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August / September 2011

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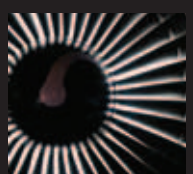

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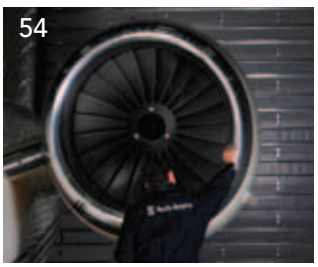
COVER STORY



DEPARTMENTS

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Editor's Notebook

Profiling in the Information Age

BY JOY FINNEGAN, EDITOR-IN-CHIEF

I am all about information. My very job is to be the conduit of information from as many sources as possible to you, the reader, so that you have the information you need to do the best job you can. Before I began covering the aviation industry, I worked in the industry. Over the years, I worked as a pilot for a local FBO, a night freight operation, two "commuter" airlines and a regional airline. I also worked for two aircraft manufacturers.

During those years I did my best to not only stay on top of technological advances in the industry, but also on the careers of my colleagues, news of companies I worked with or might work with and also of those companies that seemed to have the "magic." And by magic, I mean those that prospered when others struggled, companies that people seemed to love working for and companies that seemed to have the most dynamic employees. Reading trade journals, like this one, gave me insights that some of my co-workers didn't have.

Every year at *Aviation Maintenance* we give our advertisers a great opportunity to not only run their ad, but to have some room to brag a little. I find these articles, submitted by the companies themselves, to be full of enlightening information. In today's business environment, it is important to keep informed about the companies in your field, even if you don't work in exactly the same one.

For example, Co-Operative Industries recently added CFM56-5 wiring harnesses to their capabilities list. Perhaps your company suddenly finds itself in need of a CFM56-5 wiring harness but didn't know about this possible source. This resourceful company's repair station is also able to work in conjunction with an operator's engineering group to establish repair solutions. These are capabilities you may not have been aware of. Reading their profile on page 40 will keep you in the loop.

Corridor Aviation Software has been among the most forward thinking companies producing software for the complex maintenance market. In their profile they outline 10 ways their software helps streamline aviation maintenance businesses. Some of the areas of aviation maintenance that are most complicated are where they have focused such as parts traceability, compliance and maintaining accurate records. Learn more in the Corridor profile on page 41.

HARCO, page 44, gives an intimate look at some of their philosophies for success. These include creativity, dedicated project teams and the recognition that every job is custom. If I was in need of sensors and air data systems, that's the kind of philosophy, I'd be looking for in my supplier.

In the airline world, learning about a maintenance provider like Iberia Maintenance, located at the Barajas Airport in Madrid, Spain, might prove useful if an aircraft needed work there. The seven hangars, engine test cell and avionics and components shop might be good to know about if one of your aircraft needed to make an unscheduled stop somewhere due to a warning light requiring an immediate landing where you might or might not have contract services. They even offer metrology and NDT services. To see what else Iberia Maintenance has to offer see page 46.

Did you know that SR Technics carries out more than 1,000 checks and modifications each year, and has around 500 customers worldwide? Did you know that SR Technics is majority-owned by Mubadala Development Company? Did you know that SR Technics has total operating revenues of $1.38 billion (CHF 1.1 billion)? These details and more may come in handy some day, perhaps in a job interview, can be found in their profile on page 52.

Staying in touch with what Aviall is doing to improve ship times or what new parts they may be stocking could get you out of a bind if the situation arises. It's fascinating to learn that Aviall's revenue comes from the commercial, military and business jet markets so they've most likely got your part, whatever sector you are in. Aviall offers a unique multi-line order capability that allows customers to copy and paste an MS Excel spreadsheet with part numbers and quantities right into the site. This capability makes ordering fast and prevents human input error. On a typical day, Aviall processes 4,800 shipments – and you thought your shipping department was busy! Did you know that Aviall has upwards of 40 locations globally? Did you know that Aviall has a service devoted to helping their customers find aviation products and supplies that have a minimal impact on the environment?

A new feature you will see in some of our ads going forward is the use of mobile tagging. Mobile tagging is data that can be read from tags (usually square boxes similar to a bar code) for display on mobile devices. Using a scanning app that can be downloaded for free on a smart phone (I have NeoReader but there are many), the contents of the tag code is read. This will open up a web page with information about the product or a video about it available on the Internet. This is a quick and easy way to get more information right away if you've seen something of interest. We hope you will give it a try and let us know what you think of it. AM

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AAR Celebrates New Medley, Florida Facility

AAR Wheel and Brake Services got its humble start from a handful of dedicated employees in a small corner of AAR Corporation's Landing Gear Facility in Medley, Florida. Twelve years later, that dedicated core team of employees has grown to a team of 30 people with double-digit million dollar revenue. The success was celebrated on August 5 by 400 employees, with the opening of a brand new 12,500 sq ft Wheel and Brake Facility.

Aviation Maintenance caught up with Alex Lara, production manager and A&P mechanic in Medley at the celebration. Lara is one of the two founding team members whose vision established the business in 1999. We asked Lara what key factors contributed to the rapid expansion and success. "A quality product, customer service and turn times have been key," Lara says. "Automation, machinery and technology also have been equally instrumental in helping to significantly decrease turn times," he adds.

Walking around the new facility, it was clear that no expense was spared to ensure the best equipment is in place to improve processes. For example, the wheel washer, formerly a 25 minute operation, now takes three minutes with this new equipment. The new heat stack cleaner, formerly a 90-minute job, now takes just 20 minutes with the additional benefit of higher quality – improvements that will help AAR meet customer commitments.

Aviation Maintenance was also invited to a Lean Rapid Improvement Event taking place at the Landing Gear Facility. Lean started two and half years ago within the company, first at the Wheel and Brake Division and now in the Landing Gear Facility. Senior management participates in all Lean events and throughout both facilities they now have 22 certified Six Sigma Green Belts and four Black Belts. This Lean event, the 17th, communicated a successful reduction of movement and optimized distance travelled within the new Wheel & Brake facility. The Wheel & Brake divisions are using Lean to drive the magical 48 hour turnaround time on all jobs. The commitment and combined team effort was evident – as both facilities share new best practices to help each other achieve Lean goals.

"This new facility is three times bigger than our previous building and has new tools, equipment and lighting. Our five-year plan is to grow and achieve increased market share with aggressive revenue plans," says Ray Phair, new general manager/director at AAR Wheel & Brake Services, and added he is very excited and ambitious about the opportunity the new facility presents.

What challenges does Phair foresee in achieving these goals? "Shipping costs are a challenge as a Wheel or Brake ready to be shipped can be well over 500 pounds in weight," he says. Other traditional challenges are the cost of new OEM parts, which makes it difficult to mark up the parts and achieve a healthy gross margin. However, his goal is that eventually the Wheel & Brake Shop will become a standalone business unit within AAR, and not an ancillary part of Landing Gear. Plans include additional Wheel & Brake shops across the U.S., as well as internationally. AAR Wheel & Brake have, for example, a Wheel & Brake Facility in Kuala Lumpur, Malaysia.

Executives hosted about 400 employees and members of the media in a huge air-conditioned tent to celebrate the event. Also attending were customers including Airtran and Amerijet, leasing companies, and local politicians. Pastor Lopez, VP and general manager of Landing Gear, had an additional milestone to celebrate with his team at the podium — celebrating record profits and revenues. Lopez attributed the team's success to their dedication to the customer.

Pictured above from left to right, Gerardo Silva, Jr., councilperson, Michael Pizzi, mayor Miami Lakes, Pastor Lopez, vice president and general manager, AAR Corp. Landing Gear Services Wheel and Brake Services, Alex Lara manager AAR Wheel & Brake Services, Raymond Phair director Wheel & Brake Services.

"The opening of the new Wheel & Brake facility is history in the making for AAR," Lopez says. He singled out Alex Lara and Carlos Vallecillo for being instrumental in making this happen emphasizing their dedication and commitment during the last decade.

After the ribbon cutting, Lopez described the company's success and future. "We are a customer-centric organization and, through the use of Lean, we've focused our people on driving down costs and improving turn times, which enables us to deliver a great product to the customer, quickly and at the right price to them."

Florida Congressman David Rivera (R-FL) congratulated the team, and added: "with unemployment hovering around 10 percent in the city of Medley, your efforts at AAR Corp are a bright spot, expanding facilities and taking on new employees."

ap&m expo to be Held in October 25-26 at Hardrock Hotel, Hollywood, Florida

Now in its third year at the Seminole Hard Rock Hotel, ap&m expo USA is a B2B networking event that brings together the commercial aviation after-market for a series of formal and informal networking activities, built around a thought-provoking two-day conference. Walking the exhibit hall is free of charge, during dedicated visitor hours where networking with key suppliers from the airline MRO and aftermarket sector is encouraged. Previous airline attendance has outnumbered exhibitors 2:1

In 2010 exhibitors sat down for one on one meetings with representatives from Flyjazz, American Eagle, Delta Airlines, Air Canada, DHL, Japan Airlines International, Miami Air, American Airlines, Spirit Airlines, UPS Airlines, Vap Linhas, Free Bird Airlines, Turkish Airlines, Jetblue Airways and USA3000 Airlines.

Visitor registration is open. To see the early bird rate and register, go to www.apmexpousa.com. The event is sponsored by AeroTurbine, Avtrade and Chromalloy with media support from *Aviation Maintenance* and ATE&M.

"The Airline Purchasing & Maintenance Expo is a key event to put us directly in touch with our customers," says Andrew Farrant, Chromalloy vice president, Marketing & Corporate Communications. "This industry gathering is part of Chromalloy's overall marketing program and outreach to successfully connect and build collaboration with operators andmaintenance decision makers, about our products and services."

Confirmed speakers include Gary Appling, senior vice president Maintenance & Engineering, Mesa Air Group, Wayne Bramwell, technical purchaser, AirTran Airways, Inc., Richard Poutier, senior vice president Technical, ILFC, Michael Moore, SVP & principal, TeamSAI, PatMarkham, VP HPG Technical Services, HEICO and Paul Finklestein, director Commercial Engines & Global Services Marketing, Pratt & Whitney, among others.

For information on exhibiting at this event please contact Colin Hall on +44 (0) 207 579 4864, colin.hall@ubmaviation.com.

PAMA Announces 2011 Board of Directors

The Professional Aviation Maintenance Association (PAMA) has elected its 2011 Board of Directors. Those elected for two-year terms as PAMA Directors are:

- Chairperson – Roger Sickler, President, Air Land Turbine Services Inc.
- Vice Chairperson – Jeff Gruber, Instructor, Columbus State Community College
- Secretary – John Wicht, DER, Rapco Inc.
- Treasurer –Richard Wellman, Field Service Representative, Sikorsky Aircraft Corporation
- Director – Carl Violette, Director of Maintenance, Mass Mutual Financial Group
- ExOfficio – Clark Gordon, Director of Marketing, Prostar Aviation

Those elected as PAMA Regional Directors for one-year terms include:

- Great Lakes Region – Samuel K. Cryer, Owner, Plane Safe Aircraft Maintenance
- Southwest Region – Al "Lucky" Loque, Air Salvage of Dallas
- Eastern/ New England Region – Walter "Sandy" Glenn, Service Engineer, Daussault Falcon

"I will enjoy working with this board as they represent some history with PAMA and some brand new fresh ideas!" says Dale Forton, president of PAMA.

The Board of Directors represents the interests of the membership, provides strategic direction expressed in broad policies and offers clear future oriented leadership, outward vision and a broad range of viewpoints.

Boeing Outlook Calls for High Demand for Airline Maintenance Techs

In spite of the bleak economic outlook, Boeing is urging the aviation industry to invest, evolve and adapt to support the expected exponential growth in demand for qualified aviation personnel as the company released its 2011 Pilot and Technician Outlook recently. The Boeing outlook indicates that by 2030 the aviation industry will require 460,000 new commercial airline pilots and 650,000 new commercial airline maintenance technicians

"Clearly, the sheer size of this vital pipeline is staggering," said Sherry Carbary, vice president, Boeing Flight Services. "To meet the demand for capable, well-trained people, Boeing and the aviation industry need to move with the speed of technology to provide the tools, training and work environment that tech-savvy pilots and technicians will expect from us."

Boeing projects that airlines will need an average of 23,000 new commercial jet pilots and 32,500 new technicians per year to maintain and fly an expanded world fleet expected to grow to nearly 40,000 airplanes over the next 20 years, as well as replace the coming wave of retirements. The largest demand for pilots and technicians will be in the Asia Pacific region, with an expected need for 182,300 pilots and 247,400 technicians. China alone will need 72,700 pilots and 108,300 technicians.

Projected demand in other regions:

- North America – 82,800 pilots and 134,800 technicians
- Europe – 92,500 pilots and 129,600 technicians
- Africa – 14,300 pilots and 19,200 technicians
- Middle East – 36,600 pilots and 53,000 technicians
- Latin America – 41,200 pilots and 52,500 technicians
- Russia and CIS – 9,900 pilots and 13,500 technicians

"We are adapting our technologies, devices and training methods to attract new people to the industry. That means new-tech solutions, including online and mobile computing that is engaging, realistic, portable and accessible to meet the learning styles of today's and future generations," Carbary said. "We want to ensure that our trainers, those creating and delivering the courseware, are equipped with the knowledge, digital tools and cross-cultural and cross-generational skills to match the rapidly-changing needs of tomorrow's aviation workforce."

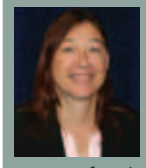
Carbary pointed out that meeting the demands of the future also means working with industry to transform the air traffic management system as well as pioneering digital delivery of essential navigation and in-flight data so that pilots and airlines are connected with real-time information — allowing them to optimize flights and overall operations and maximize the capacity of the global system.

about people

NORDAM Elects Meredith Siegfried as CEO

The Board of Directors of The NORDAM Group elected **Meredith Siegfried** to succeed Bill Peacher as chief executive officer of NORDAM. Peacher will continue to serve on the Company's Board and as a financial consultant to the Company. Ken Lackey, executive chairman, and Hastings Siegfried, vice chairman and COO of the Transparency Group, will maintain their respective positions. "To be handed the company torch as it is being returned to the family is the highest honor I could receive," Meredith Siegfried said. "This is the result of a succession plan that has been in place for several years and was carefully managed. Recognition is due to the Board, whose professional wisdom was invaluable in formulating and guiding the succession plan; to our executive leadership, who managed through the turbulence of the last several years; and, of course, to our stakeholders, who work their hearts out every day. With that solid base, my mission over the next five years is to enlarge the NORDAM legacy by expanding our footprint within the industry and across the globe."

Timken Names Figone Manager of Customer Service



The Timken Company has appointed **Janet G. Figone**, to the position of manager of customer service at the Los Alamitos, Calif. facility. In this role, Figone will lead customer service for the company's aerospace bearing repair business. Before joining Timken, Figone served as director of customer service for a world leader in advanced power management technology. Figone earned a Bachelor of Science in business management and a Master of Business Administration, both from Massachusetts Institute of Technology.

West Star Aviation Welcomes Kaczor

West Star Aviation recently welcomed the newest addition to their sales team, **Scott Kaczor**, as regional sales manager for the southeast territory. Kaczor will be based in Tequesta, Fla. In his new position, Scott will be responsible for providing sales and support for all of the West Star Aviation products and airframes in his territory. He will also focus on maintaining relationships with current customers and developing relationships with potential customers for West Star Aviation.

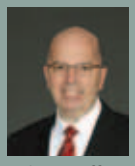
about people

Hawker Beechcraft Appoints Jay Gibson VP Special Missions

Hawker Beechcraft Corporation (HBC) appointed **John H. "Jay" Gibson II** as vice president, Special Missions. Gibson will serve as a member of the company's senior leadership team. In this role Gibson is responsible for the continued development and worldwide expansion of HBC's Special Missions Product Line (SMPL). Prior to joining HBC in 2009 as vice president of Finance and Contracts for the Government Business organization, Gibson served as the Assistant Secretary of the United States Air Force (Financial Management and Comptroller) in Washington, D.C., where he was the principal advisor to the Secretary on financial management matters and responsible for the formulation and execution of a $140 billion budget.

Jet Aviation Announces New Leadership at MRO and FBO EMEA & Asia

Jet Aviation has restructured its top management in EMEA & Asia, appointing **Johannes Turzer**, formerly vice president and general manager at Jet Aviation Dusseldorf, as the new vice president and accountable manager of maintenance services at Jet Aviation Basel. **Sebastian Groeger**, vice president and general manager at Jet Aviation Singapore, will succeed Turzer as the new vice president and general manager at Jet Aviation Dusseldorf. The company has further appointed **Philippe Crevier** as vice president and general manager at Jet Aviation Singapore. Turzer and Crevier assumed their respective leadership roles effective July 1, 2011; Groeger assumed his new role effective August 1, 2011. Turzer joined the company in 2000 as vice president and general manager of Jet Aviation Dusseldorf and Hannover, later assuming further responsibility for the London Biggin Hill operation. In his new role, he will report to Stephan Krenz, general manager Jet Aviation Basel, on matters of general business and to Christof Späth, Jet Aviation's senior vice president MRO and FBO services for EMEA & Asia, regarding maintenance issues. Groeger was appointed vice president and general manager of Jet Aviation Singapore in November 2007 and successfully grew the maintenance and FBO business to the extent that the company will soon triple its hangar space in Singapore.



JCAB Awards Chromalloy Approved Organization Exposition Certificates

Two of Chromalloy's service centers have received Approved Organization Exposition certificates from the Japan Civil Aviation Bureau (JCAB).

The certificates are the first issued by JCAB since the 2009 U.S.-Japan Bilateral Aviation Safety Agreement (BASA) took effect to officially recognize Federal Aviation Administration (FAA) Designated Engineering Representative (DER) approved repairs.

"Following a long working relationship with the JCAB officials in Tokyo, Japan, Chromalloy completed the rigorous compliance and audit process to receive the Approved Organization Exposition certificates," says Bruce Johnson, vice president, Engineering. "With this approval, JCAB has officially recognized the FAA DER repair approval process familiar to FAA repair stations."

DER is an FAA delegation allowing individuals with authorization to approve certain repairs and alterations on behalf of FAA, using submitted technical data. DER experts ensure the proper evaluation of technical data, certify compliance with FAA guidelines and regulations, and perform compliance tests and inspections.

Under the JCAB approval, Chromalloy service centers in Arizona and Nevada are now authorized to provide turbine engine component repairs for the country's leading airlines, Japan Air Lines (JAL) and All Nippon Airways (ANA). JCAB approval of the two facilities allows Japanese airlines to use Chromalloy DER repairs without the company being required to obtain individual repair approvals from JCAB.

Bruce Johnson, vice president, Engineering, Chromalloy

BASA allows for reciprocal safety certification of aircraft and aviation products, including the DER-approved repairs Chromalloy provides on turbine engine components.

At a meeting with *Aviation Maintenance* at his Fort Walton Beach, Fla. office, Johnson said that the Japanese scrutinized the documents and process "at the deepest and most extraordinary level." Numerous trips to Tokyo were required during the process as was the need to overcome the Japanese-English language barrier. Both the JCAB and Chromalloy were determined to see the process through to the end, says Johnson, and he praised the company sponsors, JAL and ANA for their commitment to the process as well.

Dassault Falcon to Offer Aviation Industry Specific NDT Training in October

Due to a growing need for qualified and knowledgeable non-destructive testing personnel in the aviation industry, trained specifically for aviation-related NDT techniques, Dassault Falcon is offering two training classes in October.

The first training course, to cover eddy current and ultrasonics, will take place October 10-14, 2011 at the FAA Airworthiness Assurance NDI Validation Center, Albuquerque International Airport. The course is designed to cover FAA regulations and personnel qualification issues, human factors and their effect on probability of detection (PoD) and aerodynamics, design, stress, including the concepts of fail safe, safe life, damage tolerance and how they fit into the determination of inspection intervals, according to Tim Kinsella, NDT program manager at Dassault Falcon.

This course features instructors who are a combination of experienced, active technicians and engineers and will include extensive, hands-on practice testing of actual flawed on-aircraft structures and/or practical exams on actually flawed, retired aircraft. The course will offer an overview of applicable NDT methods, techniques and reference standards as well as extensive testing of actual flawed on-aircraft structures and a review of less frequently encountered theory and instrument issues.

