

# AMT

**Aircraft Maintenance Technology**

*Written by aircraft maintenance professionals  
for the professional maintenance team*

*Official publication for AMTSociety*

**January/February 2011**

**Focus on**

# Helicopter Maintenance

**Airframe Technology:**

## **UH-60 Black Hawk**

Army National Guard in Minnesota and Iraq

**page 8**

**Recip Technology:**

## **Schweizer 300CB**

A few basic maintenance tips

**page 14**

**MRO Operations:**

## **AgustaWestland AW139**

Heli-One's tailboom repair program

**page 30**

**Exclusive:**

## **Tom Hendershot**

AMTSociety's Executive Director  
and His Road to the Hall of Fame

**page 26**

**Staying Legal:**

## **Are You Actively Engaged?**

FAA proposes change regarding your  
Inspection Authorization

**page 42**

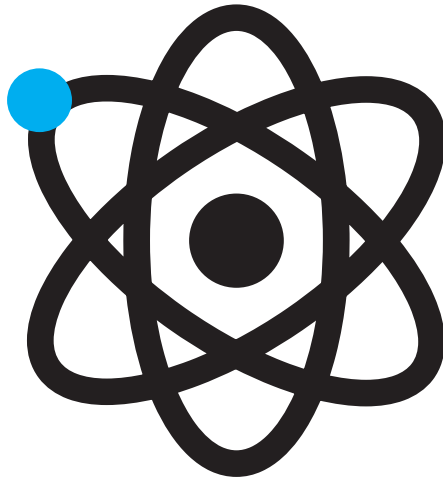
Minnesota National Guard technicians at night accomplishing a PMD check on a Black Hawk in Basra, Iraq. Photo courtesy of Keith Shelstad.

# Power

Power is something that Chromalloy puts back in the hands of our customers. As the world's leading independent provider of regulatory approved, gas-path coatings, repairs and replacement parts, we are a trusted alternative for our customers and healthy competition for the OEMs. It's the power of choice—the power to reduce your costs and extend the life of your gas turbine engines—and it's only from Chromalloy.

**Power = Choice**

Learn more at  
[chromalloy.com/icon](https://chromalloy.com/icon)



**CHROMALLOY**

Coatings / Repairs / Parts

Published By  
Cygnus Business Media  
1233 Janesville Ave., P.O. Box 803,  
Fort Atkinson, WI 53538-0803  
Phone (920) 563-6388 • Fax (920) 563-1699  
For Product Information:  
(920) 563-1762 • Fax (920) 563-1704  
Change of address or subscription information:  
Toll Free: (877) 382-9187 or Local: (847) 559-7598  
Email: circ.amt@omeda.com  
Web: www.amtonline.com

Publisher ..... Jon Jezo  
jjezo@amtonline.com  
Director of Content ..... Nick Sergi  
nsergi@amtonline.com  
Editor ..... Ronald Donner  
rdonner@amtonline.com  
Senior Editor ..... Barb Zuehlke  
bzuehlke@amtonline.com  
Associate Editor ..... Stephen P Prentice  
aerolaw@att.net  
Field Editor ..... Charles Chandler  
cchandler@amtonline.com  
Contributors ..... Stephen M.  
Carbone, John Goglia, John Rahilly, Lanny Reynolds,  
Jim Sparks

**Sales**  
National Accounts Manager ..... Denise Rimmer  
drimmer@amtonline.com  
National Accounts Manager ..... Bennett Davis  
bdavis@amtonline.com  
Classified Advertising Sales ..... Kathleen McNamee  
kathleen.mcnamee@cygnusb2b.com

**Production**  
Graphic Designer ..... Meredith Burger  
meredith.burger@cygnuspub.com  
Production Services Rep ..... Carmen Seeber  
carmen.seeber@cygnuspub.com  
Production Director ..... Steve Swick

**Administration**  
Administrative Assistant ..... Heidi Riedl  
heidi.riedl@cygnusb2b.com

**Circulation**  
Group Circulation Manager ..... Jackie Dandoy  
Circulation Manager ..... Debbie Dumke  
List Rental ..... Elizabeth Jackson  
ejackson@meritdirect.com • (847) 492-1350, Ext. 18

**Cygnus Aviation**  
Executive Vice President ..... Patrick Nadler  
VP Marketing ..... Charla Sheffield  
VP Sales ..... Rick Groth  
VP Content ..... John Infanger

**Cygnus Business Media**  
CEO ..... John French  
CFO ..... Paul Bonaiuto  
EVP Digital ..... Tom Kohn  
VP Manufacturing ..... Tom Martin  
VP Audience Development ..... Julie Nachtigal  
VP Technology ..... Eric Kammerzelt  
SVP Cygnus Expo ..... Rob Brice  
VP Human Resources ..... Ed Wood

**Cygnus Publishing**  
President ..... Mike Martin  
Corporate Production Director ..... Brett Apold

Reprints: To purchase article reprints please contact  
The YGS Group at (717) 505-9701 Ext. 128 or email  
cygnusreprints@theygsgroup.com



**AMT** Aircraft Maintenance Technology  
*Written by aircraft maintenance professionals  
for the professional maintenance team*

**Cover Story**

**The Army National Guard**  
*A Look at the UH-60A Black Hawk and Army National Guard Maintenance in Minnesota and Iraq*

