the availability of unlimited nav chart publications; eliminating the need for paper navigation charts on board.

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Eurocopter and Waypoint Leasing sign partnership

Photo: Amelie Laurin

Eurocopter and Waypoint Leasing establish comprehensive commercial and marketing partnership for helicopter leasing

An agreement signed by Eurocopter and Waypoint Leasing offers value and flexibility to helicopter lessees through the companies' enhanced commercial and marketing resources. The agreement, announced at London's Helitech International exposition, enables Waypoint to offer its client base the full capabilities of Eurocopter's comprehensive Parts-by-the-Hour (PBH) support services. Eurocopter's Parts-by-the-Hour program provides highly adaptable and cost-effective services coverage that contributes to minimal helicopter downtime, streamlines maintenance costs and reduces parts inventory. It applies to dynamic components, blades, basic and mission equipment, and can be customized to operators' needs.

AJW Aviation signs three year contract with ELFC

AJW Aviation has signed a three year contract with the Engine Lease Finance Corporation (ELFC) to become long term engine consignment partners. AJW provides complete aircraft spares support to a global portfolio of more than 800 airlines and operators and this represents an important source of high value engine spares for the Company's inventory. The contract covers end of lease engines which, once consigned to AJW, will be torn down for parts, to be repaired and marketed for sale globally to airlines and MRO organisations. ELFC is a leading independent spare engine financing and leasing company,

specialising in the provision of flexible, medium to long-term spare engine support packages for the airline industry with over 280 engines available for lease and a combined asset value of \$1.8bn. Headquartered in Shannon, Ireland, the company is owned by BTMU Capital Corporation of Boston, USA, which is a wholly-owned subsidiary of The Bank of Tokyo Mitsubishi UFJ, Ltd. one of the world's largest financial institutions.

AJW Aviation launches Fleet Management Services

AJW Aviation is extending its capabilities to provide full fleet technical management as part of its comprehensive range of integrated aircraft support services. It has appointed CAMO4jets AG, the Basel based aircraft maintenance control specialists, to partner the Company in the delivery of a total support solution for existing and new customers. "The provision of FMS is a cornerstone of AJW's expansion programme and it was vital for us to identify the right partner to match our current client's requirements, and have the scope to fulfil some of the larger contracts that we have in the pipeline. CAMO4jets was chosen as our partner provider because of their wide-ranging expertise" explains Deepak Sharma, AJW Group Technical Director. "They enable AJW to offer our customers an expert service from day one with EASA Part M Sub Part G & Sub Part I approvals and their ability to issue certifications across a wide range of aircraft types up to Airbus A380." AJW Aviation is now able to offer a multi-specialist Fleet Management Service that offers Continuous Airworthiness Management of aircraft, airworthiness reviews, export/import registration, audits,

inspections, preparation of work packs, full planning and maintenance control. It will meet the challenging demands of operators seeking to align costs with continuously improving the efficiency and reliability of global operations.

BAE Systems Regional Aircraft wins first contracts for third party aircraft interior and avionics upgrades

BAE Systems Regional Aircraft announced at the MRO Europe exhibition and conference in London that it has secured its first contracts for interior and avionics upgrades for a range of different aircraft types. Around 70 Boeing 737 Classic, Boeing 757 and ATR72 aircraft are being upgraded in three separate programmes where BAE Systems Regional Aircraft is responsible for design and engineering of the upgrade and, in the majority of cases, include the provision of installation kits and supply chain management.

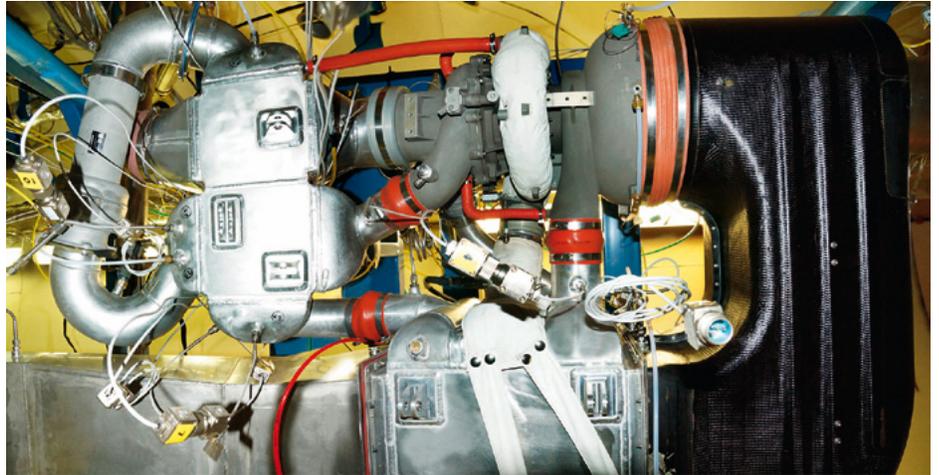
Furthermore, the company reported that it has secured new contract extensions for its successful Rate-Per-Flying-Hour (RPFH) JetSpares and MACRO spares support business from Cobham Aviation Services Australia and Yeti Airlines of Nepal. The Cobham Aviation Services Australia contract is the airline's third JetSpares extension with Regional Aircraft to support its fleet of 11 BAe 146/Avro RJ jetliners. The second new contract is with Yeti Airlines of Nepal to support its fleet of seven 29-seat Jetstream 41 turboprop airliners. These latest contract wins add to new RPFH business already announced this year from Braathens Technical AB of Sweden for its fleet of 12 Avro RJ regional jetliners, from Eastern Airways of the UK in support of its 16-strong Jetstream 41 turbo-prop fleet and, more recently, from Sky Express of Greece for its Jetstream 41 fleet.

Sabena technics and Mauritania Airlines sign five-year integrated services contract

Mauritania Airlines International, the national flag carrier, has decided to outsource maintenance support and spare parts to Sabena technics for its fleet of Boeing B737 CG & NG aircraft until 2018. Within the scope of the contract, Sabena technics will provide Mauritania Airlines with unlimited pool access B737 CG & NG, components, repair & overhaul services, engineering & maintenance as well as a dedicated main base kit to ensure the continuity of the flight operations, anywhere in the world. Additional added-value services are also provided on a punctual basis by Sabena technics and tailored to Mauritania Airlines' needs in order to improve the reliability of its flight operations.

Liebherr-Aerospace on board the Bombardier CSeries aircraft

Liebherr took advantage of its vast experience in landing gears and air management systems for commercial aircraft to optimize the operating costs and the reliability of its systems for the CSeries aircraft. The systems are designed, developed and manufactured by Liebherr-Aerospace's German- and French-based OEM facilities: Liebherr-Aerospace Lindenberg GmbH, Lindenberg (Germany), is responsible for the CSeries landing gear, whereas Liebherr-Aerospace Toulouse SAS, Toulouse (France), is in charge of the air management system.



