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## MRO INSIGHTS

2015 - 2016

Company Profile

AAR Corp

MRO News

from around the world

People on the Move

latest appointments

ICF Analysis



# Hats off to the 747

The 747-400 will forever be iconic. My passion for the four-engine beauty started just as British Airways ushered in the new jets back in the late 80s and early 90s.

The elegant -400 may have lost its crown to the A380 as the largest commercial aircraft but it sure has not lost its grace. And if it's the end of the line for the 747, then nobody told British Airways.

The UK flag carrier is now flying the first bunch of totally refreshed 747s competing head on with its much newer counterparts. 18 of British Airways' much-loved 747s are in the process of a refreshed interior and state-of-the-art in-flight entertainment system.

The revamped jumbos will now operate on select flights to New York JFK, Chicago, Lagos, Dubai,

Boston, Riyadh, and Kuwait with further routes added in summer 2016. Last month BA announced plans for improved services on the Lagos-London route with the deployment of a refurbished 747 aircraft in January 2016.

Ageing aircraft are slowly but surely making a comeback with oil prices hitting new seven year lows. The refit on BA's 747s was carried out by the airline's own engineers in Cardiff, Wales and include a cabin interior refresh bringing these 747s more in line with the airline's newest aircraft.

With the 747-8 not living up to expectations in terms of sales, the -400 will grace the skies a little while longer courtesy of BA.

The cover story in this final edition of the year looks back at the performance of some specific compa-

nies in 2015 and the strategies they will implement in 2016. The overall picture points towards growth both in terms of capabilities and geography.

We also speak with the CEO at Werner Aero Services to report on the business developments there.

As we close yet another year, and on behalf of the entire team at AviTrader, we wish all our advertisers, editorial partners and readers a pleasant and restful holiday season and a profitable 2016. We hope to continue our engagement in the New Year.

Keith Mwanalushi  
Editor



MROs are looking in good shape for 2016.

Photo: Keith Mwanalushi at the Aerostar facility Romania

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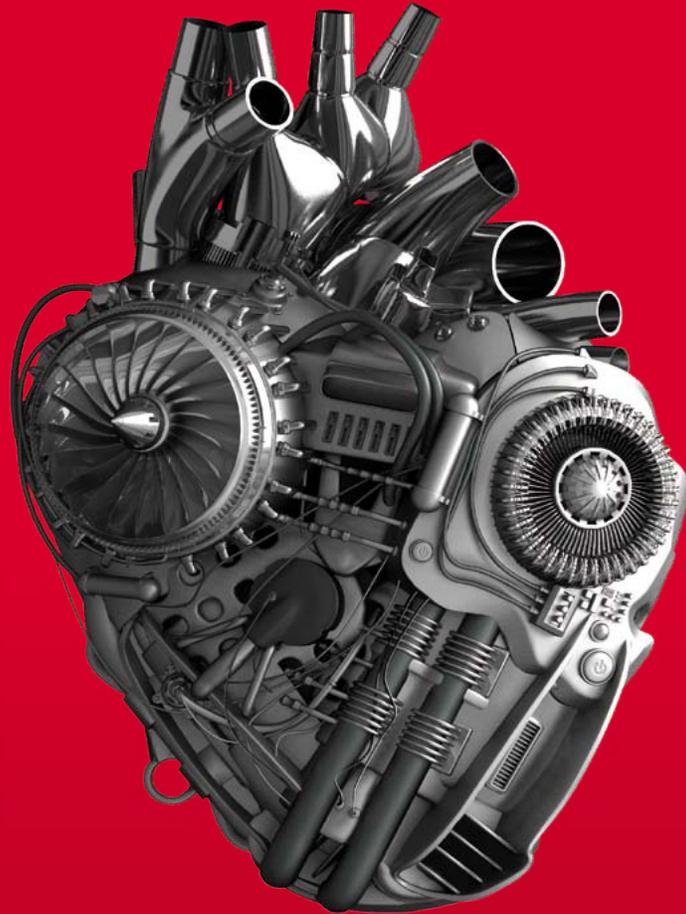
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HAITEC welcomes new customer Icelandair for B757 C-Checks

Photo: HAITEC

### HAITEC signs agreement with Icelandair

HAITEC welcomed new customer Icelandair to Hahn Airport for the first of several nose-to-tail B757 C-Checks. Iceland has become a significant and strategic growth market for HAITEC as the MRO provides maintenance services to the three major airlines Air Atlanta Icelandic, WOW Air and now Icelandair. With a growing current fleet of 24 B757 and 2 B767 aircraft, Icelandair continues to record double-digit growth in numbers of passengers.

### Delta TechOps sign long-term engine maintenance contract with Virgin Australia

Delta TechOps—Delta Air Lines' maintenance division—will perform maintenance, repair and overhaul services for Virgin Australia's fleet of CFM56-7B engines through a 13-year exclusive agreement. The new 13-year engine maintenance contract provides the opportunity for both carriers to collaborate on aircraft engineering, reliability and other maintenance-related activities.

### Trans-Pacific Aerospace receives purchase order for Chinese commercial aerospace sector

Trans-Pacific Aerospace Company has reported that a purchase order has been placed by a Chinese aerospace manufacturer for special-

ized self-lubricating bearings to be used in the Chinese commercial aerospace sector for production purposes. Bill McKay, the CEO of TPAC, stated: "This is a significant event for TPAC. The order, which is in excess of US\$100,000 represents far more than the monetary value thereof. We have worked very hard in the development and marketing of these bearings and are the only company in China able to meet the exacting blueprint requirements for performance. While it has taken a long time from product development to sales, our patience and efforts have been rewarded. We have seen over the past several months an increase in aerospace production and buying in China and are optimistic that we will become an integral part of this domestic expansion."

### Prime Turbine expands GE Aviation H Series overhaul capability

Prime Turbines has agreed to provide full overhaul capability in support of GE Aviation H Series turboprops operating in the United States. Prime Turbines and GE will also develop a new H Series test cell at Carter Field to support the enhanced service agreement. The agreement expands on a 2014 announcement where Dallas-based Prime Turbines became a Designated Repair Center for GE's M601 and H Series turboprop engine operators in the Americas. Under the 2014 agreement, Prime Turbines offers heavy repair services, engines rentals, line replacement unit rotatable pools and field service support to all existing and future M601 and H80 engines. GE Aviation provides OEM parts to meet Prime Turbine's needs.

As part of the new agreement, Prime will buy its first H80 lease pool engine and will develop full H Series overhaul capability beginning in 2017. In the first quarter of 2016, Prime Turbines and GE Aviation will begin developing a new test cell to support engine overhauls at Carter Field.

### ATR receives EASA certification for high-density cabin layout

The high-density seating configuration option for the ATR 72-600 aircraft has received its certification from the European Aviation Safety Agency (EASA). Using the existing airframe, the new high-density configuration option is achieved by optimizing the pitch and adjusting the cargo compartment, increasing the aircraft maximum capacity from 74 to 78 seats. ATR's greater passenger capacity further enhances airline revenue potential. The option will also be available as a retrofit. Cebu Pacific was the first airline to choose the high-density seating in a deal for sixteen new ATR 72-600s announced at the Paris Airshow earlier this year. The first aircraft in the 78-seat layout will enter commercial service in August 2016. The additional seats are very valuable for airlines operating in the regions where traffic grows rapidly and the demand is highly sensitive to fare price.

### FL Technics signs CAMO support agreement with Somon Air

FL Technics, a global provider of one-stop-shop aircraft maintenance, repair and overhaul services, is delighted to announce the signing of a 4-year-long CAMO support agreement with Somon Air, the first private airline in Tajikistan. FL Technics will also provide the carrier with Engine Condition Monitoring services. Under the long-term agreement, FL Technics experts will support the Tajikistani carrier's Boeing 737NG and CL fleet with complete Continuing Airworthiness Management services. Moreover, FL Technics will assist Somon Air in the process of setting up and implementing the Commsoft's OASES MRO IT system, thus making a strong step towards the launch of an in-house Continuing Airworthiness Management Organization. At a later stage FL Technics is to provide Somon Air with consulting services related to aircraft engineering, maintenance and shop visits. Currently the Tajikistani carrier operates a fleet of two Boeing 737CLs and four Boeing 737NGs.

### Royal Jordanian continues to trust MTU Maintenance with its V2500 engines

MTU Maintenance continues to be the exclusive MRO provider for Royal Jordanian's V2500 engines on its fleet of A320 family of aircraft. As such, the company has signed a Total Engine Care (TEC) agreement with Jordan's flag carrier which includes traditional MRO services, options for lease engines as well as MTU's early detection system MTUPlus Engine Trend Monitoring. The contract covers all 24 of Royal Jordanian's V2500-A5 engines and will run for five years. Royal Jordanian is one of MTU Maintenance's first customers. The two companies started working together back in the 1980s with MRO contracts for the RB211 engines and extended their collaboration for the support of CF34 engines at a later stage. In 2010, both parties concluded an exclusive agreement for Royal Jordanian's V2500 engines. This contract has now been renewed to include additional MRO services MTU is offering its customers to reduce their operational and shop visit costs.