**By Ronald Donner**  
**Page 8**



**Features**

**Exclusive:**  
*Tom Hendershot:  
Hall of Fame career*  
**By Barb Zuehlke**  
**Page 26**

**Recip Technology**  
*Schweizer 300CB: A few  
basic maintenance tips*  
**By Ronald Donner**  
**Page 14**

**Turbine Technology**  
*Chromalloy: Turbine Engine  
Parts Facility Tour*  
**By Ronald Donner**  
**Page 18**

**Avionics Technology**  
*Measuring the Miles*  
**By Jim Sparks**  
**Page 22**

**MRO Operations**  
*Heli-One's AgustaWestland  
AW139 tailboom repair*  
**By Lanny Reynolds**  
**Page 30**

**AMTSociety Mx  
Logs Update**  
**Page 38**

**Industry Outlook**

**Industry Viewpoint**  
*Helicopter Repairs*  
**By John Goglia**  
**Page 35**

**From The FAA**  
*Both Sides Now*  
**By Stephen M. Carbone**  
**Page 36**

**Staying Legal**  
*IA? Are You "Actively  
Engaged"?*  
**By Stephen P. Prentice**  
**Page 42**

**Departments**

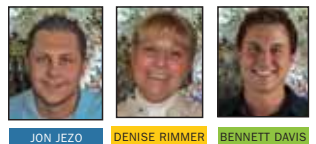
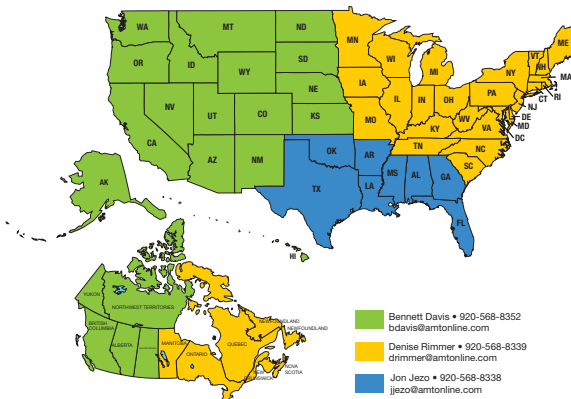
Editor's Viewpoint ..... 4  
Tech Forum ..... 6  
Industry News ..... 44

Classified Advertising... 47  
Publisher Sign-off ..... 50

**Online Exclusive:  
Management Matters**

*Professional Training*  
**By John Rahilly**

**Editorial and Sales**



# Welcome to 2011 and All Things Rotary-Wing



Ron Donner, Editor

In conjunction with the Helicopter International Association's 2011 Heli-Expo being held in Orlando, FL, March 5-8, the January/February issue of *AMT* magazine has a helicopter maintenance theme. Much of the general public and even many people who work in the aviation industry generally are focused on fixed-wing aircraft and are either not familiar with helicopters or just not interested in rotary wing aircraft in general. Yet helicopters serve such a vital and important role each and every day, with operations in civilian, government, and military organizations around the world.

In my youth I spent some limited time maintaining smaller reciprocating engine helicopters and on occasion would get to take a flight in one. It had been awhile since my last involvement with helicopters until it came time to prepare for this issue. What fun I had connecting with this segment of aviation!

In this issue we've compiled several articles relating to helicopter maintenance from several different segments of aviation. I was privileged to get a firsthand look at how the Minnesota Army National Guard accomplishes maintenance on its fleet of Sikorsky Black Hawk helicopters. I want to extend a huge thank you to the men and women soldier technicians for not only assisting with the article but for their service to this country.

In December I visited Heli-One a large helicopter MRO near Vancouver, British Columbia, Canada. Lanny Reynolds contributed an article on one of the company's many maintenance programs, this one relating to the tailboom on the AW139. And finally a small local helicopter flight school shares

some of its maintenance tips and insights into helicopter maintenance. Don't forget about the Heli-Expo; *AMT* will be there experiencing all things rotary-wing.

The 2011 FAA approved Recurrent Training Exam is included in this issue. The exam which is based on *AMT* 2010 articles is good for six hours credit toward the FAA Aviation Maintenance Technicians Awards program or four hours credit toward Inspection Authorization (IA) renewal. Speaking of the IA, Steve Prentice, our legal contributor, talks about the FAA's proposed policy change for application and renewal of IA as it relates to technicians being "actively engaged" in aircraft maintenance. This proposal has created a huge concern for holders of the IA and *AMT* has received much feedback from concerned technicians.

Chromalloy Castings hosted a tour of its new facility in Tampa, FL, and *AMT* was there. This impressive clean-sheet designed facility manufactures turbine engine blades FAA approved under a parts manufacturing approval. You can read more about this high-tech facility and its process focused staff in this issue.

Last but not least the 2011 Cygnus Aviation Expo will be held in Las Vegas, NV, Feb. 23-25, [www.cygnusaviationexpo.com](http://www.cygnusaviationexpo.com). You will be able to attend training events, development sessions, networking opportunities, and see the latest products and services relating to maintenance, airports, ground support equipment, and more. Along with all this, *AMTSociety* promises to host another great Maintenance Skills Competition this year.

*Thanks for reading AMT, Ron*

*Aircraft Maintenance Technology* is published and copyrighted 2011 by Cygnus Business Media, 1233 Janesville Ave., Fort Atkinson, WI 53538.

The material presented in *Aircraft Maintenance Technology* is intended to complement technical information that is currently available from supplier and regulatory sources such as manufacturers and the Federal Aviation Administration. Every effort is made to assure that the information provided is accurate. However, if information presented by *Aircraft Maintenance Technology* is in conflict with supplier and regulatory sources, the latter shall take precedence.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or any information storage or retrieval system, without written permission from the publisher.

Subscription Policy: Individual print subscriptions are available without charge to individuals serving as directors of maintenance, mechanics, technicians, certified inspectors and executive management in the parts and service departments at repair stations, FBOs, corporate flight departments, airlines, fractional operations, government and military in the United States only. Complimentary electronic subscriptions are available to qualified subscribers in or outside of the United States. Please visit [www.amtonline.com](http://www.amtonline.com) and click on "Subscribe." Publisher reserves the right to reject nonqualified subscribers.

A one year subscription for students is \$22.00 per year. All other non-industry related subscribers in the United States may purchase a subscription for \$35.00 per year. Subscriptions to Canada and Mexico are \$50.00 per year, and subscriptions to all other countries are \$75.00 (payable in U.S. funds drawn on U.S. banks). Single issues available (prepaid only) \$10.00 each. Complimentary digital subscriptions are avail-

able online at [www.amtonline.com/subscribe](http://www.amtonline.com/subscribe).

*Aircraft Maintenance Technology* (USPS 004-989; ISSN 1072-3145 print; ISSN 2150-2064 online) is published 10 times annually in January/February, March, April, May, June, July, August, September, October, and November/December. Periodicals postage paid at Fort Atkinson, WI and additional entry offices. POSTMASTER: Please send change of address to *Aircraft Maintenance Technology*, P.O. Box 3257, Northbrook, IL 60065 3257. Printed in the U.S.A.