The second course offering is to be held October 31 to November 4, 2011 at Advanced Composites Training in London, Ontario. This course will focus on the design, manufacture, repair, and inspection of aircraft composites and composite materials and processes. Attendees will fabricate and test composite specimens. More hands-on training will have the attendees making comparisons of various NDT methods and techniques such as BondMaster, conventional UT, infrared, shearography, and tap test on actual damaged composite components.

Both courses will cover aerodynamics, design, stress, including the concepts of fail safe, safe life, damage tolerance and how they fit into the determination of inspection intervals, says Kinsella. For more information or to sign up, contact Tim Kinsella, Dassault Falcon NDT program manager, 201-417-0610 cell or tim.kinsella@falconjet.com.

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about people

He also expanded the company's foothold in Asia by establishing a new maintenance operation in Hong Kong in 2008 and a station in Kuala Lumpur shortly thereafter. Crevier is a 30-year veteran of the aviation industry and succeeds Sebastian Groeger in his role at Jet Aviation's maintenance and FBO operations in Singapore, Hong Kong and Kuala Lumpur. He joins Jet Aviation from Bombardier, where he served as vice president of marketing for business aircraft in Montreal, Canada, and collaborated on several business development projects in the Pacific Rim. Prior to that, he was the president and COO of Canada's leading business aviation service provider, Skyservice. Crevier has a Bachelor of Engineering degree from Ecole Polytechnique de Montreal, holds a Master's degree in Business Administration from McGill University and is a distinguished graduate of the Canadian Armed Forces' Pilot Training Program. Both Sebastian Groeger and Philippe Crevier will report directly to Christof Späth.

Duncan Aviation Names Lieser Manager of Avionics Satellite

Tom Lieser has been named manager of Duncan Aviation-St. Paul, the company's avionics satellite facility in St. Paul, Minn. Lieser joined Duncan Aviation in 2003 as an avionics technician in St. Paul. He transferred to Duncan Aviation's Chicago avionics satellite shop in 2010 as crew lead and now returns to St. Paul as manager. Lieser is a graduate of St. Cloud University with a bachelor's degree in Aviation Operations and an associate's degree in Aviation Electronics.

Ryan P. Bogan Named Chief Operating Officer

LMI Aerospace announced **Ryan P. Bogan** has assumed the position of chief operating officer of LMI. Bogan was previously CEO of D3 Technologies, a wholly owned subsidiary of LMI. Mr. Bogan will relocate to LMI's corporate offices in St. Charles, Missouri, and will report to LMI's CEO Ron Saks. In his new position, Mr. Bogan will oversee the operations of both the Aerostructures and Engineering Services segments while managing the organization and execution of LMI's design and build strategy.

AMS Appoints Charles Burkhead

Aviation Management Systems (AMS), recently announced that **Charles Burkhead** has joined them as director of marketing and research. A twelve-year veteran in the business and commercial aviation industry, he has an extensive background in aircraft management, flight

Cathay Pacific Signs OnPoint Solution Agreement with GE

GE Aviation and Cathay Pacific Airways have reached a 15-year OnPoint solution agreement for the maintenance, repair and overhaul of the airline's GE90-115B engines that power its additional 18 Boeing 777-300ER aircraft. "Cathay Pacific Airways has been operating GE90-115B-powered Boeing 777-300ER aircraft for almost four years," said Paul McElhinney, president & chief executive officer of GE Aviation's Service operation. "TheOnPoint solution agreement will ensure the airline receives the highest quality maintenance and OEM material to keep its engines in top operating condition for many years to come."

GE Aviation Predicts Growth in 2011

GE Aviation expects 2011 revenues to surpass the 2010 revenues of $17.6 billion on robust engine deliveries and growing services volume. GE's says its large portfolio of military engines, upgrade initiatives and technology programs has it well positioned for continued growth.

GE Aviation's Services organization has taken its customer offerings to a new level with its Services Solutions portfolio of offerings, which include myEngines, Fuel & Carbon Solutions and ClearCore engine wash system. GE says these offerings can help customers better manage their fleets, improve productivity, reduce their operational costs and extend their engines' time on wing.

GE Aviation has recently launched its GEnx TRUEngine program on the GEnx-1B engine and granted TRUEngine designation to Air India's GEnx-1B engine fleet. Air India has ordered GEnx-1B engines for its 27 Boeing 787-8 aircraft.

Additionally, GE Aviation, in partnership with GE Global Research recently announced a new line of silicon carbide (SiC)-based power conversion products for air, land and sea-based platforms.

CFM Logs $11 Billion in LEAP Engine Orders

CFM International booked firm orders for 910 LEAP-X1A engines to power 455 Airbus A320neo aircraft during the Paris Air Show earlier in the summer. The engine orders are valued at more than $11 billion U.S. at list price. Here are some of the highlights:

- AirAsia placed the single largest order in aviation history, selecting the advanced LEAP engine to power 200 Airbus A320neo aircraft;
- CIT Aerospace placed an order for LEAP engines to power 15 A320neos;
- GE Capital Aviation Services (GECAS) ordered engines to power 60 A320neos;
- ILFC selected the LEAP engine to power 40 A320s;
- Republic Airways Holdings, the parent company of U.S.-based Frontier Airlines, selected the LEAP-X1A to power 40 A319neo and 40 A320neo aircraft;
- SAS chose the LEAP engine to power 30 A320neos;
- Virgin America officially launched the LEAP engine on 15 June with an order for engines to power 30 A320neo aircraft.

In addition to powering the A320neo, CFM also provides the exclusive Western powerplant for COMAC's 150-seater C919 aircraft. The LEAP-X1C has been ordered to power 100 C919 aircraft to date. LEAP development is progressing on schedule and the engine is on track for entry into service in 2016. The foundation of the LEAP engine is heavily rooted in advanced aerodynamics, environmental, and materials technology development programs. It will provide 15 percent better fuel consumption, according to CFM.

Air Astana Awards A J Walter Contracts

Air Astana, the national carrier of Kazakhstan, has awarded a multi-year power-by-the-hour contract for its growing fleet of Airbus A320 family aircraft to A J Walter Aviation (AJW). At the same time Air Astana has also extended its B757/767 PBH support agreement with AJW.

Air Astana is based in Almaty, Kazakhstan and currently operates a total fleet of 24 aircraft with plans to extend this to 34 aircraft by 2014. It is the only airline in Kazakhstan to maintain its fleet to audited EU EASA 145 standards and in 2008 Air Astana was admitted to the register of the IATA Operational Safety Audit (IOSA) – one of the few airlines in the Commonwealth of Independent States (CIS) to have achieved this.

"We have been supporting the Boeing aircraft for a number of years and we are especially pleased to have now been chosen to support the A320 fleet as well," says Boris Wolstenholme, chief executive of AJW. AJW says this new contract underlines the benefits of PBH, pooling and leasing options provided by the company.

GKN Aerospace Secures Follow On Order for C-130J Nacelles

GKN Aerospace has gained a multi-year follow on order, valued at approximately $458.5 million, from Lockheed Martin for engine nacelles for the C-130J military airlifter. This new five-year contract extension takes continuous manufacture at GKN Aerospace through to 2018 — and into its third decade.

GKN Aerospace is scheduled to supply 37 full aircraft nacelle sets this year — almost doubling previous annual production rates. In total, the company expects to supply 158 nacelles, including spares, during the remainder of this year and says it is confident of delivering 2000 nacelles by 2018. With these escalations in production rates, skilled employment on GKN Aerospace's new state of the art C-130J production line is set to treble by the end of 2011 — and will include a growing number of apprentices.

The C-130J nacelle has been in continuous production at the GKN Aerospace facility on the Isle of Wight, UK since 1996. Prior to that, the company was a leading member of the UK Industrial Support Group and was responsible for design changes required in the move from the C-130H to the C-130J nacelle.

"This is the second long-term contract placed with us by Lockheed Martin for C-130J nacelles," says Phil Swash, president and CEO, Aerostructures - Europe, GKN Aerospace. "Over the years, our relationship has seen us work together to great effect, continuously assessing processes, introducing improved practices and innovative technologies. This has allowed us to manufacture a better product even more efficiently for the C-130J."

OGMA Achieves CAMO Certification

OGMA - Industria Aeronautica de Portugal, received their Continuing Airworthiness Management Organization (CAMO) by the Instituto Nacional de Aviação Civil (INAC), per the European Agency for the Safety of Aviation (EASA) applicable regulations. This new competence also includes the capacity to perform aircraft condition evaluations and issue the related Airworthiness Evaluation Certificates.

With this certification, OGMA widens its scope of services to aircraft airworthiness management, including maintenance planning and control, reliability management of components, systems and structures and also condition evaluation, adding value to its portfolio in aircraft, engines and components maintenance. At start, this certification covers all Embraer 135/145 family aircraft, including Legacy 600 and 650 executive jets. However, OGMA plans to further extend these services to other aircraft in the future, following market opportunities and the needs of its clients.

Currently OGMA holds EASA certifications on a wide spectrum of aircraft industry activities: Design Office Approved (Part 21G), Production Organization Approved (Part 21J), Maintenance Organization Approved (Part 145) and now Continuing Airworthiness Management Organization (Part M).

Testing Validates Ultra-High-Efficiency LEAP Low Pressure Turbine

In May, CFM International conducted extensive rig testing on schedule of its ultra-high-efficiency LEAP low-pressure turbine with outstanding results.

The rig, which included the full low-pressure turbine (LPT) and turbine rear frame, validated the technical innovations in the design, including the advanced three-dimensional designed airfoils and blade and vane alignment. Initial results confirmed very high efficiency levels and matched results achieved in pre-test simulations, according to CFM.

"The LPT is a key contributor to the engine performance," said Francois Bastin, director of the LEAP Program for CFM. "This rig test was a major milestone and we are just thrilled with the results. This design is truly the state-of-the-art." Additional rig testing is planned over the next few weeks.

In parallel with the rig tests, CFM also installed LEAP LPT hardware in a modified CFM56 engine and began ground testing the first build at GE facilities in Peebles, Ohio. The test plan includes a second build that will be on test soon. The goal of the two builds is to assess acoustics and to validate corresponding LPT performance and airfoil mechanical behavior in a real operating environment.

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operations, research and analysis. He is an active commercial pilot and certified flight instructor with 3,000 hours. Burkhead holds a degree in Business Administration from the University of New Hampshire and is pursuing his MBA from the Whittemore School of Business.

Willis Lease Finance Promotes Donald Nunemaker to President

Willis Lease Finance has promoted **Donald A. Nunemaker** to serve as its president. Charles F. Willis continues to serve as chairman and CEO. "Don has made many significant contributions in a variety of capacities since joining Willis Lease in 1997," said Willis. "We have worked together for a long time, and Don is the right person to join me in leading the management team as we take advantage of the many opportunities in the marketplace—both today and in the future." Mr. Nunemaker has worked for Willis Lease for 14 years and since 2007 he has held the position of executive vice president & general manager—Leasing.

Twin Commander Appoints Kaess new Quality Inspector

Ray Kaess is the new quality inspector at Twin Commander Aircraft in Creedmoor, North Carolina. As the new quality inspector, Kaess is responsible for inspecting each of the parts produced by vendors when they arrive at the warehouse for inventorying and eventual shipment to service centers. Prior to joining Twin Commander he spent 25 years at Parker Hannifin Corporation's Electronic Systems Division facility in Smithtown, New York. He is also an FAA Designated Manufacturing Inspector Representative (DMIR), with responsibility for inspecting and signing off finished products that were shipped to customers.

American Eurocopter Adds Industry Veteran to Head Military Programs

Peter Cutler has joined American Eurocopter as vice president, Military and Federal Government Programs. In this position, he will be responsible for the U.S. Army Light Utility Helicopter program, the Armed Aerial Scout capture effort, and expanding federal programs including U.S. Coast Guard, Customs and Border Protection and FBI. Cutler has more than 30 years in aviation management with Sikorsky Aircraft, Lockheed and Allied Signal/ Bendix. He comes to American Eurocopter from Sikorsky, where he had a 24-year career. In his most recent position, he led Sikorsky's Product Support organization. Cutler was responsible for providing leadership for all activities related to the support of U.S. Government, Commercial and Foreign Military Sales Customers.

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ATA Member Airlines Sign Up to Buy Biomass-Derived Jet Fuel

The Air Transport Association of America, Inc. (ATA), an industry trade organization for U.S. airlines, recently announced that a core group of airlines has signed letters of intent with Solena Fuels ("Solena") for a future supply of jet fuel derived exclusively from biomass to be produced in northern California.

Solena's "GreenSky California" biomass-to-liquids (BTL) facility in Santa Clara County in Northern California, will utilize post-recycled urban and agricultural wastes to produce up to 16 million gallons of neat jet fuel (as well as 14 million gallon equivalents of other energy products) per year by 2015 to support airline operations at Oakland (OAK), San Francisco (SFO) and/or San Jose (SJC). The project will divert approximately 550,000 metric tons of waste that otherwise would go to a landfill while producing jet fuel with lower emissions of greenhouse gases and local pollutants than petroleum-based fuels.

"Today's announcement reinforces the ongoing steps that ATA member airlines are taking to stimulate competition in jet fuel production, contribute to the creation of green jobs, and promote energy security through economically viable alternatives that also demonstrate global and local environmental benefits," said ATA President and CEO Nicholas E. Calio. "It is through the leadership and commitment of ATA member airlines and the Commercial Aviation Alternative Fuels Initiative (CAAFI) that we are able to bring this groundbreaking alternative aviation fuels project in California to fruition."

American Airlines and United Continental Holdings led the development of the agreement with Solena and were joined by five additional ATA member airlines — Alaska Airlines, FedEx, JetBlue Airways, Southwest Airlines and US Airways — and ATA associate member Air Canada in signing the letters of intent, as well as Frontier Airlines and Lufthansa German Airlines. ATA is a co-founding and co-leading member of CAAFI, which is dedicated to the development and deployment of commercially viable, environmentally friendly alternative aviation fuels.

Battelle Wins $75 Million Navy Environmental Services Contract

The Naval Facilities Engineering Service Center awarded Battelle a task order contract with a ceiling of $75 million to assist ongoing cleanup efforts to clean up Navy, Marine Corps and federal government facilities at various locations worldwide.

The five-year, cost-plus-fixed-fee contract continues Battelle's history of making gains in conducting important environmental work for the Navy, Marine Corps, which it began in 1995.

Military installations across the country face-long term environmental challenges in cleaning up contamination, a result of decades-old routines and testing activities undertaken before environmental guidelines were in place.

Battelle's role under the contract is to provide innovative, sustainable technologies, technology optimization and technology transfer so that all Naval and Marine Corps bases can use the best remediation technologies through a uniform standard approach, said Godage Wickramanayake, program manager in Battelle's Energy, Environment and Material Sciences Global Business.

ATR First Green-Certified Regional Aircraft Maker for Lifecycle of Planes

ATR renewed and expanded its ISO 14001 certification recently, concerning businesses' adherence to environmental standards. The broadening in scope of this certification enables ATR to become the first regional aircraft manufacturer to obtain ISO 14001 certification covering the entire lifecycle of the aircraft.

The new ISO 14001 certificate was presented to ATR at the Paris Air Show by Eric Salaun, CEO of the certification company Det Norske Veritas Business Assurance France (DNV). The awarding of the certification took place in the presence of Mrs. Nathalie Kosciusko-Morizet, Minister of Ecology, Sustainable Development, Transport and Housing and of Mr. Thierry Mariani, Secretary of State for Transport.

The renewal of the ISO 14001 certification involves respect for the environment, which holds true for ATR headquarters in Blagnac as well as for its production site in St. Martin-du-Touch, where assembly, customization, ground and in-flight tests, sales and customer support activities take place.

This extension in scope attests to ATR's respect for the environment and applies to all stages in a product's lifecycle: design, parts and equipment purchases, transportation of aircraft subassemblies, customization, painting, plane operation by airlines, technical and operational support, and specific customer support to the -500 and -600 series ATR aircraft.

For more information on green technologies in MRO, see feature story on page 52.

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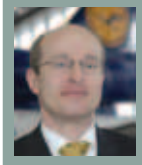
Change of Personnel at Lufthansa Technik

Several changes in key positions within the Lufthansa Technik Group were set to take place September 1, 2011. **Dr. Burkhard Andrich** (50), to date Senior Vice President Engine Services will take over as Senior Vice President Aircraft Component Services. **Dr. Johannes Bussmann** (42), currently Senior Vice President Aircraft Component Services will take over as Senior Vice President Engine Services. **Stephan Drewes** (47), to date Vice President Engine Overhaul at Hamburg has been appointed Chief Executive Officer of Lufthansa Technik Malta. **Bernhard Krueger-Sprengel** (49), currently CEO of Lufthansa Technik Philippines will take over as Vice President Engine Overhaul at Hamburg. **Gerald Frielinghaus** (55), to date Vice President Aircraft Overhaul & Modification Services, has been appointed President and CEO of Lufthansa Technik Philippines. **Aloysius Giordimaina** (54), up to now CEO of Lufthansa Technik Malta, will retire from this position, but will continue to serve Lufthansa Technik Malta as a member of the Supervisory Board.



Bryan Moss Joins Guggenheim Partners

Guggenheim Partners announced that **Bryan Moss**, former president of Gulfstream Aerospace, has joined the firm as chairman of its Business Aircraft Investments activities. Moss will assist in expanding the firm's dedicated business aircraft investment activity as it seeks global investment opportunities. "The business aircraft industry is an area where we believe Guggenheim can add value as an industry participant and create attractive investment opportunities for our committed constituency," said Todd Boehly, president of Guggenheim Partners. "Bryan has long played a key role in the industry's growth, and he will be an invaluable resource to Guggenheim as we continue to grow our presence in the business. We are thrilled to welcome him to our family." Moss previously served as vice chairman, president, and then president emeritus of Gulfstream Aerospace (a subsidiary of General Dynamics Corporation), and as executive vice president of the Aerospace Group at General Dynamics Corporation. Earlier in his career, he held various executive positions at Bombardier Aerospace Group and he went on to become President of Bombardier's Business Aircraft Division. He began his 40-year career at Lockheed-Georgia Company.

New Fiber to the Screen Solution Optimizes Serviceability for IFE

TE Connectivity (TE) recently introduced the new Fiber To The Screen (FTTS) fiber-optic backbone and interconnect scheme for in-flight entertainment systems. This new system allows the most efficient installation, which in turn lowers the revenue loss from time out of service.

The FTTS fiber challenge was to deliver a tough but easy-to maintain fiber-optic IFE solution that would endure rigorous daily airline service for many years. To meet the challenge, TE partnered with Lumexis, a developer and manufacturer of in-flight entertainment and communications systems, to develop the fiber-optic technology.

The FTTS system combines industry standard ARINC 801 fiber-optic interfaces with a flexible routing approach that allows room for growth, while ensuring long-term affordability through the lower installation and applied costs, and also provides the highest bandwidth available in the market.

Peter G. Edwards Announces Departure from Jet Aviation

In late June, Jet Aviation announced that Peter G. Edwards, president of the Jet Aviation group, would leave the company at the end of summer. Edwards maintained a full schedule through July 4 and then supported a transition to new leadership, with a planned final departure of August 31, 2011. During this period, Joe Lombardo, executive vice president of General Dynamics Aerospace Group, will assume the role of president ad interim.

"I want to express my sincere thanks to Peter Edwards for leading the Jet Aviation group over the past four years. Since the acquisition by General Dynamics in late 2008, Peter diligently maintained Jet Aviation's position as the leading independent service provider in the market to all OEM's," says Lombardo.

"As we transition to new leadership, Jet Aviation remains committed to its strong customer focus in all lines of business…The company is positioned to expand its aviation services in key markets around the world," Lombardo adds.

Edwards joined Jet Aviation as CEO in May 2007, with an initial mandate to modernize and expand the company's business aviation services. He oversaw the successful sale and transition to General Dynamics in November 2008. Under his leadership, Jet Aviation expanded its activities in the Middle East, and established new operations in Russia, Brazil and Asia.