MTU Maintenance continues to be the exclusive MRO provider for Royal Jordanian's V2500 engines  
Photo: MTU Maintenance

### Cathay Pacific signs up to new efficiency service solution from Rolls-Royce

Cathay Pacific, the home airline of Hong Kong, is further extending its partnership with Rolls-Royce with a new Efficiency Service Solution to reduce fuel consumption. Under a five-year agreement, Rolls-Royce will analyze the flight data of 189 aircraft operated by the airline and its wholly-owned subsidiary Dragonair. Rolls-Royce will deliver this service by deploying its fuel management tool, VisiumFUEL, which uses sophisticated visualization and advanced analytics to deliver operational efficiency improvements at the fleet, route and individual flight stage. This service complements the existing TotalCare long-term service agreements with Cathay Pacific.

### West Star Aviation's expansion in Chattanooga airport update

West Star Aviation (WSA) continues to work toward the grand opening of its newest MRO facility at Chattanooga Metropolitan Airport (KCHA) in Chattanooga, TN. In addition Thomas Hilboldt, former KPWK Satellite Manager in Chicago, IL, has recently been promoted to Director of Operations, and will oversee all operations at this facility. The new 20,424 ft<sup>2</sup> heated hangar space which has 28' high doors sits on a ground-lease footprint of 3.92 acres, or 170,798 ft<sup>2</sup>, with ample ramp space for uncongested aircraft move-

ment, will house maintenance, interior, avionics and the Mobile Response Team (MRT). It also features 20,424 ft<sup>2</sup> of heated and air conditioned mixed-use space which will be used for administrative and customer offices.

Furthermore West Star Aviation has been authorized by the Venezuelan government to maintain and repair Venezuelan-registered aircraft at their Columbia, SC (CAE) location. "In order for a foreign operator to bring an aircraft for service to a repair station in the U.S., the facility would have to be approved by the country under which the aircraft is registered. Europe, Saudi Arabia, China, Mexico, Brazil, Argentina and Venezuela are enforcing this requirement", says Santiago G. Carol, Regional Sales Manager with West Star Aviation in Mexico and Latin America. Customers with King Airs, C441, Citation (all series); Learjets (all 30/40/55/60 series); Gulfstream 100 – 150 – 200; Challenger 300 – 601 – 604; Hawker 800/XP; Falcon 10/20; Beechjet 400; and IAI Westwind 1124 series in that market will now have a closer West Star option for their aircraft maintenance and avionics service needs.

### Bombardier and GlobalParts.aero collaborate to enhance parts support for Learjet 20/30/50

Bombardier Business Aircraft and GlobalParts.aero have entered into a strategic collaboration for all inventory of the Learjet 20, Learjet 30, and Learjet 50 series aircraft. GlobalParts.aero, a Kansas-based aviation parts supplier, will take over the primary responsibility for all planning, stocking and distribution of aircraft parts of these Learjet series aircraft. "We are prepared to enhance support for Learjet 20, Learjet 30, and

Learjet 50 series aircraft customers right away," said Malissa Nesmith, GlobalParts.aero's Senior Vice President and Chief Operating Officer. "We have expanded our inventory of Learjet parts in recent months and have the capability and expertise to repair parts as well. We are working with Bombardier to ensure a seamless transition for this important customer segment."

### LHT stepping up capacity for support of Airbus A350

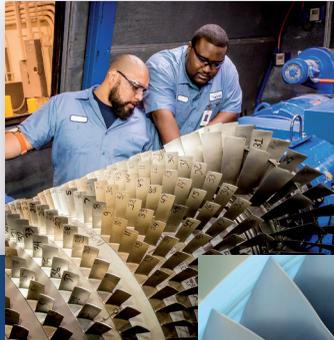
Lufthansa Technik AG is stepping up its capacities for the support of the Airbus A350: a symbolic groundbreaking marked the beginning of the expansion of an ultra-modern warehouse for the spare parts supply at the Munich location. The ceremony took place on December 8th, 2015. The existing warehouse of Lufthansa Technik Logistik Services (LTL) is expanding its floor space by 3,200 m<sup>2</sup> and will be optimized for the A350 support amongst other things. The currently limited warehousing capacity of LTL in Munich, in connection with the expanded material supply for a new aircraft type, necessitated the expansion.

### Elite Aviation Products triples production capacity

Elite Aviation Products (EAP), an advanced design, engineering, and manufacturing company within the aerospace industry, has acquired its second manufacturing facility located in Tustin, CA. At over 34,000 ft<sup>2</sup>, this acquisition effectively triples Elite Aviation Products' manufacturing capacity. EAP's Tustin facility will serve as the centerpiece, and center of excellence, for the second



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Rolls-Royce officially opens the extension to its engine production facility in Derby, UK

Photo: Rolls-Royce

### Rolls-Royce opens £30m extension to engine production facility in Derby, UK

Rolls-Royce has celebrated the official opening of its £30m (US\$45m) extension to its Derby Assembly & Test facility on November 23rd. The 2,867 m<sup>2</sup> extension will increase capacity to assemble Trent civil aero engines and become the production hub for the Trent XWB. Rolls-Royce has installed new equipment and is making use of advanced manufacturing processes helping to boost productivity in order to meet customer demand. Over the next two to three years, Trent XWB production will grow to more than 300 engines a year – the equivalent of one every working day. The engine is expected to be in service for many years, creating an annuity of aftermarket services that will generate revenues for decades to come.

### Wheels and brakes support for Thomas Cook Group Airlines

Lufthansa Technik AG will provide wheels and brakes support for Thomas Cook Group Airlines. The agreement covers the Airbus and Boeing fleets – 15 Boeing 757, 16 Boeing 767, 9 Airbus A330 and 53 A320-family aircraft – of the four airlines of Thomas Cook, one of the world's leading travel groups. It complements the existing Total Component Support TCS contract for the Airbus fleets of Thomas Cook Group Airlines from February 2015. Lufthansa Technik has provided wheels and brakes services for Condor Flugdienst, one of the four Thomas Cook Group Airlines, since 1998. With the new contract, which takes effect in October 2015, Thomas Cook Group Airlines is extending these services to its whole fleet.

### CTT Systems receives Zonal Drying order for six Boeing 737-800s

CTT Systems, a market leader of aircraft humidity control systems, has received a Zonal Drying order for six Boeing 737-800s to be factory installed by Boeing for an undisclosed customer starting in December 2015 and to be finalized in April 2016. "We are pleased with another order for factory installation at Boeing," said Peter Landquist, VP Sales & Marketing CTT Systems AB. "We are honored that airlines value the benefits from mastering the root-cause of aircraft condensation/moisture problems from the very first day of its entry into service".

phase of its business plan, and will expand on the already comprehensive suite of services offered. Some of the advanced machining capabilities to be implemented will include: automation, robotics, multiple pallet changing systems, and increased R&D activities from EAP's subsidiary, e3 (Elite Engineering Services).

### Rolls-Royce announces Trent service network changes and new agreements with Approved Maintenance Centre joint ventures

Rolls-Royce has announced changes to three Approved Maintenance Centre joint ventures, simplifying the structure of two, and introducing a more competitive business model that will improve customer service. Approved Maintenance Centres (AMCs) support Rolls-Royce's strategy to develop a competitive, capable and flexible Trent Service Network to meet the changing needs of customers across the lifecycle of engines and to support the growing Trent engine fleet. The changes relate to three existing AMC joint ventures: Hong Kong Aero Engine Services Limited ("HAESL"), Singapore Aero Engine Services Pte Ltd ("SAESL") and N3 Engine Overhaul Services GmbH and Co. KG ("N3"). HAESL is currently a joint venture with Hong Kong Aircraft Engineering Company Limited and SIA Engineering Company Limited; SAESL is currently a joint venture with SIA Engineering Company Limited and Hong

Kong Aero Engine Services Limited; and N3 a joint venture with Lufthansa Technik AG.

These joint ventures will now operate under a new business model where the existing geographic territory-based arrangements used by Rolls-Royce to direct maintenance, repair and overhaul (MRO) work to each AMC will be replaced with a competitive model where each AMC will need to compete to secure their Trent TotalCare engine overhauls. Rolls-Royce believes that this competitive model will encourage greater capability and flexibility across the Trent Service Network. The AMCs are also able to compete globally for MRO services under "time and material" business terms. These new agreements will also simplify the shareholding structure and management of HAESL and SAESL with each becoming 50/50 joint ventures with two shareholders (from three today). To support this change Rolls-Royce will increase its equity stake in HAESL and SAESL to 50% in return for an incremental investment of US\$206.5m. The transactions are subject to certain closing conditions, including regulatory approvals. The shareholding arrangements with Lufthansa Technik AG for N3 remain unchanged at 50/50 ownership. These changes to create a competitive, capable and flexible Trent Service Network complement the recent announcement that Delta TechOps will be joining the Trent Service Network as an independent AMC. Additional AMCs to further enhance the Trent Service Network will be announced at the appropriate time.



