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## REMEMBER the TITANS

Shown here, one of the titans of MRO,  
GE Aviation Services

December 2012 / January 2013

**MONARCH  
EXPANDS**  
BUILDING FACILITY  
AT BIRMINGHAM  
AIRPORT IN THE  
MIDLANDS, UK



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# 14

#### Remember the Titans

MRO industry challenges abound. Only the strongest players can expect to remain competitive in the long term. In this story we take a look at those industry titans with the strength and stamina to survive.

Cover image courtesy of GE Aviation.  
Image below courtesy of Lufthansa Technik.



### EDITORIAL

**Editor-in-Chief**  
Joy Finnegan  
[jfinnegan@avmain-mag.com](mailto:jfinnegan@avmain-mag.com)

### Contributing Editors

Charlotte Adams  
James Careless  
Jason Dickstein  
John Goglia  
David Jensen  
Douglas Nelms  
Dale Smith  
David Schober

### ADVERTISING/ BUSINESS

**Publisher/Owner** Adrian Broadbent,  
+34 91 804 2577  
[abroadbent@aerospace-media.com](mailto:abroadbent@aerospace-media.com)  
**Global Sales Director** Daniel Brindley,  
+1 414 847 6305  
[dbrindley@avmain-mag.com](mailto:dbrindley@avmain-mag.com)  
**International Key Account Director**  
Jina Lawrence,  
+44 (0) 20 8669 0838  
[jinalawrence@avmain-mag.com](mailto:jinalawrence@avmain-mag.com)

### DESIGN/PRODUCTION

**Cavich Creative, LLC.**  
[mail@cavich.com](mailto:mail@cavich.com)  
703-992-7086  
[www.cavich.com](http://www.cavich.com)

### SUBSCRIPTIONS

[subscriptions@avm-mag.com](mailto:subscriptions@avm-mag.com)

### CLIENT SERVICES

**Administration** Maria Hernanz Reyes,  
[maria@asi-mag.com](mailto:maria@asi-mag.com)

### LIST RENTAL

**Statistics** Jen Felling,  
(203) 778 8700, [j.felling@statistics.com](mailto:j.felling@statistics.com)

### REPRINT PARTNER

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Beech Court  
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# The Hard Way or the Easy Way?

BY JOY FINNEGAN  
EDITOR-IN-CHIEF



While it may be true that lessons learned the hard way, by painful, expensive firsthand experience, are the best lessons, there are other, more efficient ways to learn. For example, at our AVM Summit in London in November, we focused on bringing niche information that could potentially save MROs and airlines money, time and headaches.

Our summit had two very specific tracks of information, as opposed to some conferences that try to be all things to all people. In our case, we delved deep into these two areas, PMA parts and software and technology. Putting PMA parts and software and technology to use can and will save MROs and airlines money. We offered speakers that could give been there, done that advice on how best to implement some of these to the best advantage.



The Aviation Maintenance Magazine AVM Summit was held in London in November.

To kick the event off, we asked Bruce Dickinson, lead singer of the rock group Iron Maiden and aviation entrepreneur to come and be our keynote speaker. Dickinson spoke about his new venture, Cardiff Aviation, located in Wales. He was a dynamic speaker and knows the industry — he's not just a figurehead. He said his business will offer niche services as well as a broad range of airline maintenance capabilities. All who heard him speak were impressed. He graciously stayed throughout the event, networking, meeting attendees and exhibitors alike, signing autographs and taking pictures with any who asked.

British Airways Engineering has recently come back into the MRO space, and combined with Iberia, are offering a myriad of services to third party clients. In addition, the airline of which they are a wholly owned subsidiary, British Airways, utilizes their

services to maintain their 250-aircraft fleet and more than 100,000 components. To manage Rajan Bindra, engineering systems manager at BA Engineering who presented at the summit, said that they had been using 180 legacy software systems that didn't talk to one another. The MRO faction knew they needed change and moved ahead of the their parent airline by converting those numerous legacy systems into one single system, a system they designed and are now offering for consumer sale. BA Engineering joined with Tata Consultancy Services (TCS) to make a fully integrated, complete industry IT solution they dubbed SWIFT MRO. Bindra says it addresses key MRO requirements, including compliance control, maintenance operations and inventory management. Based on an SAP platform, the solution leverages industry best practices, increasing productivity through minimizing manual intervention and increasing process automation through a graphical user interface.

Other speakers on the software and technology track went on to address the latest in tablet technology, using e-commerce for parts procurement, training solutions, RFID use and using technology for throughput improvements. The Aeronautical Repair Station Association Executive Director Sarah MacLeod offered cautionary advice about the use of technology in MRO environments.

On the PMA side we opened by asking John Hunter, EVP Operations at Heico, to take a look back at the history and current state of the PMA parts industry and how companies within it came to be the mature, safe parts manufacturers that airlines around the world rely on to help control and reduce costs.

Jorge Leite, quality VP at TAP Maintenance & Engineering helped attendees understand how to use the BASA — bilateral aviation safety agreements — that exist between many countries and the U.S. to the best advantage when considering PMA usage. Leo Mayoral, a member of the senior professional staff at Johns Hopkins University Applied Physics Laboratory shared research about ways to use PMA parts to mitigate costs and obsolescence issues. Tamsin Hayward, an attorney at Keystone Law, also shared key insights about structuring leasing and financing agreements to allow for use of PMA. Hayward made it seem straightforward and simple. If your company needs more info on that, please let me know and we will try to cover it in an upcoming issue.

We were in awe of the amazing information shared at our AVM Summit. We thank our excellent speakers, our sponsors: Aero Parts Mart, Aviation Component Solutions, Belac, Heico, Aerotech Holdings, Jet Parts Engineering and MARPA for making the event possible and making it the easy way to learn how to save your airline money and operate more efficiently. **AM**

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## Monarch Expanding at Birmingham Airport

On Tuesday, November 20, Mick Adams, managing director at Monarch Aircraft Engineering Ltd (MAEL) announced at a press conference in Birmingham, UK, plans to expand its operations by building a state-of-the-art maintenance facility at Birmingham Airport in the Midlands.

*Photos by Jonny Marsh*

The new MAEL maintenance facility at Birmingham Airport will break ground in January 2013 and will be completed and operational by November 2013. The new facility will be located adjacent to the old Birmingham runway.

This maintenance hanger will be 110,000 sq. ft., about one and a half times with size of a football pitch, and will have the capacity for three wide body or 10 narrow body aircraft. "The facility compliments our existing facilities in the UK," Adams said. It will be the first UK facility to have the capacity to accommodate Boeing 787 Dreamliner maintenance. MAEL has knowledge in maintaining legacy fleets and new technology aircraft, including the Boeing 787 Dreamliner.

The MAEL facility will be capable of annual and bi-annual base maintenance for aircraft types such as Boeing (B737NG, B757, B767, B777, and B787), Airbus (A300, A310, A319, A320, A321, and A330) and Monarch Airlines' fleet. Aircraft will be disassembled, repaired, inspected, reassembled, tested and then released to service.

MAEL offers line maintenance throughout the world with engineer rescue teams. Adams said this hanger will provide line maintenance to aircraft including charters, special flights and perhaps the military.

New technology aircraft, such as the Boeing 787 Dreamliner, will be able to receive base and line maintenance from this hanger. MAEL is making the progressive transition from structural repairs to composite repairs to accommodate an increasing number of new technology aircraft types. MAEL is one of six MROs worldwide to be Boeing GoldCare approved to provide maintenance to the Dreamliner.

The facility will have offices and workshops, including composite repairs, avionics, and mechanical workshops, and will deliver round the clock '24/7' service for casualty repairs, heavy and overnight maintenance.

Adams said Monarch Aircraft Engineering chose Birmingham Airport because of the strong history of engineering skills in Birmingham and the previous relationship Monarch shares with Birmingham Airport. "[They] share a similar vision in terms of what this proposition does. With the cooperation of Birmingham Airport, a program of this nature, perhaps, would normally take two years has been condensed to 11 months."

Paul Kehoe, CEO of Birmingham Airport, said this new maintenance hanger "will give us the capabilities we haven't had before." The plan is to attract more aircraft to Birmingham and to be able to continue to reinvest in the maintenance facility. He stated this facility will fill a gap that is currently missing from the airport and added: "I bet we'll see tail planes come through that we haven't seen before."

With a rapidly growing third-party customer base, MAEL's third-party revenue increased from 18 percent to 27 percent in the last two years and they are aiming to grow third-party income to 40 percent during the next three years.

Adding this facility to the Birmingham area is estimated to create 150 new highly-skilled jobs in the Midlands with a potential to create an



From left to right, Monarch Aircraft Engineering Managing Director Mick Adams, Apprentice Engineer Charlotte Bale, Apprentice Engineer Jonathan Bale, Apprentice Engineer Ed Hare, CEO Birmingham Airport Paul Kehoe.



Monarch Aircraft Engineering Managing Director Mick Adams and Birmingham Airport CEO Paul Kehoe celebrate Monarch's expansion plans for 2013.



Ian Batholomew, Monarch Aircraft Engineering Sales & Marketing Director.

additional 150 jobs during the next few years. These numbers include both transfers of existing MAEL employees as well as new recruits.

This maintenance hanger will also support more engineering apprenticeships. This scheme will provide training to CAA qualification standards while offering knowledge and insight across all aspects of aircraft maintenance and associated areas of engineering. This four-year apprenticeship will create opportunities for graduates, school-leavers and adults to have hands-on experience working with airline maintenance. Within the company, there has been an annual intake of 12 apprentices and this number is predicted to double in 2013. — By Allison Donzanti

## Ametek Acquires Two Companies



Ametek has acquired two companies, Aero Components International (ACI) and Avtech

Avionics and Instruments (Avtech), both privately owned, FAA-certified aviation repair operations located in Miami, Fla.

ACI repairs and overhauls fuel, hydraulic, pneumatic, power generation and heat exchanger components and is one of the few independent aviation repair shops with fuel repair capabilities. Avtech's expertise is in the repair and maintenance of next generation and legacy avionics and instruments. Each business operates separate facilities located near AMETEK's High Standard Aviation aerospace maintenance, repair and overhaul (MRO) operation.

"Our acquisition of ACI and Avtech represents a further expansion of AMETEK's global aerospace MRO capabilities. Together with our other MRO acquisitions and organic expansion activities, AMETEK now has a significant and growing presence in this attractive market," comments Frank S. Hermance, AMETEK chairman and CEO.

"Both of the acquired businesses extend our portfolio of MRO services with ACI adding fuel repair capabilities and Avtech broadening our expertise in next generation avionics," adds Hermance.

ACI and Avtech join AMETEK Aerospace & Defense, which in addition to third party MRO services, is a leader in engine and aircraft monitoring systems, power generation and distribution systems, data acquisition units, fuel and fluid measurement systems, engine and airframe sensors, cables, harness assemblies, avionics, blowers, fans, and heat transfer and cooling systems. AMETEK Aerospace & Defense is a division of AMETEK, Inc.

## Regulation Interpretation ARC Issues Final Report to FAA

A government-industry rulemaking committee responsible for making recommendations to address the lack of consistency in regulatory interpretations issued its final report to the Federal Aviation Administration (FAA).

In late April, the FAA established the Consistency of Regulatory Interpretation (CRI) Aviation Rulemaking Committee (ARC), as directed by Congress, to review the October 2010 report by the Government Accountability Office on certification and approval processes (GAO-11-14) and to establish root causes and recommendations to address the issue.

The ARC concluded that the agency's Aviation Safety organization, specifically, the FAA's Flight Standards Service and Aircraft Certification Service should review all guidance documents and interpretations, identify and cancel outdated material and cross-reference (electronically link) material to the applicable rule. Further, the ARC recommends the FAA expand its current Aviation Safety Information Management System initiative to consolidate the service organization-level libraries into a single AVS master electronic resource, organized by rule, to allow users access to relevant rules and all active and superseded guidance material and related documents.

"During the Committee's exhaustive review, it was clear from the beginning that standardization cannot be achieved unless the FAA and industry are singing off the same sheet of music," stated National Air Transport Association Vice President of Government & Industry Affairs Eric R. Byer, Industry Chair for the ARC.

"Consolidation of all guidance documents and interpretations, organized by rule and housed in one electronic database is the linchpin to success in resolving the lack of standardization with regulatory interpretations and making the FAA's rules more accessible and easier for the public to understand," concurred Aeronautical Repair Station Association Executive Director Sarah MacLeod, a member of the ARC.

The report addresses several other issues that are predicated on the successful development of one master electronic database including the creation of a Regulatory Consistency Communications Board (RCCB) that would provide clarification to FAA personnel and certificate/approval holders and applicants on questions related to the application of regulations.

The ARC's recommendations now head to the FAA for review and transmission to Congress in early 2013. The report is available at: <http://arsa.org/wp-content/uploads/2012/11/ARC-313-Final-Report-112812-Submitted-to-FAA.pdf>.