A Liebherr air-conditioning pack (above) for the CSeries

Photo: Liebherr Aerospace

GE Aviation announces new TRUEngine LLP designation

GE Aviation is launching the TRUEngine LLP program, which offers the industry an easy means of evaluating the operating history of used life-limited parts (LLP). To earn the TRUEngine LLP designation, LLP are subjected to a rigorous back-to-birth records audit and engineering review to evaluate their configuration and maintenance history relative to airworthiness limitations substantiated by GE and documented in the engine manual. LLP will be qualified at the part level and at a specific time-since-new and cycles-since-new. Life-limited parts are the most critical engine components and include rotating components such as disks, spools and shafts. Life limits are established using a rigorous methodology that is applied to both individual parts as well as the engine system. Systems-level analysis is critical because some non-life-limited "influencing parts" like turbine blades and seals can significantly impact durability of LLP. TRUEngine LLP will be rolled out in stages and ultimately will cover the CFM56*, CF34, CF6, GE90, and GENx product lines. TRUEngine LLP documentation will accompany future LLP sold through GE Aviation's materials business, the largest source of used serviceable material for GE Aviation engines.

STS Component Solutions announces latest joint venture with Ankra International

STS Component Solutions and Ankra International reported the emergence of a distribution agreement to provide Power Drive Units (PDU's) to commercial aircraft and freighters that are used on Boeing 767 -200/300/400 and Boeing 777 -200/300 Aircraft. Ankra International develops and manufactures Power Drive Units designed as drop-in replacements for original

equipment. These aftermarket PDU's do not require any modification to the aircraft structural or electrical connections. Ankra's Flexible Designs allow operators the ability to quickly arrange PDU configurations at a moment's notice. The PDU feature a sophisticated control system to detect soft and hard pallet characteristics for optimized traction and reliability. For over 40 years Ankra International has become a well-known designer and manufacturer of these self-lifting, low profile units that weigh less than 9 pounds, resulting in a lower cost alternative to other in service PDU's.

Eirtech Aviation expands into Italy

Eirtech Aviation has expanded its global footprint, with the announcement it will begin painting aircraft in the former Alitalia Paint hanger at Rome's Fiumicino Airport. The company, which is based at Shannon Airport in Ireland, is a leading aviation services provider with operations in Shannon, Dublin, the Czech Republic, Dubai and now Italy. The state-of-the-art hanger, which is used for the painting of wide-body aircraft, boasts four magic carpet platforms, suspended from the ceiling. The magic carpets facilitate the preparation and painting of an aircraft without the need for docking, helping to reduce the time taken to prepare aircraft for painting. The Rome facility brings Eirtech Aviation's number of dedicated aircraft painting locations to four, with over 20,000 qm² of hangarage.

Eurocopter reinforces capabilities in the U.S. with installation of an AS350 assembly line

Beginning in 2014, Eurocopter will install the necessary industrial capabilities to upgrade the American Eurocopter plant in Columbus, Mississippi, to a final assembly and test site for Eu-

rocopter AS350 helicopters, the top-selling civil helicopter in the U.S. market. The plan was developed with two main objectives in mind: First, as a way to offset the impact of the reduction in local production of UH-72A Lakota helicopters and second, to help provide a boost to sales in the U.S. market, especially with government and law enforcement agencies. "North America is the largest light helicopter market in the world for Eurocopter, and this new assembly line supports our industrial strategy by manufacturing the preferred AS350 'Made in the USA' in close proximity to our customers," said Joseph Saprito, Executive Vice President of the Global Supply Chain for Eurocopter. "This decision further supports our investments that have developed reliable and efficient local industrial capabilities in a market with strong expected growth. "The plan calls for the Columbus plant to become a final AS350 assembly and test site using parts produced by Eurocopter and its suppliers, in addition to the continued production and retrofit of UH-72A Lakotas for the U.S. Army, other federal agencies and foreign military customers.

Fokker and StandardAero join forces in FLYFokker partnership

The partnership between Fokker Services, part of Fokker Technologies, and StandardAero broadens the range of services offered in the FLYFokker program by adding engine services to the services pallet. These services include engine familiarization and engine borescope training, dedicated 24/7 Field Service teams, accessory overhaul and test capability and rental engine support. The FLYFokker program was launched in 2009 and consists of cost-effective aircraft and service solutions for start-up, mature and phase-out operators. Since the launch of the program, numerous of airlines around the world have started operating Fokker aircraft.

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WHAT IT TAKES TO FLY.

Lockheed Martin's Kelly Aviation Center is open for business in Montreal

Kelly Aviation Center Montreal, a Lockheed Martin Canada division, has signed its first six contracts to perform aircraft engine maintenance for airlines, charter airlines, aircraft brokers, and aftermarket suppliers. The announcement was part of the facility's grand opening celebration that was attended by local and provincial government officials and business leaders, current and potential customers and suppliers, Lockheed Martin executives and Kelly's 95 employees and contractors hired so far this year. Kelly Aviation Center Montreal performs a complete range of services on the CF34 and CFM56 engine families, the engines that power the regional Embraer and Canadian RJ jets and the Airbus 320 family, respectively. The facility is part of Lockheed Martin Aeronautics' engine maintenance, repair and overhaul line of business, which includes Kelly Aviation Center, a Lockheed Martin affiliate based in San Antonio, Texas.

AJW Aviation signs PBH contract with Skypower Express Airways

AJW Aviation, the independent complete aircraft spares support specialist, has been selected by African airline Skypower Express Airways Nigeria to provide power-by-the-hour support to its B737-300 Classic cargo aircraft. This is AJW's first PBH contract with the airline and will provide support to the aircraft over the next three years. This contract is one of over 400 aircraft that AJW currently has under PBH or pooling globally. AJW will support Skypower Express Airways Nigeria from its network of strategic hubs across Europe and the rest of the world, which comprise over 420,000 service ready Boeing and Airbus component inventories valued at over \$450m.

Air Canada extends contract with AFI KLM E&M

AFI KLM E&M was awarded the contract to support Air Canada's eleven new GE90 engines associated with the carrier's five new Boeing 777s. Air Canada chose AFI KLM E&M in March 2010 to provide exclusive support for its GE90 engines, with a total of 39 engines for 18 aircraft. The contract covers a broad array of tailor-made solutions, from on-site and on-wing operations to shop visits, engine component support, provision of spare engines, and engineering services.

Boeing announces Montana site expansion and 787-10 work

Boeing will expand its manufacturing site in Helena, Mont. by nearly 50% to support demand for Boeing commercial airplanes and new work for the Boeing 787-10 Dreamliner. Boeing Chairman, President and CEO Jim McNerney made the announcement at the Montana Jobs Summit in Butte. The nearly \$35m expansion will add more than 55,000 ft² of manufacturing space, bringing the Boeing Helena facility to 167,099 ft². Construction will begin this fall on the south side of the existing facility, with estimated completion by the fourth quarter of 2014. Boeing expects the expansion and increased work to add 20-25 people to the 144-person workforce. Boeing Helena manufactures complex parts for the 737, 747, 767 and 787 models from hard metals like titanium. Combined with its supply network in Montana, Boeing contributes significantly to the state's economy.