INAIRVATION announces partners at NBAA 2015

Photo: INAIRVATION

### INAIRVATION announces partners for retrofit program offering

INAIRVATION has selected three partners to install its pre-engineered integrated cabin retrofit solutions on Bombardier Global Express/5000/6000 aircraft. Flying Colours Corp., Lufthansa Bombardier Aviation Services (LBAS), and RUAG Aviation will offer the interior packages to the worldwide market. INAIRVATION GmbH – a joint venture between Lufthansa Technik and F/LIST – was created to design, develop, and manufacture integrated interior business jet cabin solutions. Now with its new external partners, INAIRVATION can offer complete installation packages to the business jet retrofit market. Flying Colours Corp., LBAS, and RUAG Aviation will first offer the retro-fit packages on all Bombardier Global aircraft types and then transition to other platforms in accordance with market demand. The baseline retrofit package offers the nice HD CMS/IFE system that includes an advanced User Interface (UI), Audio and Video on Demand, a wireless interface for personal device integration (iOS and Android), and a Hollywood studio content service with leading block-buster movies and TV shows, all functionally integrated into new ergonomic side-ledges and modification kits, pre-engineered by F/LIST. Many optional packages are available that, when taken together, will create a complete new interior. INAIRVATION Co-CEO Werner Kartner states, “Our pre-engineered solutions will enable Flying Colours Corp., LBAS, and RUAG Aviation to offer major interior retrofits that minimize the high non-recurring engineering costs and down times for each installation.

### TP Aerospace signs multiple new service contracts

TP Aerospace Leasing has been selected by Danish Air Transport to provide its full-service A320 Cycle Flat Rate (CFR) Program. Danish Air Transport, a premier Danish airline, has awarded TP Aerospace Leasing the CFR Program to cover its current and future fleet of A320s.

Florida-based cargo airline Western Global Airlines, has contracted TP Aerospace Americas to provide its Land For Less (LFL) Wheel & Brake Program in support of its growing fleet currently comprising of MD11 and B747-400 freighters. The Program will secure Western Global Airlines guaranteed availability and direct cost savings while eliminating turnaround-time dependency, risk of unexpected high repair cost, and OEM shortages, in terms of wheels and brakes. The Program includes access to TP Aerospace Americas’ extensive pool of MD11 and B747-400 wheels and brakes in Orlando, Florida.

Air Pegasus, an Indian regional airline based in Bangalore, India, has chosen TP Aerospace Asia to provide its Land For Less (LFL) wheel & brake program in support of its ATR72 fleet. The Program includes exclusive access to TP Aerospace Asia’s extensive pool of ATR72 wheels and brakes in Singapore.

Astra Airlines, an airline based in Thessaloniki, Greece, has chosen TP Aerospace Solutions to provide its Brake For Less (BFL) program in support of its ATR72 and A320 fleet, with exclusive access to TP Aerospace Solutions’ extensive pool of ATR72 and A320 brakes in Hamburg, Germany.

Enerjet has also signed a contract with TP Aerospace Americas to provide its Brake For Less (BFL) program in support of Enerjet’s B737NG fleet.

### Provincial Aerospace wins 5 year in-service support contract

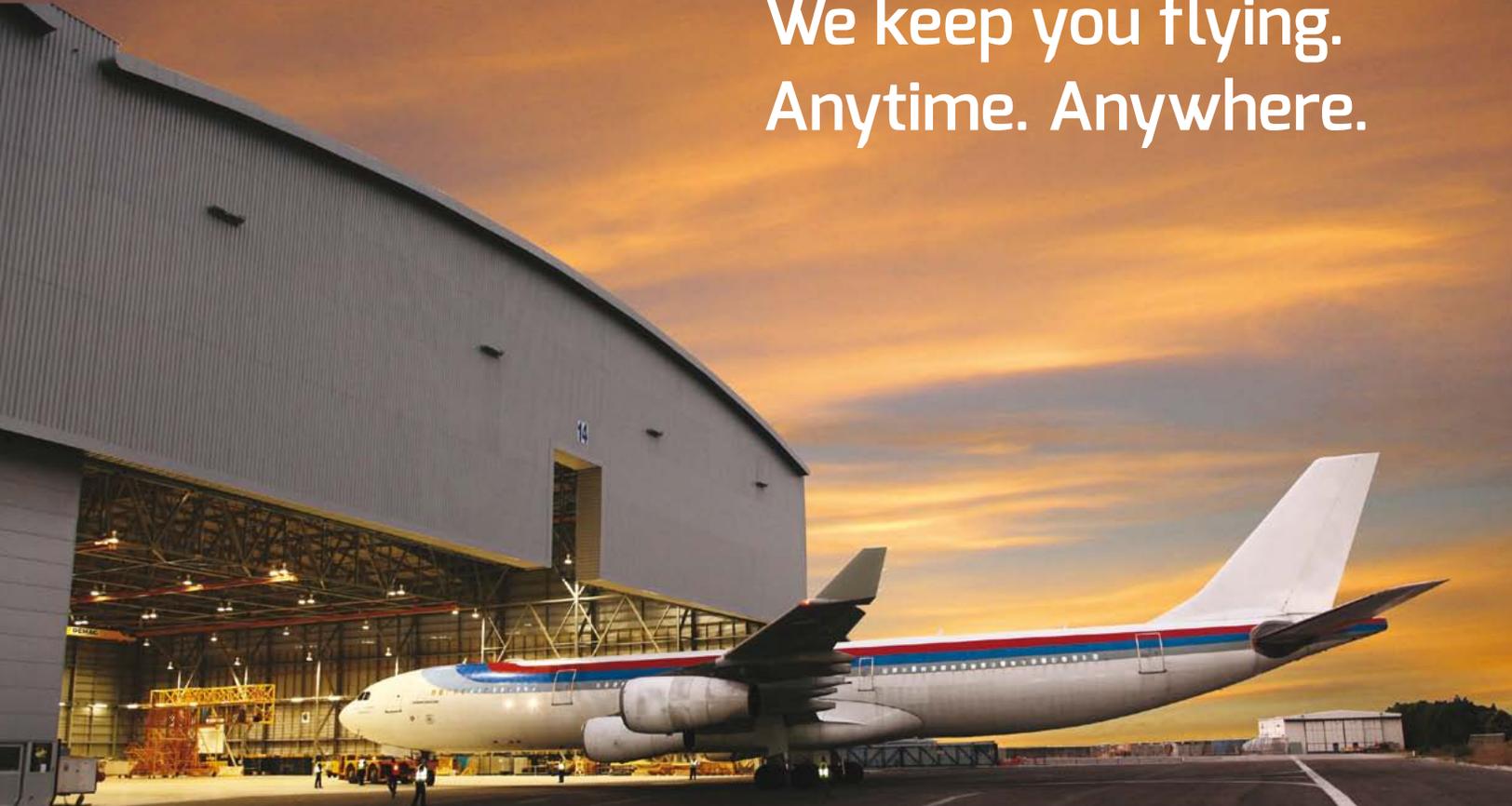
Provincial Aerospace, a subsidiary of Exchange Income Corporation, has been awarded a 5 year in-service support contract with an existing Middle East client. This contract is expected to generate additional revenues in excess of \$150m over the 5 years. “We are delighted to be able to expand our operations in the Middle East and look forward to continued growth in the region. From a strategic perspective, Provincial Aerospace’s provisioning of in-service support to clients in Canada and through-out the world is a great fit with our strategy of maximizing return on previously invested capital as the in-service support program does not require significant new capital,” said Mike Pyle, CEO of Exchange Income Corporation. Provincial Aerospace has been working in the Middle East since 2008 and signed its first in-service support contract in the region in 2012.

Exchange Income Corporation, a Canadian corporation, was created to invest in profitable, well-established companies with strong cash flows operating in niche markets and to distribute stable monthly cash dividends to its shareholders. To do this, it invests in companies for the long term with no intention of selling; retains current management; and works with them to grow their companies.

### Revima and UTC Aerospace bring landing gear repair capability to the Middle East

Revima Group and UTC Aerospace have announced a long-term agreement to provide maintenance, repair and overhaul (MRO) services for landing gear systems on Boeing 777-300ER aircraft operated by Emirates. While the service agreement with Emirates remains under the prime responsibility of Revima, a portion of the work scope will now take place at the Goodrich Customer Services maintenance, repair and overhaul campus in Dubai. This relationship provides Emirates with an in-country point of contact for landing gear service needs. Goodrich Customer Services will perform initial services on the landing gear before shipping to Revima’s Caudebec-En-Caux, France facility for the overhaul. In addition to Dubai, this relationship also provides Emirates with contingency access to UTC Aerospace Systems’ global network of repair facilities, including sites in Miami, Florida, and Oakville, Canada.

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### Magnetic MRO received FAA certificate for its MRO operations

Magnetic MRO, Aircraft Maintenance and Repair Organization has received Repair Station certificate from the US Federal Aviation Administration, covering the full scope of Magnetic MRO activities. The company has become the first FAA-certified Repair Station in the Baltic States, marking an important milestone in the development of the MRO industry in the region. The received certificate enables Magnetic MRO to issue dual release, EASA and FAA certificates on its Line, Base, Components, and Engines Part 145 activities. Over the last 12 months Magnetic MRO has expanded into full aircraft painting, engines on-wing and off-wing services, components solutions, and other areas of MRO activities. The newly added FAA certificate makes Magnetic MRO a natural first choice for Total Technical Care solutions both for aviation Asset Owners and Leasing Companies as a transition point for assets between lessees. It will also boost Magnetic MRO's active aircraft tear-down and component repair businesses, with dual release certificates available for the aforementioned activities.

### flydubai signs long-term agreement with Joramco

Joramco and flydubai have signed a long-term contract to provide the Dubai-based carrier with airframe maintenance solutions for its fleet of 50 Next-Generation Boeing 737-800 aircraft that are due for scheduled maintenance services up until December 2017. These maintenance services include C checks, EIS (Entry Into Service) and lease hand backs for flydubai's entire fleet. This agreement comes as an extension to the already existing relationship that began in 2013.