## about people

### Neil W. Book Named JSSI CEO

Jet Support Services, Inc. (JSSI) announced Neil



Book has been named president and CEO, and Louis C. Seno will serve as chairman emeritus and special advisor to the Board of Directors. Robert H. Book will act as chairman of the Board of Directors and industry veteran Bryan Moss and Joe DaGrosa will both serve as vice chairmen of the Board. Susan Marr continues as a member of the Board, general counsel and chief administrative officer of JSSI, as well as CEO of Aviation Insurance Corporation, an affiliate of JSSI.

### Thomson Joins BBA Aviation ERO

Wayne Thomson has joined BBA Aviation Engine Repair and Overhaul (ERO) as Regional Field Service Engineer for Australasia. Thomson will be responsible for supporting ERO's customer base in the region, primarily operators of TFE731, GTCP 36 series APUs, PW100 and PT6A engines. "As part of our F1RST SUPPORT global service, Wayne will integrate with the Dallas Airmotive team in Singapore and will provide the required field service support of customers in Asia Pacific," stated Andy Preston, program director for BBA Aviation ERO RTCs and Field Service for EMEA and Emerging Markets. Thomson will be based in Brisbane, Australia. Prior to joining ERO, he spent 14 years with Pratt & Whitney Canada.

### Banyan Air Service Makes Key Appointments



George Tucker recently joined Banyan Air Service as the director of Banyan Pilot Shop. He is responsible for the leadership and growth of the Pilot Shop and [banyanpilotshop.com](http://banyanpilotshop.com) including marketing strategy, management.

"We are excited that George has joined the Banyan team. Given his extensive background in e-commerce and on-line marketing, we anticipate that he will increase our market share through new relationships and increase revenue streams," says Don Campion, president of Banyan Air Service.

Additionally, Michael Grana recently joined Banyan Air Service as aircraft sales associate. In his new role, he will be responsible for aircraft research and aircraft brokerage listings.



"We're excited about Michael's experience and enthusiasm and are thrilled to have him join our team," says Michael O'Keeffe, senior vice president of aircraft sales. Grana has five years of aircraft sales experience, has held

several positions as a corporate pilot and has assisted in corporate aircraft management. >>>

about people

He is a commercial fixed wing and helicopter pilot with flight instructor ratings in single and multi-engine aircraft. He also holds a type rating the Citation 500 series aircraft. Besides his professional pilot ratings, he has a Bachelor of Science degree in Aeronautics from St. Louis University, with a concentration in Aviation Management.

**Superior Air Parts Selects Golden as V.P. Sales**



Superior Air Parts announced that Glen Golden has joined the company as its vice president of Sales and Marketing. "Superior Air Parts has made significant strides in returning to prominence in the piston engine aftermarket parts and the owner-built experimental engine markets," Timothy T. Archer, Group CEO of Superior Air Parts parent, Superior Aviation Beijing, CO. Ltd., said. "As our new VP of Sales and Marketing, Glen will be charged with, not only continuing that positive momentum, but also to work with our engineering group, key distributors and customers to explore new programs." Before joining Superior Air Parts, Golden owned Enhanced Aircraft Systems, which specialized in sales and marketing programs for companies developing STCs and PMAs. Prior to that, he was president of Engine Components, Inc. (ECI). From 1988 to 2006, Golden held various management positions with Aerospace Products International (API).

**Duncan Expands International Support Team**

Duncan Aviation has expanded their international support team recently by adding three key representatives to travel their region interfacing with aircraft operators, management organizations and other service providers with the goal of maintaining and building relationships, providing customer service, educating operators and learning more about the regulatory issues within the region. First Duncan has named Richard



Gardner as regional manager in Australia and New Zealand. Gardner has been supporting Duncan Aviation since 2007, working as an international representative in New Zealand. Prior work experience includes employment with Air New Zealand and Pacific Turbine. Through his own company, SinglePoint Assist, Gardner became involved with supporting Duncan Aviation customers in Australia and New Zealand. He has a management degree from UK Open University, and holds licenses from the FAA as an A&P mechanic, a CAA airframe and engine license in the UK, and licenses in >>>

**FLYHT Receives Boeing 777 Activation STC for AFIRS 228**



FLYHT Aerospace Solutions has received an activation Supplemental Type Certificate (STC) from Transport Canada for its Automated Flight Information Reporting System (AFIRS) 228 on Boeing 777 aircraft.

In July 2011, FLYHT announced the receipt of a provisions-only STC for the Boeing 777 series. This recent STC now allows for the activation of the AFIRS technology and enables its full functionality. The receipt of the activation STC is the first step in enabling an existing customer, a U. S. specialty carrier, to install AFIRS on its first Boeing 777. The next step will be the familiarization of the STC

with the Federal Aviation Administration (FAA) in the U. S., because the customer is flying a U. S. registered aircraft. This process is expected to begin immediately and normally takes six to eight weeks. Once the FAA has approved the STC and installation is complete, the customer will be able to activate the AFIRS technology on two Boeing 777s in its fleet of nine aircraft.

According to FLYHT, AFIRS 228 will provide a fully certified avionics platform capable of meeting all air navigation communications requirements in Europe, the U. S. and other jurisdictions around the world. It will also provide the input and outputs necessary to enhance the value of real-time data for FLYHT's customers globally. The company says AFIRS 228 will be the first safety-services certified platform on the planet to provide black box data streaming via FLYHTStream, their patent pending solution.

**Lockheed Martin Recognizes Co-Operative Industries**



Co-Operative Industries Defense received Lockheed Martin Aeronautics' Small Business Supplier of the Year Award. This award was given in acknowledgment of Co-Operative Industries' support of the F-16 and F-35 aircraft development and production.

"Co-Op's investment and heightened level of customer support clearly demonstrates their commitment to support current and future LM Aero Programs," said Lockheed's Vanessa Bull, supplier diversity programs. "Co-Operative Industries' performance is exemplary and merits their designation as one of our 2012 Small Business Suppliers of the Year."

Co-Operative Industries Aerospace & Defense is a Fort Worth based Service-Disabled Veteran-Owned company which currently employs 148 individuals. They have been doing F-16 and F-35 electrical wiring harness production and repair work since 2005. In January 2011 Co-Operative Industries relocated to their newly renovated Cherry Lane facility. This 121,096 square foot site incorporates a lean factory concept, expanded manufacturing space, strategic spare parts inventory, and harness test equipment. These actions enhanced their ability to support production requirements and enabled a more robust capability for quick turn repairs.

Receiving the award for CIA&D were Jim Green (chairman), Sam Symonds (president & CEO), and Chris Fairchild (director of contracts). "We at Co-Operative Industries Defense are extremely proud to have been recognized by Lockheed Martin Aeronautics as a 2012 Small Business of the year. We are honored that LM Aero recognizes our continuous effort to meet and exceed our customer requirements," stated Sam Symonds, president & CEO.

**Hartzell's Bantam Composite Prop Selected for Firebird OPV**

Hartzell has been chosen as the propeller supplier for Northrop Grumman Aerospace Systems' Firebird Optionally Piloted Vehicle (OPV). The Firebird will be the first production aircraft outfitted with Hartzell's new Bantam series ASC-II composite propeller.

The lightweight, five-blade, non-feathering pusher design propeller weighs 45 lb. The blades are of Hartzell's carbon monocoque construction, allowing for maximum damage tolerance and field reparability. The propeller blades' field replaceable co-molded electroformed nickel erosion shield provides impact and erosion protection in a smooth aerodynamic shape. In addition, the strength of the carbon fiber construction and its proprietary vacuum assisted resin transfer molding (VARTM) process permits the use of thin, high performance airfoils.

"Northrop Grumman selected Hartzell for the Firebird program due to the company's outstanding record in providing customized, high-performing and reliable propellers. We knew Hartzell could do the job, and do it well," said vice-president, Firebird executive program manager, Jerry Madigan.



"Earlier this month, the Firebird completed a flawless, six-minute flight at our facility in Mojave, California. This significant milestone wouldn't have been possible without the support of our suppliers like Hartzell."

Joe Brown, president of Hartzell Propeller Inc., said, "The launch of our new Bantam series composite propeller marks another chapter in Hartzell's growth throughout the diverse sectors of the aviation industry. The Firebird's Bantam propeller features custom carbon graphite blades, retaining all the benefits of our ASC-II proprietary composite construction and co-molding process—it's lightweight, strong and durable."



## Air Tahiti Nui and LHT Sign Engine Repair Deal

Representatives from Air Tahiti Nui, the international airline of Tahiti, and Lufthansa Technik have signed a long-term engine repair and overhaul contract for the 21 CFM56-5C engines of Air Tahiti Nui's A340-300 fleet.

The contract runs for a period of eight years and also comprises additional engine related services like component maintenance, logistics including transportation, pooling and lease support, engine maintenance management, airline support team (AST), advanced work-scoping and spare engine coverage.

The services will be delivered via the global Lufthansa Technik network. Spare parts will come from Frankfurt and Hamburg, overhaul and repair work will be executed at the Lufthansa Technik sites in Hamburg.

## New Book Looks at IT for MRO

A newly published book, "Leveraging information technology for optimal aircraft maintenance, repair and overhaul (MRO)" by Anant Sahay, was released in November. Sahay designed the book as a primer on IT services for maintenance and engineering professionals and also for IT professionals servicing the industry.

Sahay has worked in the commercial aviation industry for 30 years and has served as a subject matter expert on aviation MRO for IBM Australia, is certified project management professional and is a TOGAF certified enterprise architect. He has been associated with airlines and MROs such as Emirates, Gulf Air, ADAT, Malaysian Airlines, Air New Zealand Qantas and others.

Sahay says the book looks at how IT services relate to aircraft MRO information and the unique needs of the industry and how IT may be leveraged in the future to benefit MRO companies. The eight chapters of the book cover such topics as "The aviation MRO organization's challenge to the IT industry," "The current aviation MRO IT landscape," and "Leveraging IT and shaping the future."

For more information on how to order the book, contact Chandos Publishing at info@chandospublishing.com.



## about people



New Zealand, Latvia, Trinidad and Tobago.

Duncan announced the appointment of Andy (Anand) Fernandes as regional manager for India. Fernandes has been with Duncan Aviation since 1999 and will continue his current responsibilities as avionics installations sales rep, serving a dual role as he supports operators in India. "With India now being home to many corporate jets, Duncan Aviation made the commitment to have a regional manager established for that region," says John Slieter, Duncan Aviation vice president of Sales. "Andy has already established many working relationships with the industry in India. He will play a critical support role to operators of that region." Fernandes obtained his FAA A&P license in 1997. He has a Bachelor's degree in Aviation Maintenance from Kansas State University and a Master's degree in Aviation Safety from the University of Central Missouri. He worked in Airframe, Customer Service and Project Manager roles for Duncan Aviation.



Duncan Aviation also added Rodolfo Rodriguez as the company's new regional manager, located in Mexico. Rodriguez has been working with Duncan Aviation since 2007 as a sales rep, leading Duncan Aviation's work with Mexican aircraft. "With the retirement of Enrique Ortega, a representative for many years, we knew that Rodolfo would transition well into this new role," says Slieter. "Mexico has long been an important market for us and we see opportunities for additional customer support in the region. Rodolfo will play a large role in this." Prior to Duncan Aviation, Rodriguez was a Naval Officer for the Mexican Navy. He retired in 2000 after 21 years of service. He has a Naval Sciences degree with the Naval Academy in Engineering and is authorized for internal combustion engines and gas turbine engines.

## Bruce's Custom Covers Supports EAA Young Eagles With Donation To Sweepstakes Stearman

Bruce's Custom Covers announced its donation of a custom fitted aircraft cover to the Experimental Aircraft Association (EAA) for its 2013 sweepstakes Stearman Model 75 biplane. The iconic aircraft will be fully restored and awarded to one lucky contest winner following its display at the annual AirVenture Fly-in in Oshkosh, Wisconsin.

Described by EAA as a "living time machine transcending age by continuing to challenge and excite the modern pilot," the sweepstakes Stearman has a storied history and will serve to help EAA create the next generation of aviators. A beneficiary of the fly-in and contest proceeds is Young Eagles, an EAA program to introduce youth, aged 8–17, to aviation. Bruce's say it "is proud to support this organization and has done so in prior years." In July 2012, Bruce's provided two covers for fundraising at the organization's Gathering of Eagles auction. Two winning bidders received a custom fitted cover for their aircraft, valued at up to \$550.00 each, and Young Eagles program received the proceeds.

## FlightSafety Int'l Makes Key Personnel Changes

FlightSafety Int'l (FSI) has made several key personnel announcements. FSI promoted Daniel MacLellan to regional operations manager. He will continue to serve as Manager of FlightSafety's Dallas/Fort Worth Learning Center. MacLellan will oversee six FlightSafety Learning Centers in addition to the Dallas/Fort Worth facility. They are located in Hong Kong; Lafayette, Louisiana; Long Beach, California; San Antonio, Texas; Savannah, Georgia; and West Palm Beach, Florida.