ATR and LIAT sign Global Maintenance Agreement

The European manufacturer of turboprop aircraft ATR and the Caribbean carrier LIAT have announced the signature of a Global Maintenance Agreement (GMA) for the airline's new fleet of ATR -600 aircraft. Signed for an initial period of 10 years, the contract will cover the four ATR 42-600s and four ATR 72-600s that will be operated by the airline in the near future. LIAT has already started introducing its new ATR -600s into its fleet. As set out in this GMA, ATR will manage all aspects of maintenance and repair for some equipment for the airline's ATR '-600' fleet. This equipment includes LRUs (Line Replaceable Units), propeller blades and landing gears. By entering into the agreement, ATR guarantees LIAT the permanent availability of these spare parts from its logistics center in Miami. The airline will also benefit from ATR's expertise for all of its maintenance procedures. Close to 300 ATRs currently in operation are covered by GMAs with ATR. This represents nearly a third of ATR's total operational fleet.

A2B Heli Maintenance launches helicopter MRO/CAMO services with new London Oxford Airport base

A2B Heli Maintenance, a newly established EASA Part 145 independent commercial heli-

copter maintenance company, has formally opened its doors at London Oxford Airport. Headed by Andy Bloxham, Managing Director, A2B Heli moved into the newly refurbished hangar on 19th August and will specialise in the support of leading commercial helicopter types. In its first week of operation, A2B Heli supported three helicopters in Europe by providing short notice troubleshooting and scheduled maintenance. A2B Heli, part of the expanding A2B Aero Group, comprises a team of five dedicated OEM factory trained certifying staff with experience on a wide range of Eurocopter, Bell, Agusta and Sikorsky models. The offering is supported by a unique global network of support, enabling it to offer customers support all around the world.

Harbin Composite Manufacturing Centre delivers 1st major A350 part

Harbin Hafei Airbus Composite Manufacturing Centre (HMC), a joint venture between Airbus and its Chinese partners, has started to deliver elevators for the Airbus A350 XWB programme. A ceremony was held in Harbin for the delivery of the first ship set of elevators on September 16th. The elevators manufactured at HMC are delivered to Spain-based Aernnova Aerospace (ANN), who will deliver them to the Airbus plant in Getafe, Spain, where they will be integrated into the A350 XWB horizontal tail plane. ANN is a major supplier of aerostructures to Airbus. Under a contract signed by HMC and ANN in 2010, HMC is responsible for manufacturing and assembling the complete set of carbon fibre elevators (an elevator is a movable control surface in the horizontal tail plane that makes the aircraft pitch up or down to increase or reduce its flight altitude).

During the initial phase the A350 elevators were solely produced at ANN. Production in China started in 2012. After a period of transition, during which the elevators are produced at both ANN and HMC, the Harbin Manufacturing Centre will become the sole supplier of A350 XWB elevators. According to an agreement signed in 2007 between Airbus and the Chinese government, Airbus agreed to allocate five percent of the A350 XWB airframe to be manufactured in China. The work packages to be carried out by HMC are a significant part of the five per cent.



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CFMI CFM56-5B - One of several engine types Avioserv manages

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The Challenge

Avioserv's business growth strategy was the catalyst to search for a software solution to manage the operational complexity of their business and focus on its LEAN operational initiatives. As a company that offers asset leasing and lot components, the accompanying financial management documentation and service processes are tedious, paper intensive and time consuming. To grow, without compromising its hallmark customer service, Avioserv would need a solution that could work across all departments touching every aspect of managing lot receipt, teardown, documentation and sales, without slowing down the quoting and inventory management processes.

The Solution

Avioserv became an important collaborator in the development of Component Control's first-generation lot costing module for Quantum, helping to define the basic processes needed to expedite complex lot costing across inventory lines. Capabilities to date include the instant linking of a single PDF image package to thousands of lot parts, tracking acquisition costs, teardown expenses, overhaul and repair expenses as well as miscellaneous charges. A single screen gives visibility of all lot related activity including receiving, sales, repairs and scrap functions, and provides comprehensive profit analysis both on-line and through reporting.

With inter-operability across all of Quantum's modules, Avioserv also leverages Quantum's Receipt Inspection module which provides QA inspection tracking to list part dispositions and detailed findings which are

helpful in the subsequent processing of parts, thus avoiding mishandling of parts after inspection. Avioserv also utilizes Quantum's Trace Document Imaging to provide quotes with all of the regulatory information intact, and bar coding to further automate its inventory management.

To broadcast their 63,000 plus lines of available inventory 24/7, Avioserv also uses StockMarket.aero, Component Control's online e-marketplace, which is tied directly into Avioserv's inventory and accessible via their corporate website or StockMarket.aero. "The combination of Quantum and StockMarket.aero provides accessibility of real-time data to sales from the shop floor, customer records and inventory, giving us the ability to efficiently deliver the best product to our customers while meeting our strategic operational goals," commented David Strockbine, Vice President of Sales and Leasing at Avioserv.

Today, Quantum tracks all lot activity and provides native and custom reporting, extensive analysis and lot costing tools, at-a-glance commission and lot status information in real time. Avioserv's LEAN principles are not compromised as business complexity is managed with total quality control.



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To comply.... or not?

Lifting the lid on non-mandatory component modification

by Keith Mwanalushi

Any aircraft operator will no doubt have received a non-mandatory component modification from the manufacturer of the aircraft or one of its components. Where safety of flight is not necessarily compromised, this raises a number of issues where manufacturers, airlines and MROs may have varied opinions.

Non-mandatory component modifications, commonly referred to as service bulletins or simply 'SBS' normally contain a recommendation from the manufacturer with which it believes the aircraft operator should comply and that often reflects a safety issue or it may result from an improvement developed by the manufacturer.

Although a service bulletin may be labelled or characterised by the manufacturer as "mandatory," it is often that compliance with a service bulletin is not specifically required unless it is accompanied by or includes an airworthiness directive, in this case the directive is related to safety of flight issue and compliance is mandatory.

The manufacturer (OEM) issues a service bulletin because it believes compliance will make the aircraft or its components safer or more efficient. (The manufacturer may also be trying to limit its exposure to products liability).



Cost of any modification must be weighed against the benefit of incorporating the modification says David Tokoph.

So in circumstances when compliance is non-mandatory, when is it justifiable for an aircraft operator to defer or reject compliance with a service bulletin? "Firstly, there are many reasons which may cause an operator to consider incorporating a service bulletin into an airframe, engine or component such as safety, reliability or efficiency," says David Tokoph VP for valuations and technical analysis at Virginia-based morten beyer & agnew (mba).