Canada Post PM40063731. Return Undeliverable Canadian Addresses to: *Aircraft Maintenance Technology*, Station A PO Box 54, Windsor, ON N9A 6J5. Volume 22, No. 2, January/February 2011





## *Performance. On the rise.*



For efficiency. For productivity. For an extensive line of aerial lifts, telehandlers and specialty equipment, look to JLG to take you higher. JLG extends out all over the globe, so wherever you are, we'll lift you up - with far-reaching products, service and support. Take your performance to all new heights. And experience the highest level of confidence in getting there. **Rely on JLG.**

# **JLG**<sup>®</sup>

*Here are a few of the comments AMT has received from readers on the FAA's policy change proposal regarding the definition of "actively engaged."*

## Actively engaged

In no other occupation is there a requirement to be actively engaged, I feel it is wrong to have the requirement on aircraft technicians with an Inspection Authorization and it quite possibly could be challenged in court, when compared to other safety sensitive occupations.

Pilots do not face losing their license and having to retest if they do not maintain a full-time job. Just in case you are wondering the FAA is defining a full-time job (actively engaged) as 2,080 hours per year. If you look at the hours that some flight departments are flying you have to ask: How in the world can a pilot flying 150 hours a year or less be proficient and actively engaged?

You cannot argue that a biannual flight review is the same as a test; I know this because I have had several. Doctors, that we trust with our life, never risk losing their certification based on time in their practice. Neither do nurses, lawyers, medical technicians, or truck drivers. Yet an aircraft technician laid off from his job, changing location, or suffering from an extended illness, can have his IA taken away, and have to retest.

I believe that training or getting recurrent (FAA IA renewal seminars) has been accomplishing the desired results. Just to show how ludicrous this term is, the FAA has granted an exemption for its employees. Maybe the real question should be, should the phrase "actively engaged" be removed completely from the FARs?

— *Tim Begeot, A&P, IA, SEL, ATS*

## IA renewal

I just received my IA renewal letter from the North Florida FSDO 15. It is my understanding that the comment period for

"Actively Engaged" has been extended to Jan. 17. Tampa claims this "Significant" change is now in effect and unless employed full time, one will have to be evaluated with "documentation or evidence" by their ASI for renewal.

— *Tim Begeot*

## Write to us!

We welcome your comments. All letters to the editor are subject to publication and may be edited for brevity and clarity. These letters represent the opinions of the writers and are not necessarily those of AMT magazine.

Write to: **Letters,**  
**AMT, 1233 Janesville**  
**Ave., Fort Atkinson, WI**  
**53538 USA**

or email: [editor@amtonline.com](mailto:editor@amtonline.com)

Please include your full name and mailing address. Name will be withheld from publication if requested.

*Ed Hall from the FAA says the policy change is still a proposal (as of press time), and it is extremely remote that any changes would be enforced this year.*

## Won't make aviation safer

This new rule won't make aviation safer. It is just another way the little guy gets pushed aside. In this country where unemployment is out of control how can the FAA now see fit to target people who have worked hard to achieve the highest mechanic rating there is.

Also exempting FAA employees who have their IA ratings is a real smack in the face. Just how do these people stay actively engaged? I think the FAA needs to rescind this new attack on mechanics as I do not feel this will make aviation any safer. If the FAA thinks it will, then let them prove it.

— *Roger Pries*

## Inconsistency will result

Let us not fool ourselves in thinking the "streamlined" ASI

requirements for IA renewal will result in anything other than a nightmare for both the general aviation community and the poor IA himself.

Inconsistent interpretations of "active" between one FAA office and another will most certainly result in personal and subjective elements at renewal time. We don't need added problems like these.

I've made a career out of aviation since I was 16 (currently crew-member at major airline) and spent much time, money, and effort obtaining licenses and degrees in both the pilot and maintenance side and have utilized both during varying career paths.

Many individuals, such as myself, continue to devote their support (regardless of their *current* status within the industry) to the maintenance side of aviation. There aren't many left who choose to put up with the bureaucratic headaches to continue this effort and those who do should be valued and their dedication should be supported. Our attention to detail, knowledge of the regulatory process, and compliance with this process should result in recognition by the agency, not suspicion. We pride ourselves in serving as an "arm" of the very agency that is proposing to eliminate us. I would emphasize our proficiency has no tie to the "full time" or "part-time" interpretation being proposed and should only be tied to our knowledge and performance.

— *Bruce Quinby*

## Correction:

In the September Tools & Equipment Supplement to *AMT*, we incorrectly stated the web site for Aerotechnics Inc. in the article titled NDT Certification for Technicians. The correct web site is [www.atindt.com](http://www.atindt.com). *AMT* apologizes for any inconvenience this may have created.

# How to **triple** the lifespan of your mouse.



## The all-new **aviall.com**. Simpler. Faster. And takes fewer clicks to place your order!

### **Intelligent Search**

Look for your part using simple search terms such as a part number, NSN, description, or partial description. The search function is more accurate and faster than ever before. Once you find the part you want, simply click the checkbox and hit the Add to Cart button.

### **Multi-Line Order**

Also called "MO", the Multi-Line Order capability allows you to copy and paste your MS Excel spreadsheet with part numbers and quantities right into the site. MO is fast with accurate sorting and a clean presentation of results.

### **New E-mail Notifications**

Aviall.com now offers e-mail notifications at the point we receive your order, once your order has shipped and when your invoice has been generated. You can even store your e-mail address simply by clicking the check box. You'll know where your order is all the way through the process.

### **Save Shopping Carts**

If you build a Shopping Cart and plan to buy those parts again, click Save as Template. Save as many templates as you want. Then next time you need to place that order, simply drag and drop the template into the "drop zone" and hit the load button.

**aviall.com**

**North America Sales and AOG: 1-800-AVIALL-1**  
**International Sales: +1-972-586-1985**

**AVIALL**  
A BOEING COMPANY

# A Look at the UH-60A Black Hawk Helicopter

Army National Guard helicopter  
maintenance in Minnesota and Iraq



By Ronald Donner

**B**uilt by United Technology's Sikorsky Aircraft, the UH-60A Black Hawk helicopter first entered into service with the U.S. Army in 1979. Power for the four-blade main and tail rotors is provided by two GE T700 turboshaft engines. Approximately 3,000 are in use around the world; primarily for military tactical support, troop transport, electronic warfare, combat support, and aeromedical evacuation. AMT spent time with the soldier technicians of the Army Aviation Support Facility (AASF) located at Downtown St. Paul Airport in Minnesota.