Fabio Miguez has been promoted to manager of the company's Columbus, »»»

about people

»» Ohio Learning Center. He replaces Chip White who has been appointed Manager



Miguez

of FlightSafety's Learning Center in Savannah, Georgia. Miguez joined FlightSafety at the Teterboro Center in 2004 and held a number of positions including avionics instructor, program manager, and director of programs for Dassault Falcon Jet training. He was then promoted to assistant manager of the Columbus Center and most recently served as manager of FlightSafety's Detroit Metro/Toledo Learning Center.



Davenport

Chip White has been appointed manager of its Gulfstream Learning Center in Savannah, Georgia. David Davenport, who served as Manager of the Center since 2005, was recently promoted to vice president and will be relocating to FlightSafety's corporate offices in New York (see next paragraph). White joined FlightSafety in the year 2000 as an instructor at the St.



MacLellan



White

Louis, Missouri Learning Center and was promoted to assistant manager in 2002. He was named manager of the Long Beach, California Learning Center in 2004, and was most recently manager of the Columbus, Ohio Center. He served with the United States Navy prior to joining FlightSafety. He flew a wide variety of military aircraft, including the C130, DC-9 and Gulfstream IV during his 27-year career, and retired with the rank of captain. White holds a Bachelor of Science Degree from the State University of New York in New Paltz, a Masters of Education from National-Louis University in Chicago, and a Diploma in Industrial Relations and Military Sciences from the United States Air Force.

David Davenport will join the FSI's senior management team at its corporate offices in New York. Davenport was recently promoted to vice president. He previously served as manager of FlightSafety's Savannah Learning Center and Regional operations manager. Davenport will contribute to all aspects of FlightSafety's business, his primary focus will be on the development, delivery and expansion of the company's corporate aviation training programs. He graduated from the United States Air Force Academy in 1982 with a degree in business management and then served in the Air Training Command. He joined FlightSafety in 1996. »»

ST Engineering's Aerospace Arm to Acquire Volant

Singapore Technologies Engineering (ST Engineering) announced that Vision Technologies Aerospace Incorporated (VT Aerospace) has entered into an agreement to acquire 100 percent equity interest in Volant Aerospace (Volant), for a purchase consideration of \$13.1m subject to post closing adjustments. Following the acquisition, Volant will become a wholly owned subsidiary of VT Aerospace. VT Aerospace, which owns four aerospace operating companies in Mobile, Ala.; San Antonio, Tex. and Hartford, Conn., is a subsidiary of Vision Technologies Systems, Inc. (VT Systems), the U. S. headquarters of ST Engineering.

The acquisition is in line with ST Engineering's strategic initiative to develop the cabin interior engineering, manufacturing and repair capabilities for its aerospace sector. An industry-leading provider of commercial aircraft interior reconfiguration and modification services, Volant will strengthen the aerospace sector's cabin refurbishment business.

ST Aerospace says the acquisition will be managed as part of the aerospace sector's global MRO network and Volant will work closely with ST Aerospace's MRO network and in-house engineering and development center.

Pacific Coast Avionics Provides Panel Upgrade for Tac Air Twin Otters

Dewey Conroy, vice president and COO of Pacific Coast Avionics announced a contract for providing custom panel upgrades for three DeHavilland DHC-6-300 Twin Otters operated by TAC Air out of Coronado, California. The Twin Otters are utilized for jump flights and jump training by both civilian and military customers.

"Since these aircraft are used primarily in a local flight environment, the emphasis was placed on safety of flight rather than more sophisticated long range navigation," Conroy said "The install package for these aircraft is indicative of our ability to match the equipment to the mission and provide the customer with the best value for his upgrade investment."

The install package is standardized for all three aircraft and includes the fAspen Avionics Evolution 2000 Dual Screen EFIS, Garmin GNS-530W GPS/Nav/Com, Garmin GMA-340 Audio Panel, Dual Garmin GTX-327 Mode C Transponders and the Avidyne TAS-620 Traffic System.

Commenting further, Conroy added, "We successfully integrated the new avionics with the existing avionics that remained in the panel and provided all the necessary interfaces with other instruments. In addition, the customer took advantage of our capabilities for CAD panel design, panel cutting, powder coating, and laser engraving to make the panel as new as possible."

Cessna to Acquire Jet Aviation's MROs in Zurich, Dusseldorf

Cessna Aircraft Company signed a deal to acquire Jet Aviation's maintenance, repair and overhaul (MRO) facilities in Zurich, Switzerland, and Düsseldorf, Germany, further expanding Cessna's global service center footprint. Both facilities will begin operating as Cessna Citation Service Centers on January 1, 2013. Jet Aviation will continue operating its FBO facilities at both locations.

"Germany and Switzerland are strategically located where a majority of Citations in the region are based and we are enthusiastic about bringing more service options to our customers in Europe," said Scott Ernest, president and CEO at Cessna. "Cessna's focus on enhanced service offerings, paired with our investments in new product development, demonstrate our team is wholly committed to continuing to provide the industry with choices in innovative solutions for jet ownership and comprehensive services either through Cessna-owned facilities or via our extensive network of valued partners."

The Zurich and Düsseldorf service centers will provide comprehensive repair, maintenance, overhaul, refurbishment and customization services for Citation business jets and other manufacturer aircraft currently maintained at these facilities, Cessna says. As Cessna-operated Citation service centers, the Zurich and Düsseldorf service centers will now offer additional service programs to customers, including Cessna's ProAdvantage programs, which the company says enables customers to level or reduce the costs of maintaining their aircraft, while increasing its value.



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about people

» Duncan Welcomes Gilbert as Great Lakes Regional Manager

Duncan Aviation welcomed Tony Gilbert as the company's new regional manager for the Great Lakes Region in the United States. Gilbert has been instrumental in setting up several worldwide initiatives for Duncan Aviation in Europe and South America. He returns to the United States in this new role, where he is based at Duncan Aviation's Battle Creek, Mich., facility.



Gilbert began his aviation career in 1979. He is an aeronautical engineer, speaks five languages and has had extensive experience in the field of international business. Over the years, he has gathered a wide range of experience serving as a pilot in various military airplanes, including Boeing 737s. Gilbert has been with Duncan Aviation since 1988.

White Appointed Flexjet President

Flexjet, the Richardson, Texas-based division of Bombardier, recently announced the appointment of Deanna White as president. "Since joining Flexjet in 2005, Deanna has demonstrated a strong track record of identifying and maximizing opportunities to enable profitability," said Pierre Beaudoin, president and CEO, Bombardier. "Deanna possesses a passion for driving strategic change and implementing business plans that support the organization's long term strategies. I am pleased to recognize her accomplishments with this appointment and look forward to her continued leadership as president of Flexjet."

Marshall Aerospace Appoints Povey to Head Bizav Aircraft Sales



Povey

The business aviation arm of the Marshall Aerospace Group is expanding its breadth of expertise with the creation of a dedicated Aircraft Sales and Brokerage business. Based at its Cambridge Airport, UK headquarters, the new business will focus initially on acquiring and selling pre-owned business jets and turboprops. The Company has chosen Howard Povey to head the new operation and he joined the company's management team as sales director in November. He will be based at Cambridge Airport and will report to managing director of Marshall Business Aviation (MBA) and Marshall Executive Aviation (MEA), Steve Jones. The announcement of the new business arm comes as Steve Jones assumes responsibility for all business aviation-related activities at Marshall Aerospace, including the overall »

Liebherr-Aerospace Delivers the First A350 XWB-800/900 Nose Gear

The on-schedule delivery of the first Airbus A350 XWB-800/900 nose landing gear to the final aircraft assembly line in Toulouse marked an important milestone for Liebherr-Aerospace Lindenberg, based in Lindenberg Germany.

Liebherr-Aerospace Lindenberg is responsible for the development, production and the customer support of the nose landing gear, including retraction and extension actuators, steering actuation and hydraulic valve control.

The nose landing gear is currently in a comprehensive approval and test phase and a significant milestone has already been reached—the drop tests were concluded at the Direction Générale de l'Armement Technique Aéronautique (DGA-TA) in Toulouse, France. These involved testing the shock absorber properties for landings across the entire range of application of the nose landing gear and verifying the airworthiness.

In addition to the nose landing gear, Liebherr-Aerospace Lindenberg is also responsible for the Airbus A350 XWB-800/900 slat actuation, flap active differential gearbox, as well as for the load sensing drive strut and moving damper.

Sabena technics Performs First SATCOM Install on ATR 42-600

Sabena technics just performed the installation of two SATCOM systems on a new ATR 42-600 belonging to an undisclosed Middle East VIP operator.

In order to maximize the coverage for communication features, Sabena technics carried out the installation of two satellite-communication systems, Iridium and Inmarsat, through Intermediate Gain Antenna. Using these cutting-edge technologies, passengers will be able to connect their usual devices to wireless internet and to make and receive phone calls while in flight on the regional turboprop aircraft.

For this installation, Sabena technics carried out the engineering, kit manufacturing and the integration and certification of the SATCOM systems on the ATR. "Sabena technics has developed a specific know-how on such tailor-made projects over the years. In this case, our company's renowned expertise in ATR aircraft and the large capability of our design office allowed us to develop a complete in-house solution for our customer, reducing the aircraft downtime. Today, Sabena technics can offer this kind of solution for any aircraft," stated Rodolphe Marchais, chairman and CEO of Sabena technics.

Solyo Aviation Solutions Now Cobham/S-TEC Dealer



Solyo Aviation Solutions recently announced that they are now a Cobham/S-TEC dealer. Cobham Commercial Systems, Integrated Systems (formerly S-TEC Corporation) produces analog and digital autopilot systems.

"Since our avionics services became operational two years ago we have experienced increasing interests from general aviation clients (especially Cessna 206 owners converting to our MKII turbo prop) for Cobham/S-TEC autopilot sales, maintenance and repair," Dave Stauffer, Solyo's CEO said. "Adding Cobham to our line of dealerships gives us more to offer our fixed wing customers who desire an autopilot configured into their avionics package."

Solyo is authorized for autopilot, displays and HeliSAS systems in Cobham's line of avionics products.

"The HeliSAS stability augmentation system complements our AS350 engine turbine conversions by dramatically reducing pilot workload while providing precise control during all modes of flight, regardless of wind conditions or shifts in weight," Stauffer noted, "and Cobham has a wide selection of autopilots and upgrade kits for our fixed wing customers."

# mx reg log

BY CHARLOTTE ADAMS

## 1. Contract Maintenance Proposed Rule

In November 2012 the U.S. Federal Aviation Administration (FAA) issued a notice of proposed rulemaking (NPRM) on contract maintenance, as required by the agency's 2012 reauthorization act.

Under the proposal operators would develop policies, procedures, methods and instructions for contract maintenance and include them in their maintenance manuals. Operators also would provide FAA a list of all persons with whom they contract maintenance. As the Aeronautical Repair Station Association points out, the NPRM goes beyond the authorization law to include Part 135 operators of aircraft with 10 or more seats as well as Part 121 carriers.

The point of the NPRM, according to the agency, is to help ensure consistency between contract and in-house carrier maintenance and to enhance FAA and carrier oversight. It says the changes are necessary "because contract maintenance has increased to over 70 percent of all air carrier maintenance, and numerous investigations have shown deficiencies in maintenance performed by contract maintenance providers." Comments are due by Feb. 11, 2013.

## 2. Loose Seats Prompt Bulletin

The U.S. Federal Aviation Administration (FAA) has issued a special airworthiness information bulletin in response to reports of passenger seats coming loose during three American Airlines flights. One airplane had to make an emergency landing because of this problem, according to press reports.

The Nov. 2, 2012, bulletin advises air transport operators using certain Weber Aircraft model seats to inspect them and correct improperly installed seats. The document, however, states that this concern has not risen to the level that would require an airworthiness directive. It says the problem "could be related to improper rear seat track fitting installations and/or maintenance."

## 3. Fuel Pump Penalty Proposed

The U.S. Federal Aviation Administration (FAA) on Oct. 24, 2012, announced a proposed \$354,500 civil penalty against US Airways for allegedly operating a 757 airliner on 916 revenue flights—between Aug. 3 and Dec. 3, 2010—when it was not in compliance with Federal Aviation Regulations.

FAA claims that US Airways removed and replaced a leaking engine fuel pump on the aircraft and failed to carry out FAA-required tests and inspections before returning the aircraft to revenue service.

## 4. Repair Stations Face Drug Test Fines

\* California-based repair station, Woodward Inc. and its subsidiary, HRT, risk a civil penalty of \$246,450 for alleged violations of the Federal Aviation Administration (FAA) drug and alcohol testing regulations that occurred between 2010 and 2012.

The claimed violations involved failure to conduct tests and verify negative results on a dozen people before transferring or hiring them to perform safety-sensitive aircraft maintenance as well as failure to include six individuals in a random drug and alcohol testing pool and failure to administer a return-to-duty drug test to one employee after he had completed a substance abuse treatment program.