"Obviously the ability to work closely with the maintenance provider and, or OEM makes this process easier. At the end of the day the airline then has the ultimate responsibility on whether this will be accomplished or not."

Tom Covella, group president at STS Component Solutions

He continues: "The cost of any modification must be weighed against the benefit of incorporating the modification. Service bulletins identifying safety concerns are often mandated and associated with airworthiness directives so the cost of not incorporating is clear but modifications associated with reliability or efficiency must be carefully evaluated by the operator."

Tokoph notes that this evaluation must include the complete cost of the service bulletin incorporation and the expected benefits of the modification which may be realised over a longer time frame. "If the perceived benefit of a non- safety sensitive modification may not apply to the specific operation of a given operator or yield enough upside to validate the additional cost then the deferral of implementation is justified," Tokoph adds.

From any perspective most service bulletins play a very important role in the life cycle of a component. In most cases there is an underlying factor that is driving this as a result of the performance of this component. Tom Covella, group president at STS Component Solutions says although the compliance may result into additional costs to operate and maintain the component there may be an additional long

term benefit that can be realised by the incorporation of this service bulletin.

"The aircraft operators have the challenge to review each service bulletin and determine how and when this will be incorporated into their fleet," Covella declares. "The timeline associated with this incorporation or deferral is driven by operational performance that each particular airline is, or has experienced with this component. In the cases where the service

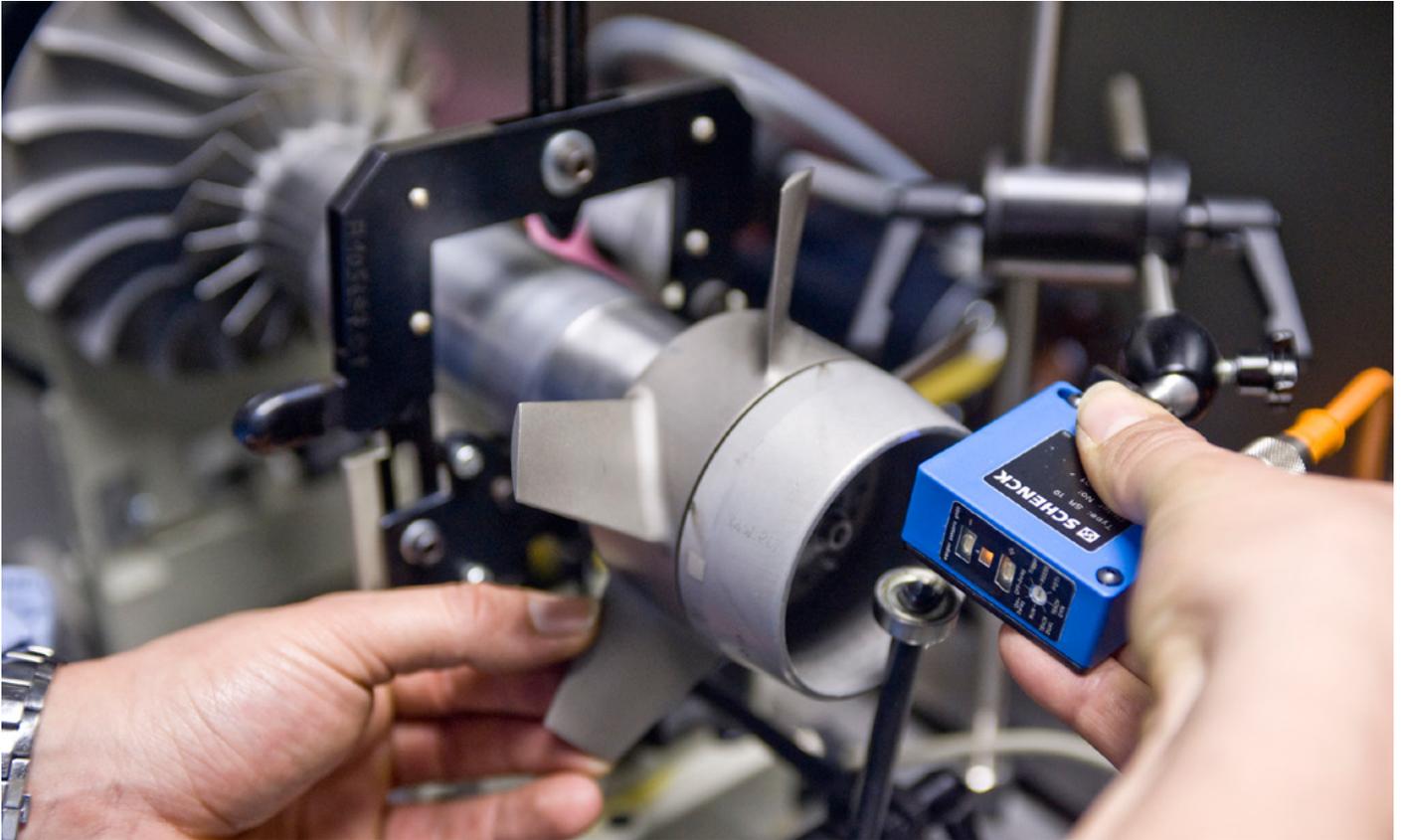
bulletins are associated with our OEM business partners we work very closely with our OEM partners and airline operators to ensure that there is a good understanding of the long term benefit associated with compliance and the value that can be realised."

In addition, Covella emphasises that STS tries to proactively work in the planning and implementation of these service bulletins in an effort to minimise their operational impact to both the airline operator and the OEM.

It's worth noting that not all service bulletins improve component reliability or safety. Or the benefits are so marginal it becomes not worthy of the investment, according to Andy Collings, VP for flight hour programmes at FL Technics. "Bear in mind that the cost of modifying a component is not limited to the component modified on the aircraft alone as spare components have to be modified too. Needless to say, this is especially important for the operators owning those spare components."

Collings warns that some MRO companies operating Power By the Hour (PBH) contracts with a central pool could refuse to support 'non- standard' pool components so the operator can be left with "no support" on these parts. He adds that FL Technics provides a "very flexible" PBH service and this situation does not occur.

"Finally, some SBS call for changes in an air-



Managing modifications on pool components can be tricky.

Photo: Iberia

craft wiring system which may necessitate a hangar visit, causing the aircraft to be out of service whilst the necessary works are carried out. Such modifications may also result in additional costs during a routine hangar visit," Collings says.



Andy Collings, Vice President, Flight Hour Programmes at FL Technics.

Some aircraft and component manufacturers have specified that their maintenance manuals include all service bulletins and instructions. As a result, some airlines spoken to in preparation for this article assumed that the manufacturer's inclusion of service bulletins creates an obligation to comply.