*Black Hawk with engines, blades, and the main rotor and gearbox assembly removed for maintenance. Photo by Ronald Donner.*

## The AASF

Keith Shelstad, maintenance test pilot (MTP) for the St. Paul AASF, explains, "This AASF is responsible for the maintenance on 10 Black Hawks operated by the Minnesota Army National Guard Aviation's 34th Combat Aviation Brigade (CAB). The maintenance organization consists of approximately 40 people."

Shelstad went on to explain most are technicians assigned to flight line or phase



maintenance, and a variety of support shop functions such as sheet-metal repair, engine repair, and nondestructive inspection tasks. There are four technical inspectors (TIs), one production controller, and one person assigned to manage the Unit Level Logistics System Aviation (ULLSA) which is the computer system that houses the technical data including the helicopter logbooks.

The group has three maintenance and one inspection supervisors, and two MTPs responsible for maintenance-related helicopter run-ups and the after maintenance test flights. Maintenance management is the responsibility of the maintenance officer, whose role can be compared to a civilian director of maintenance having responsibility for the maintenance, budget, staff, and 10 aircraft.

### The Army's maintenance program

Shelstad explains, "The Army program consists of three maintenance levels: Unit level, intermediate level, and depot level maintenance. Unit and Intermediate Level is what we are authorized to accomplish at the AASF." The preventative maintenance daily (PMD) checks take place daily when the helicopter flies or every seven days if the helicopter is not flying.

The preventative maintenance services (PMS) checks are required every 40 flight hours; they take 15 to 20 man-hours and can generally be accomplished in one day with two technicians. There's a host of other hourly and calendar driven service and inspections tasks, such as gearbox oil samples, battery checks, 30-day engine wash programs, 90-day corrosion checks, and the 120-hour inspection which takes two to three days and includes critical vibration checks of the engine

high-speed shafts, tail rotor, and oil cooler fan.

Unit level also includes the phase maintenance inspection (PMI) which is a large check accomplished every 360 flight hours. Alternating between PMI 1 and PMI 2 with some common tasks, the PMI 1 is primarily focused on

the cabin and tail section, while PMI 2 has a focus on the systems and components which are primarily located above the cabin, the main rotor, and tailboom.

Limited depot level maintenance is accomplished by Aviation Classification Repair Depot (AVCRAD). For the Minnesota

## Smaller, Lighter, Simpler...and, Less Expensive!



PRECISION BORESCOPIES

**Diameters as small as 4.0 mm!**

### Hawkeye® Flexible Video Borescopes

Hawkeye® Flexible Video Borescopes are the perfect choice when portability, and easy image capture, are key factors. These high quality, affordably priced video borescopes are simple and easy to use, completely portable,

and made in the USA. Hawkeye Flexible Video Borescopes come complete with video monitor, LED light source, and image capture capability, all in one, easy-to-use device. Select either 2- or 4-way articulation, and a 4 or 6 mm diameter.

Gradient Lens Corporation

| [gradientlens.com](http://gradientlens.com)

| 800.536.0790

| Made in USA



*Technician Rick Gendreau accomplishing blade deice troubleshooting on the main rotor of a Black Hawk. Photo by Ronald Donner.*

AASF, Springfield, MO, is the AVCRAD location and covers a 14-state area. When the AASF requires a higher-level of maintenance than it is authorized for, either the helicopter is taken to AVCRAD or a team is sent to accomplish or assist. Sikorsky and GE technical representatives are located at the AVCRAD.

Depot level maintenance is the extensive maintenance or modifications. As an example, several of the Black Hawks maintained by the St. Paul AASF are UH-60 L models, which are upgrades from A models. These upgrades were done at the depot located at Corpus Christi, TX.

### **Black Hawk maintenance at the AASF**

The flight line crew is responsible for the PMD, PMS, unscheduled maintenance, and helicopter ground movements around the facility. For example, technician Shaun Brenner was assigned to troubleshoot and correct a tail rotor deice problem, while technician Cliff Steenberg repaired the tail rotor pylon drive shaft cover. Steenberg says of his career with the National Guard, "I have 34 years of military time between

the Army and the National Guard. I've been a full-time technician here since 1988."

He holds an FAA A&P certificate from when he worked on helicopters prior to his full-time employment with the Guard.

The Phase crew was in week three of a PMI 2 during my visit. There was extensive work taking place including the complete replacement of the tail rotor pylon. Both engines and all four main rotor blades were removed, but the "5-pack" as it was called was still installed. The five-pack includes the main module or gearbox, the two engine input modules, and two accessory drive modules.

Chris Kelly, maintenance supervisor for Phase Maintenance, explains, "Several weeks out we have a phase planning meeting to review the work-

scope and make preparations. With a crew of eight technicians working a standard 40-hour work week, completion of these phase checks averages between five and seven weeks."

Terry Johnson, lead technician on the phase check crew was transferring hardware and components from the removed tail rotor pylon over to the replacement. When asked what the most complicated task was on the Black Hawk, he replies, "The complete rigging of the main rotor system can be very complicated." He went on to explain the adjustment of all the control rods from the cockpit to the cabin roof all the way to the torque shafts including the stabilization augmentation system, the control mixing unit, and the forward, aft, and lateral servos that go into the main rotor system.

### **Maintenance in the heat and the sand**

In Iraq, the maintenance organization was operated similarly, having unit, intermediate, and depot level maintenance groups. Generally, the work was accomplished in a cement dome structure known as the hardened area aircraft shelter (HAAS). I was told



*Technician Scott Staiert working on the upper-deck of a Black Hawk undergoing a Phase 2 inspection. Photo by Ronald Donner.*

# CYGNUS AVIATION EXPO



## SAVE THE DATE

MARCH 7-9, 2012

LAS VEGAS, NV  
LAS VEGAS CONVENTION CENTER



800.827.8009  
[CygnumAviationExpo.com](http://CygnumAviationExpo.com)

**CYGNUS**  
BUSINESS MEDIA



*Technician Joe Schnellman working in the forward located avionics compartment of a Black Hawk. Photo by Ronald Donner.*

most days were 10 to 14 hours on duty with one day per week off for things like laundry or catching up on rest. I listened intently as a group of technicians recalled their experiences in Iraq.