\* GKN Aerospace Chem-Tronics, Inc., an El Cajon, Calif., repair station, faces similar allegations. FAA claims the company failed to conduct required pre-employment drug tests and receive verified negative results before hiring 17 people to perform safety-sensitive functions and also failed to carry out all the required drug and alcohol testing.

\* A third repair station, Circor Aerospace, confronts similar charges and a proposed \$205,250 penalty for alleged failures involving pre-employment drug testing of 29 people before hiring them for aircraft maintenance.

## about people

» responsibility for the development of business aviation strategy, the management of business aviation, hangars and ramp facilities and the FBO (fixed base operations) which is currently franchised operationally to ExecuJet.

### Wyatt Becomes GM of Stevens Aviation's Denver Facility

Stevens Aviation has appointed Robert Wyatt to the position of general manager of its Rocky Mountain Metropolitan Airport facility in Broomfield, Colo. Wyatt has held an Airframe and Powerplant (A&P) license since 1996 and has worked at various levels of aviation management including 10 years with Bombardier Learjet. "Robert's broad-based experience, from lead Learjet technician to service manager, makes him uniquely qualified to lead Stevens' Denver facility," said Neal McGrail, Stevens Aviation president. "His technical background and customer service expertise are an ideal combination background as Stevens looks to maximize its presence in the Denver area."

### Reimers Becomes CEO of Tamarack Aerospace



John Reimers has assumed the position of CEO at Tamarack Aerospace Group. He joins Nick Guida, founder of the company, who will remain chairman of the Board and will continue his focus on leadership in advancing winglet technology. Reimers was recently the CEO and president of Aviation Partners Boeing in Seattle, Washington, where he and his team were responsible for the development and installation of more than 1000 plus blended winglets on Boeing aircraft. Prior to that, he was with Teledyne Industries, as well as chairman and CEO of Compass Aerospace.

### Avgroup Announces New Regional Sales Rep

Avgroup has announced that Jim Spencer is opening a new office location for Avgroup in Wichita, Kan. His focus will be on customers in the northwestern states of North America and in Canada. Spencer's twenty plus years of experience with Matrix Aviation and extensive avionics background align well with Avgroup's goals, the company says. "We are excited to welcome Jim to the Avgroup team," said Steve Piller, Avgroup's president. "His avionics background and knowledge of the region will add a new dimension to our strong sales team as we head into 2013."

# MRO Titans:



# Changing Landscape

By Charlotte Adams

**H**ammered by global economic problems and fuel prices, the MRO industry is becoming more challenging by the day. Competition

is intensifying, cost pressures rising, regulation expanding, and barriers to entry in engine and component work are becoming steeper with the advent of new-generation aircraft. Only the strongest players—by financial heft, scale, niche excellence or cost advantage can expect to remain competitive in the long term.

The most obvious trends are the increasing strength of the engine and component original equipment manufacturers (OEMs) and the airframers' move into the aftermarket. In line with these developments, the increasing cost of and restrictions on intellectual

property needed to maintain components is the most important factor for game change, potentially driving partnerships and acquisitions over the long term, according to Marcel Versteeg, managing director of Netherlands-based VZM Management Services.

Components are the next big battleground. Material, tooling and equipment are more expensive, "and you need a lot more scale to justify the investment," says Jonathan Berger, vice president, MRO services, ICF SH&E. The big airline MROs don't have deep pockets, but they have the scale to justify the return on investment for equipment and tooling, he says. "It is so necessary for them to stay in the market because they are to some extent keeping competition in the market."

Preserving competition is a rallying cry in the non-OEM camp. "The airlines won't let the OEMs take a dominant position in the market," asserts Sebastien Weber, vice

president for marketing, product support and development for AFI KLM Engineering and Maintenance (E&M). "That would result in higher maintenance costs for airlines." Weber asserts there is room for "fair and balanced competition."

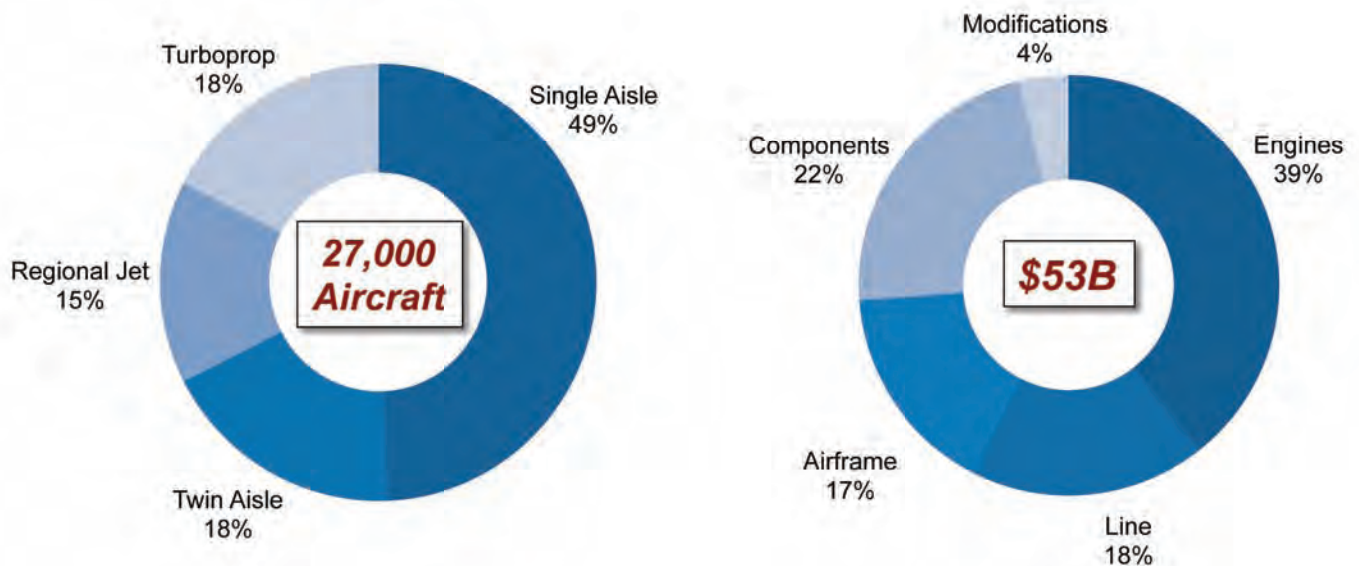
Walter Heerdt, senior vice president of marketing & sales for Lufthansa Technik (LHT), thinks cost pressures are a major challenge and therefore sees a need for further cost reduction. He also sees room for different players and business models "as long as customers...want to have a choice between OEMs and other providers."

Airlines and operators "seem to be very clearly saying...they very importantly want to continue to see the competition and choice that come from non-OEM providers," adds Leonard Kazmerski, vice president of marketing and business development with TIMCO Aviation Services.

Airline MROs with enough scale and independents with financial resources and world-class skills will continue to prosper, but

# Today's active fleet is almost 27,000 – this generates an MRO spend of about \$53B

## 2012 Global Commercial Fleet and MRO Market



Source: ICF SH&E Analysis

Forecast in 2012 \$USD, exclusive of inflation

smaller niche players will be challenged as fleet composition shifts.

Still it will be more like a decade, rather than two or three years, before the less maintenance-intensive airplanes become numerous enough to have an effect, Versteeg says. So independent MROs, for example, have time to develop new strategies.

But there are significant headwinds for significant growth among the independent MROs, says Chris Spafford, partner with Oliver Wyman. On the 787, for example, there are five or six major component OEMs. If there's any consolidation among them, "it won't be difficult for carriers to piece together a full fleet solution with the two to three OEMs who cover the vast majority of components."

Airline MROs also may change, specializing in "revenue-positive" lines like components, says Wayne Plucker, a Frost & Sullivan aerospace industry manager. At any rate the do-it-all-yourself model of American Airlines—especially given their cost structure—is ultimately untenable.

### Market Size

Versteeg estimates the market to be about \$47 billion today, growing in the next five years to about \$52 billion. Overall, VZM thinks that the shrinking North American market offsets aircraft volume growth in Asia and the Middle East. The short-term trend for global MRO market volume is flat, according to the consultancy. However, MRO revenues will continue to grow because prices for engine and component shop visits will continue to increase.

ICF SH&E, by contrast, puts the MRO market at about \$53 billion today, growing on average about 4 percent per year, to about \$75.6 billion by 2021, Berger says. But virtually all MRO growth will be concentrated in emerging markets, led by China, Asia Pacific (excluding China) and the Middle East, according to ICF.

### Engine Makers

Engine manufacturers, led by Rolls-Royce, long ago figured out how to exploit their aftermarket. Although the relative market shares of individual OEMs differ,

collectively they account for around half of the business. According to Spafford, 55-60 percent of engine MRO is controlled directly by the OEMs or heavily affiliated shops. And the remaining providers buy the vast majority of their material from the OEMs.

GE Aviation Services, with \$7.2 billion in revenues, may be the world's No. 1 MRO although a little over half of that figure comes from sales of parts, component repairs and used materials to other MROs. All the unit admits to is "probably" being the largest engine MRO. The total figure includes work on GE engines and the company's share of CFM International and Engine Alliance engines. But compiling a list of the other top MROs by revenues would be daunting since "pure MRO" data is notoriously hard to find.

Of the about 29,000 GE, CFM and Engine Alliance engines currently in service on about 14,000 commercial-sector airplanes, GE performs about one-third of the estimated 4,500 annual overhauls, says Brian Ovington, principal marketing manager. "But we sell parts





GE Aviation Services boasts \$7.2 billion in revenues and may be the world's No. 1 MRO, although a little over half of that figure comes from sales of parts, component repairs and used materials to other MROs. GE image

into the other 70 percent," he adds. GE Aviation Services also enjoys a \$74 billion services backlog, defined as the total of its firm, signed MRO agreements with its customers.

GE Aviation Services already has licensed Air India and ADAT to overhaul its GENx engine and expects to issue more licenses. GE has five MRO shops and is a minority partner in several others.

GE Aviation Services claims the broadest availability of material options and the largest availability of slots for servicing GE and CFM engines. The unit has 150 to 200 airline and lessor customers.

It also has broadened its portfolio. In 2010 it added a fuel and carbon solutions business, which addresses the airlines' biggest cost element, and this year it beefed up that business by acquiring

Austin Digital, a flight data analysis firm. GE claims clients like newly signed China Airlines, can reduce fuel spend by an average of 2-3 percent.

Rival Pratt & Whitney (P&W) Global Service Partners overhauls about 600 commercial engines a year at five engine centers, according to Jerry Tarnacki, vice president of commercial engines. It delivers more than 1 million repairs a year

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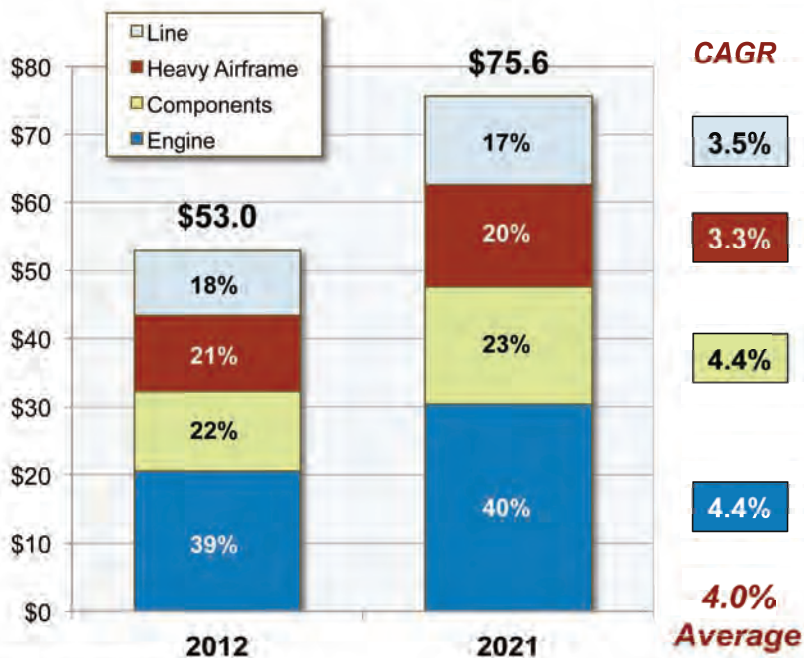
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# The global commercial MRO market is expected to grow to \$76B by 2021, at 4% per annum

**Global Commercial MRO Spend**  
(2012 USD Billions)



Source: ICF SH&E analysis  
Forecast in 2012 \$USD, exclusive of inflation.

and serves around 400 customers, mostly airline and cargo operators but some MROs. It also repairs engine parts and sells used, serviceable materials. By policy it does not release its revenues.

Over the last decade P&W has invested more than \$300 million to develop more than 25,000 new repairs. These new repairs have saved customers some \$250 million over the past five years, Tarnacki says.