MMRO hangar

Photo: Magnetic MRO

### Crane to provide brake control and landing gear position sensing systems for new Cessna Citation Longitude business jet

Crane Aerospace & Electronics, a segment of Crane Co., has been selected by Cessna Aircraft Company to provide the brake control system and the landing gear position sensing system for the new Cessna Citation Longitude business jet. The Brake Control System for the Citation Longitude will be the first Brake-By-Wire system for a Cessna business jet, and will also include brake temperature monitoring functionality. The Landing Gear Position Sensing System will leverage proven Crane electronics and proximity sensor designs to provide accurate and reliable indication of the landing gear position. The new Citation Longitude was announced at the 2015 NBAA Business Aviation Convention & Exhibition.

### PPG Aerospace introduces new-design windshield for Hawker 800 series aircraft

PPG Industries' aerospace transparencies group has received Parts Manufacturer Approval for its new-design glass-faced acrylic windshields for Hawker 800 series business jets, including the Hawker 750, 800, 800XP, 800 (U-125A), 850XP, 900XP and 1000 aircraft. According to Mark Hood, PPG Aerospace global director for general aviation transparencies, the glass-faced acrylic windshields offer superior scratch, abrasion and chemical resistance over the previous all-acrylic design. The new-design windshields have a better, more reliable anti-ice heating system, higher visible light transmittance, and improved precipitation-static drain.

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Comlux America extends service capabilities on VIP aircraft

Photo: Comlux

### Comlux America extends service capabilities on VIP aircraft

Comlux America, the Completion and Service Center based in Indianapolis IN, has obtained the required top-of-the-line qualifications to offer complete maintenance and repair services to ACJ, BBJ and Bombardier Business Aircraft customers. Earlier this month, Comlux America was approved by Airbus Corporate Jets as an Authorized Service Center for the Airbus Corporate Jet fleet worldwide. Comlux America is the first independent fully Airbus Corporate Jet Authorized Service Center, able to provide maintenance services from A to C checks. In October 2015, Boeing Business Jets signed an agreement with Comlux America which designates the company as an authorized warranty repair facility and service center. The contract allows Comlux America to perform warranty work on BBJ aircraft on behalf of Boeing, providing BBJ operators another service option in the USA. Additionally, Comlux America will provide other maintenance, repair and overhaul services as required. Since 2009, Comlux America has been an Authorized Service Facility (ASF) for Bombardier. In October 2015, Comlux America renewed their ASF agreement with Bombardier for an additional five years which further reiterates Comlux's commitment to its Bombardier customers.

### Wizz Air signs line maintenance contract with Lufthansa Technik

The Hungarian airline Wizz Air has contracted Lufthansa Technik Budapest (LTB) to provide line maintenance services for its fleet at the Budapest and Debrecen locations. The agreement comes into force in February 2016 and includes Wizz Air's eight Airbus A320 aircraft stationed in Budapest. Lufthansa Technik Budapest will carry out the maintenance at the two Hungarian stations and also take on full responsibility for managing the Wizz Air hangar at the airport in the Hungarian capital. The airline plans to expand its fleet to be maintained in Hungary to 20 A320 aircraft by the year 2024.

### Air Europa becomes latest airline to select liTeMood LED lighting

Spanish charter airline Air Europa has chosen liTeMood for retrofitting to its fleet of 737-800 aircraft. Installation of Air Europa's liTeMood systems took place in October and November, and although this will be the first time the airline has installed STG Aerospace's LED lighting, many of its aircraft are already fitted with the company saf-Tglo photoluminescent emergency floorpath marking and saf-Tsign signage products. From its main base at Palma de Mallorca Airport, Air Eu-

ropa operates scheduled services to destinations across Europe and long-haul flights to North and South America.

### Aircelle to supply thrust reversers for new Cessna Citation Longitude business jet

The proven PERT thrust reverser from Aircelle (Safran) has been selected by the Cessna Aircraft Company, a subsidiary of Textron Aviation, a Textron company, to equip the new Citation Longitude super-midsize business jet. Aircelle will have a direct-supplier role to the U.S. aircraft manufacturer for these thrust reversers, which are to equip the Longitude's two Honeywell HTF7700L turbofan engines. The patented PERT (Planar Exit Rear Target) thrust reverser features two blocker doors that serve as the engine's exhaust exit during flight, and are deployed on landing for the reverse thrust function. This concept combines thrust reverser effectiveness with an optimized weight. Aircelle produces the PERT thrust reverser for numerous aircraft applications, with more than 1,200 delivered to date.

### BAE Systems wins spares support contract extension with Yeti Airlines of Nepal

BAE Systems Regional Aircraft has won a two-year extension to its long-running Rate-Per-Flying-Hour (RPFH) spares support contract with leading Nepalese regional operator, Yeti Airlines. The MACRO contract (Material and Components Repair and Overhaul) covers the airline's fleet of seven BAE Systems-built 29-seat Jetstream 41 turboprop airliners and covers some 240 separate part numbers. Under the contract BAE Systems retains responsibility for managing the spares inventory, logistics and repairs. This allows Yeti Airlines to focus its attention on the day-to-day running of its intensive domestic schedule with the Jetstream 41s, while BAE Systems provides a first-class support service. Yeti Airlines first enrolled on to the MACRO programme in 2006 and this second extension by the airline will see the program continue until the end of 2017. Yeti has become the first operator to sign up for the new remodeled version of MACRO.

### Lufthansa Technik has successfully completed 16g certification testing for 'chair'

Lufthansa Technik AG's new seating concept, 'chair', has passed all 16g and 9g certification tests for forward and aft facing installations. This cer-

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tification allows owners, operators, and designers to choose from thousands of possible 'chair' configurations to match the need of a particular cabin environment. The ETSO (European Technical Standard Orders) / TSO (Technical Standard Orders) certificate is in process and will be issued over the next few months. The 'chair' is based on an innovative pedestal design upon which is mounted a baseline core skeleton or structure. This certified pedestal and structure is intentionally left incomplete, allowing designers to create a 'chair' to meet the particular needs of a particular cabin – dining room, video lounge, office, bedroom, etc. Not only the height, width, and depth, but also the overall "look-and-feel" can be configured. The shape, upholstery, and padding can be selected to allow for an uncompromised

interior design under one certification. An innovative certification process allows the Lufthansa Technik experts to validate changes to the 'chair' without intensive re-testing. Testing was designed and passed to maximum dynamic load cases. This enables changes to be classified as minor deviations under the umbrella of an existing ETSO/TSO.

### Vector Aerospace inks engine services agreement with PNG Air

Vector Aerospace has signed an engine services agreement with PNG Air, formerly known as Airlines of PNG, based out of Port Moresby, Papua New Guinea. As per the terms of the

multi-year exclusive agreement, Vector Aerospace will provide comprehensive fixed-wing aircraft engine maintenance, repair and overhaul (MRO) services to PNG Air's new fleet of Pratt & Whitney Canada PW127M-powered ATR 72-600 regional turboprop aircraft from its facilities in Summerside, PE, Canada and Brisbane, QLD, Australia. PW127M MRO services provided by Vector under the agreement will include engine repair, hot section inspections, testing, modifications, overhaul services and parts distribution.

## Finance News



Acro Aircraft Seating manufacturing

Photo: Acro Aircraft Seating

### Acro Aircraft Seating growth accelerates with BGF investment

Acro, one of the fastest growing aircraft seating companies, has received a £7.75m (US\$11.60m) growth capital investment from BGF (Business Growth Fund). Acro has grown rapidly as a major player in the global aircraft seating market; in 2015 Acro delivered more than 25,000 seats including more than 120 aircraft in North America alone flying for Spirit, Frontier, Hawaiian and Allegiant. Acro believes that aircraft seats should be considered as furniture first and aircraft equipment second and puts passenger comfort at the heart of its designs. Its entirely new economy seat 'Series 6', provides more legroom and in addition is 15% lighter than current generation seats. It also offers a more sophisticated appearance and it is available in both fixed back and reclining versions. Acro's new Premium Economy seat, 'Series 7', is inspired by the best of 20th century furniture design. It can be offered as Business/First Class on Narrow-body aircraft and as a Premium Economy Class seat on Wide-body installations. The new Series 7 also embodies all of Acro's characteristics of comfort, robustness, maintainability and light weight in a supremely elegant and re-

fined design. BGF's capital will be used to accelerate Acro's product developments, with a long-range economy seat 'Series 8' now included in Acro's plans. The BGF investment is just the first step on Acro's next growth phase and there will be more to come in 2016.

### AerCap announces closing of US\$1.3bn of new credit facilities

AerCap Holdings has completed the closing of US\$1.3bn of new credit facilities. The facilities will primarily be used to acquire new narrow-body and wide-body aircraft as they are delivered from Boeing and Airbus through to the end of 2016. A US\$0.8bn facility was signed to finance a portfolio of 13 aircraft over a nine-year term. The facility was coordinated by Commonwealth Bank of Australia and Crédit Agricole Corporate and Investment Bank, and was co-arranged by Bank of America, N.A., Crédit Industriel et Commercial, DekaBank Deutsche Girozentrale, ING Bank, KfW IPEX-Bank GmbH, Helaba, National Australia Bank, and Santander. Crédit Agricole Corporate and Investment Bank acted as facility agent. An additional US\$0.5bn limited-recourse facility was arranged by Wells Fargo Bank N.A., and will finance a portfolio of nine aircraft over a five-year term.