"I would encourage all OEMs to provide the SB details in the Component Maintenance Manual (CMM), but I don't believe that this creates an obligation for an operator," suggests Collings. "However, it does allow a maintenance organisation to better evaluate the modification and the costs involved and, in turn, to provide the operator with more accurate recommendations. With this information the operator can then make an informed decision about the embodiment of the modification. Component repair facilities often have difficulty getting modification details and to have them available in the CMM is a definite advantage to the entire industry," Collings adds.

The inclusion of service bulletins into the CMM's is a direction that some OEM's have chosen to pursue. "Obviously if these service bulletins are incorporated into the CMM there is an underlying factor that is driving this. Airline operators and MRO's then must work

together to determine if compliance will be accomplished," comments Covella.

In most cases, Covella reminds that airline operators will make this decision based on the "criticality" (flight critical or not) of the specific component and operational performance and, or reliability that the component is achieving. "Another factor that we also see come into to play is whether the aircraft is leased or owned and remaining time left on the lease. If the specific fleet or aircraft is not in the long term business model for the airline operator they may defer this if they are on the 'back end' of their lease."

When safety of flight is not necessarily an issue, an aircraft owner may then want to perform a cost benefit analysis to compare the cost of compliance, often with recommendation from a maintenance provider.

David Tokoph from mba agrees that performing a cost benefit analysis for any non-mandated or safety sensitive modification is a must for any owner or operator. "Not doing so has a negative economic impact as many modifications may not provide the returns to justify the cost of compliance," he argues.



To defer or reject compliance with a service bulletin is a common dilemma. Photo: Iberia

"In addition to this analysis it is important for the operator to consider the best time frame for implementation across its fleet as a fleet concurrent implementation may bring down the overall implementation and maintenance costs through bulk kit purchases, negotiated man hour rates and inventory management," Tokoph continues.

Covella has a similar view saying the performance of a "sound" cost benefit analysis is extremely important for the review of compliance of service bulletins. "Obviously the ability to work closely with the maintenance provider and, or OEM makes this process easier. At the end of the day the airline then has the ultimate responsibility on whether this will be accomplished or not.

"From my experience the ability of the OEM to effectively communicate the key benefits of the service bulletin on the 'front end' will enable the airline operator to make better de-

isions with the compliance and incorporation of these SBs. From our experience working closely with the OEM's, MRO's and airlines we have cohesively achieved a seamless process in this area," Covella assures.

Another issue that crops up relates to parts pooling. If an airline joins a parts pool, the decision making process is sometimes tricky. For instance, an airline wants to incorporate a service bulletin to save fuel but there are no financial benefits to the pool provider. If not all pool members accept the modification - how does a pool provider manage this? Secondly, who pays for it?

"Typically, pool providers will require a minimum modification standard for components within the pool and accept compo-

nents meeting or exceeding this specification," Tokoph responds. "Modification costs in excess of the minimum mod requirements for the pool are often borne by the operator, making it very important that the operator negotiate and manage the pool contract to meet their specific requirements."

"Organisations like the International Airlines Technical Pool (IATP) have been an increasingly important venue for communication and cooperation of airlines seeking mutually beneficial component pooling agreements as opposed to those of the larger legacy pool providers."

David Tokoph, VP for valuations and technical analysis at Virginia-based morten beyer & agnew (mba)

Alternatively, in operator pools, Tokoph advises that it is essential that the operators communicate to establish the most beneficial standards for all parties. "Organisations like the International Airlines Technical Pool (IATP) have been an increasingly important venue for

communication and cooperation of airlines seeking mutually beneficial component pooling agreements as opposed to those of the larger legacy pool providers," he says.

FL Technics currently supports 80 aircraft (A320, B737C, B737NG and CRJ200) on PBH contracts and part of the service provided is pool access and forward exchange in support of the failed component, so this is a situation the company comes across quite regularly, according to Andy Collings.

"The FL Technics pool contains components which support the requirements of our customers and if a customer requests a component with a specific SB incorporated then we strive to provide this part for them."

If this part is different to the normal pool standard such as not fully interchangeable, Collings says FL Technics keeps different mod states to allow all customers to be supported.

"Moreover, as part of the FL Technics PBH support, a significant proportion of the modification cost is paid by us, in effect subsidising the cost of modifications, so the customer may go ahead with a modification that would otherwise be rejected under a normal cost benefit analysis. This often leads to component reliability and safety improvements," Collings explains.

When there is a non-exclusive component pool involved in the process this of course makes the decision much more complex. "Sometimes the underlying factor will be the structured contract language of the agreement on how service bulletins are managed," Covella observes.

Regardless, Covella believes the ability to work together and determine the best "long-term" solution for all parties involved will determine how this will be incorporated or deferred. "I am an avid believer that when both parties work towards a common goal and establish a win-win business partnership that benefits all parties involved the incorpora-

tion of these service bulletins can be achieved successfully. If all parties are educated on the benefits and criticality of the SB so that sound business decisions can be made in accordance with the parameters of the contract then this can be accomplished successfully."

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WHEN RESULTS MATTER

Triumph Group expects fiscal year 2014 additional program costs

Triumph Group reported that it expects to record pre-tax additional program costs during fiscal year 2014 totaling approximately \$68.0m, primarily associated with the 747-8 program. Of the total incremental costs, approximately \$44.0m, will be included in the company's second quarter fiscal year 2014 financial results. The company expects that approximately \$11.0m will be reflected in third quarter fiscal year 2014 and the remaining \$13.0m will be included in the fourth quarter fiscal year 2014 financial results. The

number of shares used in computing diluted earnings per share was approximately 53.0m shares. These amounts have resulted from reductions to the profitability estimates of the company's current 747-8 production lot, which will be approximately 80% completed by the end of the company's second quarter fiscal year 2014 and is expected to be nearly 100% completed by the end of the third quarter fiscal year 2014. As a result of the current cost levels, the expected profitability on the next production lot, which will begin delivery in the fourth quarter of fiscal year 2014, was also decreased. Both current and future production lots are expected to be profitable and not result in loss reserves.

Information Technology

Mxi Technologies, a leader in aviation maintenance management software, released that Link Airs, a start-up low-cost regional carrier based in Japan, has selected Maintenix software to provide comprehensive fleet maintenance management. As a start-up with plans to begin operations in early 2014, Link Airs wanted an MRO system that could provide the functional scope and flexibility to meet its immediate needs, then scale in lockstep with the company's growth. Link Airs will also be the first to operate ATR aircraft in Japan, so the software had to come with a proven track record in inducting and maintaining modern aircraft.