P&W also has a sizable business in the CFM56 through joint venture partnerships. It also repairs parts and makes some parts under supplemental type certificates. This year the company also acquired a majority interest in the V2500 consortium, International Aero Engines, which will provide additional opportunities.

## Airline MROs

Airline MROs face a tougher business climate, but the larger ones are investing heavily to obtain the necessary infrastructure, tooling, technology and documentation to service newer aircraft and compete for external customers.

"Fewer and fewer airlines are truly wedded to the [MRO] business strategy," Spafford says. There are very few airline MROs left—you can practically count them on one hand, he says. However, the ones that remain have strong, defensible positions, scale, effective capital deployment and technology, strategies, innovation and good relationships with OEMs. "They'll survive and thrive."

Collaborations and partnerships are common as a way to build scale and extend reach. AFI KLM E&M tries to develop partnerships with other airlines and MROs "to counterbalance the growing imprint of the OEMs," Weber says.

OEMs realize that customers can get access to third-party solutions and would rather that that business come to themselves, says Saj Ahmad, chief analyst for StrategicAero Research.com. "That's why we've seen the standoff between Air France and Rolls-Royce over the Trent XWB engine MRO for the A350-900 order that still hasn't been finalized." OEMs are developing proprietary methods of maintaining airplanes, engines and other components, he says. In the case of the

Fewer and fewer airlines are truly wedded to the [MRO] business strategy. There are very few airline MROs left... the ones that remain have strong, defensible positions... They'll survive and thrive."

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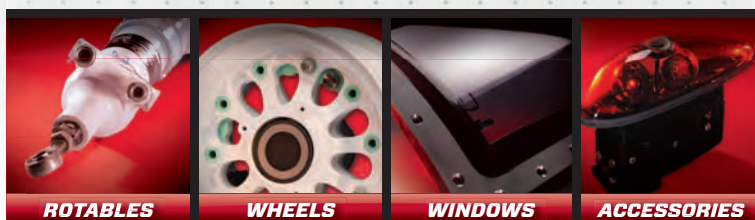
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Strategic partnerships will be key in the years ahead. According to Oliver Wyman, 40 percent of carriers are negotiating long-term engine and component maintenance contracts before they even make an aircraft selection. SIA Engineering Co. (SIAEC), the MRO branch of Singapore Airlines, has forged 25 joint ventures with OEMs and strategic partners across nine countries.

787, for example, many MRO-related solutions can only be obtained via Boeing Edge, Boeing's solution arm.

"The real question is why [airframe] OEMs haven't stepped in earlier," Ahmad says. Their presence "will, of course, heighten customer concern that there is too much overlap between OEM sales and support and could even threaten the competitiveness of airlines that have their own dedicated MRO arms," he says. "But the reality is that this is an interconnected portal where collaboration will drive synergies, competition and efficiency."

There will be real opportunities, especially for the OEMs, to collaborate, Plucker says. Imagine if Boeing were to go with TIMCO and equipment vendors like Goodrich, Rockwell Collins and Hamilton Sundstrand.

The power of the OEMs is affecting the way airlines buy support, as well, Spafford says. According to a recent Oliver Wyman survey, 40 percent of carriers are negotiating long-term engine and component maintenance contracts before they even make an aircraft selection, he says.

The airline MROs aren't backing down. AFI KLM E&M, for example, wants to support new aircraft types such as the

787. "We made the choice to invest in tooling, test benches, documentation and other capabilities," Weber says. "There are only a few MROs in the world which made this extremely expensive choice, but we did so because we want to be a player in this market."

Recently the Franco-Dutch MRO extended its A380 component support joint venture with Lufthansa Technik (LHT)—Spairliners—to include Embraer's E-Jet. It also has a joint venture with UK asset manager, Avtrade, to manage inventory for customers.

LHT boasts 32 affiliates and subsidiaries worldwide. It recently signed a cooperation agreement with GE Aviation under which the two will jointly develop and use each other's component repairs.

SIA Engineering Co. (SIAEC), the MRO branch of Singapore Airlines, has forged 25 joint ventures with OEMs and strategic partners across nine countries. It also opened the first A380 hangar in the world for heavy maintenance in 2010 and has completed at least 10 A380 C-checks.

One of SIAEC's fastest-growing sectors is its fleet management program (FMP), which currently has more than 160 aircraft in the program. FMP encompasses technical support,

**"The reality is that this is an interconnected portal where collaboration will drive synergies, competition and efficiency."**

engineering and component management and planning services, as well as spare parts management, component repair and overhaul, consumables supply and logistics support.

SIAEC sees positive opportunities for MROs to partner with aircraft manufacturers such as Boeing and Airbus. The Asian MRO, for example, has collaborated with Airbus to provide total support to the airlines under the Airbus Total Support Package (TSP) Program. It signed long-term TSP contracts with Airbus in 2008, 2010 and 2011 for Singapore Airlines' fleet of A330 and A340 aircraft. **AMM**

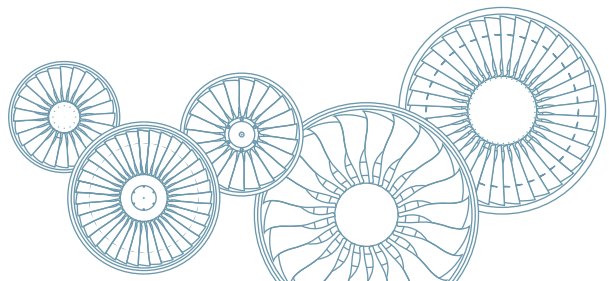


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Adaptiveness ® lies at the heart of AFI KLM E&M's successful offer. The airlines that prefer to outsource all their maintenance activities can access a one-stop-shop approach. AFI KLM E&M can also customize services and maintenance contracts to their very specific requirements.

### The AFI KLM E&M Network

AFI KLM E&M is consolidating a strong network of subsidiaries and joint ventures, both for the development of new products and the extension of its geographical presence. These include the Florida-based Aero Maintenance Group (component support, repair and services), EPCOR in Amsterdam (APU and APU component maintenance), KLM UK Engineering in Norwich (full maintenance of Boeing 737 and regional fleets), CRMA in Paris (engine repairs), AMES in Dubai (Aerostructure services), Aerotechnic Industries in Casablanca (A320 Family Airframe services), Spairliners in Hamburg (A380 component services) and Max MRO Services in India (component services).

A single point of contact and local support is provided by sales offices all over the world. Ultimately, the strength of AFI KLM E&M lies in the extent of its knowledge, flexibility and experience, combined with its worldwide network support.

### Approvals and certification

- **European approvals (EASA and DGAC)**  
EASA Part 145, Part M subpart G, Part 21J, Part 21G, Part 147
- **US approvals**  
FAR 145: FAA approved Repair Station: CNFY912C
- **Other international approvals**  
Over 30 approvals have been granted to AFI KLM E&M by a number of international authorities (and notably CAAC), enabling the Group to work on aircraft registered in the countries concerned.
- **Certification**



AFI is the world's only MRO to have obtained Global and Unique Certification covering nine international standards for all of its facilities: ISO14 001 (Environment), ISO 9001 (Quality Management), EN 9100 (Aircraft Design), EN 9110 (Aircraft Maintenance), EN 9120 (Logistics and Storage), ISO 22 000 (Food Safety), OHSAS 18 001 (Occupational Health & Safety), ISO 15 489 (Records Management) and ISO 26000 (Sustainable Development). In the Netherlands, KLM E&M's avionics unit is also ISO 14 001 certified.



More information at [www.afiklmem.com](http://www.afiklmem.com) and [mobile.afiklmem.com](http://mobile.afiklmem.com)



# IN A CHANGING WORLD, TRUST THE ADAPTIVE ONE



# MRO

ADAPTIVENESS® is our response to the changing Maintenance Repair Overhaul business environment. ADAPTIVENESS® means listening to and understanding the key technical priorities of your operations, building unique solutions meeting your specific requirements, and staying at your side as a partner to support you through your daily challenges in a spirit of continuous improvement. If, like many other airlines around the world, you are looking for efficient MRO solutions which lead to longer on-wing times, optimized MTBRs, and overall performance, ask us about ADAPTIVENESS®.

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# GKN Aerospace



GKN Aerospace is the global market-leading provider of military transparency systems and is one of the two lead providers to the commercial aircraft transparency market for both original fit and aftermarket support. GKN Aerospace cockpit windows, windshields, passenger cabin windows and wingtip lenses exceed industry performance benchmarks across the board and are the reliable, low-risk products of choice for operators worldwide. The company supports the full range of aircraft, from supersonic military applications such as the F-35 Lightning II (JSF) canopy and the Eurofighter Typhoon to the latest in commercial aircraft transparencies such as the B747-8 cockpit window and extra-large, state of the art, B787 passenger cabin window. GKN Aerospace transparencies are also standard on a variety of passenger airliners, business aircraft, and special mission aircraft where the company supports mature fleets through its highly effective aftermarket activity.

The GKN Aerospace's CrystalVue II™ passenger cabin window has been selected for all recently launched commercial aircraft programmes - B787, C-Series, A350, MRJ, B747-8 - as well as the Bombardier Global 7000/8000 and is standard fit on all Boeing and Embraer aircraft and on all Airbus long range aircraft. Well over two million of these market leading, abrasion-resistant, coated windows are in service whilst the company's proven cockpit windshields provide military and commercial operators with unmatched protection against moisture ingress. This reduces the risk of delamination and electrical system failure that can lead to unscheduled aircraft downtime and premature windshield removal. GKN Aerospace designs, analyses, tests and certifies military canopies, aircraft cockpit and passenger cabin windows, bringing together industry-leading developments in advanced coatings with a secure, vertically integrated supply of aerospace grade acrylic material. These factors, along with the company's expertise in high strength, light weight glass processing techniques, are key to its dominant market position and to the success of the company's long term collaborative relationships with all major aircraft OEM's and with many commercial and military aircraft operators. As operators and prime manufacturers demand more performance and endurance from their aircraft transparencies, GKN Aerospace is effectively positioned to develop solutions that meet these evolving requirements.

Exploiting the company's industry leading Crystal Vue II coating expertise, GKN Aerospace has developed a number of proprietary coatings for both its transparency product range and more recently for its structures activities. These proprietary coatings have the potential to provide even greater performance and service life through combination of improved abrasion, wear and chemical



resistance, solar heat shielding, ice, rain and fog repellence. For military applications, these coatings offer greater erosion, sand, dust and foreign object damage (FOD) resistance and p-static tolerance and will lead to improved longevity in theatre. The company is currently exploring the application of these coatings in a number of environments.

All three of GKN Aerospace's transparency manufacturing sites offer certified repair station services for commercial and military applications and provide global support to aircraft operators with comprehensive component overhaul services and factory new replacement windows. Effective distribution and stocking of transparencies globally provides airline customers with consistent availability and reduced lead times to support operator needs. With sales of GBP1.5bn in 2011, GKN Aerospace is a world leading global first tier supplier of airframe and engine structures, components, assemblies, and transparencies to a wide range of aircraft and engine prime contractors and other first tier suppliers. The company has a global customer base, operates in both civil and military markets and has significant participation on all major aircraft programmes.

GKN plc is a global engineering group with sales of GBP 6.1 billion in 2011. It has four divisions GKN Driveline, GKN Powder Metallurgy, GKN Aerospace and GKN Land Systems, which operate in the automotive, aerospace and land systems markets. Approximately 44,000 people work in GKN companies and joint ventures in more than 35 countries.





SCAN TO CONTACT US

**CrystalVue II™**

# A CLEAR LEADER

GKN Aerospace is the world leader in passenger cabin window design development and manufacturing.

At the core of our success is our proprietary abrasion resistant coating CrystalVue II™. Today over 2 million CrystalVue II™ coated windows are in service worldwide and our passenger windows are the product of choice for aircraft manufacturers and airlines.

## KEY FACTS

- GKN cockpit windows lead the industry in reliability and performance
- Global inventory and AOG support provided in partnership with Seal Dynamics
- Full design, testing and certification capability
- Recent product development: B787, A350, C-Series, MRJ, Global 7000/8000
- Production supplier to: Airbus, Boeing, Bombardier, Embraer

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# TES Aviation Group



TES Aviation Group is the global leader of aircraft engine asset management services for investors, lessors, owners and operators of mid to large thrust commercial aircraft engines with a current managed engine portfolio of over 900 engines valued in excess of \$3.5 billion.

TES was established in 1995 to provide professional, independent aircraft engine maintenance management services, and to deliver cost-effective technical and commercial management for aircraft engine portfolios.

In 2007, TES became a subsidiary of DVB Bank SE, the leading specialist in international transport finance. Today TES has grown to a staff in excess of 120 and in June 2012 DVB completed its sale of a 60% shareholding in TES Holdings Ltd, the parent company of TES Aviation Group, to new shareholders Mitsubishi Corporation, Tokyo and the Development Bank of Japan Inc., Tokyo. As a result, company projections for 2015 have the business increasing its turnover to in excess of \$160 million with a corresponding increase in staff to in excess of 200.