### MTU Aero Engines issues ten-year forecast

On the occasion of the company's annual Investor & Analyst Day, MTU Aero Engines AG has issued a more precise forecast for the next ten years to 2025. The group intends to maintain its growth trajectory and achieve further improvements in profitability. In the medium-to-long term, adjusted EBIT is expected to increase at a faster rate than revenues, with a corresponding increase in adjusted net income. These projections are based on MTU's existing business plans, which foresee an investment phase lasting until 2017, followed by a consolidation

phase from 2018 onward. They reflect the expected development of revenues in the individual operating segments. As of 2018, MTU expects to see a surge in revenues from its most profitable activities, namely spare part sales and maintenance services. Revenues from the series production of engine components, which generates lower profit margins, are also expected to rise – based on the assumption that the increased production of the Airbus A320neo will result in growth rates for the PW1100G-JM engine, which are higher than previously anticipated. Weaker revenues are expected in the military engine business. “Overall, this product mix will enable us to increase our EBIT margins in the medium to long term,” said MTU Aero Engines CEO Reiner Winkler. “As a result, we can expect our adjusted net income to rise in line with operating profit.” Chief Operating Officer Dr Rainer Martens added: “Once we have reached the end of the current investment phase, in which we have been focusing on the construction of new facilities and their equipment with plant and machinery to prepare for the production phase of the geared turbofan (GTF) programs, our capital expenditure will return to normal levels. The same applies to our R&D expenditure, which will also gradually return to normal levels around 2018. The main focus will be on the ongoing improvement of GTF technology.” This will significantly improve the group’s free cash flow, which in the longer term will closely match adjusted net income.

### **Kaman completes GRW Bearing acquisition**

Kaman Corporation’s Aerospace segment has acquired GRW Bearing GmbH (GRW), a Germany-based designer and manufacturer of super-precision miniature ball bearings. GRW is focused on the demanding applications segment of the miniature ball bearings market, where low noise requirements, extreme temperatures, ultra-high speeds and/or caustic environments require both exceptional engineering design and continuous operating performance capabilities. GRW operates out of two state-of-the-art production facilities in Rimpar, Germany and Prachatice, Czech Republic, and is expected to have sales for the full year 2015 of approximately €48m (US\$51m). The purchase price was approximately €135.2m (US\$143.3m), net of cash acquired, and was funded through borrowings under the company’s revolving credit facility. Citizens Bank, N. A. acted as financial advisor to Kaman for this transaction.

### **TransDigm Group and Breeze-Eastern sign acquisition agreement**

TransDigm Group and Breeze-Eastern have signed a definitive merger agreement providing for Breeze-Eastern to become an indirect wholly-owned subsidiary of TransDigm. TransDigm and Breeze-Eastern both design, manufacture and supply highly engineered aircraft components. Under the terms of the agreement, a subsidiary of TransDigm will commence a tender offer to acquire all of the outstanding shares of Breeze-Eastern common stock for US\$19.61 per share in cash, in a transaction valued at approximately US\$206m. Following the purchase of shares through the tender offer, TransDigm will complete the transaction by acquiring all remaining shares

not acquired in the offer through a merger at the same price as the tender offer. The transaction will be funded with TransDigm’s cash on hand and is not subject to any financing condition. The merger agreement was unanimously approved by the Board of Directors of Breeze-Eastern. Breeze-Eastern Corporation is a global designer and manufacturer of high performance lifting and pulling devices for military and civilian aircraft, including rescue hoists, winches and cargo hooks, and weapons-lifting systems. The Company employs approximately 172 people at its facility in Whippany, New Jersey and in Fredericksburg, Virginia.

### **Zodiac Aerospace core profit down 45% on aircraft seat delays**

Zodiac Aerospace posted a 44.6% drop in core annual earnings on November 24th, in the wake of production delays at its troubled aircraft seats division. Hit by a series of recent profit warnings, Zodiac Aerospace said its 2014/15 ordinary profit fell to €314m (US\$333.66m) as its core profit margin more than halved to 6.4%, while already-reported revenue rose 18%. For the current September-August financial year, the French company predicted slight growth in revenue thanks partly to a stronger dollar and an operating margin of around 10%.

### **Doric arranges financing for two Boeing 737s**

Doric has concluded junior financing for two Boeing 737-800 aircraft. Both aircraft are on finance lease to Norwegian, which has been operating them since August and September 2015 respectively. The lease term is 12 years. As Europe’s third-largest low-cost carrier Norwegian is keen to expand not only within Europe, but also in the long-haul market. The senior lender is Norddeutsche Landesbank Girozentrale (Nord/LB) with a loan volume of US\$68m. The junior loan totaling US\$26m was provided by a family office based in the UK. The overall financing arranged by Doric is US\$94m for both aircraft.

### **Willis Lease Finance Corporation announces commencement of modified Dutch auction tender offer to repurchase up to US\$8m of its Common Shares**

Willis Lease Finance has commenced a modified “Dutch auction” tender offer repurchase, for cash, for up to 516,129 of shares of its common stock at a price not less than \$15.50 per share nor greater than \$18.00 per share, for an aggregate purchase price not to exceed US\$8m (the “Tender Offer”). The Tender Offer is subject to the conditions set forth in the offer to purchase, dated November 17th, 2015 (the “Offer to Purchase”), and in the related Letter of Transmittal (which, together, may be amended or supplemented from time to time). The Tender Offer, as approved by the Company’s Board of Directors, will expire at 5:00 p.m., New York City time, on December 16th, 2015.



first installation of a Ka-Band SCS on a B747-400 aircraft

Photo: Jet Aviation Basel

**Jet Aviation Basel** has signed an agreement to perform the first installation of a Ka-Band satellite communications system (SCS) on a Boeing B747-400 aircraft. The company will install **Honeywell's** JetWave fuselage-mounted antenna (MCS-8200) to support the Ka-Band satellite communications (**Satcom**) system. Ka-Band connectivity enables one of the highest data transfer speeds available in the industry while further supporting the growth in data expected to occur over the coming decades. Jet Aviation Basel will develop a Ka-Band supplemental type certificate (STC) for the B747-400 and install the Ka-Band system with Honeywell's high-speed Satcom hardware and the JetWave<sup>TM</sup> MCS-8200 fuselage-mounted antenna. The Ka-Band SCS will ultimately interface with the existing local area network (LAN) on the aircraft.

**Gogo** has reported the availability of an expanded suite of cockpit and datalink services for its business aviation customers from **Honeywell's Global Data Center (GDC)**. The additional services include Inmarsat Classic Aero (voice and data services) along with a variety of flight planning, datalink, graphical cockpit and weather information, flight following and concierge services. Gogo offers one of the business aviation market's widest selections of in-flight voice and data services, which now include Gogo Biz, SwiftBroadband, Jet Connex, Classic Aero, Swift64, Iridium, terrestrial 3G and Gogo Cloud (automated content delivery).

**ATR**, the turboprop manufacturer, has opened a Representative Office in Beijing, a new milestone in its long history of cooperation with China. For nearly 20 years China has been a strategic partner and supplier for ATR. Key airframe sections and some components

of the wings of ATR aircraft are produced by **Xian Aircraft Company (XAC)**, a subsidiary of **AVIC**. The establishment of the Representative Office in Beijing enables ATR to further develop and strengthen dependable relationships with Chinese partners, potential customers and Chinese authorities. The new ATR Office is located at the Tianzhu Airport. The growing ATR team in Beijing, led by VP Sales China & Chief Representative Wang Qi, will benefit from **Airbus'** working platform and experience in China to develop and consolidate ATR's footprint across the country.

**L-3 Aviation Products** and **Thomas Global Systems** have signed an alliance agreement to cooperate in the development of certain CRT-to-LCD display upgrade products that eliminate CRT-related maintenance costs, downtime and obsolescence issues, while providing a cost-effective growth path for cockpit upgrades. "L-3 is delighted to be working with Thomas Global, leveraging its CRT-to-LCD display conversion technology and growing commercial market presence," said Stuart Mullan, president of L-3 Aviation Products. "This agreement builds on our recent award from ATR to provide an LCD display upgrade for its 42/72 aircraft. The ATR program is a springboard for CRT-to-LCD upgrades on other aircraft platforms."

To better represent its expanded offerings beyond satellite communications solutions, **Satcom Direct** has changed its brand identity to **SD**. The move stems from the company's ongoing technology advancements and strategic partnerships, which have broadened its capabilities as a global connectivity provider. In addition to **SATCOM**, **SD** offers secured network capabilities, air-to-ground solutions, and value-added services to make those networks faster, more efficient and more secure. The company name will remain Satcom Direct, while using the "SD" mark and initials to represent its evolution as a company.

**Constant Aviation** have been awarded an eight aircraft WiFi installation project by Georgia Jet. "Constant Aviation will be installing the **Gogo Biz 2000** system on eight aircraft operated by **Georgia Jet**. The installation on the six Beechjet 400A/XP's and two Hawker 800XP's will begin in January 2106. We are among the top five Gogo dealers in the country and own over ten WiFi STC's. Connectivity while traveling has become a necessity, no longer just an amenity," said Jay Rizzo, Vice President Sales.