Airbus A321

Photo: AirTeamImages

Next year, **Lufthansa Technik AG** will equip 20 of Lufthansa's Airbus A321 aircraft with the BoardConnect in-flight entertainment solution developed by Lufthansa Systems. In contrast to conventional systems, BoardConnect requires no labor-intensive cabling of each seat. Instead, the system relies on an ultra-fast WLAN network that meets the latest WiFi standard. The wireless access points (WAP) were developed by Lufthansa Technik, and are the first access points in an aircraft to support the wireless standard 802.11ac (1.3 Gbps). The system has been optimized for the extremely demanding conditions of an aircraft cabin and enables hitherto unattainable data transmission rates. The new WAPs have their own integrated antennas (3x3 MIMO antenna array): in addition to the simplest possible installation, there is no need for the tuning or adjustments necessary with external antennas. This new WAP technology has already been designed to meet the standards of the latest aircraft generations, such as the Boeing 787 or the Airbus A350. Depending on the aircraft's size, Lufthansa Technik needs only a few access

points in the cabin to enable every passenger to enjoy a wide range of content, including perfectly streamed media. Passengers use WLAN to connect to the aircraft's infotainment server quickly and easily using their own laptops, tablet computers or smart phones.

Aircell, a leading provider of in-flight connectivity equipment and services for the business aviation market and a division of Gogo, announced the ATG 2000, a new equipment package that provides Gogo Biz in-flight Internet and voice service for the business aviation market. Joining the existing family of Gogo Biz equipment packages, the ATG 2000 is designed to effectively and affordably provide Internet and voice services aboard aircraft with fewer users and/or lighter passenger loads, such as light jets and turboprops. Aircell also announced Travel Management Company (TMC) as the launch customer for the ATG 2000. TMC is adding the system to its entire light jet charter fleet. Once installations are complete next month, Gogo Biz service will be available aboard the entire TMC charter fleet – nearly 70 aircraft in total.

Precision Aviation Group of companies has scaled up operations further with the Pentagon 2000SQL system. Additional company operations have been added seamlessly under the system with minimal additional setup and implementation activities required. Chad Lemke, Vice President at PAG, commented that "Pentagon 2000SQL has proven to be a very powerful yet flexible part of our infrastructure. We have been able to support the growth of the business in a very seamless and non-disruptive way. Our initial investment has been leveraged throughout our expansion, so adding additional company operations to the system has been quick and very cost effective".

Commsoft, a leader in aviation engineering and maintenance systems, has signed a new five-year contract with Blue Air AMS, the Romanian low-cost airline, for the continued use of Commsoft's OASES MRO IT system. Originally founded in 2004, Blue Air was the first Romanian airline to be launched with 100% Romanian private equity and its business was acquired recently by Airline Management Solutions. The business assets of the old company have now been formally transferred to the new owners and the newly-named airline has been awarded an Air Operations Certificate by the Romanian CAA. An OASES user since 2006, Blue Air AMS plans to migrate to the latest AMP and AD/SB software early in 2014 for the on-going maintenance of its current fleet of Boeing 737s, including one 737-300, one 737-500 and four 737-400s. The airline will be supported in its upgrade by Commsoft's own Bucharest-based implementation team.

In the hot seat.....

Keith Mwanalushi speaks to **Gabriel Mofaz**, President, PENTAGON 2000 Software, Inc

AviTrader MRO: What attracted you to work in the software industry?

Mofaz: My degree work in engineering and computer science initially attracted me to the software industry. The industry is fast moving and competitive, so once I got started there was no turning back.

AviTrader MRO: What does a typical day's work entail in your job?

Mofaz: Everything we do at Pentagon 2000 Software is centred on our customers and our people. During a typical day, I will meet or talk with key clients, review customer service and support issues, survey the progress of our new development initiatives, map out our company strategy for existing and new markets, attend to the concerns of our staff, and help advance new customer and partner initiatives.

AviTrader MRO: In your opinion, how is the global aircraft maintenance industry responding to MRO specific software?

Mofaz: The MRO industry is highly regulated, but very fragmented. There are many regional and cultural differences that define the landscape, and the businesses include a broad range of companies from OEM's to repair stations, airlines, FBO's and parts brokers. We have developed a comprehensive MRO software system that includes the robust features and functions that are demanded by the leading OEM's, and we have deployed the system using modular and scalable technology so that we can implement complete business solutions for a vast array of companies in multiple disciplines, both large and small.

AviTrader MRO: MRO organisations are continuously looking at ways to improve efficiency levels, how does this industry specific software help them achieve that?

Mofaz: Our system focuses on providing improvements for our customers in both efficiency and effectiveness. It's good to be able to do things faster, but there is no substitution for doing things right the first time. Our system design philosophy is to allow customers to capture key information "one-time", as early in the process as possible. So as an example, the time and effort spent during a receiving and inspection process to capture key operational data is leveraged during the quality assurance, sales and shipping process. All of these operational benefits generally translate to ROI. When customers make an investment to install the Pentagon 2000SQL system, the underlying business benefit is usually increased revenues, reduced costs and expenses, and lower operational risk.

AviTrader MRO: How do you factor in the need to meet the requirements of varied users who have different needs, such as OEMs, airlines and MRO providers?

Mofaz: The Pentagon 2000SQL system is modular by design, so we are able to deliver a fully-integrated system to each customer with the specific features and functions that they require to run their business. The system has been adopted by many leading enterprises in each major segment of the market, so MRO's benefit from the rich sourcing and supply chain features that distributors and parts brokers have driven

into the system. And the parts brokers and distributors benefit from the capabilities to manage life-limited components that operators and MRO's have driven into the system. To a large degree, each customer set cross-pollinates the system with features that other customer sets can make use of. The broader that our customer's business model is, the higher the value they can obtain from the system.

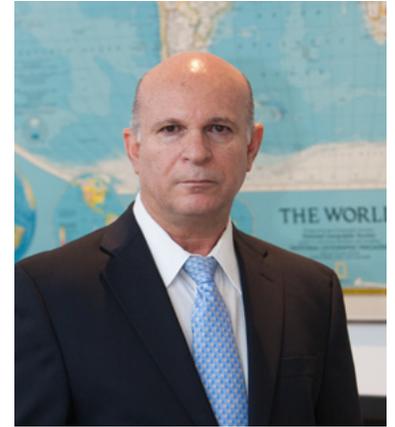
For example, we have customers that utilise fleet management, flight operations, aircraft recordkeeping, airframe maintenance, component repairs, and advanced materials management all within a single installation of the system. On one end of the spectrum, we have customers with hundreds of users, and on the other end of the spectrum we have customers running a single user installation on a laptop. The technology that we have deployed enables us to meet the needs of OEM's and MRO's operating in an enterprise environment, and also to meet the needs of the small start up businesses operating on a tight budget. In every instance, we provide a similar functional system for our customer that is powered by the latest Microsoft platform products. So we don't have a limited-capabilities version of the system that we sell to one sector and a more comprehensive version of the software that we sell to another sector. All of our customers get the same base feature set in each module and they can scale the system up as their business grows.

AviTrader MRO: What's next in the pipeline at Pentagon 2000?

Mofaz: We are continuously making investments in the system in different areas. We are strengthening the underlying foundation of the software by implementing new facilities of the Microsoft .NET framework, this is not always visible to our customers, but it provides benefits through performance and scalability improvements.