TES' 130,000ft<sup>2</sup> headquarters is based in Bridgend, Wales. Situated 30 minutes from Cardiff the state-of-the-art facility accommodates all engineering and material operations. A second TES site was opened in Singapore in 2010 as a base for all Asia Pacific sales, warehousing and logistics operations and opened in conjunction with a sales and marketing facility in New Zealand that supports growing opportunities in the Americas and Asia Pacific regions. In 2011, TES opened an office in Dallas to support delivery of the platform of services of fleet management solutions, quality overhauled material supply and stub-time lease engine provision.

Under TES' global platform of services sits its Technical Services offering. This includes Fleet Management, the company's flagship product comprising all of its management services within one programme targeted specifically at airline and lessor clients; Shop Visit Management, the effective management of engines undergoing maintenance allowing airlines, lessors and investors to retain the appropriate level of control during the repair process by using an experienced TES engineer; and LOI/Lease Contract Review and Negotiation which includes diligent technical and commercial evaluation of aircraft LOI and lease agreements prior to implementation are critical to mitigating risk for airlines and lessors alike. TES is also an EASA 145 approved company that offers borescope services.

Material Sales is another service of TES' global offering. TES Parts Ltd specialises in the provision and supply of high quality Serviceable Used Material for engine maintenance activities, from minor line maintenance to full engine overhaul. TES maintains an increasingly large inventory of engine material derived from a philosophy of purchasing engines for disassembly, providing the capability to satisfy customers with even the most challenging requirements. At least 70% of engine maintenance cost is parts, providing a significant opportunity for savings.

The final service of the TES global offering is Assets and Leasing. TES has been active in engine and aircraft purchasing and engine leasing since 2006, and has a diverse portfolio of engines spanning all major OEMs including Rolls-Royce, Pratt and Whitney, GE and CFMi. The TES portfolio is managed by a dedicated Engine Leasing team, part of the Commercial division, with complete technical support provided by TES Technical Services, drawing on the depth of experience from lessor and fleet management programmes. TES' market is mainly short-to-medium term leases to realise the green-time value from assets prior to engine disassembly. This enables it to support lease customers, as well as supply Fleet Management customer base with materials supply pipeline.

#### Contact details

Tel No: 01656 765200

Email address: [contactus@tes-uk.com](mailto:contactus@tes-uk.com)

Postal Address:

Aviation House, Brocastle Ave, Waterton Industrial Estate,  
Bridgend, CF31 3XR, Wales, UK

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# TAP Maintenance & Engineering

TAP Maintenance & Engineering is a MRO solution provider for Airbus, Boeing and Embraer fleets, offering a unique value proposition built around geographical flexibility, wide range of service offer and agility.

The knowledge management resulting from the support experience of TAP Portugal airline fleet enables our Customers all the advantages of a complete set of integrated services ranging from airframe, engines and components, to the engineering and material support.

With a total workforce of about 3800, comprising highly qualified technicians and engineering staff, TAP M&E operates one main centre in Portugal and two in Brazil, covering the Americas, Africa and Europe, bridging three continents and one entire ocean.



## TAP M&E Bases

### Lisbon

In its Lisbon Base, TAP M&E offers, for the Airbus A300-600, A310, A330, A340, A320 family; for engine models CFM56-3, -5A, -5B, -5C, -7B; JT8D standard; RB211-524 B4 and D4; a vast span of services ranging from line maintenance to heavy maintenance checks, engine overhaul, components maintenance, engineering and planning services, material support and integrated maintenance packages.

Hangars: 3  
Hangar Capacity: 3 WB, 5 NB  
Hangar Area: 26,380 m<sup>2</sup>  
Total Building Area: 71,200m<sup>2</sup>

### Rio de Janeiro

In Rio de Janeiro TAP M&E provides aircraft maintenance services (A, B, C, IL and D checks, aircraft painting, engineering and planning support) for the Boeing B727, B737 CL, B737 NG (incl. BBJ), B747-100/-200/-300, B757, B767, B777, DC10, MD11; for the Airbus A300-B4, A300-600, A310, A330 and A340.

Hangar: 1  
Hangar Capacity: 4 WB  
Hangar Area: 14,500m<sup>2</sup>  
Total Building Area: 180,000m<sup>2</sup>

### Porto Alegre

TAP M&E, at its Porto Alegre base, makes available to its Customers airframe maintenance for the Boeing B727, B737 CL, B737 NG (incl. BBJ), B767; for the Airbus A320 family; for the Embraer 120, ERJ 135/145, E-JET 170/175/190/195 and Legacy; as well as complete overhaul for Landing Gears, APUs and PWC engines, plus avionics and accessories maintenance for over 17,000 part numbers.

Hangars: 5  
Hangar Capacity: 1 WB, 5 NB  
Hangars Area: 12,500m<sup>2</sup>  
Total Building Area: 55,000m<sup>2</sup>

## Contacts

### Portugal: Lisbon

P.O. Box 50194  
P 1704-801 Lisbon  
Portugal  
**Phone:** (+351) 21 841 59 75  
**Fax:** (+351) 21 841 59 13  
**E-mail:** marketing.me@tap.pt

### Brazil: Rio de Janeiro

Estrada das Canárias, 1862  
21941-480 Rio de Janeiro / RJ  
Brazil  
**Phone:** (+55) 21 3383 2782  
**Fax:** (+55) 21 3383 2047  
**E-Mail:** marketing@tapme.com.br

### Brazil: Porto Alegre

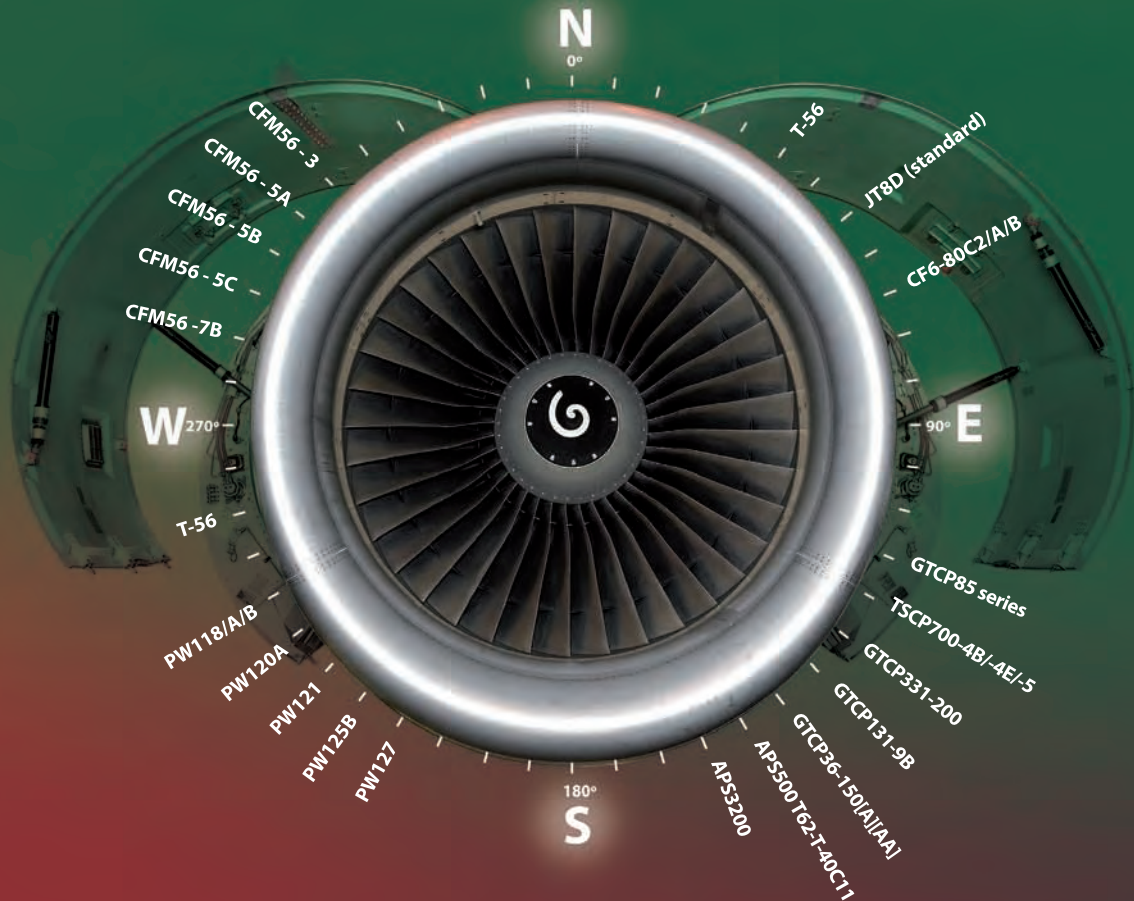
Rua Augusto Severo, 851  
90240-480 Porto Alegre / RS  
Brazil  
**Phone:** (+55) 51 3375 7053  
**Fax:** (+55) 51 3375 7006  
**E-Mail:** marketing@tapme.com.br

[www.tapme.pt](http://www.tapme.pt)

# Oriented to Excellence in Engine and APU Maintenance.

TAP Maintenance & Engineering has kept its course for more than 40 years, building up experience in commercial and military aircraft engine maintenance and APUs. The Company incorporates two Overhaul Centers and highly qualified Technicians with a remarkable background in operating, troubleshooting and repairing several types of engines. With an Overhaul Engine Center located in Lisbon, Portugal, and a Turbo-prop Engine and APU Center in Porto Alegre, Brazil, the Company provides its Customers with a full list of tailored services and on site field teams.

FOR MORE INFORMATION  
ABOUT OUR SERVICES:  
[marketing.me@tap.pt](mailto:marketing.me@tap.pt)  
[www.tapme.pt](http://www.tapme.pt)



# Monarch Aircraft Engineering

Headquarters based at London Luton Airport in the UK, award winning independent aircraft maintenance provider, Monarch Aircraft Engineering (MAEL) is an EASA and FAA approved maintenance organisation providing line, light and heavy maintenance support services for a large range of Boeing and Airbus aircraft types 365 days a year. MAEL also provides continuing airworthiness management (part m), technical and management consultancy, engine leasing, spares loans, exchanges and power by the hour programs. MAEL has extensive component repair capability, is an approved Part 21J design authority and Part 147 training organisation.

## Heavy Maintenance

Checks from 'A' to 'D' are carried out at Monarch Aircraft Engineering's hangar facilities located at London Luton and Manchester International Airport on Boeing 757, 767, 787, Airbus A300-600, A300B4, A310, A320 family and A330 aircraft. Established in 1967, Monarch has carried out thousands of heavy maintenance checks and more recently formed a team of specialist engineers to complete Airbus A320 family rear spar inspections and rectifications for its customers.

## Line Maintenance

With permanent line maintenance stations established at London Gatwick, London Luton, Birmingham International, Manchester International, Malaga, Alicante, Canary Islands, Kiev, Goa and the Maldives, Monarch Aircraft Engineering carries out full line maintenance technical handling on Boeing 737CG, 737NG, 757, 767, 777, 787 Airbus A300-600, A300B4, A310, A320 family and A330 aircraft. More recently MAEL has gained UK CAA/EASA Part 145 line maintenance approval on Embraer ERJ 170 series and Embraer ERJ 190 at their established station in Malaga.

## Spares Trading

We now have a dedicated spares team that will operate within MAEL's MRO facility and offer a wider portfolio of services to the aviation market.

With a US\$70m spares inventory Monarch Aircraft Engineering is able to provide full spares support programmes on a flight hour basis as well as offering components on a loan and exchange basis. Consignment stocks are available and Monarch's team of experts can also advise on initial provisioning packages and stocking policies. The spares inventory owned by Monarch is dual released with both EASA and FAA certification.

## SMART - (Specialised Monarch AOG Response Team)

With a large number of line maintenance clients, Monarch Aircraft Engineering is acutely aware of the significant damage to airline operations and revenue when AOG events are not responded to immediately. In order to ensure that the necessary action is taken to manage the operational limitations, Monarch has created a Specialised Monarch AOG Response Team (SMART). Available 24/7 this service is managed through Monarch's Maintenance Operations Centre (MOC). Since its launch in 2009, SMART has completed numerous sorties in the UK and Europe and as far flung as Africa and Asia. In addition to down route rescues Monarch Aircraft Engineering also provides teams of technical experts to accomplish routine maintenance and bespoke work packages.

## Component Maintenance Centre

Situated at its London Luton facilities, with additional operations at Manchester International Airport, Monarch Aircraft Engineering has established a modern state of the art component maintenance centre, capable of carrying out repair and overhaul of components from a large range of Airbus and Boeing narrow and wide body aircraft. The facilities has an excellent range of tools and test equipment and several workshops, including Avionics and Battery Services, Calibration, Composites, Safety Equipment, Aircraft Engine and Mechanical Services.