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## High flying ambitions

As another year draws to a close, **Keith Mwanalushi** reflects back on 2015 with some key industry players and looks at some of the issues that will drive the MRO industry in the coming year.

According to the results of Oliver Wyman's 2015 MRO Survey, by 2020, most companies in the MRO sector will use new technology in a way that fundamentally changes how the industry works, cutting or re-distributing industry revenue by up to 20%, or \$15 billion.

Most MROs are already gearing up to meet these changes. MRO providers must also invest in different capabilities during the next few years, as manufacturers deliver next generation aircraft and engines with new technology and services.

Pratt & Whitney is a good example of a business poised for sustainable long-term growth. "We have over 12,000 engines in service, and the acceptance rate of our GTF engine is great, with about 7,000 engines including options, sold to date. Over the next 20 years, commercial aviation analysts predict that 35,000 aircraft will be delivered," Paul Finklestein, Pratt & Whitney Director, Marketing tells AviTrader MRO.

In the aftermarket, Finklestein says there continues to be a strong customer demand for long-term fleet management programmes, especially for engines early in their life cycle.

A key achievement for Pratt & Whitney aftermarket in 2015 was the expansion of its 'Big Data' analytics capabilities.

Pratt & Whitney is building a predictive model to monitor engine event performance leading to an increasingly proactive approach in main-



The PurePower 1100G-JM engine will be a game-changer.

Photo: Pratt & Whitney

tenance planning and requirements. "The project, which initially focused on field operational data and system health information data from PW4000 100-inch engines, has been expanded to encompass similar data for all PW4000 engine models," Finklestein states.

He says a number of predictive analytics development programmes are underway. "These programmes will continue to evolve and grow over time, as we narrow our focus on services and metrics most important to our customers," he continues.

2015 was a productive year for HEICO and its partners. HEICO capabilities and international presence continued to grow with the acquisition of five new companies. Interestingly, two of its subsidiaries supplied mission critical flight hardware on NASA's Dawn spacecraft. The Dawn spacecraft became the first mission in history to achieve orbit around a dwarf planet when it orbited Ceres in March 2015.

At FLTechnics 2015 marked further diversification of products and geography. "We have launched a daughter company in Thailand to enhance our operations in Asia, opened a representative office in the USA to strengthen our cooperation

with local suppliers, entered the African market with base maintenance and spare parts services as well as attracted several new customers from Western Europe and the Middle East. All of these actions are a part of our five-year development plan aimed at diversification of our business and making our presence truly global," explains Silvinas Lapinskas, the CEO of FL Technics.

With regards to challenges, Lapinskas is fully aware of the geopolitical factors in Eastern Europe and subsequent volatility in the Russian airline market – "these are the main issues for the entire MRO market in the region. However, our focus on new markets and a wider range of products helped us to mitigate the risks and keep developing further."

It seems 2015 was also a highly successful year for Thomas Global Systems in a number of areas particularly for CRT-to-LCD upgrade solutions for business, commercial and regional aircraft. Angus Hutchinson, CEO, Thomas Global Systems reminds that these products were launched in Q1 this year and that the company has received an outstanding level of response.

"These solutions drive down maintenance costs and avoid issues of obsolescence. They enable



Lapinskas - In the process of a five-year development plan.  
Photo: FL Technics



FL Technics are adding SSJ100 capability next year.

Photo: Superjet

operators to get the most out of their existing cockpit investments, eliminating full cockpit upgrades and with no need for changes to cockpit panels or wiring, equipment downtime and flight crew training. Thomas Global's solutions also offer a growth path for additional cockpit functionality," says Hutchinson.

Thomas Global Systems' launch partner for the CRT-to-LCD upgrade for business and regional aircraft was Sydney based operator, Regional Express (REX) – the world's largest Saab 340 operator. "The display solution from Thomas Global will be rolled out across REX's fleet of more than 40 Saab 340 aircraft. REX is a model regional operator and quickly identified the benefits of the plug-and-play CRT-to-LCD solution," Hutchinson elaborates.

The lower cost of fuel in 2014/15 supposedly may see airlines change their spending patterns in 2016. Experts at HEICO say the decrease in fuel costs for the airlines helped reduce their operating cost and made the economics of older aircraft more attractive, and this might encourage carriers to maintain older aircraft longer in the fleet increasing the value of an efficient maintenance programme. However, it is important to note that the reduction in fuel costs has been, in many cases, counterbalanced by the strengthening of the USD against all major foreign currencies. Hence there is continued pressure on finding new ways to reduce costs.

If fuel prices continue to be low for an extended period of time – multiple years – Finklestein from Pratt & Whitney agrees that we might see

slower retirements of legacy aircraft, "but for the time being most carriers are planning for higher fuel prices within the next two years and are not changing their fleet plans appreciably."

Lower fuel prices allowed some airlines to prolong operations of less efficient airplanes and thus support additional demand for MRO works on Boeing 737CL and similar aircraft. Lapinskas reckons this trend will continue somewhat in 2016 with the main demand for spare parts and line maintenance during the summer season. "But these factors shouldn't change the spending pattern as in a long-term perspective airlines in general tend to optimise their MRO costs," he says.

### **“Airlines, operators and lessors must act now to ensure their fleet will be compliant by the impending 2020 deadline for Europe and USA.”**

Angus Hutchinson, CEO, Thomas Global Systems

Generally, there will be a lot of change across the industry during 2016 and onwards as airlines, operators and lessors prepare for changing legislation. By 2020 all aircraft that operate in controlled airspace in Europe and North America must be ADS-B Out compliant and equipped with the GPS-based identification technology. "Major OEMs are pushing entire cockpit upgrades, which are a costly investment. For operators of ageing, high mileage, low value aircraft with a limited lifespan, this is likely to be an unattractive propo-

sition," observes Hutchinson.

He says the role of the specialist niche OEM and MROs is therefore becoming increasingly fundamental in stepping up to support those operators who have ongoing support requirements that OEMs may be unwilling to provide. "Flexible, adaptable solutions that can accommodate Next-Gen capabilities and evolving technologies to extend aircraft economic life are more important to operators and lessors than ever before.

"Thomas Global System's new TFD-8601 retrofit solution is NextGen ready and supports integration for this legislation. With current lower fuel prices, maintenance now accounts for a greater share of airlines' expenditure so maintenance programmes are under even more scrutiny," Hutchinson states.

In terms of product lines and capabilities for the New Year, Thomas Global Systems is looking to further expand its portfolio of products. "Our new products will continue to be designed around our core philosophy of practical innovation," Hutchinson adds.

At Pratt & Whitney, they have two significant areas of focus in 2016: GTF engine support and predictive analytics.

"We are laser focused on supporting the GTF engine as it enters revenue service," says Finklestein. "The GTF engine is a game-changer for the aviation industry with a more than 75% reduction in noise footprint compared to today's aircraft, a more than 16% engine fuel burn reduction, and a more than 50% reduction in regulated emissions," he continues.

One of the main goals for 2016 at FL Technics is becoming truly LEAN and offering even more transparency according to Lapinskas. "Recently, we have launched several own IT solutions under a joint name – Open FLT. These solutions allow our customers to have real-time monitoring of the progress of base maintenance services. They also provide an online communication tool with auto-notifications which ensure that both we and the customer provide prompt responses on any service-related inquiries. More efficient and quicker communication will allow us to further squeeze TAT without the necessity for extra man-hours."

In addition, Lapinskas confirms that the company will add several new aircraft types to its BM capabilities – the Airbus A330 and regional SSJ100. "The A330 approval will allow us to be less de-

pendent on the seasonality, while SSJ100 - to expand our full aircraft support programme for SSJ100 operators.

“We also plan adding new courses to our online training platform, launching base maintenance in Indonesia and several new line maintenance stations across the globe, attracting additional financing for engine management projects as well as enhancing our focus on PBH and Part M products,” Lapinskas asserts.

Aspirations aside, 2016 is expected to come with some challenges. As we get closer to the ADS-B mandate Hutchinson expects the industry to get considerably busy. “Airlines, operators and lessors must act now to ensure their fleet will be compliant by the impending 2020 deadline for Europe and USA.”

Seemingly, compliance will be much more costly for ageing aircraft using older technologies that do not offer a NextGen platform. “CRT-based display units generally do not offer a platform for such new technology requirements. To date, the core solution offered by major OEMs is an entire cockpit upgrade, which is a very costly investment. For operators and lessors of ageing, high mileage aircraft with a limited lifespan, flexible, adaptable solutions to extend aircraft economic life are more important than ever before,” Hutchinson advises.

Unfortunately aviation is very susceptible to external factors that are very hard to predict. However HEICO state that one factor is always constant, the industry will continue to be under pressure to reduce costs and be more competitive. According to HEICO, their products and services are designed specifically to help airlines achieve this.



Big data predictive analytics capability.

Photo: Pratt & Whitney

“Our global footprint, technical know-how and industry leading team of over 4000 employees has us well positioned to take advantage of the challenges and opportunities that a growing aviation industry will create. HEICO subsidiaries now operate production or engineering facilities in 18 States and ten countries in North America, Europe and Asia,” the company says in a statement.

One of the key challenges Finklestein identifies for customers and the MRO industry is driving down total cost of ownership. “The role of Pratt

& Whitney’s aftermarket business is to keep our customers’ fleet flying competitively and safely.”