When asked about the weather, technician Mike Ricke promptly replies, "The sandstorms were very real and they could last as long as two to three days. I'll always remember the red color of the sky during a sandstorm."

Technician Dustin Paulson recalls, "We'd close the doors on the HAAS but still everything was eventually covered with dust and sand. We did a lot of cleaning and vacuuming of dust and sand from inside the aircraft during our maintenance checks."

Another part of the sandstorms I was told was they sometimes meant an increase in enemy mortar attacks. Again Ricke says, "In the summer months the temperature would reach a high of 130 F and it would cool down to 90 F at night. During the winter months it would range from about 60 to 30 F."

Flight line checks in Iraq were accomplished using larger crews in a much shorter time. The goal was to keep the Black Hawks in a constant state of readiness. Technician Johnson says, "Sometimes getting parts is slower than we'd like here, but in Iraq we never had to wait for parts." Ricke shares, "We really became good at doing Black Hawk checks and I think I could do a 120-hour check with a blindfold on."

Technician Scott Staiert, who was recently hired at the St. Paul AASF shares, "Even though I am relatively new here, I gained a



*Technician Mike Ricke reassembling the tail rotor gearbox during a Phase 2 inspection. Photo by Ronald Donner.*

whole lot of experience working 13 Black Hawk phase inspections in Iraq. The phase checks were more extensive due to the extreme flying, but were accomplished in shorter periods with up to 10

technicians working two shifts." Lead technician Johnson says, "We had great engineering support with rapid response and repair authorization, and Sikorsky and GE reps were on-site to assist us at any time."

### The National Guard as a career

Steve Goetz, maintenance supervisor for the flight line explains the one requirement for working at the AASF: you must be a member of the Army National Guard. If you are or can be, feel free to apply for a job. Goetz says, "We look for technicians with military or National Guard experience, but primarily we look for current and relevant technical experience. Goetz explains for a recently hired technician, "Although he didn't have military helicopter experience he did have aircraft systems experience and a well-rounded heavy maintenance airline background. He was a good fit."

I discussed Army National Guard Aviation as a career with the AASF maintenance officer Major Jeff Merricks. Merricks explains that in the past there was very little turnover of technicians, but today there is more. Merricks concludes by saying, "Don't exclude the National Guard as an aviation career. The pay and benefits are good when compared to many civilian jobs these days. This can be much more than a one weekend per month job. It's the best-kept secret in aviation careers." **AMT**

*From the editor. AMT extends a sincere thanks to all the maintenance technicians at the St. Paul AASF who participated in this article and for their service to this country. Most had deployed to Iraq on at least one occasion and some twice. During my visit the next deployment of Minnesota National Guard was being finalized.*



# EPIC PERFORMANCE

Cut protection, flame resistance and comfort.

**PowerFlex® | Shake the hand of awesome.**

In a world of dangerous work environments, one glove reaches for exceptional safety – the new PowerFlex 80-813. It's a fiercely powerful combination of **ANSI Level 4 cut protection, EN 407 Level 4 flame resistance, HRC 1, Arc Rating (ATPV) 5.7cal/cm<sup>2</sup>**, and a fine gauge knitted liner with DuPont™ Kevlar® for protection and comfort. Grasp the awesome strength of the PowerFlex 80-813 and put the ultimate in safety and productivity in the palm of your hand. And on the back of your hand. And on your fingers, too. Visit [powerflexgloves.com/amt1](http://powerflexgloves.com/amt1) for more information or to request a sample pair.

DuPont™  
**Kevlar®**

Ansell and PowerFlex are registered trademarks owned by Ansell Limited or one of its affiliates. DuPont™ Kevlar® is a registered trademark of E.I. Du Pont de Nemours and Company. © 2011 Ansell Limited. All Rights Reserved. Printed in the USA.

**Ansell**  
Solutions That Fit.™

# The Schweizer 300CB

One operator shares a few basic maintenance tips



By Ronald Donner

**C**hris Cooper says, “After two years of early retirement I knew it wasn’t for me, so I decided to get back to my aviation roots by opening a helicopter flight school.” He began by consulting with operators of small reciprocating engine helicopters around the country and ultimately chose to use the Schweizer as his primary trainer.

Since opening Hummingbird Helicopters of Minnesota in 2002, his company has operated as many as five helicopters and gained approximately 12,500 flight hours of experience in the Schweizer 300s and Robinson R-22 and R-44 helicopters. Cooper uses these small helicopters primarily for flight training, air rides, photo flights, deer survey, and just about any other use he can find for them.



*The Schweizer 300CB helicopter. Photos by Ronald Donner.*

paying very close attention to detail when maintaining a helicopter.” He goes on to share a few lessons learned relating to maintaining the Schweizer 300CB helicopter.

## Lubrication

Bill Halpin, director of maintenance for Hummingbird Helicopters, shares, “Grease is cheap and helicopter components are expensive. As you know not all grease is the same, so don’t make assumptions about lubricating using the same type of grease.”

Cooper and Halpin went on to discuss some of the lubrication practices that have been implemented for their Schweizer 300CB. The first step was the lubrication chart in the Handbook of Maintenance Instructions (HMI) for the 300CB. It’s easy to see that numerous types of lubricants are required and that many areas of the helicopter have different lubrication intervals. Cooper provides the example of the belt drive assembly on the 300CB which consists of a lower drive pulley, an upper drive pulley, and an idler pulley all having different lubricating requirements.

Halpin explains that it’s important to understand the basic concept of purge lubri-



*Rotating parts of helicopters generally sling grease requiring regular cleanup and re-greasing.*

Cooper says, “I’m a Vietnam era helicopter maintenance test pilot and even though I do not have an A&P certificate, I’ve always maintained a close involvement with aircraft maintenance. I’ve learned the importance of

cation; which means to pump new grease into a grease fitting or grease nipple (commonly referred to as a Zerk fitting after the inventor Oscar Zerk in 1929) until all the old grease has been visibly displaced. The HMI requires certain points on the 300CB be greased every 25 flight hours of operation.

Cooper says, "We've learned that lubricating certain areas at 10 flight hour intervals is a much better practice for our type of operation. As an example the three main rotor pitch bearings, the flapping hinge bearings, the upper and lower swash plate scissors links, the main rotor droop stop, and the main rotor swash plate bearing sleeve all get purge lubricated at every 10 flight hours on our Schweizer."