All Nippon Selects P&W PW4074D Engines

All Nippon Airways has selected Pratt & Whitney's PW4074D engines to power five new Boeing 777 aircraft. The agreement represents 10 firm PW4074D engines and is valued at $230 million at list prices.

"The PW4000 engine series has provided reliable operation to All Nippon Airways since the introduction of the Boeing 777 aircraft at ANA more than fifteen years ago," said Mr. Tomohiro Hidema, executive vice president, Purchasing, All Nippon Airways. "With the expansion of our fleet and our continuous desire to provide our customers with the highest quality service, selection of this Pratt & Whitney engine was the right choice."

Sikorsky Aerospace Services Teams with Saab

In June, Sikorsky Aerospace Services (SAS) announced the signing of a teaming agreement with the Swedish defense and security company Saab to support the fleet of 15 UH-60M helicopters recently purchased by the Swedish Defense Materiel Administration (FMV). Under the teaming agreement, SAS and Saab, Sweden's largest defense contractor, will provide logistics support for the UH-60M BLACK HAWK helicopters. The program, designated HKP 16, will be operated by the Swedish Air Force in Linköping, the main base for maintenance, inspections and repairs. The agreement will commence when the first UH-60M helicopter is delivered later this year.

Aircelle Signs Nacelle Services Agreement with SIA Engineering

Aircelle, Safran group, has signed an agreement with SIA Engineering Company Limited (SIAEC) for the repair, overhaul and services of Aircelle engine nacelles of SIA's fleet and related operators, as well as other legacy customers of SIAEC, bringing the company into the Asia Pacific region.

"The agreement with SIAEC is part of Aircelle's determined strategy to be positioned where our nacelles are flying, combining our capabilities with those of SIAEC to be closer to our customers, and thus further enhancing our services offer in the Asia Pacific region," says Vincent Mascré, chairman and CEO of Aircelle.

Test Devices Sells Russia and China $17 Million in Engine Test Equipment

Two of the world's turbine engine research institutions have purchased nearly $17 million dollars in jet engine test equipment from Test Devices, the Hudson, Mass.-based firm announced earlier this summer. Test Devices provides spin testing equipment and services to perform material tests for commercial gas turbine components.

Test Devices has sold and delivered two test facilities to the Central Institute for Aviation Motors (CIAM) in Russia. One rig performs low cycle fatigue testing (LCF) and the other conducts dynamic spin testing. The equipment can perform a range of tests including production pre-spin, proof testing, overspeed to burst, and complex LCF and HCF testing. Test Devices technology detects developing cracks and can halt a test before the part under test fails. This preserves the part for future examination and evaluation. CIAM's Research Test Center is the largest facility in Russia to focus on altitude, speed and full-scale testing of gas turbine engines.

Test Devices also signed a contract to develop and deliver four test facilities to China, including one for dynamic spin testing, two for LCF testing and one rig for large LCF containment tests. Test Devices is working with Aviation Industry Corporation of China (AVIC) to bring this advanced component testing to the nation. "Breaking into these new markets is a great success for us," says Dr. Boris Milatovic, Test Devices director of Advanced Technologies Programs. "We are helping to develop and transform our industry."

navAero Nabs EASA EFB STC for B767

navAero recently achieved an EASA STC 10033897 for the company's tBagC22 Class 2 Electronic Flight Bag system on the Boeing 767-200, 767-300, 767-300F and 767-400ER Series aircraft.

Executed by navAero in cooperation with U.S. Technical who facilitated the validation of the FAA STC ST02320LA, this certification is another of the highly integrated STCs for the navAero tBagC22 Class 2 EFB system. The system architecture includes the navAero-designed, AT&T-certified, UMTS/HSDPA 3G cellular modem module for on-ground data transfer. Also included is the navAero ARINC 429 module with custom software that enables the deployment of the Jeppesen Airport Moving Map application on a Class 2 EFB platform.

Bodycote Expands in Mexico

Bodycote is planning to open a new vacuum heat treatment facility in northwest Mexico in the third quarter 2011. The first of its kind in the region, the facility will provide outsourced specialist processing support to major aerospace and power generation suppliers in the area, including those that serve Rolls-Royce, Honeywell and Siemens.

Its new plant, located in the city of Empalme in the State of Sonora, is a result of Bodycote's recently signed long-term agreement with Trac Precision, a key supplier to Rolls-Royce and Siemens.

Under this agreement, Bodycote will support Trac's Mexico operations with vacuum brazing and heat-treating.

Availability Rates for Sikorsky S-92 Offshore Fleet Consistent

Sikorsky's S-92 helicopter achieved an average availability rate of 96 percent for the offshore oil operators' fleet during the month of April, demonstrating a trend over the last few years that the aircraft are increasingly reliable for customers worldwide, the company says.

The S-92 offshore fleet has flown more than 290,000 flight hours, with 83 aircraft in the offshore mission. The April 2011 milestone in offshore aircraft availability was reached after a steady increase in aircraft availability from 92 percent in 2009 to 94 percent in 2010.

"It is clear that the S-92 helicopter continues to operate at high levels of performance and capability," said David Adler, president, Sikorsky Aerospace Services (SAS). "Sikorsky places a high value on providing exemplary customer service, and it is the combination of capability, service and customer insight with which they fly and maintain the aircraft."

Sikorsky says the improvement in availability is due to a combination of customer support initiatives by Helicopter Support Inc. (HSI), a division of Sikorsky Aerospace Services, to balance spare parts inventory levels geographically, improve repair turnaround times, and expedite parts around the world. In addition, Sikorsky has continued to offer product improvements to prolong component time in service. These product improvements have the added benefit of reducing customer maintenance cost per flight hour. Partnerships with offshore operators to provide specific operational performance data have enabled this availability increase.

MTU Aero Engines and TECT Power sign to Make Blisks

MTU Aero Engines has concluded a strategic agreement with TECT Power for the supply of compressor blisks. The contract provides for the U.S. company to deliver as many as 800 of the high-tech components a year to the German engine manufacturer.

Blisks (or IBRs, integrally bladed rotors) are one-piece disk-and-blade components that represent the cutting edge in compressor technology. They are used on engines such as the Pratt & Whitney PurePower PW1000G series of geared turbofans built in partnership with MTU. Demand for blisks is growing since Airbus selected the PW1000G as one of the engine options for its A320neo. Bombardier, Mitsubishi and Irkut have also chosen the engine to provide exclusive power for their new regional jets.

"As a result, the demand for blisks will go up significantly," explained Theodor Pregler, MTU Aero Engines senior vice president Procurement and Logistics. To cover its needs, MTU has decided to set up a new, dedicated building for blisk production at its main manufacturing site in Munich and to team up with a specialist supplier in the field. "Blisk manufacture requires a high degree of technical skills and advanced machining technology, and that's exactly what our U.S. partner, TECT Power, has to offer," adds Pregler.

The agreement is for a term of 10 years and includes collaborative activities involving blisk and IBR manufacturing. MTU estimates its annual requirement at 4,000 blisks. The components will be produced at MTU's plant in Munich and in the U.S., with every fifth blisk being supplied by TECT Power as part of the cooperative effort.

TenCate and Toray Industries Sign Long-Term Agreement

TenCate Advanced Composites and Toray Industries (Tokyo, Japan) have signed a long-term agreement for the supply of carbon fibers to TenCate for the production of thermoplastic TenCate Cetex RTL composite materials. These fibers will be used for the growing amount of composite laminates that TenCate produces for the aerospace industry.

Under the new supply agreement over five years through 2015, Toray Industries will supply high performance carbon fiber to TenCate Advanced Composites in support of growing thermoplastic prepreg demand from the aerospace industry.

"Thermoplastic materials are rapidly establishing a meaningful position in a growing amount of aircraft applications, and are also used in structural parts of the latest Aircraft," Frank Meurs, director TenCate Advanced Composites EMEA says. "This long-term supply agreement fits to our needs, because it covers our long-term needs based on our contracts with, for instance, Airbus."

Oakenhurst Aircraft Services Expands UK R&D Facility

Oakenhurst Aircraft Services has expanded its research and development department at their UK headquarters facility in Essex.

Oakenhurst's research and development department serves the company's global client base including commercial, commuter, military and corporate airlines. The R&D department offers test equipment that is a direct equivalent and meets or exceeds the original design specification, thus possessing a natural advantage in providing the customer with cost savings and an enhanced service according to the company.

"As an independent MRO facility Oakenhurst has developed as a business by mapping its capability to current market trends. We believe the ability to quickly develop direct support around an airlines repair needs is crucial to Oakenhurst's ongoing success," says Charlie Parker, managing director of Oakenhurst. "It is for this reason that Oakenhurst finds itself investing heavily in a new research and development facility with a dedicated team of professionals who are able to design test equipment and tooling from the OEM's original design specification."

CIRCOR Selected by Piper to Supply Hardware

CIRCOR Aerospace Products Group has been selected by Piper Aircraft Inc. to design and manufacture a fuel system motor-operated fuel component on the PiperJet Altaire single-engine business jet. The contract value is not being disclosed. CIRCOR Aerospace will perform the manufacturing, final assembly and testing of these fuel system components at its Corona, California facilities. CIRCOR says its "rapid-response" capability will support the Iron Bird build schedule by providing prototype hardware with a 30 percent lead-time reduction. "The CIRCOR Aerospace team is proud to be a key supplier to Piper Aircraft. We look forward to continuing to expand the growing partnership between CIRCOR Aerospace and Piper Aircraft," says George Teets, CIRCOR Aerospace product line director.

Ground-Breaking for LHT's New Maintenance Hangar at BER

The construction of Lufthansa Technik AG's new maintenance hangar at the future Airport Berlin Brandenburg (BER) is officially under way. Accompanied by Klaus Wowereit, Governing Mayor of Berlin, Matthias Platzeck, Minister President of the State of Brandenburg, the Parliamentary State Secretary at the Federal Ministry of Transport, Building and Urban Development, Jan Muecke (MdB), and Prof. Dr. Rainer Schwarz, CEO of Berliner Flughaefen, August Wilhelm Henningsen, Chairman of the Executive Board of Lufthansa Technik AG, ceremonially broke ground. The Hamburg-based company is investing €16 million in the new hangar, which will be able to accommodate up to five short-haul and medium-haul aircraft. Alternatively it will be possible to maintain one widebody aircraft up to the size of an Airbus A340 there.

"For Lufthansa Technik today is a special day. With the ground-breaking ceremony for the new maintenance hangar we are expanding our existing Berlin Schoenefeld premises and preparing for the new BER Airport," August Henningsen, chairman of the executive board of Lufthansa Technik said.

mx reg log

Australian About-Face

Australia is in an unusual position, as a result of an ongoing change from one regulatory regime to another. The country currently has two sets of aviation maintenance regulations. Australian repair station maintenance organizations have until the end of 2012 to transition to the new regulations. The new system will be easier for European MROs to comply with because it is very similar to the European system, according to Lufthansa Technik (LHT). Currently regulated under the "old" set of Civil Aviation Safety Authority rules, LHT is slated to transfer to the new regime by November 2012.

BASA Impact

The recently signed Bilateral Aviation Safety Agreement (BASA) between the U.S. and the European Union is having positive impact. Lufthansa Technik, for example, plans to bring its "daughter companies" under the same European certificate as well as under the same Federal Aviation Administration (FAA) repair station certificate—in countries that are eligible under the BASA, says Werner Luehmann, manager for regulatory compliance and authorities liaison. LHT already has integrated its affiliates in Budapest, Malta, Sofia, Brussels and Basel into its single European Aviation Safety Agency (EASA) certificate. But, prior to the BASA, the German MRO had not been able to do so with its three Irish subsidiaries—Shannon Aerospace, Lufthansa Technik Turbine Shannon, and Lufthansa Technik Airmotive Ireland—because Ireland and Germany had separate bilateral agreements with the U.S. BASA allows LHT to cut costs, simplify administration and harmonize procedures. For European countries that didn't formerly have maintenance bilaterals with the U.S., BASA is an even bigger plus, Luehmann says. Now, by complying with EASA's Part 145 regulations, they can show compliance with the FAA's Part 145 and 43 rules, saving money and time. A repair station's national aviation authority still will inspect the company, but now the authority will just ask additional questions for the FAA's "special conditions" and send the U.S. agency a form that allows the company to comply with the U.S. FAR 145. Based on that information, the FAA will issue the repair station certificate.

A "Good" Regulation?

The notice of proposed amendment (NPA) 2010-9 on contracting out continuing airworthiness management activities, issued last year by the European Aviation Safety Agency (EASA), is raising hopes that MROs and manufacturers like Airbus might be able to perform continuing airworthiness management for European small and startup airlines on a contract basis.

Lufthansa Technik (LHT) sees the initiative as a potential business case, says Werner Luehmann, manager for regulatory compliance and authorities liaison with LHT. But the idea is controversial. Although the British civil aviation authority is "very supportive," the German aviation authority is less enthusiastic. LHT is already a continuing airworthiness management organization (CAMO) for non-commercial aircraft but would like to become a CAMO for commercial aircraft. Becoming a commercial aircraft CAMO would be a necessary step towards managing continuing airworthiness for a commercial carrier.

Please send tips on other regulatory issues Aviation Maintenance should be covering to: ***cburtonadams@yahoo.com or jfinnegan@avmain-mag.com***

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WEST EUROPEAN MROS TARGET ENGINES, COMPONENTS FOR GROWTH

EYES ON MIDDLE EAST, ASIA...

By Charlotte Adams

Europe's maintenance, repair and overhaul (MRO) market is recovering from the economic crisis, but growth will be sluggish over the next decade. Airline MROs face lag effects of the airline downturn, overcapacity issues, competition from original equipment manufacturers (OEMs), continuing economic uncertainty and increasing regulatory burdens.

At the top are Lufthansa Technik (LHT) and Air France Industries (AFI) KLM Engineering & Maintenance (E&M), with total revenues of 4 billion and 3 billion euros, respectively, in 2010. Close behind are SR Technics, Snecma Services and Rolls-Royce UK. Also in the front rank are International Airlines Group (IAG)—the combination of Iberia and British Airways—Sabena Technics, Turkish Technic and TAP Air Portugal's MRO unit.

AeroStrategy and OAG analysts agree that Western and Eastern European MROs produced revenues of $13.1 billion in 2010. OAG further subdivides revenues into Western Europe ($11.8 billion) and Eastern Europe ($1.4 billion). David Stewart, an AeroStrategy principal, estimates annual growth at 2.1 percent over the decade. UBM Aviation-OAG's director of business development, Paul Chen, is slightly more bullish, predicting a 2.4 percent annual growth rate.

European MROs are looking to grow engine and component revenues. The region already is a net exporter of engine MRO services, Stewart says. Some suppliers, like LHT, AFI KLM E&M, Rolls-Royce, MTU, SR Technics and Snecma, are headquartered in Europe, while others, like GE Wales, are units of overseas providers.

But there also will be an influx of engines in this decade. "The main driving force of growth is due to engine spend growth, as a result of massive deliveries expected…over the 2010-2020 period," Chen says. Eastern and Western Europe account for 22 percent of worldwide engine deliveries, he says.

Growth of the traditional airframe maintenance business in Western Europe is more problematic. There is overcapacity there, observes Jorge Sobral, a member of the Executive Board of the Portuguese carrier, TAP. He points to the "phenomenal migration of airframe business to lower-cost countries, such as China." Turkish Technic's large investment may be the exception that proves the rule.

Challenges

Western European MROs need to look to areas such as Asia and the Middle East for growth, AeroStrategy's Stewart says. Others have added South American and Southern European facilities.

Business conditions have been rough. Customers have deferred a lot of heavy maintenance to conserve cash and improve results. Pricing pressures have increased, as a result of oversupply and some struggling players, notes SR Technics CEO James Stewart. The MRO business has seen and continues to see "substantial pricing drops on the spot market and to some extent on long-term deals," he says. He expects this trend to abate in the next 1.5 to two years, however, "as various MRO providers—in-house [or] third-party—either fail or are repurposed through bankruptcy." At the same time airline costs are increasing for oil and spare parts, LHT points out.

European MROs have been expanding globally. LHT and AFI/KLM E&M have numerous subsidiaries and joint ventures (JVs) abroad, including U.S. affiliates. But it works the other way, too, AeroStrategy's Stewart points out. Mubadala, the investment arm of Abu Dhabi, acquired SR Technics and owns Abu Dhabi Aircraft Technologies (ADAT), formerly GAMCO.

OEMS are another challenge for the airline MROs. In the 1990s the engine OEMs had about 20 percent of the engine aftermarket, but they have more than doubled their share, to about 45 percent, AeroStrategy's Stewart says. Component OEMs like Honeywell, Hamilton Sundstrand and Goodrich, want to grow their aftermarkets, too.

OEMs have an advantage in pricing and access to material, Sobral says. They also have better access to information, especially on the engine side, he says.

AFI KLM E&M Adapts to Challenging Market

"I'm not telling you a secret when I say that the airlines went through the deepest crisis we have seen since World War II," says Peter de Swert, executive vice-president of KLM Engineering and Maintenance, referring to the global economic downturn of the recession. "Of course the MRO industry lags behind by six months because the airlines, in the beginning, are still trying to transport their passengers and only after a while do they recognize they have to decrease the number of flight hours and move some aircraft to the desert." He went on to note MRO activities are linked to the airlines and the health of the airlines they are working for. "I have to give a warning to the industry in general because the crisis is not definitely over," de Swert warns. "You are well aware that the fuel problem is not over yet and that may have an impact in the coming months."

The company took aggressive steps to "adapt" to the volatile market rather than to be "flexible," de Swert stressed. AFI KLM E&M has orders and contracts ranging from a few years to long-term contracts over 10 years. Operating income was raised from €81 million to €143 million, a big increase, some of which is due to accounting maneuvers. "We had a very intense year. As Peter said, the crisis is not strictly over. But we have had a very good order book and our order book is at over €2.5 billion. This increase I would say is thanks to several things," says Franck Terner, president of Air France Industries. "[It] may be explained by willingness to listen to customers, listen to their needs and adapt our product."

De Swert went on to highlight some of the programs helping AFI KLM E&M survive the challenging economy. The Component Support Program is one product growth area for the company. Another area of change for the better was the decision to specialize in APUs at a facility in Amsterdam that had formerly been focused on pneumatic components. Additionally, the company is launching global training. "Both AFI and KLM have a long history of training their own people," says de Swert. "Why not interest other companies that can profit from our high level of training. This above all will create ambassadors for our knowledge and experience to our potential customers." The training centers are EASA Part 147-approved maintenance training organizations.

More moves included taking over 100 percent of the stakes of Aero Maintenance Group (AMG) a Miami-based company, giving AFI KLM E&M more control over its strategy in the region. "We are about to take 20 percent of the stakes of a company in India known as Max Aerospace. We have been studying Aerotechnic Industries (ATI) which is our subsidiary with our partner Royal Air Morac, dedicated to the A320 airframe," de Swert says. They are also teaming with Aircelle to form AMES in Dubai, dedicated to aircraft engine nacelle repair and maintenance. Both executives stressed the company will continue to grow its worldwide presence because they say its customers want to have some presence near them.

— By Joy Finnegan, Editor-in-Chief

Peter de Swert, executive vice-president of KLM Engineering and Maintenance

Franck Terner, president of Air France Industries



While some believe there is overcapacity in the MRO field in Europe, others believe that specialization will help compensate.

Royalties are assessed for maintenance manuals, and if the information cannot be obtained, repairs have to be subcontracted out. MROs, however, are using their size and networks to convince OEMs to collaborate as well as compete.

Lufthansa Technik

Despite the soft MRO market and lost revenue from crisis-related insolvencies, Lufthansa Technik increased its portfolio last year by 27 aircraft, reporting 2,055 under contract. The MRO increased third-party business by 3.3 percent to 2.4 billion euros. It operates more than 30 affiliates worldwide. LHT attributes its ability to weather cyclical ups and downs to its solid financial, organizational and technical foundation.

This year LHT broke ground, at the future Berlin Brandenburg Airport, on a new line maintenance hangar which will be able to service up to five short-haul and medium-haul aircraft or one widebody aircraft up to the size of an A340. The MRO also broke ground this year on a hangar for widebody aircraft maintenance and overhaul at LHT Philippines. The company also announced plans to increase capacity at LHT Sofia.