We are also adding new features to our existing modules, customers enjoy these functional enhancements that we add based on their recommendations and feedback, and the enhancements to an existing module are provided at no additional charge to our customers under their maintenance and support plan.

We also have new modules under development in the areas of mobile computing, e-commerce and external interfaces. As the global workforce further embraces smartphones and tablets with cloud computing, we are delivering additional capabilities in these form factors to make sure that our customers can operate at maximum efficiency. Our pipeline is guided by our customers and by the latest technologies, so as the market evolves, our pipeline will evolve with it.



Gabriel Mofaz, President, PENTAGON 2000 Software. Photo: FLT

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Pulling resources

Iberia Maintenance is one of the lines of business that, along with cargo, passenger transportation and airport assistance constitutes Iberia. The maintenance division services the Iberia fleet and those of nearly 100 airlines from all corners of the globe including Cathay Pacific, British Airways, Vueling, Qatar Airways, and Sri Lankan Airlines.

The nearly 4,000 technicians and engineers employed by the company provide a wide array of MRO solutions from relatively simple options to the more complex ones. As part of its every day solutions the MRO provider says it dedicates hundreds of hours to improve processes aimed at reducing TATs, increase force effectiveness and cut down on logistics and engineering management expenses.

The company is now using laser welding technology to repair aircraft engine turbine blades. It also installed a vertical crankcase rectifier, water spraying machine, and new valve tolerance monitoring equipment. The division has introduced paperless workshop procedures, in which only portable wireless devices are used around the aircraft for consulting manuals and documentation. Iberia Maintenance also continues to work with Airbus Military on its Multi Role Tanker Transport project.

Iberia Maintenance is the world's ninth largest MRO provider and Spain's largest in terms of turnover and capability. In 2012 it reportedly carried out 85 C and D checks on aircraft, plus



Portable wireless devices are used around the aircraft.

Photo: Iberia Maintenance

215 inspections and overhauls of engines, 30 of APUs and 35 landing gear repairs. It also inspected more than 57,000 components, and painted 28 aircraft.

The Iberia and British Airways businesses came under the IAG banner in April 2011 and the progressive integration has already had a considerable impact on the global MRO market. The engineering capabilities, facilities and expertise of British Airways Engineering and Iberia Maintenance & Engineering have

come together to provide global carriers with combined expertise in MRO solutions.

The combined capabilities now have an approximately 8,700 strong workforce, base maintenance at Madrid, Heathrow and Gatwick. Heavy maintenance is done at Madrid, Barcelona, Cardiff and Glasgow. There is an engine overhaul shop at Madrid and component maintenance sites at London, Cardiff and Madrid.

The merger of the two MROs has significantly widened the capabilities and extended the scope of each business, ensuring airworthiness, increasing the efficiency and substantially reducing aircraft downtime for more carriers in more locations.

The combined company can deliver MRO services for Boeing 737, 747, 757, 767, 777, 787 and Airbus 300, 320, 330, 340 and 380 families as well as the MD80. It can also provide repair and overhaul services for APUs including GTCP85-98, GTCP36-300 and 131-9A. Iberia Maintenance & Engineering offers engine process on a wide range of products such as CFM56-5A1/-5B/-5C4, CFM56-7B; RB211-535E4/-C, CF34-3A/-3B, RR Pegasus MK 154 and JT8D-17A/-C.

Airlines can often face a dilemma when choosing the right MRO strategy, but choosing the right MRO partner tends to have a positive impact on the residual values of carriers' aircraft and significantly lowers risk.



Combined capabilities

Photo: IAG



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For further information regarding IBA's data provision services contact Ben.Jacques@ibagroup.com



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Maintenance Cost Benchmarking

by Usman Ahmed

Costs are the biggest worry of any airline; according to IATA almost 54% of the costs are operational. Airlines would like to bring these down to increase the profit margins, but with fuel costs at around 30% of the total operational costs, airlines have no other option but to look for savings in other areas. The second biggest operational cost is maintenance, which is where airlines can make significant savings. According to IATA, maintenance costs can be as much as 12% of airlines cash operating costs, so any reduction in these can mean an increase in the profit margin of a similar magnitude.

The number of airlines willing to instruct these audits has been increasing every year, as more and more realise that these benchmarking exercises can result in significant benefits. The specific methodology and approach depends on the structure of the airline and complexity of its maintenance operations. In any case, the objective of the airline should be to review their technical performance, highlight areas of concern and identify opportunities to lower the costs. Typically airlines will find a suitable independent partner to evaluate both maintenance and engineering costs borne by the operation and report how the airline performs when compared to similar and/or competing carriers. The results are used to quantify opportunities for both structural and economic improvements within the technical operating environment.

A typical study should aim to identify maintenance costs and drivers, particularly those performing badly. These can then be compared with competitors, both regional and worldwide. This will not only allow the maintenance staff to improve technical performance

but will give them a better understanding of the associated costs. It will also give airlines the opportunity to create or reorganise trend monitoring to quantify and control spend going forward.

Airlines have not only cut costs but have also been able to optimise their maintenance planning by renegotiating contracts with MROs and external suppliers. The key is not only scrutinise the costs but also the organisation, its structure and hierarchy, then recommend improvements. Improvement of the organisation, and changing the culture within, can result in far better cost savings and efficiency improvements than simple bottom line improvements over the short term.

Smaller airlines for example do not always have the luxury to renegotiate PBH agreements; however, they can closely monitor the reliability of the aircraft and be more vigilant at the time of delivery, alongside well-structured warranty management.

Airlines sometimes assume that if an aircraft has had a heavy check, or recently been overhauled in the case of an engine, it will perform as described by the OEM until the next maintenance input. We know that this is not always true; IBA has seen aircraft and engines returning to the fleet with worse performance than before their maintenance checks. Maintenance Cost Benchmarking identifies these planning errors and addresses the root cause of the failure, saving cost in both the short and longer term.

Non-routine maintenance is a big concern and often a point of cost mismanagement; this could be defect rectification due to AOG incidents, or findings during one of the standard inspections. For a new aircraft, the non-routine maintenance ratio is very low, however, as the aircraft ages, the non-routine ratio also increases, and can be between 50-100% depending on the type of check for a 10-15 year old aircraft. There are two elements of non-routine costs, the labour cost and

the cost of material. The labour element is unavoidable, but airlines can be more intelligent with the material cost. For this airlines are turning to MROs and component suppliers for PBH programmes. Airlines would provide a list of parts and MRO will provide



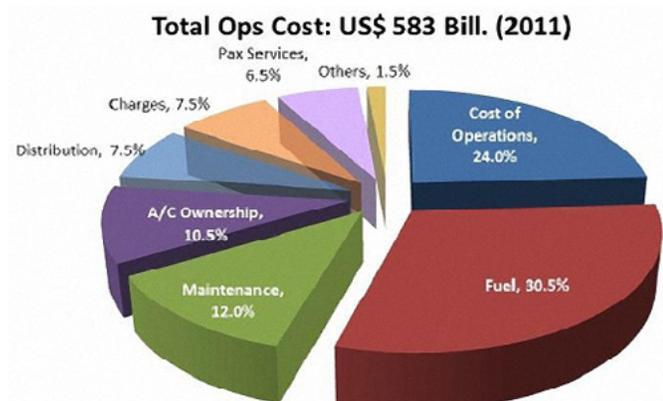
Usman Ahmed
Senior Aviation Analyst IBA Group Ltd

access to the pool of parts for a fee. Airlines that have an efficient reliability management department are able to identify parts that have a higher failure rate and parts that have a lower probability of failure. The parts with lower probability can then be removed from the list, which will reduce the hourly rate an airline pays to the supplier.