They also caution helicopter maintainers to be mindful of the operating environment. There

may be multiple types of grease approved for one application. Make sure you use the best type of grease for the climate you operate in.

An example of this is the Anderol 786 grease which the HMI states is used when the temperatures are 17.8 C or 0 F and above. Cooper shares, "Here in the cold climates we routinely operate in temperatures below 0 F. We've learned that an approved alternative Syn-Tec 3913G1 holds up better in these cold weather operations."

Another tip regarding operating environments is to always purge lubrication after operating the helicopter in the rain, or in dusty or dirty conditions. The HMI for the 300CB speaks to lubricating the rotor head bearings after operating in the rain.

Purge lubrication also requires a detailed cleaning when completed.



*Placard showing the importance of purge lubrication on the 300CB.*

You need to remove the excess grease that was displaced during the lubrication task. The rotating areas of the helicopter will sling a certain amount of grease, so removing all excess after the purge will provide a cleaner area.

Halpin says, "Excess grease that slings out of fittings appears nasty,

# GAGE BILT



## Blind Rivet, Blind Bolt & Lockbolt Aerospace Installation Tools

Gage Bilt has been designing and manufacturing blind rivet, blind bolt and lockbolt tools since 1956.

In addition to pneumatic and hydraulic tools we produce straight, extended, right angle and offset nose assemblies to meet specific customer application requirements.



GBP731



GBP784B



GBP756



GBP745D/204



GB50/GB51

GAGE BILT tools are built to install the following HUCK®, CHERRY® and ALLFAST® fasteners:

ASP®/MAF®, CHERRYMAX®, CHERRYLOCK®, MS20600, MS21140, MS90353, MS90354, NAS1919, NAS1921 and NAS1700 blind rivets. GP®, LGP® and NAS lockbolts.

GAGE BILT

GAGE BILT Inc.  
44766 CENTRE COURT - CLINTON TWP., MI 48038  
TEL (586) 226-1500 - FAX (586) 226-1505  
www.gagebilt.com - solutions@gagebilt.com

TOUGH TOOLS FOR  
TOUGH JOBS  
FOR OVER 50 YEARS

Made in USA  
 Since 1956



*Landing gear dampers on the 300CB installed and being repaired.*



and when operating rentals and training helicopters appearance counts." He goes on to explain a caution regarding the cleaning of excess grease after purge lubrication. "Be careful to not use excess force when cleaning excess grease from bearing retainers, rubber boots, and protective covers," he says. "In some cases I like to use an acid brush just so I don't apply excessive or uneven pressure around certain retainers."

He went on to explain how a local helicopter owner/pilot learned an expensive lesson regarding cleaning excess grease from areas of the rotor head on his personal helicopter. While wiping excess grease from the area he unknowingly snagged a cotter pin with his cleaning rag and opened the legs of the cotter pin. The pin stayed in place; however, it now contacted the upper portion of the swash plate and eventually scored the component requiring a very costly replacement. Again, pay attention to detail.

### Vibration, balance, and blades

Cooper says, "Vibration management is another issue that helicopter maintainers need to be very mindful of. Beginning at the

tail of the helicopter, the tail rotor provides a lot of stress at the end of a long arm — the tailboom. We pay particular attention to the entire tail rotor area and tailboom for any unusual wear, cracking, or other signs that vibration is beginning to create a problem."

Vibration resulting from both the tail rotor and main rotor blades can be linked to many mechanical failures from simple burnt-out light bulbs to fatigue cracks in the structure and the engine cooling baffles.

Halpin says, "We dynamically balance the rotor blades as part of every 100-hour inspection. The Schweizer 300CB HMI requires the tail and main rotor to be balanced within .2 inches per second (ips). With the modern equipment available today you can easily do a much better job of balancing the rotor blades. We regularly are able to balance within .02 ips which we feel is much better on the helicopter."

Careful balancing of the internal components of an engine during overhaul is an important feature that can help with overall vibration management. The Lycoming

engine in the 300CB operates constantly at a power setting of 2,600 rpm and dynamic balance under operating conditions enhances overall comfort.

Another vibration-related aspect is the ground resonance dampening system on the 300CB. It was explained that the dampening system for the fully articulating rotor system on this helicopter consists of three lead-lag dampeners, one associated with each main rotor blade, and four landing gear dampeners, one on the fore and aft points of the right and left skids. Together they make up the entire ground resonance dampening system which is necessary to dampen out possible vibration induced when landing. The main rotor blade lead-lag dampeners contain a series of potted-rubber "donuts." The landing gear dampeners are a cylinder containing oil and charged with 700 psi of nitrogen.

Halpin explains, "The landing gear dampeners have a tight tolerance and should have no visible signs of weeping. We have special fixtures and tooling for overhauling the landing gear dampeners and provide this service to other Schweizer operators."

Then there's blade erosion, another area to pay particular attention to. Cooper says, "Each of the three main rotor blades costs approximately \$18,000. Flying in the rain, sand, and dust can rapidly erode the leading edges."

Cooper shares this final comment to other operators, "Regular inspection and preventative maintenance based on your specific type of operation is a key element in controlling maintenance and operating costs at a small operation like ours."

### AMT

*For more information relating to the Schweizer 300 helicopter visit [www.sacusa.com](http://www.sacusa.com), or Hummingbird Helicopters of Minnesota at [www.hummingbirdhelicopters.us](http://www.hummingbirdhelicopters.us).*



BOMBARDIER  
**CUSTOMER SERVICES**  
BUSINESS AIRCRAFT



# You. First.

WHEREVER YOU GO, WHATEVER YOU NEED, WE BRING TOGETHER THE PEOPLE, THE PASSION AND THE PERFORMANCE TO GET THE JOB DONE. WE WORK TO ENSURE YOU REMAIN AT THE FOREFRONT AND PROVIDE THE BACKING OF AN ENTIRE ORGANIZATION COMMITTED TO YOUR SUCCESS. RESPONSIVE. RELIABLE. READY. AT BOMBARDIER' CUSTOMER SERVICES IT'S ABOUT PUTTING YOU FIRST.