Lufthansa Technik offers competitive solutions for both very new products and mature products, says Walter Heerdt, senior vice president marketing & sales. On the new aircraft side, LHT is developing nondestructive test methods for composites and bonded repairs for primary structures. It is also looking for solutions for load transfer technologies for carbon fiber reinforced plastics structures.

AFI KLM

Air France Industries KLM E&M focuses on "the most modern aircraft and the most modern components and engines," says Fabrice Defrance, senior vice president, commercial, of the organization.

In spite of slow regional growth, the unit's external MRO business grew to 1.03 billion euros in 2010, an increase of 7.6 percent from 2009. AFI KLM E&M is a strong No. 2, supporting almost 1,300 aircraft operated by over 150 major international airlines.

Engine and component support accounted for most of that growth, Defrance says. The MRO is the alternative to GE on the B777 GE90, for example. Recently the MRO scooped up Alitalia's and Air Canada's GE90 business. Future growth opportunities include B777 components, GE90 engines, and support for the A330, A320 and B737NG as well as for emerging aircraft such as the B787 and the A350.

The KLM side of the business has developed support programs around CFMI CFM56-7 engines, powering the 737NG aircraft, and also maintains 20 percent of the world's CF6-80E1s, one of the A330 powerplants.

The MRO has ramped up support for "very big engines," such as the Engine Alliance GP7200—powering the A380—the GE90-94 and GE90-115. A VBE engine test cell is expected to go live in Paris next year.

Component repair and overhaul is a major focus. AFI KLM E&M formed a JV, Spairliners, with archrival LHT for A380 component support. AFI KLM E&M has another JV with Aircelle—AMES—for nacelle repair and maintenance in the Middle East and has taken total ownership of Miami-based Aero Maintenance Group (AMG), which specializes in component repairs.

Turkish Technic

Turkish Technic is expanding capabilities at a rapid pace. The subsidiary of Turkish Airlines has not won a lot of business in Western Europe yet, according to AeroStrategy. But the MRO's "first goal" has been to accumulate all in-country business, emphasizes the CEO, Dr. Ismail Demir.

SR TECHNICS

SR Technics, unaffiliated with an airline, is one of the largest European MROs. It is now owned by Mubadala, the investment arm of Abu Dhabi. SR Technics finds itself in the position of being able to supply "substantial financing capabilities"—either directly or, more commonly, through its sister company Sanad—for larger, longer-term MRO packages, according to CEO James Stewart. While MRO financing of minor deals is commonplace, SR Technics can build customized and creative solutions which allow customers to exploit Mubadala's network, he says. SR Technics' business was basically flat in 2010, Stewart says. The MRO used the downturn to restructure. It closed operations in Dublin, consolidated operations from the UK to Zurich, and established a lower-cost maintenance base in Malta. Although the "top line of our business did go down" as a result of this restructuring, Stewart says, "the core business, which we intended to retain from that period, has been stable to positive." SR Technics plans to gain market share over the next three to five years through expansion of its customer base outside of Europe. In 2009, 70 percent or more of its revenue was generated in Europe, Stewart says. But in 2010, that number began to shrink. "Today, over 70 percent of our business pipeline comes from outside of Europe, and we intend to use that to grow well beyond European growth levels on an ongoing basis."

With nearly all that business under its belt, the MRO is poised to win more international work. Its HABOM facility, expected to become fully operational in 2013, will address the "capacity problem" which has restricted the growth of third-party work. This Istanbul heavy maintenance and modification center will include one hangar for 11 narrow-body aircraft and another for three wide-body aircraft. Turkish Technic currently has 10 domestic and about 20 international long- and short-term airline customers.

Turkish Technic also notes its successful use of Lean methodology. One project reduced cycle time in component pool services activities by 60 percent. The MRO also has set up a number of joint ventures (JVs). In 2009 it launched the Turkish Engine Center (TEC), a JV with P&W. A JV with Goodrich for nacelle and thrust reverser repair and overhaul became operational this year. Other projects include TURKBINE, a JV with a local power generation company to overhaul gas turbines, and Turkish Cabin Interiors, a JV with Turkish Aircraft Industries.

TAP Air Portugal

TAP's maintenance business is recovering from the recession although there are challenges ahead. Combined revenues from TAP's Portuguese and Brazilian M&E facilities are expected to rise 4 percent this year, compared with last year. Revenues in 2010 for the Portuguese M&E business hit 286.7 million euros, including internal and external customers. The Portuguese entity also has won Eastern European customers but can't disclose their names because of contractual obligations. The Lisbon base has embraced Lean maintenance, and expects to save around 80 million euros over a three-year period, ending in 2012.

TAP M&E's sister company, TAP M&E Brazil, which TAP bought in 2005, last year produced revenues of less than $100 million, which amounted to a small loss, Sobral says. The Brazilian entity's revenues are expected to exceed $100 million in 2012, which would allow TAP M&E Brazil to break even.

The Brazilian business focuses more on airframe and components work, while the Portuguese side focuses on the engine and components support. The Brazilian facility traditionally specialized in Boeing and Embraer aircraft, and Portugal, in Airbus aircraft. But TAP M&E Brazil now has achieved certification for most Airbus models. The Brazilian organization's physical footprint is 2.5 times larger than the Portuguese M&E's plant despite the difference in revenues.

Opportunities

TAP M&E in Portugal expects most of its growth to come from engine maintenance. TAP M&E Portugal works on classic and modern CFMI, P&W and Rolls-Royce engines and may add the new CF6-80E to its lineup. TAP M&E Brazil, meanwhile, has been able to attract new airframe business from both North American and South American carriers.

TAP also is experiencing a major ownership shift. The Portuguese government is privatizing the airline, including the MRO, as part of an agreement with European and international financial agencies. Now wholly government-owned, TAP is expected to be privatized. AM

Jet Aviation

Jet Aviation, a subsidiary of General Dynamics and major bizjet MRO and service provider headquartered in Switzerland, faces many of the same challenges that commercial-air-transport MROs do—slow economic recovery, increasing regulatory burdens and competition with original equipment manufacturers (OEMs). The company's network of 25 facilities worldwide has been central to its success in hard times. The network is a selling point with airframe and avionics OEMs as a platform for introducing cockpit and cabin upgrades. Jet Aviation works with equipment suppliers such as Honeywell and Rockwell Collins, on the one hand, and with airframers such as its sister company Gulfstream, as well as Boeing, Airbus, Bombardier, Dassault, Hawker, Cessna and Embraer, on the other. Among its relatively recent activities, the MRO won approval to service Dassault aircraft at its Hong Kong facility, says Christof Spaeth, senior vice president of MRO. It also is greatly expanding heavy maintenance and refurbishment capacity at its Singapore base, which handles mainly Bombardier, Gulfstream and Cessna bizjets, as well as Boeing VIP aircraft, Spaeth says. Nevertheless OEM encroachment is a concern. The company anticipates only slight MRO revenues growth in 2011 over 2010, in part because OEMs' material programs are maturing. This is how OEMs are trying to take more control of spare parts sales, Spaeth says. Jet Aviation counters the deterioration of its maintenance business model with strategies such as aircraft upgrade solutions involving its own intellectual property—supplemental type certificates (STCs) earned in its completions business. The company exploits its MRO network to offer global service solutions for aircraft manufacturers and customers who operate globally. Jet Aviation, for example, has started a facility in Russia. The Russian operation got its Part 145 certificate last year and at this stage supports Gulfstream, Bombardier, Hawker and Embraer aircraft. Along the same lines is the "My Aircraft" campaign, which offers owners of used aircraft a cost-effective "catalog" approach to refurbishment with a menu of options based on the company's STCs.

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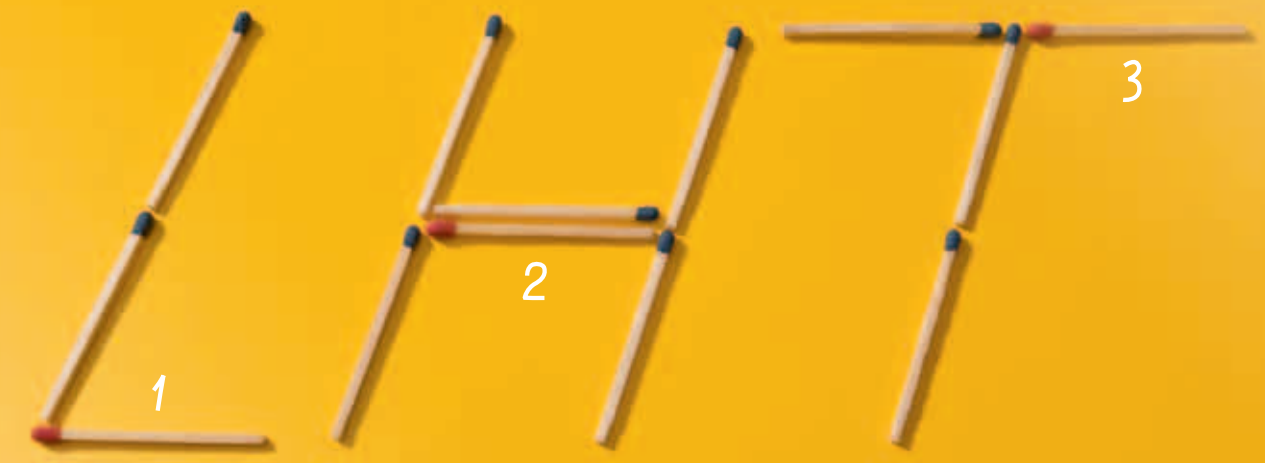

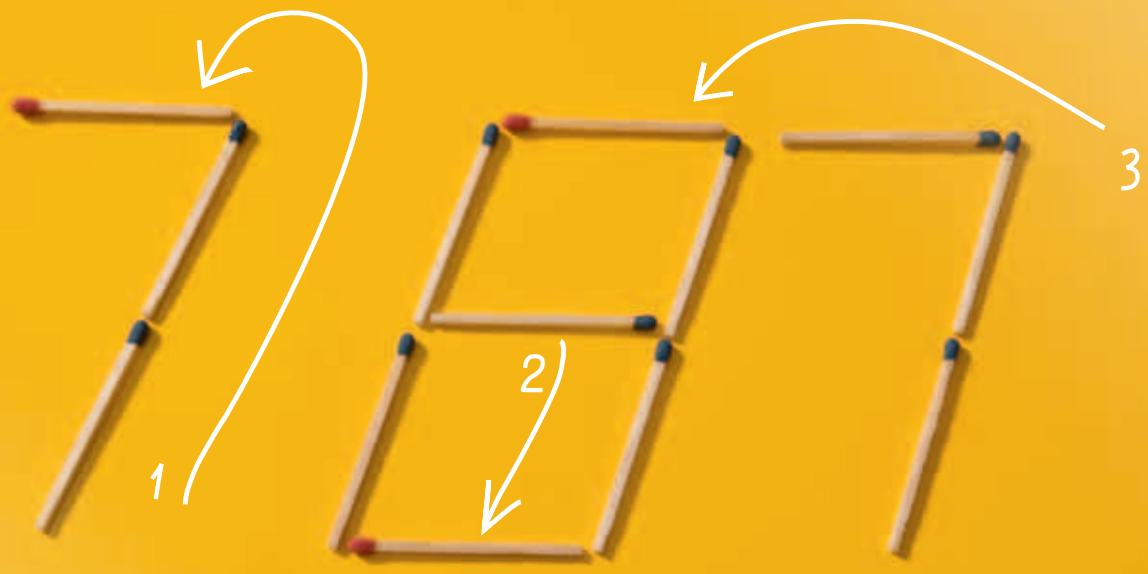

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DAKOTA CUB AIRCRAFT: FROM PMA TO TC

A small aircraft-parts producer makes the very big decision to become an airframe manufacturer. It's risky, but gambling is what small business owners do.
By David Jensen

Next to my car on Route 294 east of Sioux Falls, I scan the horizon and see little more than flat, fertile farmland, typical of eastern South Dakota. Did my GPS guide me to the company I planned to visit? My first clue that it did is a modest-size sign denoting the company's name. My second clue was a dandelion-dotted grass airstrip running along side a gravel road leading to a grove of trees. In those trees I soon found my destination and probably the newest company to enter the illustrious, if highly competitive, world of aircraft manufacturing.

Three single-story buildings plus a separate paint booth comprise the headquarters, marketing department, machine shop, assembly and fabrication facilities for Dakota Cub Aircraft Inc. (DCA). One building houses a Part 145-approved repair station that provides full spinner-to-rudder rebuilds of most "rag-wing" Piper Cub models: the J-3, PA-11, PA-18, PA-12, PA-20 and PA-22. During my visit, DCA was repairing and upgrading a PA-18 Super Cub that its owner flipped when braking to avoid a deer on the runway, a common hazard for bush pilots.

Mark Erickson bet his son's college fund on his small business. Fortunately, his gamble paid off.

The firm has been producing parts with PMA (parts manufacturing authority) and STC (supplemental type certificate) approvals for versions of the venerable Cub since 1993. More recently, its founder and owner, Mark Erickson, decided to manufacture a new version of the Cub. It incorporates improved parts and components, many made from new materials and with DCA designs.

A new, sister company called Super 18 LLC has been formed. Its name references the Super 18-180 aircraft the firm manufactures. When I visited DCA and Super18 last spring, the first Super 18-180 was being assembled for delivery in August. The new company also produces kits for three models of the Super 18:

- The S18-160-EXP, with a 2,050-pound (930-kg) gross weight and designed with the Lycoming O-320 in mind;
- The S18-LT-EXP, which is light-sport-aircraft eligible and designed with the Continental O-200 and Lycoming O-233 as likely engine choices, and
- The S18-180, which has a 2,300-pound (1,043-kg) gross weight (1,050-pounds [476-kg] useful load) and likely would be powered by the 180-hp Lycoming O-360-C4P that also is in the certified Super 18.

Kit customers can choose other power-plant options, as any engine used on a PA-18 Super will fit on a Super 18 kit.

Betting the Farm

Becoming an airframe manufacturer is a gamble, but for Erickson, gambling is part of being a small business owner. So is hard work, and Erickson encountered both risk and long hours of labor when he decided to launch into type-certificate (TC) approved aircraft manufacturing. The move represents one more leg in a long journey that began where many a small company begins—in a garage.

A tool-and-die maker working at a federal facility, Erickson decided at age 39 that he wanted to build an experimental amateur-built airplane, so he acquired plans for the Super Cub. That was some 20 years ago. Erickson found that the available Super Cub wing ribs were costly and quite fragile. He therefore decided to build his own rib in his garage on a nearby farm. Recognizing that the hand-built wing rib was stronger and made with better material than the original rib, a Flight Standards representative encouraged Erickson to get an STC.

STCs don't come cheap, however. Erickson had to come up with $25,000 –which he did, from his son's college fund. "I was basically gambling," he admits. "But you have to gamble in this business."

That first STC launched Dakota Cub Aircraft. More parts for the Cub wing were approved, enough for the company to decide in 1996 to build whole wing assemblies. DCA currently produces a wide array of parts for various Cub models and all the wing parts for the J-3, PA-11 and Super Cub. Building entire aircraft became the logical next step.

Incidentally, the college fund was soon replenished; Erickson's son now holds both a university degree and a flight instructor's license. He is a professional pilot.

At first, DCA hand-built parts. But in 1995, the company acquired the first of its four milling machines. They have about doubled the firm's production rate and yielded parts runs in the thousands rather than hundreds, as before. A three-axis milling machine produces smaller items such as brake master cylinders, fuel valves and internal wing parts. Another machine makes larger parts such as wing spars. A turret punch produces contour forms from sheet material and punches holes, for example, to accommodate fuel-tank reinforcement.

DCA makes parts exclusively for fabric-covered Piper aircraft because, according to Erickson, "there are more Cubs out there than any other airplane." Over the past nearly 80 years, more than 40,000 Cub variants, both military and civil, have been built by Piper Aircraft, its affiliates and other companies under license (see sidebar on page 28).

DCA specializes in PA-18 support. It's catalog of parts include many of the about 1,500 parts that make up a Super Cub: wing assemblies, flaps, spars, ailerons, fuel tanks, leading edge skins and a wide variety of fittings, bell cranks, hinges, braces and bushings.

The development of new and improved parts is ongoing at DCA. "We have about 13 STCs and three or four more in the works," Erickson reports. "Many of the STCs came out of the [Super-18's] TC process as spin-offs."

DCA recently secured an STC for a high-pressure brake master cylinder, which uses a positive-displacement piston instead of the original steel cup and diaphragm. Erickson also has added a safety feature to the fuel selector valve for choosing a gas source from the Cub's two wing tanks. "The original valve allows the pilot to turn the valve knob in either direction: right, left or off," he explains. "Our valve has a right, left, off and 'both' setting, and you get to the off setting only by turning the valve clockwise."

Most of DCA's available parts fit into J-3s and PA-18 Super Cubs, a favorite among bush pilots. Much of the business focuses on supporting the Super Cub, which Erickson describes as being "fast, with excellent short-field performance." With its enhancements, the Super 18-180 can take off at maximum gross weight on a grass strip that is no more than a 500 feet, less than the length of one and a half football fields.

While DCA's domestic market is its largest, the company does sell parts worldwide. For seven years, Erickson has been an FAA-approved designated manufacturing inspection representative (DMIR), giving him the authority to issue

Dakota Cub Aircraft has four milling machines which have helped double the firm's production rate. Shown center is the Cub's cockpit featuring the Garmin GPSMAP 696.

export airworthiness approvals. He has been a designated airworthiness representative (DAR) for two years.

Super 18 Features

The Super 18-180 achieves much of its short-field performance thanks to the extended slotted wing that Erickson developed and had STC'd in 1999. This feature extends inboard from the landing light location to about 30 inches (76 cm) from the wing root. It allows the pilot to apply a high angle of attack (up to a 45 degree nose-up) at slow stall speeds (down to 30 mph IAS) with full flight control authority. The pilot can maintain aileron authority and make approaches to landings more precisely by solely controlling power. This is achieved by maintaining the boundary layer—i.e., delaying the separation—of the airflow from the wing's surface.

The slotted wing has become a popular retrofit item for the company's Super Cub customers. "When we started making it, we probably sold one slotted wing for every three or four stock Super Cub wings," Erickson recalls. "Now I can't remember when we sold the last stock wing."

In addition, Erickson squared off the Super 18-180's wing, thus enlarging the surface by an additional six percent. The aircraft's flaps have been enlarged by 44 percent to 90 inches (229 cm) and the ailerons have been extended 23 inches (58 cm) to the wing's end.

The Super 18-180 is not the first Cub with a slotted wing. Piper Aircraft came up with the design for the U.S. Army near the end of World War II. It was installed on the YL-14 observation/liaison version of the J-5C Cub Cruiser and meant to allow takeoffs and landings within 100 feet (30.5 m). But soon after initial production, the war came to a close and thus Piper built only 14 YL-14s. Just two remain flightworthy, one in Burgos, Spain, for which DCA has supplied parts, and one in Kearney, Neb.

Erickson traveled to Kearney to examine the wing on the refurbished Cub, then returned to South Dakota to refine the design. He applied sturdier materials and incorporated the slot into the wing by modifying the original Piper US35B airfoil.

The Super 18-180 integrates other new features as well. The fuselage, made by Airframes Alaska, in Chugiak, is four inches (10.1 cm) wider than the Super Cub's. It yields a 20-percent increase in interior space. "We're all getting bigger," Erickson jokes, explaining one reason for the expansion. The aircraft's landing gear has been lengthened by three inches (7.6 cm) to provide more ground clearance and better angle of attack during takeoffs. The Super 18-180 comes with the Alpha Omega Suspension System (AOSS) developed and supplied by Burl's Aircraft LLC, also in Chugiak. Made of deformable polymer for suspension and shock absorption, the AOSS was designed to eliminate "slingshot-like" landings. Pilots can make ground adjustments to the AOSS to accommodate heavier loads. The suspension system, along with standard 26-inch (66-cm) "tundra" type tires provided by Alaskan Bushwheels, Joseph, Ore., contributes to the Super 18-180's ability to land in less-than-ideal surfaces. Tires as large as 31 inches (79 cm) are approved for the Super 18.