## Engineering Services (Part M & Part 21 J)

Monarch Aircraft Engineering with its highly skilled workforce can assist airline operators with a multitude of fleet support solutions including planning, technical records, technical service support, reliability management, engine trend monitoring, warranty and consultancy services to name but a few. With a large engineering and technical management team they are also perfectly set up to provide all aspects of continuing airworthiness management, SB reviews and recommendations.

Monarch Design Services is an EASA Part 21J Design Organisation with an outstanding reputation in the marketplace which has been earned by delivering projects to an extremely high standard. They can offer a comprehensive suite of services; whether its as simple as a flower holder in a wash room or an new interior design.

## MAETTA (Monarch Aircraft Engineering Technical Training Academy)

Our Technical training facility has gained a worldwide reputation for its continuing high standards providing full EASA Part 147 B1 and B2 type courses and Part 66 category A basic training. Our highly skilled and professional instructors are approved under Part 147 by the UK Civil Aviation Authority and we are able to complete the training at our training facility at London Luton Airport or Manchester Airport. If preferred, training courses can be offered at the client's own facilities worldwide.

Boeing 787 training is to commence later this year; investing \$2.5m on state-of-the-art desk top training equipment. Based at London Luton Airport, the technical training academy will undergo a complete refurbishment providing several new classrooms and facilities for Composite and Fibre optic training, a technology that is now being employed on next generation aircraft.

Monarch will be one of only five Boeing 787 training providers worldwide and the first Boeing 787 training academy outside of Boeing.

## TEAMS Consulting

Through its Consulting Division, branded TEAMS (Technical & Expert Aircraft Maintenance Support) Monarch Aircraft Engineering can provide tailored management, technical and safety management systems (SMS) consulting services to Airlines, MRO's as well as Supply Chain organisations. These services can be offered on a short, medium or long term basis and tailored to specific client requirements.

### Contact details

For all your MRO requirements please get in touch with us by email: [engineering@monarch.co.uk](mailto:engineering@monarch.co.uk) or call: +44 1582 398644.

# THE HEIGHT OF EXCELLENCE

Since 1967 Monarch Aircraft Engineering has gone about its business providing first class service to major airlines around the world. Today, we continue to provide valued solutions to the aviation industry.

WE  
AIM FOR  
THE  
TOP

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- Line Maintenance
- Engine Maintenance
- Component Maintenance
- Spares Trading
- 24/7 AOG Support
- Technical Training – Part 147
- Design Services – Part 21 J
- Engineering Services – Part M
- Technical & Safety Consultancy



**Monarch**  
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# RF System lab.

## See What You've Been Missing!

The VJ-Advance from RF System Lab is a new video borescope designed for the aviation maintenance community. Featuring an ergonomic pistol grip design and joystick-controlled 4-way articulation, the VJ-ADV is perfect for aviation maintenance technicians who value superb image quality, portability and ease of use. Features include on-board image and video capture capability,

variable LED illumination, built-in 3.5" LCD display and 2X digital zoom. This ground-breaking joystick-controlled video borescope is available with insertion tube lengths ranging from 1.5 to 5.0 meters and diameters of 3.9mm or 6.9mm.

RF System Lab is so confident in the value and performance of the VJ-Advance that we offer a no-cost, no-obligation demo program to interested customers. With this

program, technicians interested in evaluating the VJ-Advance can demo a unit at their own facility for 5 full days. This borescope is so compact, it ships easily via UPS, and it is so easy to use, no salesperson needs to be onsite to conduct training. This "try before you buy" demo program has become extremely popular across the aircraft maintenance industry.

Whether you work on PT6s, GE90s, or anything in between, there is a VJ-ADV model with the correct length and diameter to fit your requirements.

### ARTICULATING VIDEO BORESCOPE

- 3.9mm or 6.9mm Diameter
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- Audio/Video Capture
- Weight: 23 oz.

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Working with RF System Lab has been a breath of fresh air. We already use a couple of scopes that cost about \$30,000 each, but we were looking for a scope that we could use on a more regular basis. Not only did RF System Lab have a great scope at a great price, but they let us demo it before we bought it. After demoing it, it was a no brainer – the scope performed.

**Ken W. – Quality Assurance Technician  
(Aviation/Aerospace)**

#### Contact details

For further information or to request a no-cost, no-obligation demo unit to evaluate in your facility, call RF System Lab at 989-731-5083, or visit us on the web at [www.rfsystemlab.us](http://www.rfsystemlab.us)

**RF SYSTEM lab.**  
**989.731.5083**  
**RFSYSTEMLAB.US**



# Communications Software

For over 35 years, Communications Software has supported aircraft maintenance organisations with high-quality computer systems with easy-to-use but functionally sophisticated systems that increase efficiency and reduce costs in many key areas.

Proven worldwide in a variety of live maintenance environments under approvals from the CAA, FAA and JAA, the system modules are fully integrated, but can also be used individually.

The system can be run on any PC or any network, offering several database options including Oracle.

The company offers a full package of services: initial requirements studies; implementation support; user training; system tailoring; forward planning; day-to-day help desk; maintenance support; and update release services.

The Open Aviation Strategic Engineering System (OASES) modules cover all key aspects of maintenance management for over 50 users worldwide, ranging from national carriers and large third party maintainers to regional, charter and small independent operators.

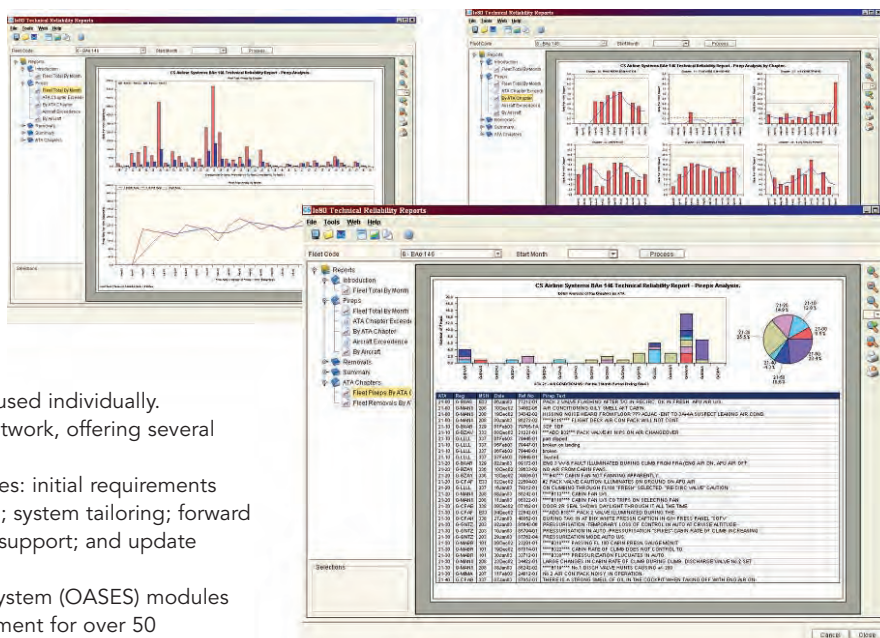
## Closed-loop maintenance

OASES's 'closed-loop' maintenance philosophy ensures full feedback between all aspects of the system. Starting with resource information relating to staffing, aircraft type and tooling, this feeds into planning modules producing a workpack, also generating work-in-progress reports and raising non-routine cards that are actionable immediately or fed into schedule changes – updating records continuously and informing the re-planning process. Simultaneously, a second closed loop is running for the provision of spares.

Demands that come from the planning department and engineers on the line or in the hangar are electronically requisitioned with a 'time required'. If the part is in stock the necessary electronic notification is routed to the appropriate store, or, if not in stock, notification is routed to the purchasing department. All such requirements will be automatically re-shortaged should the situation change and the part becomes unavailable.

OASES covers all aspects of technical records, line maintenance, MSG-3, reliability, inventory control, purchasing, rotatable tracking, workcard production, shop floor data collection, time and attendance, digital documentation, AD/SB/EO evaluation, advanced scheduling, line maintenance control, DR, graphical planning and defect control.

OASES can be easily implemented either as standalone modules or as a fully integrated system.



### Contact details

8 The Centre  
Tiptree  
Essex CO5 0HF  
United Kingdom

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+44 1621 817262  
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Communications Software (Aviation Systems) Limited

# Vector Aerospace Corporation

Vector Aerospace Corporation is an industry-leading, independent provider of maintenance, repair and overhaul (MRO) services for fixed-wing and rotary-wing aircraft operators around the globe. Vector's service portfolio includes support for various types of engines, dynamic components, structures and avionics.

From state-of-the-art facilities in Canada, the United States, the United Kingdom, Africa, Brisbane, Australia, France, and a facility soon to open in the Asia-Pacific region, Vector employs approximately 2,800 employees who serve a global customer base consisting of private and commercial operators, government agencies and defense departments.

Vector holds approvals from some of the world's leading OEMs, including Agusta Westland, Boeing, Eurocopter, General Electric, Pratt & Whitney Canada, Rockwell Collins, Rolls Royce, Sagem Avionics, Sikorsky, Turbomeca and many other manufacturers and suppliers.

Our vision is "To Set the Standard of Customer Service" by building on our proud history of superior customer service and our expert technical resources where Vector delivers world-class capabilities and service. WE deliver on our promise and strive to be the benchmark against which MRO businesses are measured. Our goal is to set the standard of customer service, continuously challenging ourselves to raise the bar.

#### Contact details

For more information,  
visit [www.vectoraerospace.com](http://www.vectoraerospace.com)

Colin MacDonald  
Marketing & Communications Coordinator  
Vector Aerospace Engine Services - Atlantic  
Tel: 902-888-1828

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## IBERIA MAINTENANCE & ENGINEERING AND BRITISH AIRWAYS ENGINEERING

The merger of the Iberia and British Airways businesses under the IAG banner in April 2011 will have a great impact on the MRO market. With the progressive integration of services, the world class engineering capabilities, facilities and expertise of British Airways Engineering and Iberia Maintenance & Engineering have come together to provide global carriers with compelling, premium MRO services.

The combined capabilities of the two companies provide airlines with high-quality services that deliver real value for money. With worldwide reputations for engineering excellence, Iberia Maintenance & Engineering and British Airways Engineering provide customers with a flexible approach that keeps their fleets in the air for longer. Combined, the two MROs can provide customers with:

- Full airline engineering and maintenance capability
  - Aircraft management
  - Aircraft maintenance and repair
  - Modification design and installation
- Approximately 8,700 staff
- Base maintenance at Madrid, Heathrow and Gatwick
- Heavy maintenance at Madrid, Barcelona, Cardiff and Glasgow
- Engine overhaul shop at Madrid
- 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.

Boosting some of the broadest capabilities in the market, 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-217A/-C. The company leading edge technology and innovative repair procedures developed in-house.

With customers at the heart of everything they do, every day Iberia Maintenance & Engineering and British Airways Engineering oversee:

- More than 480 aircraft under their care
- More than 1,750 departures
- Eight lines of base maintenance
- 13 lines of heavy maintenance
- Three modification lines
- 130 worldwide line maintenance bases
- Three paint lines
- Engine shop with 200 shop visits per year

Choosing the right MRO partner has a positive impact on the residual values of carriers' aircraft and significantly lowers risk. The flexibility of this joint proposition means customers can opt for world class management, or can choose from a menu of services from line maintenance to global AOG support.

When what matters is finely tuned, everything works.

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# Sabena technics, your solutions provider

Sabena technics is a leading independent provider of maintenance services to civil and military aircraft operators. The group operates under the brands Sabena technics, Sabena technics training and Barfield in the USA. Sabena technics employs over 3,000 persons across its 17 sites worldwide.

Its services are organized into product lines: Airframe services, Component services, Integrated services, Military services, Training services and VIP completion.

## Airframe services

Across seven of its sites, Sabena technics offers airframe maintenance services on a large range of aircraft, from pre-flight inspections to D-checks.

Thanks to the support of its many backshops, Sabena technics is able to test, repair and maintain a wide range of components. The engineering department, the EASA PART 21J Design Office and the EASA PART 21G Product Office allow the company to perform the most complex modifications. With an expertise in civil, military and corporate aircraft, Sabena technics also provides stripping and painting services. Sabena technics also develops special solutions for lessors.

## Component services

With three sites in Europe and Barfield in the United States, Sabena technics certifies over 100,000 components in-house every year, benefiting from logistics platforms including Paris CDG.

In order to provide the right component services, the following technologies are offered on a flat rate and time and material base: avionics, integrated drive generator, electromechanics, pneumatics, fuel, hydraulics, oxygen, aircraft structure and wheels and brakes. Sabena technics also offers landing gear services: its facilities, as well as its Dinard-based Hydrep joint-venture with Messier Services, are fully equipped to carry out all kinds of repairs and surface treatments under the same roof.

## Integrated services

Integrated services is an "à la carte" support. To meet its customers' needs, Sabena technics builds customized and cost-effective maintenance support, combining key services: airframe solutions, component solutions, logistic solutions, fleet solutions, asset solutions and support solutions.