[www.cic.bombardier.com](http://www.cic.bombardier.com)

\*Registered and/or unregistered trademark(s) of Bombardier Inc. or its subsidiaries.  
© 2011 Bombardier Inc. All rights reserved.

**BOMBARDIER**

# A Tour of Turbine Engine Parts Facility

Chromalloy Castings unveils new facility in Tampa, FL



By Ronald Donner

**A** new state-of-the-art facility for casting turbine engine parts and components was unveiled last December in Tampa, FL, and members of the aviation maintenance media were there.

Chromalloy is a worldwide supplier of large gas turbine engine critical gas path (hot section) blade and vane repairs and coatings, and also a manufacturer of replacement hot section components approved by the FAA under a Parts Manufacturer Approval. In addition to aircraft turbine engine parts, the facility also produces the same types of parts for industrial gas turbines found in the power generation industry, marine, and other heavy industrial applications. Both the aircraft and commercial industrial parts are all subject to the same high-standards and follow the same manufacturing processes.

The company invested \$30 million into this 115,000-square-foot facility. Tom Trotter, vice president and general manager of Chromalloy Castings, says, "This was a clean-sheet design and throughout the facility process flow was

*Chromalloy Casting's new facility in Tampa, FL. Photo courtesy of Chromalloy.*



designed into the floor plan and lean manufacturing techniques were considered with every process. This facility is designed to pour



*Wax patterns for turbine engine blade casting. Photo courtesy of Chromalloy.*

up to 1 million pounds of nickel and cobalt super alloys per year in a process known as "investment casting."

According to Trotter, approximately 250 are employed at Chromalloy Castings, 30 in engineering or other technical specialty roles, and the company has 12 Six-Sigma Black Belt individuals on staff. The new facility is within a 20-minute drive of the old facility which has been established in the Tampa area for 20 years. Approximately 90 percent of the existing work force was retained after moving to the new location. Trotter shares, "All of the employees are excited to be part of the clean-sheet design and everyone embraces the culture of continuous improvement. This is all part of how we are re-defining World Class."

## Investment casting

Investment casting as it was explained is an old process in which molten metal is poured into a ceramic mold. The mold is made by using a wax pattern in the shape of the desired part. This wax pattern is covered or "invested" in a slurry made from ceramic materials which hardens into the mold. Investment casting is sometimes referred to as

“lost-wax casting” because the wax pattern is eventually melted out of the mold.

The investment casting process is typically used for casting metal parts having complex shapes with high melting temperatures such as turbine engine blades and is very precise. The most common metals used are aluminum alloys, bronze alloys, magnesium alloys, cast iron, stainless steel, and tool steel. Investment casting of turbine engine parts requires many types of equipment and technical processes, such as wax mold creation, ceramic slurry application, pouring molten metal, furnaces, autoclaves, cutting, grinding, sandblasting, inspection, measuring, and more.

### The new facility

Our facility tour started near the Wax Department, which has a staff of 37 people all having more than 10 years experience in their jobs. Marilyn Breckley proudly says, “It all begins with the wax input. Cleanliness and housekeeping are most important and audits of the area are regularly accomplished to ensure we continually meet the standards set for this type of operation.” She went on to show some of the first steps involved with producing a wax pattern and the mold assembly for a first stage high-pressure turbine blade for a CFM56-3 series engine. The result forms the pattern used to cast a new blade.

The next stop on our tour was the Shell Building area. The Shell Team is comprised of 24 people; again all with many years of related experience. This is the “investment” stage. The shell is typically made of six to 10 layers of the ceramic slurry which has been applied around an assembly of wax molds on what is termed a mold tree. The shell is then cured in an autoclave under high temperature and high pressure.

The Casting Department is comprised of 11 casting furnaces,

and is considered the most critical step. This is where the new part is formed. A high-level review of the process steps at this location are: shell inspection, preheating, wax melting, metal pouring, and cooling. It was explained that four key disciplines are employed in the Casting Department: safety,

6S, quality, and flow. Their 6S program further defined consists of Sorting, Set-in-order, Shine, Standardize, Sustain, and again Safety. Turbine engine blades cast here can include single-crystal, directionally solidified, or conventional equiaxed crystal material processes.

DEDICATED TO HELPING BUSINESS ACHIEVE ITS HIGHEST GOALS.



## NBAA 26TH ANNUAL MAINTENANCE MANAGEMENT CONFERENCE

April 5–7, 2011 • San Diego, CA

### *Building a Community of Leaders*

This conference is business aviation’s single dedicated event for anyone responsible for managing the maintenance function of flight departments – from managing personnel and safety to aircraft maintenance and facilities. Don’t miss this one-stop shop for the aviation maintenance community.

Register at [www.nbaa.org/mmc/2011](http://www.nbaa.org/mmc/2011)

The Rough Finishing Department is where shell removal and initial cleanup occurs, and traceability for each individual part is introduced. Chemical processes are used so additional strict safety standards are followed and data analysis is employed in order to minimize process variation. A high safety conciseness was apparent



*Chromalloy Casting's furnace. Photo courtesy of Chromalloy.*

throughout the facility.

The last stop on our tour and the most impressive area was the PHOENIX Room, which is a combination of several departments and process steps combined together in one location. PHOENIX was the name decided upon by the group because of the numerous processes that are accomplished in this one area such as, sandblasting, bench check, visual inspection, dimensional inspection, florescent penetrant inspection, additional part marking, X-ray, final inspection, and eventually preparations for shipping to the customer.

The name PHOENIX stands for finishing (PH), operational (O), excellence (E), nondestructive testing (N), inspection (I), and X-ray (X). This area was where process flow design and lean manufacturing techniques paid huge dividends. It was explained that at the old facility a casting would travel up to 6,000 feet for accomplishment of these processes. In the PHOENIX Room that same casting travels 185 feet to complete the same process steps. Numerous inspection steps take place here as the parts are near completion. One of the inspection steps is an advanced topographic optical scanner (ATOS). The ATOS laser scanner takes a complete scan of the exterior contour of a casting, and makes a comparison to the electronic modal in its nominal condition. Through these processes, deviations from the nominal modal

### The Nation's First Unmanned Aerial Systems Maintenance Training Program



**NORTHLAND  
UAS**  
MAINTENANCE TRAINING CENTER



**NORTHLAND**  
COMMUNITY & TECHNICAL COLLEGE

**NORTHLAND  
AAT**  
MAINTENANCE TRAINING CENTER

[www.NorthlandAerospace.com](http://www.NorthlandAerospace.com)

Start your future in aviation by contacting Northland at 218.683.8802 or email [UAS@northlandcollege.edu](mailto:UAS@northlandcollege.edu).