He says the comprehensive portfolio of services addresses the needs of operators throughout the engine’s service life. “We take a long-term, integrated approach to design solutions that translate to lower overall cost of ownership for our customers.

“Another opportunity for us is supporting the rapid introduction of GTF engines into the market. To address this challenge, Pratt & Whitney has developed a global MRO network to support this expanding fleet,” Finklestein reports.

Initially, Pratt & Whitney and its OEM programme partners, MTU and JAEC, have been selected to maintain the PW1000G fleet. Facilities will be strategically located in Asia, Europe and North America.

“The network will deliver quality and value by sharing best practices and procedures, and improve upon existing, knowledge-based build standards that drive increased reliability, best fuel burn retention, and highest EGT margin. This results in longer time on-wing, predictable costs and highest residual value for our customers,” ends Finklestein.



REX Saab 340s are Thomas Global’s launch partner for the CRT-to-LCD upgrade.

Photo: REX



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## AAR - Still nifty at sixty

With the MRO sector growing steadily in North America and more rapidly in emerging markets overseas, AAR began 2015 by taking the important strategic step of selling its Telair Cargo Group business, which included Nordisk Aviation, to position the Company as a pure-play, industry-leading global aviation services company. AAR leadership has been deliberate and innovative in its efforts to expand AAR's reach to the world's airlines. The Company is positioned for substantial opportunities in the coming year, having made significant forays in providing its award-winning aircraft maintenance, repair and overhaul (MRO), inventory management and component repair, and integrated IT solutions to new customers in Europe, Asia-Pacific, the Middle East and Africa.



AAR's MRO facility in Lake Charles

Photo: AAR

As part of an effort to grow the Company's global presence, AAR signed an agreement with South African Airways Technical, the maintenance division for South African Airways (SAA), to establish a joint venture partnership to reduce costs and increase operational efficiencies of the airline's fleet. The joint venture will include a focus on growing SAAT's MRO services to third-party customers/airlines across the continent. AAR will provide operational analysis and technical assistance for MRO and warehouse facilities and integrative IT solutions, including AAR's proprietary 1MRO Software Suite, which enables AAR's 1MRO Network of five aircraft repair stations in the U.S. to deliver the same customer experience across its facilities.

In terms of expanding AAR's presence in Asia, the Company signed a memorandum of understanding with Korea Aerospace Industries, the largest original equipment manufacturer (OEM) and MRO provider for military aerospace customers in Korea, to work together to establish a commercial aircraft MRO facility in South Korea. AAR and KAI are also considering operating the new facility under a joint venture.

And in Europe, AAR subsidiary Airinmar, a leading provider of innovative aviation repair management solutions near London, signed a three-year agreement with ExpressJet, a subsidiary of SkyWest Inc., to manage component repairs for its fleet of more than 300 regional aircraft. AAR

also continues to expand the EMEA customers served by its new supply chain hub in Brussels.

In terms of performance, AAR's Supply Chain Group revenues saw double-digit, organic growth, and its 1 MRO network, the largest independent MRO in North America, again reached 5 million manhours. And while AAR consolidated its regional MRO work in Hot Springs, Ark., into its Oklahoma City facility, the Company broke ground in October on a new facility in Rockford, Ill., designed to serve next-generation aircraft.

As airlines turn to cabin upgrades to gain a competitive edge, AAR has expanded MRO business lines such as engineering services, obtaining the necessary certifications to perform cabin, structural and systems modifications, avionics and upgrades, parts kitting, installation and lifecycle support.

In the coming year, AAR plans to continue to leverage opportunities in component maintenance and power-by-the-hour contracts, the Company's largest revenue stream, including 24-hour AOG at its new parts warehouse hub in Brussels. AAR will continue to expand its work on wide-body aircraft utilizing its 1MRO network including the new hangar in Lake Charles, La., and take advantage of the repatriation of wide-body to North America. AAR hopes to benefit

from increased airline spending due to lower jet fuel prices, which has been linked to an uptick in heavy maintenance and inspection of legacy aircraft as airlines re-commission planes and keep them in service longer.

Some of the year's challenges can be tied directly to increased competition by smaller niche and expansion of OEMs into the MRO and inventory management market. However, AAR anticipates more consolidation in the industry in the near future and is working to develop strategic relationships with OEMs for contract maintenance support and parts distribution. Overall, AAR's leadership feels confident that an independent, aftermarket provider like AAR is a valuable choice for airlines.

In 2016, AAR will continue to invest in its IT platform to enhance the experience for end-users on their devices, including handhelds, by developing its own apps to communicate with customers in real time. In a rapidly changing global market, AAR, voted the Best Airframe Maintenance Provider in North America in 2012 and 2014, and best worldwide in 2015, can apply 60 years of industry-leading experience to mitigate the challenges, leverage opportunities both domestically and internationally, while upholding its culture of excellence and its close-to-the-customer business model.

# In the hot seat.....

**Keith Mwanalushi** speaks to Mike Cazaz, CEO, Werner Aero Services.

**AviTrader MRO: What attracted you to this business?**

**Cazaz:** The aviation industry is incredibly fascinating with many different aspects that are always evolving. One of the things I truly enjoy is that this is a global business which gives me a chance to work with many different airlines in a variety of countries with different cultures and people. Of course, dealing with airplanes and engines makes this business more exciting.

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

**Cazaz:** As President and CEO I spend a lot of time developing new businesses with our different unit managers (asset management, engines, and airframe components). I also spend part of the day running the day-to-day business including meetings and problem solving. No two days are the same and you never know what opportunities or challenges the day will present which is why I love my job.

**AviTrader MRO: What is the most challenging part of your job?**

**Cazaz:** The most challenging aspect revolves around putting deals together for assets. You first need the ability to access greater capital to be able to get the deal done, but you also need to try and predict the future value of an asset. We want to ensure that we are betting on the right asset at the right time especially when there is a lot of capital at stake. We are proud of our ability to convince the customer that we are different from our competitors and demonstrate what separates us from the others.

**AviTrader MRO: Since being established in 1993, what are some of the key achievements at Werner Aero Services?**

**Cazaz:** Our biggest accomplishment is that we started out as a local company dealing mainly with regional aircraft and now we are a global asset management firm with two headquarters, one in New Jersey USA and one in Singapore. We are much more diversified having grown from focusing on parts, to today as an asset management company dealing with larger, mainly narrow body, aircraft with our business comprised of three units: components, engine sale/lease, and asset management. Another significant achievement is that over the past 20 years we have turned down dozens of airplanes and engines from turboprop to jet engines. All this could not have happened without the Werner Aero Services staff comprised of professionals and industry

experts who have decades of experience and are incredibly passionate about this business.

**AviTrader MRO: The Dubai Airshow just concluded. What emphasis do you place in the Middle East region as a market?**

**Cazaz:** Our plan is to develop more business in the Middle East. We have found that the airlines which typically operate in that market have new aircraft under warranties, so there is no need for us. However, we have identified a number of opportunities for us there that we are pursuing as we typically work with airlines that have less than 36 airplanes. At the moment we are also looking for the right staff to hire in this area to help us build our establishment there.

**AviTrader MRO: Werner recently announced an FAA supplier accreditation upgrade. What does this mean for the customer?**

**Cazaz:** We are very proud to have the FAA supplier accreditation upgrade as it demonstrates our commitment to provide the best service possible. We want our customers to know that they are getting the best product backed by a company that focuses on quality control and service. Customers can also always be sure that we are always up to date with the latest technology and safety standards.

**AviTrader MRO: In terms of engine supply, which types are you seeing the greatest demand for sale and/or lease?**

**Cazaz:** Narrow body engine requirements (V2500-A5, CFM56-5 and 7) remain relatively robust with the A5 coming back from a low demand requirement- driven by increasing MRO demand and short term leases. There also continues to be increasing demand for CFM56-3 leases. These requirements overall may be driven by lower fuel prices which at the margin are extending useful life of, the less fuel efficient models.

On the widebody types, there continues to be demand for CF6 -80 at the right levels, although with the planned retirements over the next two years of major fleets of 767s this could wain, unless we see the continued effect of lower fuel prices extending useful lives. On the RR side, this remains a difficult market controlled by the OEM with the small exception of the RB211-535 which there will continue to be demand for useful green time lives—unfortunately most Trent types supply is controlled by the OEM and we would suggest that from an independent viewpoint – “buyer beware.”



Mike Cazaz, CEO, Werner Aero Services

**AviTrader MRO: Managing parts inventory is key to your business. Do you see that some airlines still resist to outsource their inventory management?**

**Cazaz:** We have found that airlines like to manage their own inventory as a way to have better control and save money. There is a shift towards third party inventory management as airlines realise that they can save time and money by outsourcing. Third party inventory managers like us, deal with parts on a large scale basis so very often we can secure better prices based on our annual volume.

**AviTrader MRO: What can we expect from Werner in 2016?**

**Cazaz:** We expect 2016 to be a big year for Werner Aero Services as we continue purchasing narrow body aircrafts which will allow us to increase our component supply for both our asset management customers and AOG needs. Our successful purchase and teardown of a Boeing NG plane in 2015 has shown us that we are nimble enough to take on new products without compromising attention to our existing businesses. We also have plans in place to increase our engine nacelle business and asset management programmes as we are always looking for ways to provide better and more efficient solutions to our customers. Lastly, we are looking to grow our engine and aircraft sale/lease back business while transforming the organisation to bigger and more diversified projects.