An important part of the whole exercise is to look at cost invoicing structure, close coordination between the maintenance and finance department is essential. IBA has noticed that people in the finance department who deal with maintenance related costs have little understanding of maintenance and thus are not able to question any anomalies. Maintenance invoices can be complicated, and therefore should be scrutinised. In one recent review, we discovered that at least 10% of the costs should have reduced by simply cross checking the labour hours of the contract.

Maintenance Cost Benchmarking is a powerful tool for empowering airlines and MROs to make accurate and wide reaching cost benefit decisions. In recent years IBA has saved millions of dollars for legacy and low cost carriers alike, combine this with the technological leaps forward and forward thinking, airlines really do have access to tangible cost savings during a period of difficult cost management.

For more information on Maintenance Cost Benchmarking please contact ben.jacques@ibagroup.com +44 1372 22 44 88.



Airline Operating Costs Breakdown

Source: IATA 2011



The IBA is an independent aviation consulting firm based in Leatherhead, UK, with representation worldwide.

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Universal Asset Management, a global leader in aviation asset management, aircraft disassembly and commercial aviation aftermarket component sales, announced that UAM Holdings, a corporation wholly owned and operated by Keri Wright, has acquired 100% of Universal Asset Management and its wholly owned subsidiary, Universal Air Repair. The transaction will enable Universal Asset Management to build upon its customer focus, drive continued organic growth, and pursue aviation asset acquisition opportunities. In conjunction with the acquisition, company founder and CEO Steve Manley announced his retirement from Universal Asset Management.

Lufthansa LEOS, a subsidiary of **Lufthansa Technik AG**, will deploy electrically powered hybrid towbarless aircraft tugs. A development contract for the project was signed with Kalmar Motor AB from Sweden on October 9th, 2013, on the occasion of the inter airport Europe exhibition in Munich. The electrically powered tug, or eSchlepper, is

capable of moving aircraft with a maximum take-off weight (MTOW) of up to 600 tonnes. The powerful eSchlepper will primarily be used for repositioning and hangar towing operations involving heavy long-haul aircraft, towing them over distances of up to seven kilometers. The all-wheel-drive electric vehicle will be powered by lithium-ion batteries, externally charged from the electricity network. Where necessary, the batteries can also be charged during operation by using a fully integrated diesel motor, the Range Extender. The eSchlepper is therefore purely electrically powered, whilst the integrated diesel generator is exclusively there for safety-related redundancy purposes.

WheelTug plc announced the execution of a Slot Purchase Agreement with Malaysia Airline System Berhad Airlines for 68 737NG Systems. With the new reservations the order book of WheelTug aircraft drive systems grows to 641 delivery slots reserved by twelve airlines from Europe, America, the Middle East and Asia. Seven of those airlines are flag

carriers. Current commercial aviation practice utilizes a tug for aircraft gate pushback, while forward taxi is powered by the aircraft's engines. The electric WheelTug unit drives the aircraft without using the engines.

MAINtag, leading provider of aerospace flyable RFID chips and tags, is providing EAM Worldwide and its EAM RFID Solutions division with FLYtag fiber dual RFID tags for life vests. EAM's first delivery of life vests with dual-memory tags is for Airbus A320 aircraft owned by European airline easyJet. Airbus announced in 2012 that they will require all life vest suppliers to comply with the dual-memory tag criteria outlined by the ATA Spec 2000 committee. This committee establishes the data format standard for RFID flyable tags. EAM Worldwide, a featured vest supplier for Airbus, is the first company to fulfil this requirement. FLYtag fiber dual covers both single- and dual-record formats and embeds ATA Spec 2000-compliant aerospace silicon chips.

People On The Move

MTU Aero Engines AG's Supervisory Board unanimously voted to extend the contract with Chief Financial Officer **Reiner Winkler**. The new, five-year contract will run from October 1, 2014 through September 30, 2019. On January 1, 2014, Winkler will take over the helm of MTU Aero Engines AG as its new Chief Executive Officer, a role he will serve in addition to his duties as CFO. Winkler has been a member of MTU Aero Engines' Board of Management since May 2005 and has so far been responsible for finances, human resources and IT.

remit to cover both helicopter marketing and business development.



Gerard Kenneally, new CTO for BOC Aviation Photo: BOC aviation

BOC Aviation announced the appointment of **Gerard Kenneally** as Chief Technical Officer commencing 2nd October 2013. Reporting directly to Robert Martin, Managing Director and Chief Executive Officer, Gerard will be based in the Dublin office of BOC Aviation. Gerard's appointment helps BOC Aviation add further depth to its management team through a senior professional manager with 24 years' experience in technical positions with a major aircraft lessor across a wide range of aircraft types.

StandardAero announced that **Russell Ford** has been appointed as Chief Executive Officer (CEO) of the company. Ford joins StandardAero from Precision Castparts Corporation, where he recently served as President of Carlton Forge Works and Dickson Test Group of the Forged Products Division. Ford begins his new role on October 15th.

ILFC released that **Peter Chang** has been appointed Senior Vice President and Head of Greater China. Mr. Chang will be responsible for leading the company's marketing efforts and operations throughout the Greater China region. Mr. Chang is an industry expert with more than 25 years of experience in placing aircraft and managing aircraft portfolios in the Greater China region. Mr. Chang most recently was Executive Vice President, Marketing at Air-castle Advisor and Executive Director at Aviation Capital Group.

Northrop Grumman Corporation announced the appointment of **Douglas Raaberg** as chief executive United Arab Emirates (UAE), effective Oct. 14th. In this new position, he will be responsible for coordinating the corporation's relationship with the UAE, supporting current programmes and developing strategies for growth.



Douglas Raaberg, Chief Executive UAE Photo: Northrop Grumman



Mark Kelly new VP-Marketing Photo: LCI

Experienced industry executive **Mark Kelly** has been appointed Vice President – Marketing at Lease Corporation International (LCI). With a particular focus on the Europe, Middle East and Africa regions, he

brings his combined years as a senior executive in the sector as well as his extensive helicopter piloting experience to both LCI and its leasing customers. Joining this week, Mr Kelly will be based in the firm's Dublin office with a