The highly modified Cub also includes two 24-gallon (90.8-l) extended-range fuel tanks, an enlarged baggage compartment with 200-pound (90-kg) capacity and, under the rear seat, a storage area with 50 pounds (22.6 kg) of capacity for tools, tie-downs and other gear. The new Cub's nose sports an 82-inch (208.3-cm) McCauley 1A200-FA8242 metal propeller. Its cockpit comes standard with Garmin's GPSMAP 696 and engine monitoring gauges from Bend, Ore.-based Electronic International Inc.

The Super 18-180 costs about $190,000 factory made or about $86,000 when completed in kit form. Potential customers may purchase the airplane for personal use or training; however, Erickson believes that with its larger fuselage, short-field performance and 2,300-pound maximum gross weight (550 pounds [250 kg] more than the Super Cub's), the Super 18-180 would make a worthy workhorse, transporting supplies and personnel in remote areas such as Alaska and northern Canada. Those locations are fitting since "at least half" of the DCA-built parts go to customers in Alaska, Canada and the northwestern U.S., according to Erickson

The company's founder stresses that, unlike most experimental amateur-built aircraft, parts for Super 18's three kit airplanes are the same as ones for manufactured aircraft. All have PMA approval. This is important, according to Erickson, because many experimental kit aircraft are not completed.

"Maybe the customer loses his medical or loses interest, and now he's stuck with a box of parts that don't have their original value," he explains. "But the PMA'd parts in our kits can be sold at retail price and installed on a certificated airplane."

Erickson says his original intent was to build just parts and airplanes. However, his customers wanted to build their own Super 18s, so the company started producing kits. In May 2010, the Super 18 kit was added to the FAA's list of approved amateur-built aircraft kits. The company has sold two airplane kits to individuals who, under FAR 21-191(g), must be responsible for 51 percent of the aircraft's construction.

One of the first PMA parts Erickson made were Super Cub wing ribs that were stronger and made of better material than the original rib.

The Long TC

Erickson concedes that securing the Super 18-180's type certificate was a bigger task than he anticipated. Because the aircraft's relatively simple design, he initially thought he could achieve its TC "inside two years."

"It took six years, three months and five days from the day I signed the application for a type certificate to when I actually got the TC," Erickson recalls vividly. The exact, lengthy timeframe would appear to be permanently etched in his brain. His long hours of work, as well as the venture's risk, no doubt explain why individuals or small companies don't often pursue type certificates.

Super 18's TC also is unique in that it is the first one issued in South Dakota and precedes type certificates issued in the neighboring states of North Dakota, Nebraska, Iowa and Montana. The company received FAA approval during the 2009 AirVenture Oshkosh show.

The new manufacturer assembled three aircraft for the Super 18-180's flight test program, which took about a year. Aircraft N2300S was flown to Harvey Field in Snohomish, Wash., where a flight-test designated engineering representative (DER) assisted in most of the flight-testing. Noise tests were carried out there, too, with an acoustics DER. The aircraft was subsequently flown to Coos Bay, Ore., for crosswind landing tests, and then to Lancaster, Calif., for spin flight testing. The test results were verified back in South Dakota by an FAA test pilot and then sent to the aircraft certification office (ACO) in Anchorage, Alaska, where the Super 18-180's TC was issued.

Erickson recalls that the TC process requires "a lot of load testing," of wings, struts, landing gear, engine mounts, fuselage, the electrical system and other components. All tests required the attendance of still another DER to apply the loads and verify the components' structural integrity.

All told, test results for Super 18-180 certification fill the four 3-drawer file

Long Live the Cub

To say the Piper Cub is venerable is like saying the Airbus A380 is big. The familiar two-seater Cub can trace its roots back to 1930, when C. Gilbert Taylor, founder of Taylor Aircraft, in Bradford, Pa., introduced the E-2 as a light utility aircraft. It had a 20-hp engine. Taylor received the aircraft's type certificate in 1931, just 20 years after the very first TC was issued, to build Wright aircraft. The industrialist William Piper acquired Taylor Aircraft and introduced the J-2 in 1936. Twelve hundred J-2s were built, all sporting the "Cub yellow" paint that has become the Piper Cub's trademark.

In 1938, Piper Aircraft introduced the J-3 with a 40-hp engine. It initially sold for just over $1,000. Close to 20,000 J-3s have been built and about 5,500 remain on the FAA registry, according to Steve Krog, president and owner of Cub Club. His 30-year old organization provides its 2,700 members technical support for Cubs. The U.S. military acquired J-3 variants, which were designated the L4 "Grasshopper" and used for training and surveillance.

There are a large number of Cub variants. However, Krog cites two major advancements in the aircraft's history: the PA-11, which replaced the J-3 and had a design that moved the fuel tanks from the fuselage to the wings, and the PA-18 Super Cub, which has remained popular since Piper Aircraft introduced it in 1949.

Super Cubs are still manufactured by CubCrafters, Yakima Wash., and American Legend Aircraft Co., Sulfur Springs, Texas. Individuals can also acquire Cub kits from those two companies, as well as from Backcountry Cub in London, Ontario, Canada. The newest Cub manufacturer is Super 18 LLC in Valley Springs, S.D.

These companies join a lengthy list of manufacturers who have produced Cubs over the years. Piper Aircraft built most of the type in Lock Haven, Pa., and about 100 Cubs in Vero Beach, Fla. But the aircraft has also been produced under license and by Piper subsidiaries, including Aircraft Associates, Long Beach, Calif.; Cub Aircraft, Hamilton, Ontario; Piper Aircraft, Ponca City, Okla., and WTA Inc., Lubbock, Texas. In addition, Cubs have been manufactured in Denmark, Argentina and the Czech Republic

cabinets in Erickson's office. Having gone through all of the FAA's hoops, Erickson still had to attend, via a conference phone call, two TC board meetings.

"The first meeting took four hours," he recalls. Some changes were made to the aircraft, and a second, half-hour meeting took place. It ended with the question from an FAA official: "Does anybody dissent the issue of a type certificate?"

"It was the first time I was glad to hear silence," Erickson recalls. "Nobody objected."

Ramping Up

Super 18 is ramping up to become fully operational. A one-year warranty program was established. Additionally, Erickson hired a marketing person, Amy Gesch, to help advance the aircraft's sales, and he plans to set up a sales/distribution network.

"I'll probably look for distributors that used to handle the Piper Super Cub," he says. "My goal is to have a distributor in all nine FAA regions." DCA has two distributors for its parts: Yakima Aerosport in Washington and Glacier Aircraft in Alaska.

Erickson's new company is tooled up for airframe manufacturing and set to enlarge its current workforce, which comprises two machinists, two A&Ps, two welders, a business manager and Gesch, as well as Erickson. DCA once had a staff of 11; however, the 2008 economic downturn brought about five layoffs. Signs of a recovery have prompted Erickson to recently hire two new employees to primarily fabricate parts.

Before additional hiring, however, Erickson first needs a larger, facility for aircraft assembly. "We don't have enough square footage," he explains. A facility in the Valley Springs area east of Sioux Falls would be preferred; that is where Erickson has always lived, excepting a stint in the U.S. Army.

However, new facilities and staff depend on incoming business. Erickson has sought no outside funding for his new company and is no longer gambling with college funds. Rather he says he has adopted a "pay-as-you-go plan."

But Erickson takes comfort in the Piper Cub's apparent endless popularity and believes he can achieve his original goal of producing one Super 18-180 a month. Meantime, he continues with the steady business of building and selling PMA parts. AM

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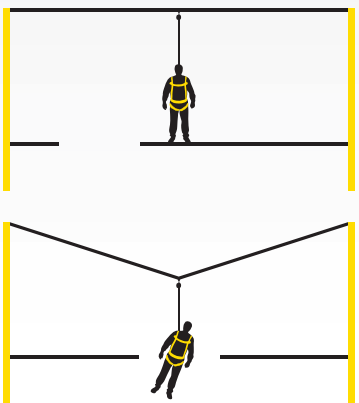

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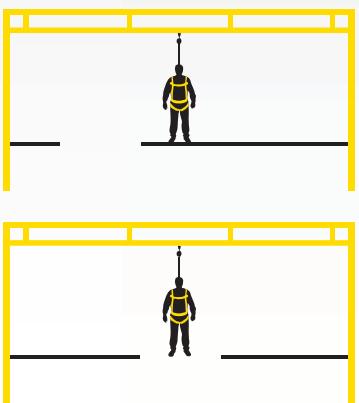

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MRO Green Initiatives

By Dale Smith

Duncan Aviation's Battle Creek, Mich. paint shop is on the cutting edge of processes and materials that have less impact to the environment and they have worked with Sherwin Williams to replace primers with chromate- and lead-free products.

It doesn't seem that long ago when the only time you heard the words "green" and "MRO" in the same sentence was when discussing the delivery of a new business jet to a completion center.

Today that's all changed. From electric airplanes to bio-fuels to buying carbon offsets, to not dumping your fuel samples on the ramp, it seems like every part of aviation is greening up. And that includes MROs.

Sure most shops already do a great job in being as clean as they can. Unfortunately, the very nature of our business makes it hard. Whether it's scrap metal, old wire bundles, cleaners, paint, greasy rags, or whatever, ours is a dirty and often environmentally unfriendly business.

But with increasing local and national pressure to curb the hazardous byproducts of aircraft maintenance and overhaul, shops of all sizes are looking for ways to reduce their impact on the environment.

Color Your World – Green.

Probably the most environmentally unfriendly thing MROs do is strip and repaint aircraft. Not to date myself, but I can remember a shop at my old airport stripping an airplane out on the ramp with a fire hose. They would put the stripper on and just wash it all down the storm drain. You wouldn't get away with that today.

"The improvements in the environmental efforts of the paint industry over the past 40 years has just been amazing," Robert Mitchell, director of paint operations at Jet Aviation St. Louis said. "One of the biggest is the current movement away from hexavalent chrome-based products. It's a known carcinogen. The EPA has issued several standards on that and so we're looking for ways to reduce or eliminate the use of chrome-based products in our paint shop."

They are not alone. "Chrome-free painting is something we've phased into our Nebraska and Michigan facilities already," explained Jeannine Falter, PhD, V.P. business development, Duncan Aviation. "We paint more than 100 airplanes every year at each facility so this will make a huge impact."

Both companies have replaced hazardous acid etching processes with a new product called PreKote by Pantheon Enterprises. "Basically it's a water-based system. You just scrub it on with Scotch-Brite. It's similar to the etch and alodine process, but because it's non-toxic there's no disposal costs or impact on the environment, " Mitchell said. "Once it's dry, it acts as a very thin 'glue' that adheres the primer to the airplane."

"It's one of those environmental type things that's been a win/win," he added. "It's faster, safer and cheaper."

Cobham Composite Manufacturing Facility Receives LEED Certification

Cobham's manufacturing facility in Suffolk, Virginia achieved Leadership in Energy and Environmental Design (LEED) certification through the U.S. Green Building Council. LEED certification identifies Cobham's facility as a pioneering example of sustainable design. "LEED certification is a unique accomplishment among production facilities in composites manufacturing," said Charles Stuff, president of Cobham Defense Systems. "Being one of the few companies outside of the large aerospace primes with high-volume production capabilities of advanced composite products, makes this accomplishment even more significant." Formally opened on May 3, 2010, the $9.2 million, 73,500-sq. ft. facility was built to manufacture aircraft engine components, aircraft and rotorcraft structural products, unmanned aerial vehicle components, as well as missile and munitions products for the U.S. aerospace and defense industry.

The facility uses state-of-the-art manufacturing processes, including advanced, continuous-fiber compression molding, resin transfer molding and a unique technology called Memory Shape Mandrel. Aimed at improving energy savings, water efficiency, CO_2 emissions reduction, improved indoor environmental quality and stewardship of resources, the facility was built using locally manufactured and recycled materials and even promotes alternative transportation with bicycle storage and changing facilities.

A Really Green Primer

Move over zinc chromate, there's a new, environmentally friendly green primer in town and Duncan Aviation is one of the first shops to make it standard issue.

"Duncan Aviation has recently received approval to amend our proprietary FAA-Approved Paint Process to include these new processes and products," Dr. Falter said. "We have partnered with Sherwin-Williams and Pantheon Enterprises for several years to develop a new chrome-free paint process that is better for the environment, better for the paint technicians and better for the aircraft."

Sherwin-Williams' new low-VOC, two-component, corrosive-inhibitive primer products are at the heart of Duncan's new process. Since they contain no hexavalent chromium they meet the latest OSHA standards for occupation exposure limits. Duncan has replaced both chromate conversion coatings and traditional zinc chromate primers with the new non-chrome alternative.

"We are one of the first coatings manufacturers to offer the aerospace market a complete line of primers that are free from chrome and lead hazards," stated Julie Voisin, Sherwin-Williams product manager. "We provide a choice of environmentally supportive primers including our latest Chrome Hazard Free Epoxy Primer, Epoxy Primer Surfacer and Urethane Primer."

(If you're interested there's some great information on the chrome-free paint process available at: www.duncanaviation.aero/fieldguides/promotions/201010-chrome_free_paint.php)

While we're on the subject of primers and paint prep, Mitchell shared a very good idea with regards to safer sanding.

"When you sand, even the reduced or no-chrome products will have some level of chrome in the dust," he said. "Instead of letting it fly everywhere, we now use vacuum sanders. When the bag gets full it's tossed in the drum for disposal. It reduces the amount of chrome in the air and it's a lot better for the people working with it."

Of course not all the painting is done outside the aircraft. Many airlines and charter operators on a budget will choose to repaint headliners, side panels and other areas inside the cabin. Problem is, many of the high VOC paints and finishes leave harmful fumes behind.

AkzoNobel Aerospace Coatings has recently introduced Aerofine: a line of low VOC coatings that are based on new waterborne topcoat and primers. According to the company, the quick drying times and minimal odor make these new products ideal for quick turn around repairs.

There's also some great green news if you're business is painting big Boeings. PPG Aerospace recently qualified a chromate-free exterior decorative primer with Boeing.

"Desoprime CF/CA 7502 is a technology breakthrough that achieves exceptional corrosion resistance because of a proprietary PPG-corrosion-inhibition package," explained Scott Cavin, global coatings marketing manager, airlines and aerospace, PPG. "Paint shops can now reduce environmental issues and waste removal costs when using this new primer."

According to the company, with the introduction of the Desoprime product, PPG now offers a complete green exterior coatings system that includes the primer, Desothane HS topcoat and Desogel metal pretreatment.

Plenty of Green to Go Around

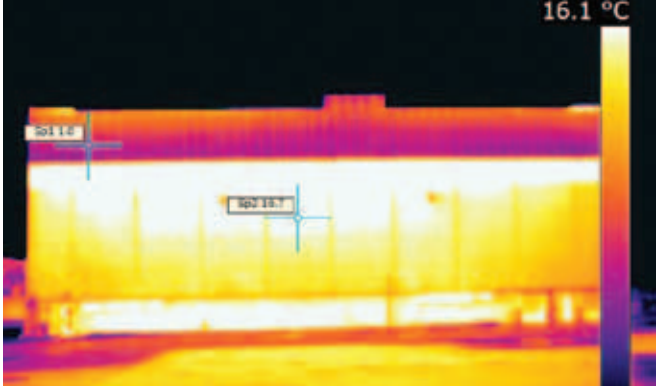
What if your MRO doesn't do much painting? Well, there are still plenty of green things you can do.

"Going green will actually lower many of your costs," Dr. Falter said. "We've switched to energy-saving lighting and put motion sensors in areas that aren't frequently used. When you leave the room the lights go off. We've put recycling bins by all the printers. And to save more paper, we transfer and store information electronically now. Even our work orders are digital."

"We also have recycling bins for all the scrap metal – even the nuts and bolts are recycled," she added. "We have minimized the

Turbine Engine Washing Goes Green

Engine washing has been around for a long, long time. You just used hoses to blow water and possibly some cleaner through the engine and let the waste run off into the nearest storm drain. It was a messy operation that's been banned at most airports. Pratt & Whitney's patented EcoPower engine wash system is a new-generation, green solution with zero environmental impact. "EcoPower engine wash is a closed-loop system. We have a manifold with nozzle jets that goes on the front of the engine. The jets disperse atomized water through the core of the engine," explained Mary Canty, general manager of Pratt & Whitney's line maintenance services and integrated service solutions. "There's a collection system that goes at the back and underneath the engine to catch all the run-off water. Since we collect everything that's being used, we can do this right out on the tarmac," she said. "We just back the unit up at the gate and perform the engine wash. Each wash takes about an hour and a half and is usually done in the middle of the night while the aircraft is undergoing regular maintenance." Ms. Canty said that the patented process ensures a more uniform, complete wetting and cleaning of critical core gas-path surfaces without needing any detergents or cleaners. "The water is de-ionized so it acts to attract the dirt particles away from the engine components. It leaves nothing behind that could be detrimental to gas-path coatings or sealants," she said. Since it collects, filters and reuses all of the cleaning water, EcoPower's closed-loop system saves upwards of 120 gallons of water per engine wash. After the equipment is moved away from the aircraft all that's left are a few drops of water on the ground, and much cleaner, better performing engines on the airplane. "We can save the typical operator about 1.2 percent in overall fuel consumption compared to a non-washed engine," Ms. Canty said. "Those are pretty significant savings." Cleaner engines are also better for the overall environment. According to Pratt & Whitney with regular engine washing the typical widebody airliner will emit 330 tones less carbon dioxide per year. Ms. Canty also said that the benefits of washing extend beyond Pratt & Whitney engines. EcoPower Engine Wash can be done on the majority of modern jet engines. While EcoPower is currently available for large and regional-type engines on commercial and military aircraft, Ms. Canty said that Pratt & Whitney is "seriously exploring an EcoPower program for smaller business jet engines." For more information, visit: www.pw.utc.com/ecopower.



Left: Bombardier's plant engineering group authorized the recent installation of a Lubi, a wall-mounted solar air heater at its 40,000-square-foot research and development facility at the Mirabel Airport, Mirabel, Quebec. The solar collector manufactured by Enerconcept Technologies, Magog, Quebec, is amidst a two-year payback for that application. The 145-foot-wide x 12-foot-high Lubi aesthetically simulates architectural windows and covers about 25-percent of the 7,600-sq ft masonry wall. Right: Thermal imaging illustrates the dramatic rise of temperature in the solar collector versus ambient air and the building wall temperature below the Lubi. (Photos courtesy of Enerconcept Technologies) Right: Thermal imaging illustrates the dramatic rise of temperature in the solar collector versus ambient air and the building wall temperature below the Lubi™. (Photos courtesy of Enerconcept Technologies, Magog, Quebec)

Bombardier Preheats Outdoor Air with Enerconcept's Lubi

Recently Bombardier took additional steps toward more green technology by using a solar energy retrofit to preheat outdoor air at its Mirabel, Quebec industrial building. Previously, solar wasn't a preference because the Montreal-based, publicly-held company's two-year payback selection criteria limits the consideration of many alternative energy concepts. At the company's 40,000-square-foot research and development facility at the Mirabel Airport, for example, Bombardier's plant engineering group authorized the recent installation of a Lubi, a wall-mounted solar air heater that is amidst a two-year payback for that application. The Lubi supplements the existing natural gas-fired make-up air unit by preheating wintertime outdoor air for the 52-foot-tall, hangar style building as required by ASHRAE Standard 62-mandated commercial building requirements. "In 2008 we analyzed all types of equipment with a goal of reducing our electric and natural gas consumption," said Serge Dumont, plant engineering and tooling manager, commercial aircraft division, Bombardier. "We decided only projects with a two-year payback or less would give us the most effective return on investment." The 145-foot-wide x 12-foot-high solar collector aesthetically simulates architectural windows and covers about 25-percent of the 7,600-square-foot masonry wall. It is delivering an annual 16-ton reduction of CO_2 emissions and a $5,000 (CAD) natural gas savings. Over the course of its 20-year (minimum) lifecycle, the natural gas savings will undoubtedly rise well past $100,000 when considering inevitable fossil fuel price escalations. Lifecycle CO_2 reductions are estimated at 320 tons. Developed and manufactured by Enerconcept Technologies, Magog, Quebec, the Lubi is the world's most efficient solar product, according to National Solar Test Facility (NSTF), a Mississauga, Ont.-based, third-party laboratory that tests and rates solar technologies under controlled temperature/sunlight/wind and is sanctioned by the Solar Rating and Certification Corp., (SRCC), Cocoa, Fla. Enerconcept's factory engineers supplied Dumont's engineering team with sizing, output calculations and other design assistance. In an ideal setting, the Lubi could have yielded an even greater payback if the collector had been mounted on an optimum south wall exposure, which was decided against due to a future building project that is expected to partially block sunlight on the south wall and if a larger Lubi could have also supplied a second HVAC system, however its east side location required a rooftop ductwork addition that was not cost-effective. The company uses temperature set of 66°F (19°C), which requires less solar heating capacity than higher building set points. The 66°F building temperature is part of several company-wide green strategies Bombardier employs. "We have saved a lot of natural gas by lowering the temperature in our building by just one degree," Dumont said. Other strategies include energy conservation through microprocessor-controlled lighting zone programming that provides light only when workers are present. The company also stores energy during off-peak hours so as not to surpass higher energy rate allowances by local utilities during peak times. The solar strategy is new for Bombardier although it has been used twice previously, both with wall-mounted solar collectors. Other solar methods, such as solar water heating and photovoltaic don't yet reach the company's two-year payback standard, according to Dumont. A Lubi solar collector of the Mirabel building's size costs approximately $40,000, according to Enerconcept Technologies. Project costs were reduced with incentives from Natural Resources Canada and a rebate from the Energy Efficiency Fund (EEF) of natural gas utility, Gaz Metro.

amounts of chemicals and cleaners we use for maintenance of airframes and engines. We also recycle those whenever possible."