# Aftermarket – 2015 Conundrum

## What's Really Happening?

Analysis by David Stewart, *VP and Global Managing Director – Aerospace and MRO– ICF International.*

ATA is forecasting airline industry profitability for 2015 of almost \$30 billion. Traffic and capacity have grown robustly at year-on-year rates of around 5%. There are even some signs of growth in the cargo/freight sector in some areas – oft cited as a harbinger for an upswing in industry fortunes. All this should surely be indicative of good and healthy times in aviation. Certainly some have interpreted the situation this way, as (at least from the perspective of this author), there are many financial and strategic acquirers out there, seeking to tap into the prospects sound industry growth.

However, upon deeper investigation into the aftermarket, times are much tougher than the afore-mentioned runes would indicate. For example, Canacord Genuity's industry survey (see graph), shows aftermarket businesses anticipating much lower growth rates moving forward. If you talk to key players in the market, whether OEMs or non-OEMs, everyone mentions the degree of price competition on new deals and the focus of airlines on reducing maintenance costs and activity. If you analyse the financial result announcements of the OEMs in recent times, all indicate lower than anticipated aftermarket activity. Some of these announcements have hurt badly (for some), with resulting significant falls in share price.

All of which presents an interesting conundrum. Why this disconnect between good times for airlines and tough times for the aftermarket. Surely

airline health equals growth of fleets and utilization, which should be positive news for MRO? It seems not, but what is the disconnect?

There are four main causes of this conundrum. First, the industry is moving into a new age of provisioning. More and more aircraft are being brought into operation under an integrated component support programme that leverages rotatable pools. Airlines are learning that they don't have to invest in expensive rotatables to keep their shiny new aircraft up in the air. Experience has taught that OEM initial provisioning recommendations are oftentimes risk averse and lack the benefits of scale. The larger the fleet supported by a stock of inventory, the lower the inventory required per aircraft. Thus, inventory management firms with financial muscle and scale can take advantage of these scale effects and move their customers down the inventory holding curve. For example, it now appears that for new types such as the 787 and A350, a very high proportion are being supported via such a third party provisioning model. Airlines now more and more recognize this opportunity to reduce their investment outlay and there are plenty of people vying to offer such a service including the aircraft OEMs, the large MRO integrators, the broad-based component OEMs and certain agile inventory management firms.

Such initial provisioning has historically been a critical element of the OEM economic model. But

now, their aftermarket parts sales have been impacted by this new age of provisioning dynamics.

Second, as often mentioned by ICF (see Avitrader January 2015), the availability and use of used serviceable material (USM) has grown, constraining new parts sales for OEMs and thereby reducing demand and OEM aftermarket revenue. The growth in aircraft retirements from on average 480 per annum between 2000 and 2009, to an expected average of more than 800 between 2010 and 2024, fuels availability of such material. As does the growth of a new breed of suppliers with access to capital and newer generation aircraft. Examples GE/Memphis, ILFC hooking up with Aeroturbine, or GA Telesis moving along the supply chain by acquiring Finnair Engine Services. Today, USM spend is over \$3.5 billion and this is only set to grow as the fleet grows, as airlines focus more and more on costs and as adoption increases in the more conservative regions of the world.

Third, somewhat tritely yet importantly, the airlines are doing a better job of managing their costs and have focused much more diligently on return-on-net-assets (RONA). For years, airlines have not generated investor returns above the cost of capital but this is now changing. Leading carriers have been exercising better capacity management and are making asset utilization a higher priority. To quote Derek Kerr, CFO at American: "the airlines have historically been run by operationally-minded people, who tended to throw planes onto routes in a fight for market share. The name of the game is now capacity management, and the decision makers are the finance people".

Delta Airlines is another great example of this new focus and discipline. It has targeted 15% ROIC and is doing a very good job of achieving this. What's the impact in the maintenance arena? It's once again about cost and investment reduction. To quote the Delta CFO: "opportunities to acquire older airplanes and harvest them for parts has provided significant savings for us going forward in terms of a lower-cost basis for the overhauls that we have". Delta now has a group dedicated to parting out aircraft and has purchased aircraft from other operators to cannibalize (e.g. SAS MD80s). It also actively cannibalizes its own retired aircraft. As a result, recent repair volume fell by 20% partly through use of USM. Delta also leverages its internal engineering capability to



Capacity management is now the focus.

Photo: American Airlines

WHAT HAPPENED TO AFTERMARKET DEMAND?

# MRO demand growth is considerably lower than global capacity growth

*MRO Demand Growth vs Global Capacity (ASK) Growth*



Sources Canacord Genuity, ICAO

ICF International

develop DER repairs and modified repair scopes. Now Delta typically buys new parts only as a last resort (on mature aircraft).

Such RONA focused behaviour has enhanced an already strong cost focus that has resulted in improved inventory management, reduced inventory holdings and the deferral of maintenance activity as and where appropriate.

Last but not least is the dramatic strengthening of the US\$. Against some important currencies, it has appreciated by some 20%-35%. Since MRO materials are typically priced in US\$, material input costs have risen accordingly for non-US MROs. Anecdotal evidence points to much greater pressure on MRO

spend in regions and countries that have suffered the more significant shifts in exchange rates.

So the conundrum can be explained, albeit it is not down to any one driving factor. It's a blend of causes, and for any one company, the emphasis of these external four factors may be different.

And on top of all this, there may of course be internal factors that are impacting financial results in the aftermarket, such as not having a strategy to combat and/or leverage the use of alternative parts. All of the above implies that aftermarket participants need to stay closely tuned to changes in the market and customer needs. In these already tough times, failure to do so has

already hurt many financially, and could yet impact many more.

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Parting out older aircraft has provided significant savings for Delta.

Photo: Delta



Khanh T. Tran

Aviation Capital Group (ACG), the commercial aircraft leasing subsidiary of Pacific Life Insurance Company, has named **Khanh T. Tran** as ACG's next Chief Executive Officer effective January 1st, 2016. Mr. Tran will assume the CEO role from **Denis Kalscheur**, who will become Vice Chairman of ACG until the end of 2016 when he is scheduled to retire from the Pacific Life organization.

Avtrade has appointed **Joanne Burkby** as Sales Manager – New Product Services. An Aviation professional with over 25 years representing OEM's worldwide for a vast range of expendable products, Joanne will be responsible for leading sales for Avtrade New Product Services (NPS). Customer focused, Joanne's experience of providing high-quality customer support to Corporate, VIP and Commercial operators will enable her to develop customer relationships and business opportunities with new

and existing customers. Avtrade New Product Services, a recognized stocking distributor, offers a comprehensive range of expendable and consumable products which enhances aircraft support to global aviation customers 24/7.



Brian Sartain

Chromalloy has named **Brian Sartain**, a senior aerospace executive, as the company's Vice President, Commercial Aero & Military Strategic Business Unit (SBU). "Brian has a terrific track record in growing aerospace businesses and units, including technical achievement, new product introduction, and expanded customer relationships," said **Carlo Luzzatto**, President. "We welcome his tremendous expertise

and leadership." Sartain, an aerospace executive for more than 25 years, has held executive assignments in all aspects of global business. Previously he worked at United Technologies Aerospace Systems (UTAS) and Goodrich Aerospace, which was acquired by United Technologies Corporation, where he worked for more than 20 years.

Aviation Technical Services (ATS) appointed **Doug Dalbey** as Vice President of Quality, Safety and Technical Training effective January 4th, 2016. In this newly-created position, Dalbey will have oversight of ATS' primary values – safety and quality. He will manage the safety, quality and training divisions at ATS' facilities in Everett and Moses Lake, WA; Kansas City, MO; and Fort Worth, TX.



Doug Dalbey

## Information Technology

**Somon Air**, a private airline based in Dushanbe, Tajikistan, has selected OASES, the MRO IT system from engineering and maintenance systems expert **Commsoft**, for its airline CAMO activities. OASES will control the airline's six-strong fleet of Boeing 737 'Classic' and NG aircraft. The fast-growing airline has signed a 10 concurrent users five-year contract with Commsoft, with implementation and set-up services provided by **FL Technics** scheduled to start straight away. FL Technics will use OASES to manage the Continuing Airworthiness of Somon Air's fleet. The contract covers three modules: Core, Airworthiness and Planning. It also allows the airline access to Commsoft's private computing cloud to manage its OASES operations.

**JetBlue** has become the launch customer for **Airbus'** "Maintenance Mobility" offering, following a contract signed with Airbus. Maintenance Mobility

allows the airline mechanics to have all the technical information they need on iPads. Maintenance Mobility is one of several services in the Smarter Fleet cloud-based services platform developed by Airbus in partnership with IBM. The agreement with JetBlue covers the integration of the Maintenance Mobility services into the airline's maintenance information system (MIS), as well as the software and data hosting over a five-year servicing period. The deployment will be accomplished step-by-step with Airbus experts working on-site with JetBlue in order to spread the integration and manage change gradually. For mechanics it enables them to access information needed to perform the turnaround, such as task cards or real-time access to aircraft maintenance messages. It also includes an e-Doc browser for access to the Aircraft Maintenance Manual (AMM), Illustrated Parts Catalogue (IPC) or Minimum Equipment List (MEL) from a mobile device.