## More than 570 aircraft already benefit from these solutions.

24 hours a day, 7 days a week, Sabena technics guarantees its customers the support they need in AOG situations, wherever they are.

Its trading division provides spare parts solutions in managing the purchasing, short or long term lease, loans and exchanges of a wide range of components.

## Military services

Sabena technics offers global support and maintenance services to military operators, from line to heavy maintenance, including airworthiness monitoring. The company also provides aircraft modifications, new systems integration and aircraft interiors. Sabena technics has been an authorized Lockheed Hercules service center since 1977 and is renowned worldwide for its C-130 expertise.

Sabena technics has also won numerous Maintaining in Operational Condition (MOC) contracts.

## Training services

Sabena technics training shares its know-how with you through EASA PART 147 accredited training programs, based on more than 80 years of experience in aircraft maintenance. Tailored to clients' needs, its programs can be set up at its training centers in Brussels and Bordeaux or at customers' premises.

Sabena technics training is a founding member of the Airbus Maintenance Training Network.

## VIP completion by Sabena technics

Sabena technics offers outstanding refurbishment and completion services for aircraft such as CRJ, ERJ, B737, A320, A330 and A340 aircraft families. Working with the best designers, Sabena technics develops and installs aircraft cabin projects for airlines, governments and business aviation operators.



### Contact details

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The 3rd AVM Summit Europe event will take place at the London Olympia Exhibition Centre on the 21-22nd January 2014. In addition to a dedicated PAMA two day track there will be a broader MRO based track discussing the industry challenges and looking at solutions that can help MROs and airlines operate more efficiently and save money.

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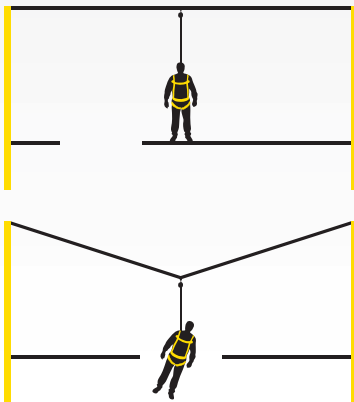
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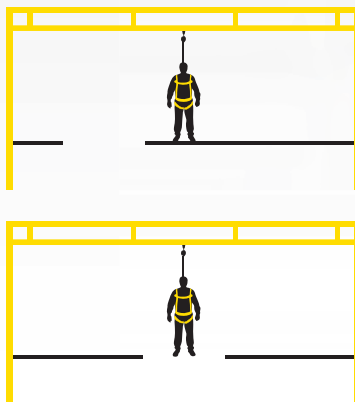
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# National Symposium 2013!



DALE FORTON has worked in aviation for more than 32 years and as a licensed A&P Technician has been an active PAMA member for more than 26 of those years. For the past seven years he has served on the PAMA Board of Directors as vice chairman of the Board of Directors, Great Lakes Regional Director, Membership Committee Chairman, Governance Committee Chairman, and Strategic Planning Committee Chairman. Formerly a director of maintenance for 135,145, and 147 operations, he has also held positions as service manager, parts manager, technician, and director of product support. Dale has owned his own businesses as well.

It is going on two years now since I was hired as president of PAMA. I have watched as the support continues to grow for PAMA's mission as we increase our presence once again.

The support comes through full memberships, company memberships and sponsorships. It has also come from the industry. As we are not owned by any one publishing outlet we can place our message everywhere. Which is exactly what we want as advocates for the aviation maintenance professional!

A perfect example of this is the following two events. First is the graciousness of *Aviation Maintenance Magazine* to offer us to come alongside them with their first AVM Summit USA in Orlando in November 13-14 2013. AVM and PAMA both realized the industry was calling for a bigger event at a popular location. So here it is. I am so very excited about this and the positive feedback we are getting in the short time it has been since the press release.

It will be so exciting to bring back events PAMA originated at its national symposiums when we were alongside the National Aviation Transportation Association (NATA) for so many years. Things like PAMA Olympics, which has been duplicated by so many others, may not make it this year. But we are planning the Chili Cook-off and an awards event once again. If you have any interest in helping with these two items please let us know.

The second event, which is happening a little earlier in the year, is something that is an unprecedented event. Aviation Workforce Development, Inc. in partnership with The Professional Aviation Maintenance Association (PAMA) Announces the first Aviation/Aerospace Workforce Issues Think Tank to be held Tuesday May 7th, 2013 in Minneapolis, Minn.

The aviation/aerospace industry is facing the "perfect storm" of 21st century leadership development issues: large retirements of the baby-boomer generation, changing U.S.

**“The roots  
of education  
are bitter, but  
the fruit  
is sweet.”**

demographics, and the rising demands of the world economy, politics, and technology. Fundamentally, this means, not enough well qualified and trained and certified personnel to meet the new vehicle and retiring personnel replacements required. The industry cannot afford to raise the risk factor by not having a plan to alleviate the stress.

The objective is to bring a small group of key aviation/aerospace industry leaders, literally around a table, to roll up their sleeves, address this looming crisis, bring real-time action items to the agenda, create measurements with tracking/reporting to monitor and follow through with deliverables to tackle this daunting issue.

So far at the table we have:

- AWD Dr. Tara Harl & board of directors;
- Dale Forton, PAMA president;
- Mark Albert, Boeing director Training & Development;
- Jepessen (to be announced first of year 2013);
- Trish Gilbert, NATCA president;
- Ed Bolen, NBAA president;
- Derrin Groubel, United Airlines, director of Flight Training;
- AOPA CEO, Craig Fuller;
- EAA (to be announced first of year 2013);
- Dr. Peggy Chabrian, WAI president.

PAMA will be busy in 2013! Your help and support is greatly appreciated as we continue on as the only nonprofit advocate for the aviation maintenance professional for more than 40 years!





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# Contract Maintenance NPRM



Over the past several years, the amount of maintenance contracted by certificate holders to outside repair stations and other contract maintenance providers, has increased. Efforts to reduce costs have led certificate holders to seek out companies with specialized expertise to perform significant portions of maintenance, rather than the air carrier bearing the cost of trying to maintain that expertise and the related infrastructure. As much as 70 percent of air carrier maintenance is now performed by contract maintenance providers.

The FAA recently issued a proposed rule (Air Carrier Contract Maintenance Requirements, 77 Federal Register 67,584) that has the potential to introduce new complexities into the way agreements between air carriers and their MROs are structured. The proposed rule would require air carriers that use MROs to develop and incorporate in their maintenance manuals policies, procedures, methods, and instructions for the accomplishment of that maintenance. The idea behind the new rule is that if those procedures are followed, then this will ensure that the work will be performed the way that the air carrier wants the work performed. Such procedures would have to be in a form “acceptable to the FAA.”

The impetus for this rule stretches back several decades. As air carriers and other certificate holders have sought to reduce costs, they have become more reliant on an expansive network of contract maintenance providers. This marked a change from the original in-house model of air carrier maintenance. As reliance on third party maintenance increases, however, the air carriers remain responsible for ensuring the airworthiness of the aircraft and of the work performed. Because the carriers remained responsible, and in order to ensure airworthiness, the current regulations require that any repair station performing maintenance for an air carrier must follow the carrier’s maintenance program.

These requirements notwithstanding, contract maintenance and carrier maintenance is a point of emphasis with the DOT Inspector General ever since the crash of Valuejet Flight 592. Although the Valujet accident was not directly a result of maintenance (improperly packaged chemical oxygen generators—hazmat that violated the then-existing regulations—was the probable cause of the accident) the fact that a contract maintenance provider packaged the oxygen generators that were placed in the cargo hold was enough to cause the DOT’s Office of Inspector General to scrutinize contract maintenance. The Inspector General subsequently issued several reports and recommendations regarding contract maintenance providers. In those reports, the DOT IG has frequently noted shortcomings in oversight and a lack of guidance and training when it comes to contract maintenance providers adhering to air carrier maintenance manuals.

The proposed rule is the FAA’s attempt to better clarify the regulatory obligations associated with air carrier oversight of their contract maintenance providers. MROs performing maintenance for a carrier or commercial operator are currently required to follow the carrier’s program and applicable sections of its maintenance manual. However, the IG reports have suggested that outside maintenance providers may fail to properly comply with an operator’s maintenance program. This can result from a manual that references proprietary or confidential information that carriers may not share with outside maintenance providers (because of contracts with manufacturers, for example). Even though a maintenance provider is a part of the carrier’s maintenance program, the absence of the applicable sections of the manual can make compliance difficult or impossible. In other cases, air carrier guidance is internally conflicting or is simply vague or misleading. Any of these problems can inhibit the intended result of safe maintenance.

## The proposed rule attempts to solve these problems.

The proposed rule requires air carriers that contracts maintenance to outside maintenance provider to have in place policies, procedures, methods, and instructions for the accomplishment of that maintenance. The idea of an air carrier general maintenance manual is not a new one, but the level of FAA requirements and oversight imposed on such a program appears to be much greater in the proposed rule. These policies, procedures, methods, and instructions would be required to be “acceptable to the FAA.”

The requirement that each certificate holder's policies and procedures for control of outside maintenance be acceptable to the FAA creates several new potential problems. First, the rules do not set any metrics for what is (and what is not) acceptable. Past history suggests that FAA inspectors may attempt to impose their own personal ideas of what is acceptable in the absence of guidance. It also opens the door to regulation by policy guidance (the actual metrics and standards would be published in advisory circulars). This allows the FAA to set pseudo-regulatory standards in non-regulatory documents, which means that the FAA can change them without the formalities of rulemaking. This appears to violate the Administrative Procedures Act (APA). Although the FAA has gotten away with this in the past, the results are often a constant source of industry complaints about the lack of standardization among FAA offices and among FAA personnel.

Another problem with the lack of standards and metrics for the procedures is that the FAA is likely to begin regulating the way that commerce is conducted, in addition to the way that.

This undermines the industry deregulation that took place over 30 years ago, and it also permits the FAA to regulate business elements that have little impact on safety. There are plenty of industry anecdotes about FAA inspector interference in business relationships to support the idea that some FAA employees will abuse such power. Even if the total number of abuses is small, these abuses undermine public respect for the FAA's safety mission, and they also impede commerce in a way that undermines US efficiency with no concurrent gain in safety.

It is also worth noting that the FAA and its inspectors have no specific competency in contracting, and does not train their inspectors to have any competency in the regulation of commercial relationships. FAA inspectors attempting to interpret matters of contract law may create unwanted liabilities when they attempt to micromanage the commercial aspects of contractual relationships.

The intention of proposed rule is noble: ensuring that certificate holders provide the right guidance to their maintenance providers. But additional metrics are

necessary to ensure the consistency the rule strives for and to make sure that issues of contract interpretation are not left to inspectors at local offices.

Anyone with concerns about the application of the proposed rules, or the attendant burdens, should submit comments to the FAA identified by docket number FAA-2011-1136. Please feel free to share your comments with my office, as we will be submitting comments as well in order to try to improve the proposal. Comments are due to the FAA by February 11, 2013. **AM**



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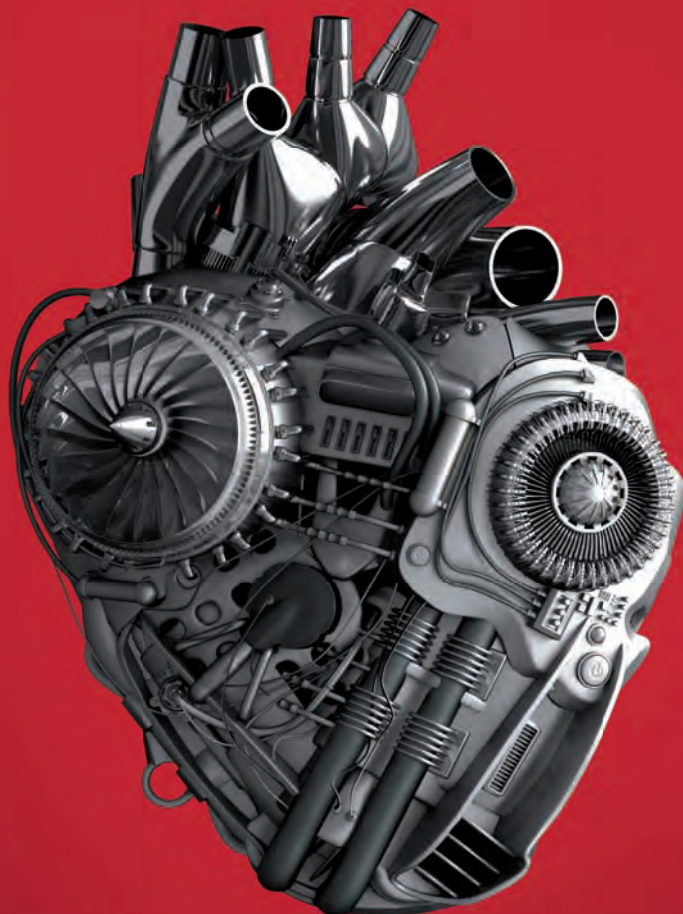
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