With regards to parts washing, an alternative to using harsh chemicals and cleaners is to take a look at a new technology system that uses plant-based formulas to "eat" the oil, grease and dirt off parts. They're not only environmentally friendly, they can actually give you a cleaner part that's less prone to ongoing corrosion.

Other green ideas include using absorbent pads and materials to reduce the need to water wash the shop floor. If you wash aircraft, look for ways to use less water and detergents. Also, next time you have to do an avionics or systems check, try using a ground power cart instead of running the aircraft's engines – and if you must run the engines, use the minimum power settings.

Your efforts can also put some extra green in your pocket. Besides saving on your water, fuel and electrical bills, there are a lot of companies who will buy scrap metal, old avionics, and used oils, fuels and fluids for recycling.

It's Not Easy Being Green…

While greening up your shop is the responsible thing to do, it can seem a bit overwhelming at first.

"The first thing you need to do is find a champion in your company who is passionate about the green effort and who will bring ideas to the table," Dr. Falter said. "Then it's just taking that first step. Whether it's just recycling your printer paper or reducing your energy use, you just need to start where you can."

One place you can start is by doing a simple examination of our facility and equipment. Not to dwell on painting, but it does lend a lot of opportunity for improvement. "A terrific waste of environmental cost is when must rework areas during the paint process," Mitchell said. "Rework requires extra effort, which is extra impact on the environment."

"We're big believers in continuous improvement," he added. "And our people have helped identify and improve many of our green processes. Your efforts, whatever they are, are only as good as your people." AM

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Dassault Falcon

In 2010, Dassault Falcon launched a number of important new customer service initiatives while introducing technical innovations that will revolutionize the way Falcon operators interact with their aircraft when performing maintenance tasks.

New Service Center Network Strategy Provides More Options

A major new strategy for Dassault's worldwide service center network was launched in March, creating three categories for Authorized Service Centers (ASCs): Heavy, Major and Line maintenance. The initiative expands Dassault's "footprint of service" while cutting costs for its ASCs and giving more options to customers. "We are now putting in place a stronger, more vibrant network that will allow ASCs to specialize in one or two aircraft models if they choose or to support all Falcon models through all phases of maintenance. What our customers will see is a more specialized approach that will provide a quicker reaction to their needs," said Jacques Chauvet, Senior Vice President of Worldwide Customer Service for Dassault Falcon.

Simultaneously, Dassault introduced company owned Satellite Service Stations which support basic line maintenance up through 'A' inspections. Each is staffed with an AOG GoTeam which provides rapid mobile response directly to an aircraft location, with the parts and tools necessary to get an operator's Falcon flying with minimal delay. Satellite Service Stations are in operation in St. Louis, Missouri; Nice, France; Rome, Italy; Moscow, Russia and London, United Kingdom.

In April, Frank Youngkin was appointed to Senior Vice President, Western Hemisphere Customer Service. Youngkin's appointment brings every service entity operated by Dassault in the Western Hemisphere under a single leader, setting the groundwork to further elevate the caliber of the Falcon customer experience. In his new position, Youngkin oversees Dassault's customer service organization in the western hemisphere and manages three of Dassault's subsidiaries: Dassault Aircraft Services (DAS), Midway Aircraft Instrument Corporation and Aero Precision Repair and Overhaul Company (A-PRO).

E-Maintenance: Innovation for the 21st Century

Dassault's innovative E-Maintenance program, first introduced in late 2009, continues to be developed in preparation for its 2011 rollout. Dassault is the first business jet manufacturer to develop such a tool. E-maintenance allows an operator to connect to Dassault's Technical Center which can then remotely access the airplane's Central Maintenance Computer (CMC) through the onboard laptop to troubleshoot, diagnose and expedite solutions on maintenance issues.

Real-time troubleshooting with E-maintenance includes the ability to order necessary parts and plan their delivery to the aircraft's location, reducing and in some cases preventing AOG situations.

"With instant access to what is effectively a collaborative network, all Dassault resources will be one click away from any operator equipped with a laptop, regardless of their aircraft's geographic location," said Dassault Aviation's Director of Technical Support, Cyril Mac Garry.

Full integration of the new technology will in-effect create a collaborative network between Dassault's Technical Center, Service Center Network, Field Representatives, Spares organization and key Dassault partners. While rollout will occur in stages, the basic service is planned to be available for new Falcon aircraft in early 2011 and for in-service Falcons by mid 2011.

Spares High-Volume Discount Program Expands

Most recently, Dassault Falcon Spares introduced a new high-volume discount program that offers an opportunity for an even broader range of operators to save money by dramatically reducing minimum spending requirements. The spending threshold was lowered from $175,000 to $50,000 which qualified an additional 125 operators to participate in the program. Based on historical and empirical data, Falcon projects more and more operators to qualify each calendar year going forward.

FlightSafety International Takes Maintenance Training to New Levels

Maintenance technician training at FlightSafety International goes far beyond basic technical instruction. FlightSafety courses emphasize safety, dispatch reliability and professional development, resulting in ever higher levels of technician achievement.

"All FlightSafety technician training is developed in close concert with aircraft manufacturers," says Mike Lee, director of maintenance training business development for FlightSafety."They want the safest operation and the highest possible dispatch reliability for their aircraft. We obtain airframe and maintenance data directly from the manufacturers, and they audit our courses to ensure that the information is accurately presented and up to date."

FlightSafety offers maintenance training on a broad range of both fixed-wing aircraft and helicopters, including the upcoming Sikorsky S-76D.

In-Depth Practical Training

FlightSafety's close working relationship with Gulfstream, Cessna and Hawker Beechcraft led to the development of advanced type-specific maintenance training for select aircraft by those manufacturers. The company worked with Gulfstream to jointly develop Total Technical Training, with Hawker Beechcraft to create MXPro training and with Cessna to design MX Advantage training.

All three programs are unique to the manufacturer and the aircraft type, but share important features. All employ instructors drawn from among the OEMs' most capable maintenance experts to complement FlightSafety's own highly experienced instructors. The three programs place substantial emphasis on practical, EASA-qualified, hands-on training to ensure deep familiarity with systems and potential trouble-spots. And each manufacturer makes whole aircraft available to give technicians and instructors complete and accurate context for advanced learning.

New Era in P&WC Training

A recent agreement with Pratt & Whitney Canada opens up FlightSafety's global network of Learning Centers and technology-based training to technicians maintaining P&WC engines. FlightSafety's integrated MATRIX training technology, as well as full-scale systems trainers, major component cutaways, working models, maintenance task simulators and a large variety of test equipment add new depth to the courses, helping to increase understanding of engine systems and their operation.

The agreement means P&WC Customers will continue to enjoy the world-class training they're accustomed to, but with expanded locations and schedules. Training can be scheduled at various FlightSafety Learning Centers worldwide, or Customers can arrange for training at their own location. Under a new agreement with Sikorsky Aerospace Services, P&WC engine training will be available at Sikorsky Helitech in Brisbane, Australia.

Training to Excel

Recognizing that simply maintaining your skills limits your possibilities, FlightSafety worked with Global Jet Services to develop a series of professional development courses that emphasize human factors in aviation maintenance.

These programs are based on the understanding that customer service, business operations, personnel management and government regulations are everyday considerations in today's increasingly demanding maintenance sector.

Masters of the Profession

The innovative and prestigious Master Technician program is a prime example of FlightSafety training that advances technician skills and value while improving the flight department bottom line.

The five-step program, now available for most aircraft models, results in a highly qualified, efficient and self-motivated technician who is capable not only of ensuring safe operation but of increasing dispatch reliability.

Master Technician training also is available in several specialized sequences: avionics; career-boosting Management Endorsement; and, coming soon, engine maintenance.

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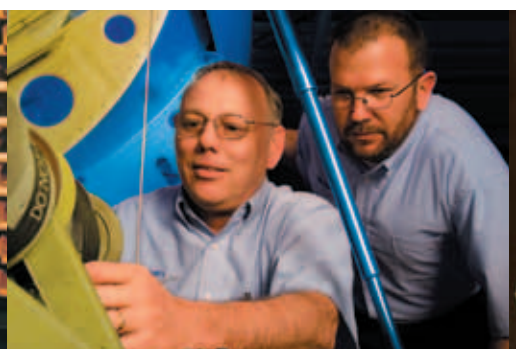

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Proven success in providing quality, cost effective product solutions, and extensive industry experience, is why HARCO has ,such a strong industry reputation and works alongside the world's leading Aerospace engineering and manufacturing companies.

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5. Commitment to Customer service and Support.
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As well as:

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- Field Support

HARCO offers harness and temperature sensor repair and replacement services for V2500, PW4000, PW2000, PT6, CF6-80C2, CFM56-3, JTD9D, JT8D and several other powerplants as well as airframe harnesses for Boeing 777 and others. If we don't have a repair solution our team will work with your team to develop cost effect, high reliable solutions while maintaining OEM quality and reliability.

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Our work... flies with you

Iberia Maintenance & Engineering is one of the greatest companies on MRO Services with an extensive experience on Iberia fleet and third party.

Our 4.000 experienced technicians and engineers, our competitive turn times, our knowledge and our personalized solutions for each workscope provide a recommendable MRO source based in customized maintenance programs according to your specific needs.

Iberia main facilities are located at Madrid-Barajas Airport. The extension of the maintenance complex is more than 220.000m^2, sited in two industrial areas on both sides of the airport.
The facilities are made up of:

- Seven hangars and general workshops with an automated wheel and brakes facility, sheet metal installations, composites, structural damages, galleys, interiors, painting, labelling and marking works, etc.
- Engine, engine associated accessories, APUs and thrust reverses shops with one engine test cell (120.000 Lb. thrust).
- Avionics and components shop
- Training school.

Our AOG services provides the most effective and flexible support on emergency services.

7 days / 24 hours AOG SERVICES

The engine repair center will assist you in the design of customized services to suit your specific requirements. Shops with specialized personnel and components equipment are available to perform the inspections, repair and test for more than 70.000 instruments, accessories, electronics, radio and electric components repaired annually.

Iberia Maintenance offers a wide range of aircraft, engine and component services on:

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CFM56-5A1/-5B/-5C4	A319, A320, A321
CFM56-7x	A310
CF34-3A1/-3B1	B757
JT8D-217/-219	B767
PEGASUS MK 150/-152/-157	B707
APUs	MD80´s
GTCP85-98DHF	C-130
GTPC36-300	P3 ORION
131-91	FALCON

Originally aimed at the civil maintenance market, Iberia Maintenance services have since been extended into the military arena, partly because the Spanish Army Forces need widen maintenance and operational solutions.

Full Support Services

Iberia Maintenance can also provide additional services including engineering for all maintenance areas, computerized systems, metrology, maintenance personnel training, NDT services, inventory management and exchange.

Iberia Maintenance position in Spain gives its customers a strategic situation in Europe as well as a low cost and timely alternative.

Put your fleet in our hands... the perfect place where our technicians and professionals can apply cutting-edge technology so **our work... flies with you.**

FOR FURTHER INFORMATION, PLEASE CONTACT:
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Interturbine Aviation Logistics GmbH

Interturbine Aviation Logistics GmbH is recognized around the world as an approved supplier of 'CES' materials such as standard hardware, raw and semi-finished materials, consumables, chemicals and composites to the aerospace industry, MROs and airlines, consolidating more than 500,000 part numbers / specifications from over 3,000 sources.

The innovative material service concept provides a ONE STOP SOURCE for immediate supply on call; supplying aerospace manufacturers, maintenance centers, airlines and high-tech industries alike.

AgustaWestland, Airbus, ATR, Dornier, Embraer, Eurocopter, Pilatus and Superjet have appointed Interturbine as their approved fleet support distributor due to Interturbine's highly committed staff, fast responses, global presence and worldwide material handling capability.

The international supply network - headquartered in Germany - includes distribution centers, contact offices and representations in France, UK, Czech Republic, Hungary, Turkey, Russia, USA, Canada, Mexico, Brazil, United Arab Emirates, P.R. China, Japan, Singapore, India, Australia and South Africa ensuring a quick service for fastest material availability.

Interturbine Aviation Logistics is committed to provide superior value-added services. Service means prompt response to customer inquiries, enhanced computerized inventory and data systems, 24-hour AOG service and timely delivery according to IATA shipping norms and SPEC 2000 requirements. Interturbine also supplies customized repair parts / products, i.e. cut to length, as the company has its own FAA/EASA-21G approved production facility in-house.

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Inventory Locator Service,® LLC (ILS) is a global leader in providing supply chain solutions to the aviation and defense industries. Over the last 30 years, ILS has built the world's largest and most active aviation and defense parts marketplace, ILSmart. This marketplace offers an array of services that allow companies to promote their business to key players in their industries, make and receive bids on merchandise, search thousands of supplier inventories around the world in seconds, and get information on prospective buyers/sellers.

The ILS MRO database lets buyers search a worldwide community of aviation suppliers and see the average cost to overhaul, repair, bench check and exchange items. Repair shops can market the services they provide to ILS customers who search the MRO database for over 81,000 items a month. Competitively-priced services can be found with the click of a button, and MRO service providers can be visible to a much larger market – allowing more local repair stations to serve a world-wide clientele. You can also contact suppliers directly using our easy-to-use online RFQ system.

But the marketplace is only part of the story. ILS offers a rich set of solutions that enable clients to manage their internal inventory and repair processes, auction off surplus inventory, company profiles, send message broadcasts, retrieve supply and demand information report, research defense logistics data, create personalized electronic catalogs or websites, and seamlessly integrate internal business processes with the ILS marketplace.

ILS also offers market intelligence reports that provide in-depth supply and demand statistics, and pricing information for individual parts all the way up to the complete component level. Six different types of standard reports are available, or a company can choose to receive a custom report, and the information in all reports is fully exportable for greater ease of use.

Visit www.ILSmart.com, or call 1-901-794-5000 for more information on ILS.

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Division of SPANCO, Inc.

Rigid Lifelines™, a division of the industry leading material handling company, Spanco, Inc., engineers and manufactures overhead fall protection systems that utilize enclosed steel and aluminum track with a rolling trolley. Rigid Lifelines provides a ground breaking alternative to wire rope fall protection systems and its solutions provide decreased fall distance through their rigid design that eliminates deflection during a fall event. Rigid Lifelines manufactures several types of horizontal fall arrest systems that are used in the aircraft industry, most notably, the traveling bridge system.

Traveling Bridge systems are designed to be mounted to the ceiling of large maintenance hangars and aircraft production facilities. These systems are unique to the aircraft industry and perfectly accommodate hangars that house a variety of aircraft with varying wing and stabilizer heights, and changing positions. Each system is made up of two runways on which one or more bridges traverse. The bridge has a rolling trolley that provides an easy attachment point for the safety lanyard. The combination of the ergonomic movement of the bridge on the runways and the trolley on the bridge provides for a dual axis of movement. This means unrestrained ease of use for the worker and total coverage under the system. It also translates into the attachment point remaining centered over the worker's head at all times, which is something not possible with wire rope or I-beam systems. Due to this feature, the traveling bridge system eliminates the possibility of a swing fall, an event that occurs after the user has walked away from their attachment point and fallen. When the user's lanyard deploys to arrest the freefall, the user swings back to the attachment point. The greater the distance the user travels during the swing fall, the more speed they gather. This speed translates into an impact that can result in injury, costly damage to the aircraft, or even death.

To learn more about Rigid Lifelines Traveling Bridge systems and how they can protect your workers, please visit www.rigidlifelines.com.

Need Aerospace Coatings? ASK Sherwin-Williams

Aviation coatings specifiers and painters ASK for Sherwin-Williams Aerospace to provide quality coating systems and technical support to the global commercial, military, general and business aviation markets. Sherwin-Williams is an industry leader in innovation and technology solutions with its certified products, top-rated service and knowledgeable team of field technicians.

For more than 80 years professionals have ASKed for the Sherwin-Williams Aerospace full line of topcoats, surface prep and interior coatings products.

The company has extensive experience providing coatings solutions for the aviation industry's thriving MRO segment – a long-standing business for the company.

Today, the company introduces its latest innovation: the SKYscapes® basecoat-clearcoat polyurethane aerospace paint system that saves time and money - imagine being able to cut as much as 30% from your painting process time - and eliminating most bake cycles. It truly provides Exceptional Appearance from Topcoat to Bottom Line™.

Whether it's new construction or a recoat, a single-owner or commercial-fleet operation, Sherwin-Williams provides the quality product and proven expertise to make every application last. The durable quality and enduring beauty of its products make them ideal for aircraft that travel the globe.

SR Technics at a glance

Introducing SR Technics

SR Technics is a leading global technical solutions provider for airlines, backed by 80 years of operational experience. We deliver an extensive array of integrated MRO solutions for airframes, engines and components, along with engineering services, technical management, and training.

As part of a strong and growing international MRO network, we build long-term partnerships with a diversified global customer base that includes flagship and low-cost carriers, aircraft leasing companies, and original equipment manufacturers.

Through our partner company Sanad, we offer a wide range of financing solutions, including leasing options for components and spare engines.

Our services

We specialize in providing technical services and solutions for Airbus and Boeing aircraft (including the Airbus A320 family, A330, A340, and Boeing 737, 747 and 767), as well as PW4000 and CFM56 engines.

Our broad product and service portfolio extends from a wide range of single services for aircraft, components and engines, through to full support solutions based on a combination of these services, all the way to the complete outsourcing of all technical services and training requirements. These integrated solutions, backed up by comprehensive engineering knowledge, allow our customers to entrust SR Technics with the entire technical management of their fleets, thus freeing them to concentrate on their core business.

Your benefits in brief

- Commitment to highest quality standards
- Uncompromising dedication to safety
- Comprehensive product and service portfolio
- Highly skilled, reliable and efficient workforce

International presence

Headquartered at Zurich Airport in Switzerland, SR Technics has operations in Cork, London, Madrid, Malta and Palma. Our extensive network of field stations both within and beyond Europe provides full line maintenance services for our customers' day-to-day flight operations. In addition to a sales office at Zurich, we also have sales offices in Abu Dhabi, Fort Lauderdale / Florida, Hong Kong, Mumbai and Shanghai.

Committed to growth

Our growth plans for the future include further diversification of our customer base and continued expansion into the fast-growing aviation markets of Asia-Pacific and North America. SR Technics pursues a multi-track strategy of pushing organic growth while at the same time seeking suitable acquisitions, joint ventures and other partnership opportunities in order to develop the business and serve our customers better.

A strong partner

SR Technics is majority-owned by Mubadala Development Company. Headed by Group Chief Executive Officer James Stewart, the company has a workforce of 3,500 employees and generated total operating revenues of CHF 1.1 billion in 2010.

SR Technics carries out over 1,000 checks and modifications each year, and has around 500 customers worldwide. Our key customers include Swiss International Airlines, Air Berlin, easyJet, Etihad Airways and Singapore Airlines.

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SR Technics

GUEST OPINION COLUMN

LEARN, EARN, RETURN - PROFESSIONALISM

BY DALE FORNTON

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.

In Oshkosh at the General Aviation Awards luncheon I was honored to have Hal Shevers, founder of Sporty's Pilot Shop, at my table. In our discussions at the table Hal stated he was always taught to "learn, earn, and return." He went on to explain in more detail what he meant. And it is a great beginning to describing being a professional and having professionalism.

Professional: 1 a: characteristic of a profession b: engaged in one of the learned professions c (1): characterized by or conforming to the technical or ethical standards of a profession (2): exhibiting a courteous, conscientious, and generally businesslike manner in the workplace

2 a: participating for gain or livelihood in an activity or field of endeavor often engaged in by amateurs b: having a particular profession as a permanent career c: engaged in by persons receiving FINANCIAL return

Professionalism 1: the CONDUCT, aims, or qualities that characterize or mark a PROFESSION or a PROFESSIONAL person

As a new A&P you have learned. Does that make you a professional? You have spent 1900 hours or more just to take and pass 3 written tests, 3 Oral Exams and 3 practical (hands on) exams. Your counterpart at the controls of the aircraft took about 250 hours and two each, written, oral, and practical exams to start their career as a commercial pilot. You can start now with thirty times that! Others who have earned bachelor degrees only spent around 1700 hours to get the degree and have not passed any ultimate final exams. You are now a part of the only maintenance profession certified by the federal government!

Is this education the last knowledge you have gained in your profession? No, some may go on to choose to get their inspection authorization in a couple of years. All need to study maintenance manuals, FAR's, AD's and other common documents found in the work environment. Some will go to aircraft, engine, or system specific training classes. Does all of this learning make you a professional? No, it's just a part of being a professional.

Many of you have flown on the airlines and some have had major surgery. How do these two events compare? One surgeon working on one person can make no mistakes. He knows he cannot, because he is a professional. One technician installing an outflow valve, 200 passengers and crew flying on the aircraft. The technician knows if the aircraft depressurizes at 40,000 feet it may end in catastrophe. But he knows he cannot make a mistake. Because he is a professional at what he does. Both the surgeon and the technician are confident, competent and knowledgeable in what the do, they have to be. The comparison ends there. As one gets paid handsomely the other is rewarded mainly by his love of aviation. The aircraft technician has always done it for the accomplishment not the glory or the money. For the opportunity to be around something sleek, fast, complicated and powerful. A field where you are not only supervised, but also regulated by the government and #1, held to a personal responsibility for people's lives. Does the competence, ethical structure and pay for a job well done make you a professional? No, just another important part of being a professional.

As you advance in your career others are watching you. They supervised you to find out if you really knew what your certificate says you know. And what your certificate says you know is simple. You have the knowledge to learn.

Throughout your career your development is observed. Your personal and professional conduct, morals and ethics are now being scrutinized. Aviation maintenance has no place for inappropriate behavior on the job. Lying is something that is not tolerated. Cutting corners will not get you far for long. Admitting mistakes, lack of knowledge or that you need help will go much farther in the long run. Your conduct, work methods, performance, character and standards are now becoming a part of your resume. Do these make you a professional? No, once again it's only a part of the whole.

Other factors will enter in as well during your career. Human Factors! Stress from work and life events; Fatigue - physical and mental; Communication - verbal and non verbal; Distractions; Lack of resources; Lack of knowledge; Lack of situational awareness; Pressure of job performance. Learning about and remembering how they affect you and others will be another important part of your career and job. Again, only part of the whole is human factors and your personality type making you a professional.

Returning or giving back is the final piece of being a professional. It involves commitment, volunteerism, and mentoring. There are many ways to be involved as a professional AMT. Become a FAA Safety Team representative, get involved in career days at a local school, help to mentor youth in an Aviation Explorer Post or Civil Air Patrol Squadron. You can support PAMA as a member as well and perhaps form a PAMA chapter. Donate to a scholarship fund through our foundation to help others become a part of our industry.

Learn, earn and return. These all make you a professional. AM

GETTING UNGROUNDED ANYWHERE

In this roundtable, *Aviation Maintenance* asks several industry experts about the remote business jet support they provide.

By Mark Robins

When aircraft are grounded due to unscheduled maintenance, an unforeseen event or a lack of inventory every minute counts to minimize revenue loss. This situation is only worsened when it happens in remote locations. *Aviation Maintenance* magazine asked several industry experts how they get planes back flying again.

How do your mobile maintenance units situated around the world operate and go to wherever an aircraft needs maintenance?

Laura Schreibeis, director of customer support business and general aviation, GE Aviation: GE Aviation has mobile maintenance teams around the world to support the types of engines in the region. The teams have robust quality processes, including training, certification, OEM material, OEM tooling, excellent customer support and established resources to enable quick departure. GE Aviation also has a comprehensive software program that provides visibility to tools, parts and trained technicians for each workscope and the current availability of these assets on a daily basis.

Jeff Miller, vice president of communications at Gulfstream: The Gulfstream Product Support Network includes more than 40 field service representatives worldwide, who respond to the maintenance needs of customers. Gulfstream FSRs are located throughout the U.S. and internationally in places such as Brazil, China, England, Hong Kong, India and Russia.

At its sites across the United States, Gulfstream has several mobile support vehicles available to support customers who are faced with an aircraft on ground (AOG) situation. The equipment on these vans and trucks varies, but they can include aircraft jacks, an air compressor, a toolbox and consumables. Some vehicles feature a laptop computer, wireless connectivity and a Global Positioning System (GPS), which ensure quick arrival to an aircraft, even in remote areas. These vehicles provide the resources necessary for technicians to perform or support maintenance services, including aircraft jacking, engine changes, troubleshooting and repairs. The vehicles can also transport a wide range of replacement parts.

Outside of North American and the Caribbean, Gulfstream's mobile maintenance resources include the relatively new Gulfstream FAST (Field and Airborne Support Team). These dedicated groups of "super engineers" will ultimately combine maintenance expertise with the resources of the company's APS unit and its on-the-road mobile support vehicles to create fast-moving, responsive mobile repair teams.

Gulfstream FAST members can be dispatched by airplane, train, automobile or van to tackle maintenance issues. The first FAST is based in Europe, with two maintenance engineers in Geneva, Switzerland, one in Altenrhein, Switzerland, and one in Greece. The mobile team is available 24 hours a day, seven days a week to respond to maintenance requests in the field. Each of the four Europe-based engineers is type-rated on multiple Gulfstream aircraft models.

Gulfstream also has technicians/engineers based at its Luton, England, service center available for AOG support. Gulfstream can ship parts in internationally with its APS aircraft, delivery vehicles based in Luton or Madrid, commercial airlines and through such courier companies as FedEx.

Lanny Schindelmeiser, director of customer response team, Bombardier Business Aircraft: Customers call into our 24/7 CRC (Customer Response Center) and together we assess the situation and if required, dispatch one of our mobile response teams (MRTs).

Allen McReynolds, director of operations, Hawker Beechcraft Services: Our mobile technical support teams are based geographically where the largest concentration of the fleet is based. This program is expanding to add geographical regions. Additionally, we utilize aircraft to respond where a specific situation warrants the added speed and flexibility of an aircraft.

Rick Pataky, general manager and director of maintenance, Rolls-Royce On-Wing Care Services: Rolls-Royce On-Wing Care is a global in-field specialist maintenance support organization that provides on-wing, of-wing and hospital level shop services. Instead of having individual maintenance units located globally, On-Wing Care has invested in building a fully mobile network of technicians that can be deployed quickly around the globe in order to maximize response times for our customers. In addition to our technician network, On-Wing Care currently has eight repair facilities strategically located around the world that provide off-wing services. On-Wing Care in Indianapolis also has a 25,000 sq ft hangar and shop that allows them to provide full service aircraft maintenance.

Jim Testin, managing director of AOG Aircraft Services, Boeing Commercial Airplanes: Within the Boeing fleet management operation, our AOG team is responsible for rapid response to Boeing. Our teams are based in Seattle and are deployed to react swiftly to any customer need, including an aircraft-disabling incident. In other cases where recovery is not necessary, our teams – which include expert advisors, engineers, and mechanics – often provide technical support (onsite or remotely) to determine what needs to be done and get the process moving forward, including identifying, ordering, and tracking parts and providing test equipment and specialized tooling.

How frequently do they respond and how fast can they respond when needed?

Schreibeis: GE has a dedicated mobile repair teams for various products that responds to customers and dispatches on a regular basis every day, 24/7. Depending on the location, customer timing needs and workscope, a maintenance team can be at a customer location within a few hours to a day or two.

Miller: In the past 12 months, Gulfstream APS has completed more than 350 flights in just North America and the Caribbean. Response speed varies, but the response can be before an aircraft lands with PlaneConnect, the air-to-ground maintenance data link Gulfstream introduced in 2007.

Schindelmeiser: Our MRT members are located around the world giving us the ability to dispatch quickly. Our International MRTs have a couple of missions a week. Our North American MRTs dispatch more frequently. We can normally commit to a mission within 4 hours (pending visas and customs).

McReynolds: Our teams are continuously busy. Response is nearly immediate. We have a 24/7 dispatch center that receives calls and web requests, and will immediately begin the process of deploying the appropriate logistics for support.

Pataky: Since 2005, On-Wing Care has supported over 9,000 tasks and mitigated need of some 300 unplanned engine removals/shop visits through services we have developed and delivered. Last year, we responded to over 3,000 service requests in seven countries. On-Wing Care is designed to work around operator's critical schedules. The customer response process commences immediately upon receipt of customer work scope. A dedicated team of maintenance operations controllers monitor incoming customer work requests 24 hours a day, seven days a week, 365 days a year. Maintenance and resource planning commence contingent upon customer's timeframe requirement.

> **Our teams are continuously busy. Response is nearly immediate.**
>
> Allen McReynolds, director of operations, Hawker Beechcraft Services

Testin: The teams provide support to both AOG requirements as well as on-site technical support requirements as requested by customers. Overall, 75-95 responses are logged on average annually, of which 15-20 would typically be AOG requirements. A Boeing team can be enroute in as little as four hours if visas are not required or are in place already. This depends on the laws in place at the destination.

What are the most common types of maintenance support issues they attend to?

Schreibeis: Common worskcopes are trouble shooting engines, fan blade remove and replacement due to foreign object damage or vibration and oil leaks. The teams can perform module swaps on wing if needed, but this is not the most common workscope.

McReynolds: AOG response is the most common. We are expanding our capabilities to include scheduled work, but today the current teams stay busy with AOG requests.

Schindelmeiser: The change-out of line replaceable units in AOG situations.

Pataky: Services offered range from boroscope inspections to engine removal/ installations, to more specialist work scopes such as gearbox changes and on-wing compressor blade boroblending. In addition, we also have extensive experience completing non-standard tasks, such as foreign object retrieval from a gas path, where the customer may not have the correct equipment or personnel experience.

Testin: By far the most common need is to address structural issues that are beyond the scope of the customer to repair.

Repairs like this 10 x 15-inch puncture of a pressure dome can be handled via a remote maintenance team.

This support team repair technician works on a Challenger aircraft. GE Aviation Image

Do you use authorized service providers, i.e. independent maintenance facilities, approved by the manufacturer to work for your aircraft?

Schreibeis: To meet the various customer needs, GE Aviation offers its own service support as well as works with authorized service providers when/where appropriate.

Miller: Gulfstream has a combined 22 authorized warranty repair and warranty line service facilities. This list includes facilities operated by sister company Jet Aviation in Switzerland, United Arab Emirates, Germany, Singapore, Russia, France and Brazil, as well as Corjet Maintenance Europe in Madrid, Metrojet in Hong Kong, ExecuJet in Australia, South Africa and UAE, and Airworks India in Mumbai.

Schindelmeiser: Bombardier Customers benefit from an extensive network of Authorized Service facilities (ASFs). We currently have 49 business aircraft ASFs located around the world and we continue to grow

McReynolds: Yes. We have tremendously reduced the number of authorized service centers in the last few years and therefore have an increasing need for our teams to be regionally available to respond to our customers in their time of need, hence the success of the Mobile Support Teams.

Pataky: On-Wing Care currently utilizes an independent non-destructive testing provider that offers global support with rapid response times.

Testin: Not normally, for this type of service, all participants are Boeing employees.

Is there a specific example or success story of a remote location where you had to travel to get your aircraft back in the air?

Schreibeis: GE Aviation's mobile maintenance team travels to remote locations worldwide on a regular basis. To ensure success, the team assumes we are going to remote location and take all the anticipated tools, parts and qualified personnel with us to ensure the job can be completed with no surprises and no need for additional material. We utilized Lean Six Sigma skills to analyze our past job needs for parts and tools and have developed comprehensive "kits" for particular workscopes.

Miller: In the summer of 2010, the Gulfstream facility in Luton, England, received a call from a GIV customer stranded in Cape Verde, an island in the central Atlantic Ocean. The problem? A shattered windshield. With no scheduled airline service to Cape Verde, Luton's operations manager had to arrange for a chartered aircraft to get two technicians/engineers, a new windshield and tooling to Cape Verde.

Schindelmeiser: During the 2010 World Cup we pre-positioned several MRTs in Africa. When a customer experienced hanger rash we were able to respond quickly with technicians that are experts on Bombardier aircraft. The aircraft was repaired and the principle's schedule was not impacted. It is our policy to pre-position MRTs ahead of large world events, including next summer's Olympic Games in London.

McReynolds: Every response has resulted in a success story. Most recently, we assisted an aircraft at an airport away from his base where an electrical event had occurred. Due to the electrical failure, harnesses were ruined and significant access and replacement was required to repair the damage – including an engine removal. Our team was immediately dispatched, and with the onboard crane, were able to remove the engine, replace the harnesses and reinstall all at a remote location. A tremendous response by the Mobile Team while allowing the customer to receive OEM support and also get warranty credits where applicable. Where else can you get warranty credits on an AOG event away from base?

Pataky: In 2010, a two personnel On-Wing Care team responded to an AOG request in Japan. Knowing the customer had a very tight flight schedule, our technicians were able to deploy immediately and worked diligently to return the aircraft back in to operation in just over half the time projected - two days earlier than originally planned.

As you provide support to customers overseas and remote locations, what are some of the major obstacles you encounter such as language barriers, currency exchange and part replacement availability?

Miller: Obstacles include getting visas to certain countries on short notice and the red tape that goes along with shipping parts to certain countries. With the growth of its fleet internationally, Gulfstream has recruited and hired more bilingual employees in its Product Support organization, including those that speak Cantonese, Mandarin, Arabic, Hindi, Russian, Portuguese, French, German and Spanish. Several of Gulfstream's international FSRs are bilingual or have working knowledge of the major language(s) in the territory they cover. The four men who make up the Gulfstream FAST in Europe are bilingual; more than one person in the group speaks three languages. Gulfstream has more than $1 million in parts inventory strategically located at international gateways, including distribution hubs in Savannah, Ga., Madrid and Hong Kong. Parts are constantly being shipped to different warehouses or distribution centers to handle the anticipated demand.

Schindelmeiser: Our international network of in-country Field Service Representatives (FSRs) speak 12 different languages and are able to translate for our MRTs when required. Currency exchange has not been an issue for us. Bombardier's PartsExpress, PartsExpress Europe and PartsExpress Middle East are able to move parts from our depots located around the world to remote locations quickly.

McReynolds: We have a large worldwide network of field service representatives around the world that are a critical conduit to customers. As they already have established relationships, we are able to partner with our customers in the solution to ensure communication and results are beyond expectation. As an OEM, we utilize our existing and globally established supply chain and logistics network. It allows a seamless means of conducting service with our mobile support teams. We deal with part replacement availability just like we would in any one of our factory owned service centers. The transaction is handled behind the scenes through our large logistics channels to provide parts and expedite service as we would for any AOG or critical demand. This is a key advantage of using the OEM over outside providers.

Schreibeis: Having locations in different regions around the world minimizes our language barriers, but does not eliminate them. All personnel are required to speak English in additional to their native language since English is the official language of aviation and all manuals are written in English. Our team uses credit cards as much as possible and accesses cash at the airport so they are ready to

go when they arrive at the site. The team collects the best technical and trouble shooting information prior to dispatching so we can better anticipate the workscope and the required parts and tooling. As applicable, we will locally purchase or use our extensive network of service centers, overhaul locations and global warehouses to get material to our location as quickly as possible.

> **Our international network of in-country Field Service Representatives (FSRs) speak 12 different languages.**
>
> Lanny Schindelmeiser, director of customer response team, Bombardier Business Aircraft:

Testin: Most concerns involve logistical capabilities and contracting in country for local services. Typically, however, the customer already has provided a preliminary description of the situation, the location, and the damage to the airplane. But until we are on site, we don't have a clear picture of the severity of the incident and what might be affected under the surface. We've been engaged in this business for a long time, so the basic drill is well-documented, but there are always opportunities for surprises.

Boeing has a very effective parts network with distribution centers around the world and a 24-hour Operations Center to help coordinate the shipment of needed parts on an expedited basis. We work with our customers to determine the best method, depending on the sending and receiving location. Depending on the situation, we can arrange shipment or work with the customer to get the parts there as quickly as possible.

Anything else that keeps you ungrounded?

Schreibeis: As travel is becoming more global, GE Aviation is working quickly to further enhance our worldwide capabilities with our own facilities, partners and qualified service centers.

McReynolds: Our mobile technical support is handled through a central dispatch office providing a single point of contact for the customer. With a network of 10 wholly-owned factory service centers, we can provide additional geographical and/or specific talent to respond to any need: small or large. The teams can provide support for any unscheduled item and a host of scheduled events. Additionally, while performing work away from base, we have the ability to file and process claims for relevant items under various OEM support programs (MSP, CASP, HAP, Support Plus, Standard Warranty, etc).

Members of the Bombardier PartsExpress support team celebrate the launch of its leading airborne parts delivery service in Middle East and Asia. Bombardier Image

Schindelmeiser: Bombardier is ready and able to go anywhere in the world to support our fleet.Many remote locations do not have the resources typically seen in North America and Europe. Just as pilot operational planning is secured before an international trip, the same preparations and planning should be conducted in case a maintenance event should arise while accessing these remote locations.

Pataky: Rolls-Royce On-Wing Care in North America holds the Federal Aviation Administration's (FAA) Aviation Maintenance Technician (AMT) Diamond Award in recognition of its outstanding achievement in AMT type training, for the past three consecutive years. Rolls-Royce On-Wing Care Service Center in Indianapolis, in addition to specialist engine maintenance, is able to offer a full-range of support functions for their aircraft operations, including, but not limited to: general aircraft servicing and handling with access to lounge and a full suite of business amenities.

Miller: Gulfstream continues to expand and enhance its product support organization internationally as the fleet grows in Asia, Europe and South America, in particular. This has been a trend the last few years and is expected to continue.

Testin: For business jets, the interiors are designed and installed by third-parties, so when we provide support for a business jet in a remote location, the business jet owner doesn't normally contract with Boeing for cabin issues. For airlines, the original interior was installed by Boeing, so the airline may opt for Boeing for cabin repair as part of the service. AM

INTERNATIONAL

PMA SUMMIT

3-4th Nov 2011, London, UK

Definitive Guide to Using PMA Parts in Airline Maintenance

The international PMA Summit – London, 3-4th November 2011

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- Guaranteeing airworthiness
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- Stock Cost: order quantities, Inventory levels & speed of delivery issues
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- Certification / FAA & EASA approval
- New legislation and guidelines

Confirmed speakers include:

David Linebaugh – snr Principal Engineer, Delta Air Lines

Sarah MacLeod – Executive Director Aeronautical Repair Station Association

Joy Finnegan – Editor-in-chief Aviation Maintenance Magazine

John Goglia – IFA Vice President Americas & Independent Air Safety Consultant

Jason Dickstein – President of the Modification and Replacement Parts Association (MARPA)

Richard Brown – Senior Associate with AeroStrategy

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INTERNATIONAL PMA SUMMIT

3-4th Nov 2011, London, UK

Lufthansa Technik and BA now use PMA parts; benefiting from savings of up to 40% over OEM. The International PMA Summit is the first PMA conference based in Europe. This comprehensive, independent event developed by *Aviation Maintenance Magazine* and *MARPA* is designed to give you a clear insight into the opportunities and benefits of using PMA.

Joy Finnegan

Sarah MacLeod

Jason Dickstein

David Linebaugh

Day 1– November 3, Thursday

OPENING REMARKS FROM MARPA REPRESENTATIVE AND CONFERENCE CHAIRPERSON

KEYNOTE PRESENTATION: THE MYTHS SURROUNDING PMA AND LEASING

Sarah MacLeod will give attendees her often controversial take and knowledge on how prevent the frustrations, hypocrisy and unintended ramifications of entering into leasing agreements without the proper separation of business and regulatory concerns.

Sarah MacLeod, Executive Director, Aeronautical Repair Station Association

PMA YESTERDAY, TODAY…AND TOMORROW

A presentation that provides an overview of the history, current status, size and trends of the PMA market, with projections as to its future. The speaker provides a powerful look at the maturation of PMA creating an overarching context for the entire summit.

Featured Speaker: Larry Schiembob, General Manager at Timken Aftermarket Solutions

PMA – THE ISSUES FOR END-USERS

A detailed discussion among airlines that have implemented the use of PMA. They will discuss the issues they have faced and savings they have made. They will also address the PMA industry with their concerns about pricing structures and exclusivity contracts. All airline maintenance professionals should attend and participate in this lively a discussion, which will set the flight-path for the future of the PMA industry within Europe.

Panel: David Linebaugh, Delta Air Lines, Richard Brown, Aerostrategy, Air France Consulting – speaker TBC

MAINTAINING AND ENHANCING OPERATIONAL SAFETY & AIRWORTHINESS

Speakers discuss how PMA providers and PMA end users can maintain and enhance operational safety of PMA parts. Speakers will be drawn from PMA providers; regulators, notably the Federal Aviation Administration (FAA); the National Transportation Safety Board (NTSB); and the European Aviation Safety Agency (EASA); aviation analysts; and PMA end users (engine and aircraft OEMs; and aircraft operators, lessors and leasing companies).

Panel: Don Arendt, FAA, Tom Post, ADpma, Darren Lovato, DER Technologies, Don Lohin, Axiam

EFFECTIVE INCIDENT MANAGEMENT: USING PROACTIVE SAFETY MANAGEMENT TO IMPROVE SAFETY

Speakers, with the conference chairman as moderator, discuss how PMA providers can protect their reputations, through continued operational safety, proactive prevention and effective incident response. A simultaneously live, online webinar that's will field questions from both the web-based and live summit audience. Actual case studies are examined, with lessons learned.

Sarah MacLeod, Executive Director of the Aeronautical Repair Station Association
David Linebaugh, Delta Airlines
Panel: John Goglia, Pat Markham, David Doll

COCKTAIL RECEPTION – free for all delegates: a chance to network and discuss the issues.

Day 2 – November 4, Friday

NETWORKING BREAKFAST: PMA PROVIDERS AND THEIR CUSTOMERS

This breakfast allows PMA providers and their customers – airlines, OEMs, and other PMA end users – to get together in the same room, to discuss their needs, concerns, challenges, and expectations. Each attendee at the breakfast will be asked to fill out an anonymous multi-question survey that asks them to explain how their counterparts can foster a better business relationship – e.g., what would the airlines like to see from their PMA providers, and vice versa. The survey results will be shared with the entire group, to spark a robust and uninhibited give-and-take. You won't want to miss this rare opportunity for candid dialogue!

NAVIGATING THE REGULATORY MAZE

The latest news on the BASA Agreement and how that agreement will make PMA parts easier to obtain and use internationally. PMA providers, government regulators and an attorney in aviation law discuss the major regulatory and legal issues that are changing the playing field for PMA parts. How will BASA improve airlines and PMA providers' relationships? This session will explain it all.

Panel: Larry Shiembob, Timken, Lee Benson, Able Engineering, Dave Kvasnicka, ACS, Jason Dickstein, MARPA & CAA – speaker TBC

AVOIDING LEASING AGREEMENT LIMITATIONS AND DEBUNKING THE MYTH OF HOW PMA PARTS IMPACT AIRCRAFT VALUATIONS

Speakers include leasing and finance companies, operators, owners, analysts, bankers, and financiers who discuss how PMA parts affect aircraft prices and leasing rates — and how to negotiate a lease that allows PMA usage and at the same time satisfies the lessors.

Phil Seymour, IBA Group.

WHAT AIRLINES NEED FROM THE PMA INDUSTRY

Speakers, moderated by the conference chairperson, discuss how airlines are increasingly adopting PMA parts, and what these air carriers need in return from the PMA industry. Speaker roster comprised of representatives from major and regional air carriers, as well as PMA makers. This discussion is a chance for PMA providers and airlines to exchange views and knowledge and to share their challenges and concerns.

Moderator: Bernie Baldwin, Editor Low Cost & Regional Airlines Magazine, David Linebaugh, snr Principal Engineer, Delta Air Lines

THE UNIQUE CHALLENGE OF HIGH PRESSURE TURBINE BLADES – PMA EXAMPLE

High pressure turbine blades are one of the most technically challenging parts to manufacture due to their intense life cycle environment. Metallurgists et al must guarantee the integrity of base alloys, weld, braze, casting and coating materials metallurgical development in reverse engineered components. Learn the complexities of making HPT blades and why they are as good as or better than what they replace.

Featured Speaker: Rob Church, Director Sales and Marketing, Belac

WHAT THE MRO SECTOR NEEDS FROM THE PMA INDUSTRY

Speakers, moderated by the conference chairperson, discuss how the Maintenance, Repair and Overhaul (MRO) industry has adapted to the increasing prevalence of PMA parts, and what the MRO sector needs from the PMA industry, such as faster parts availability; an integrated global supply chain; easier parts documentation retrieval; etc. Speakers include representatives from the major MRO players, as well as PMA providers.

Don Wilson, ILS, Monty Montgomery, Aerotech Holdings,

CLOSING REMARKS FROM MARPA AND CONFERENCE CHAIRMAN

INTERNATIONAL
PMA SUMMIT
3-4th Nov 2011, London, UK

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GUEST OPINION COLUMN

BY JASON DICKSTEIN

US EXPORT REFORM COULD AID THE GLOBAL MARKET

Aviation is a global market. Everyone says it. But what are we doing about it?

The regulators understand the global nature of aviation. I serve on rulemaking committees in Europe and North America and I have been asked to offer assistance on policy issues in China and Japan. No one is asking for my opinion because of my looks (just look at that picture in the upper corner). They are asking for it because I am tracking the regulations and policies affecting aircraft parts manufacturing, distribution and maintenance over multiple jurisdictions, and they are interested in creating regulatory structures that ensure safety without unnecessarily impeding international commerce.

No one wants to impede international commerce; but for decades the major impediment to international commerce has been U. S. export laws and regulations. The U.S. export law system is confusing. It is overly complicated. Compliance can sometimes require information from manufacturers that some companies refuse to share in order to gain a competitive edge. It is hard to deny that the one thing that the aviation community desperately needs is reform in the U.S. export laws.

Imagine this: you have a CFM56-2B-1 engine. This engine is used for military applications and thus it is controlled under the International Traffic in Arms Regulations (ITARs) for export purposes. Exporting this engine from the United States will nearly always require a license from the U.S. State Department. Similarly, exporting a part that was removed from this engine will also require a license from the U.S. State Department because the parts are subject to ITARs.

Now compare that engine to the CFM56-3B-1 engine. This engine is used on 737 classic aircraft. As such it is a civilian model engine. Despite the tremendous commonality in parts between these two engine models (the fan reflects the major difference between the two engines), exports of the CFM56-3B-1 engine are subject to the jurisdiction of the U.S. Commerce Department's Export Administration Regulations (EARs). The EARs are subject to the oversight of the Commerce Department's Bureau of Industry and Security (BIS). Under BIS regulations (the EARs), exports of the CFM56-3B-1 engine generally will not require a license to most of the major trading partners of the United States. Similarly exporting a part that was removed from this civilian engine will not require an export license from the U.S. government in most cases.

Now here's the interesting feature of the regulations: there are numerous parts in those two engines that are identical. These are known as dual use parts because they have both military and civilian installations. The identical part can be subject to two different export regulations depending on which engine it was removed-from.

If the part is manufactured as a spare part, and has not been installed

and removed from an engine, then it might default to BIS-EAR control under a rule that permits certain dual use parts to be presumed to fall within Commerce Department jurisdiction, but recent cases and interpretations have made it clear that the part must be called-out on the type design drawings. This is a tricky element, because not all parts are called-out directly in the drawings. Particularly where you have assemblies produced under Technical Standard Order Authorizations (TSOAs), the type design drawings may only call out the top-level assembly number. Several manufacturers have been accused of wrong-doing for exporting spares under the BIS-EAR standards, only out find out that the part number itself was not called-out in the drawings (only the higher-level assembly part number was described in the drawings). This sort of "gotcha" can make it impossible for non-manufacturers to know how to comply with the regulations (because of a lack of access to the actual type design drawings).

Aviation is not alone. Many industries have recognized flaws in the U.S. export laws, but for aviation, these export regulation flaws threaten to impede global safety.

The Bush Administration set a goal to double U.S. exports and the Obama Administration has continued with that quest. They have recognized that regulatory reform is necessary - in order to make exporting easier, and to take some of the fear out of exporting. The Obama Administration has set a goal that is known as "the four singles:"

- Single control list
- Single licensing agency
- Single enforcement agency
- Single information technology system for tracking licenses

These are all very ambitious goals, but the U.S. government has already started taking steps toward a single control list.

Single Control List

Right now, some export articles are found on the State Department's list, while others are found on the Commerce Department's list. The long-term goal is to only have one list of controlled items, in order to make it easier to determine compliance strategies. This is a very bold undertaking, which may be too big to ever really accomplish, but the Administration is taking interim steps to help make things easier even before the export control lists are all merged into one.

This summer, the Obama Administration announced plans to move a number of items from the ITAR control lists to the EAR control lists. This is a major change because ITAR-controlled items almost always require a license, while EAR-controlled items usually do not require a license. EAR-controlled aircraft parts can often be exported from the United States under licensing exceptions that are designed to circumvent licensing requirements for certain "typical" aircraft parts transactions (including certain AOG situations).

Another goal is to create an ITAR export list that will be a "positive list." It will list the aircraft parts and items that are controlled under the ITARs for export purposes, and anything that is not on the positive list will NOT be ITAR-controlled. The final version of this list will likely be over one hundred pages long.

The positive list of ITAR-controlled items is an interim step but it is a very important one. It is something that can be done today without a major upheaval in the way that ITAR-controlled items are exported. This positive list will also make it easier to move munitions list items (ITAR-controlled items) to the EARs in order to create a single list of export-controlled items.

These are significant steps to making U.S. export law more friendly to global commerce. AM

TOOL CRIB

New Wright Wrenches: Extra-Wide Jaw Openings, No Extra Weight

A new line of extra-wide opening adjustable wrenches has been introduced by Wright Tool Company. Designed for professionals, Wright's adjustable wrenches feature extra-wide jaw openings that offer 20 percent more capacity without adding weight to the tool. The wrench is designed with a flat nose and thin, tapered head for easier access. Forged from single bars of high quality, U. S. steel, these adjustable wrenches are made in the U. S. and carry a lifetime guarantee against defects in workmanship. Available in three different finishes, satin finish, satin finish with cushion grip, and industrial black, the adjustable wrenches come in a complete range of sizes from 6 to 12 inches, with maximum opening capacities of 15/16 to 1-1/2 inches. The jaw openings open to the maximum allowable by ANSI standards. The satin finish comfort grip adjustable wrenches are designed with a hunter green rubberized grip handle. The wrench handles are 50 percent wider to offer a better grip. The adjustable wrenches are engineered with a channel that leads to the spring-loaded adjustment screw for ease of use. The wrench's knurl is through hardened for greater durability and its spring is stainless steel for added corrosion resistance. Its finish provides excellent wear and corrosion resistance in abrasive environments.
Wright Tool, 800-321-2902, www.wrighttool.com.

ExxonMobil Aviation Lubricants Introduces Mobil AGL

ExxonMobil Aviation Lubricants has added Mobil AGL Synthetic Aviation Gear Lubricant (Mobil AGL) to its product line. The gear oil is especially beneficial to high-performance helicopters operating in extreme conditions. Mobil AGL offers measurably better wear protection for transmissions operating at high temperatures than Type I (MIL-L-7808) and Type II (MIL-L-23699) turbine oils, as well as wear resistance that is critical to military and other helicopters operating under unusual stress, according to the company. Arizona-based MD Helicopters, an aerospace company with products known for speed, strength and high performance, tested Mobil AGL extensively. The company started investigating lubrication improvements for its fleet's transmissions when some operators experienced difficulty reaching a 3,000-hour main transmission overhaul period. "Field evaluation tests on our single-engine product line allowed increasing the overhaul period of main rotor transmissions from 3,000 to 4,000 hours, if the transmission operated exclusively with Mobil AGL," says Scott Hendrickson an MD Helicopters engineer. "The 33 percent increase in time between overhauls (TBO) provides operators with a corresponding decrease in operating costs." MD Helicopters requires the use of Mobil AGL in all current production transmissions and recommends its use in older designs. ExxonMobil Aviation Lubricants, exxonmobilaviationlubes.com.

PRODUCT AND SERVICE SPOTLIGHT

Conductive Antenna Gaskets

AV-DEC is the market leader in pre-cured die cut polyurethane conductive antenna gaskets. With 15 years of on aircraft experience on virtually every aircraft type, they have proven their ability to prevent corrosion. Av-DEC antenna gaskets provide a high degree of environmental protection, while allowing bonding and easy removal, which enables a proven high ROI.We are a technical design and manufacturing company based in Fort Worth, Texas serving customers worldwide. Founded and operated by engineers, Av-DEC is highly focused on corrosion prevention in the aerospace industry. Av-DEC has products that are currently in use solving a wide variety of corrosion problems with Non-Hazardous Polyurethane based products on commercial and military aircraft. Av-DEC

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Certified Wiring Harness Repair Services

Our certified Repair Station provides quick-turn times and cost effective repair services for CFM56-5A/B/C, CFM56-7B, GE90, and CF6-80C engine harnesses, as well as PW4000 QECs. Contact us to learn more about how our wiring harness solutions can benefit your maintenance operations. Co-Operative Industries Aerospace

Nitrogen & Oxygen Service Carts

High quality and very competitively priced Nitrogen & Oxygen Service Carts from Newbow Aerospace. Two-bottle service cart, fully demountable, easy loading & unloading by one person, front mounted steering & parking brake, certified charging panel in cabinet, all hoses provided, tool stowage area, available in easy flat-pack form for reduced freight. Newbow Aerospace

Broken Compilers Are Expensive

Testing the quality of compilers is imperative. A compiler in the field can cause immense problems by producing incorrect code. The consequences of quality defects are far more expensive than the investment in a reliable test suite such as SuperTest. Engineers should never take the quality of compiler tools for granted. SuperTest gives you the confidence that your compiler is up to the task. ACE Associated Compiler Experts bv

TOOL CRIB TOOL CRIB TOOL CRIB TOOL CR

High-Temperature Cabinet Oven From Grieve

The No. 965 High Temp Cabinet Oven is a 1350°F (~733°C) electrically-heated cabinet oven from Grieve, currently being used to heat treat titanium at a customer's facility. Workspace of this unit measures 24"W x 24"D x 24"H. Installed are 30KWs in nickel chrome wire coils, supported by a stainless steel frame to heat the oven, while a 1300CFM, 1-1/2HP alloy recirculating blower provides horizontal airflow to the workload. This Grieve cabinet oven features 11" thick insulated walls, comprising 2" of 1900°F (~1038°C) block and 9" of 10 lb/cf density rockwool insulation, as well as an aluminized steel exterior, Type 304 2B finish stainless steel interior, plus inner and outer door gaskets, with the inner gasket sealing directly against the door plug and the outer gasket sealing directly against the face of the oven for optimum seal integrity. Oven controls on No. 965 include a digital indicating temperature controller, manual reset excess temperature controller with separate contactors, recirculating blower airflow safety switch, 10" diameter circular chart temperature recorder, plus an an SCR power controller and fused disconnect switch. The Grieve CorportationORPORATION, +1-847-546-8225, www.grievecorp.com.

Olympus Introduces Omniscan Mx2 Phased Array Flaw Detector

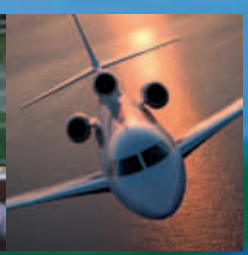
Olympus NDT has introduced the newest version of the OmniScan Series flaw detectors, the OmniScan MX2. This phased array flaw detector features an entirely new design with a large, bright 10.4 inch LCD touch screen that provides simple and fast navigation, enhanced text input functionality, and easy parameter settings. In combination with new software features, high-capacity data storage and fast data transfer, the OmniScan MX2 provides powerful inspection capabilities for manual and automated phased array applications. The OmniScan MX2's touch screen interface with full screen mode has excellent visibility and provides intuitive operation for most common operator functions such as menu selection, zooming, gate selection, cursor movement, and text and value input. Wizards during setup and calibration, a high S-scan and A-scan display refresh rate, and a fast pulse repetition frequency (PRF) make the OmniScan MX2 an efficient inspection tool, according to Olympus. High-speed data transfer can be achieved with an SD card or through USB ports. The OmniScan Phased Array family comes with all software options including Multigroup, Time-of-Flight Diffraction (TOFD) and the new Weld Overlay Wizard software that facilitates the creation of industry standard weld overlays for analysis assistance and volumetric flaw placement. The OmniScan MX2 is a modular instrument that is fully compatible with the thousands of phased array modules already in the field. Its technology platform allows for fast and easy software and phased array module upgrades ranging from to 16:64 to 32.128 configurations. The OmniScan MX2 can be used with a full range of phased array probes, scanners, and accessories. Olympus NDT, +1-781-419-3900, www.olympus-ims.com

Whatever it Takes

Pilot Larry Erd, Falcon 7X Captain, lands at London Luton, with an inboard slat fault alert. He quickly checks the aircraft system and then confirms he is AOG – and his next flight is on the following day.

He calls Dassault's Technical Center in Paris and gets Insy Houang – Customer Service Engineer and an on duty 7X specialist. Together they access the aircraft on-board Central Maintenance Computer to identify the fault code.

Insy coordinates assistance and parts shipment via Eurostar, from Paris-Le Bourget to Luton. Go Team technicians from Dassault's Luton Satellite install a new flight control PCB the next morning and Larry e-mails back later to Dassault Falcon: *"The airplane performs really well and Customer Service is doing an incredible job too."*



GoTeam
Whatever it takes

Falcon GoTeams do whatever-it-takes to turn your AOG into an *Airplane On The Go.*

Learn more at *falconjet.com/Go*

DASSAULT FALCON

WHAT DOES OUTSTANDING DISPATCH RELIABILITY MEAN TO YOUR BUSINESS?

Being ready for departure on time is a challenge airlines face every day. With so many aspects involved, you need a technical partner you can count on. SWISS chose SR Technics as its primary technical partner from the moment it was founded and continues to benefit from customized solutions ranging from aircraft, engine and line maintenance services to integrated component solutions, engineering, and cabin modifications. All consistently delivered with the precision, quality and efficiency that SWISS demands, and which recently helped it win the Airbus Dispatch Reliability Award. You can rely on these same values, together with our comprehensive service portfolio at attractive commercial terms, to support your operations at all times. Talk to us today – and begin a partnership where quality and reliability strengthen your bottom line. www.srtechnics.com

ADDING VALUE TO YOUR BUSINESS

SR Technics