**50 Years of A&P Training  
with 100% Job Placement**



Member of the Minnesota State Colleges & Universities System. An equal opportunity Employer & Educator.

Visit us at Cygnus Aviation Expo, Booth #2029



*Automation used in the casting process. Photo courtesy of Chromalloy.*

can be identified. These processes evaluate in great detail the dimensional quality, and are performed on every high-pressure turbine blade cast.

### The next steps

Trotter says, "We are now able to offer the industry a single source for engine component design, engineering, tooling, machining, repairs, coatings and now castings."

Chromalloy announced its plan to already expand this new facility by adding another 40,000 square feet to it in order to develop complex ceramic cores on-site. A ceramic core is used in the investment casting process to form complex features internal to a casting such as cooling passages and holes within turbine engine components. The complex core area is planned to be fully operational by January 2012. Trotter feels the new facility allows them full control of all manufacturing functions using state-of-the-art process control.

Not yet 100 percent, the facility is on its way to becoming totally green. Work is underway to become a zero-discharge facility, which includes the reclamation of waste water. As an example the shell materials are being considered for highway applications and most of the metal alloy materials are retainable.

It appears the clean-sheet approach is working as evidenced by the cleanliness of the organization of the facility, and how

engaged and proud all the employees appeared. Located in all work areas were large poster-size photo standards describing at a glance how the work area should

appear. Everyone spoke about safety, process, continuous improvement, and customer service. **AMT**

*For more information you can visit [www.chromalloy.com](http://www.chromalloy.com).*

**USATCO**  
U.S. Air Tool Co.

*Supplying the aerospace & metal working industries since 1951!*

- Snap Soc Protective Rivet Set Caps
- Sioux® 1HP Pistol Grip Rivet Shaver
- Mini Hi-Shear Reversible Ratchet Wrench
- Tensitron Digital Aircraft Cable Tensiometer
- Wiss Metalmaster® Compound Action Offset Snips
- Intrinsically Safe Dual Mode Flashlight
- Tri-Cylinder Alligator Riveter

*Large Inventory ~ Repairs On All Major Brands ~ Calibration  
Over 50 years of exceptional customer service!*

[www.USATCO.com](http://www.USATCO.com) Toll Free USA & Canada: **800-645-8180**  
 Ronkonkoma, NY ..... tel: 631-471-3300 fax: 631-471-3308  
 Rancho Dominguez, CA ..... tel: 310-632-5400 fax: 310-632-3900

Visit us at Cygnus Aviation Expo, Booth #2116

# Measuring The Miles

From star-gazing to satellite navigation systems



By Jim Sparks

**N**avigation has undergone many changes over the years. It all started with early world travelers learning to read the celestial guidelines. In fact several early airliners were provisioned with a dedicated navigator's station complete with a star-gazing window.

In more recent years looking to the stars for navigation has taken on a whole new persona. The commissioning of satellite navigation systems makes getting from point A to point B virtually a nonchallenge, providing of course, the data base is up to date. Radio navigation has played a significant role in aviation for more than 80 years and will no doubt continue to be an integral part of our industry. Systems such as automatic direction finding (ADF) and very high omnidirectional range (VOR) employ principles to determine a course to a radio transmitter plus compare signal phase relationships to enable an aircraft to fly a precise track to or from the transmitter station.

## Distance factor

One of the key elements to any navigation query is the distance factor. Unfortunately the basic radio navigation principles employed by ADF and VOR do not easily lend themselves to this calculation.

The concept of distance measuring equipment (DME) is a bit different than distance provided by a satellite-based system. Rather than displaying distance over the ground, this device will show slant angle distance, or in other words true distance to the ground-based transponder. In the world of aviation this means if an aircraft is flying at an altitude of 6,076 feet above the ground and flew directly over a DME station the displayed distance would be 1 nautical mile.

In the years following World War II, aviation technology was in a boom period with research abounding on many fronts including navigation. In the early 1950s in a land down under (Australia) Edward Bowen while in the

employ of the Commonwealth came up with the concept of today's DME.

The principle was based on the physical law that if you know the speed of an object and the amount of travel time then the distance covered can easily and accurately be calculated. Although the principle is relatively basic, the means to accomplish was a bit more complex. There would need to be a combined radio transmitter and receiver on the aircraft more commonly referred to as an Interrogator and when connected through an "L" Band antenna (short and stubby) that will communicate with a transponder on the ground.

In fact the DME system utilized the same concept as Air Traffic Control (ATC) with the exception that the roles are reversed. In this case the aircraft is requesting information and the ground-based equipment is responding. Most frequently, DME is collocated with precision navigation devices such as VOR stations and instrument landing systems (ILS). The DME Interrogator is automatically tuned to a DME station that will coincide with a specific VOR frequency.

## UHF and VHF bands

DME utilizes the ultra high frequency (UHF) band. There are certain advantages over conventional very high frequencies (VHF). Even though the VOR utilizes the VHF portion of the radio spectrum, the aircraft will most often pick up the DME signal well ahead of the VOR. This is due in part to the physical characteristics of the UHF wave.

Although both frequencies are referred to as "line of sight" transmissions the UHF portion being a shorter wave can be bounced off the charged particles of the ionosphere creating a "skip" effect enabling a bit more range. Another factor influencing signal quality is the heating and cooling of the atmosphere. "Tropospheric Ducting" is a term used to relate to radio wave transmission enhancement or degradation based on thermal conditions.

Most current DME systems are calibrated for a maximum range of 300 nautical miles.

Ground-based equipment can vary based on usage. Where a device used in conjunction with an ILS will have significantly less output power than a unit associated with high altitude navigation. The calibration of the unit connected to ILS will be set to display zero just as the aircraft comes into the touchdown zone of the runway.

The aircraft interrogates the ground transponder with a series of pulse-pair interrogations and after a precise time delay of 50 microseconds, the ground station replies with an identical sequence of reply pulse-pairs. The DME receiver in the aircraft searches for specific pulse pairs using 12 microsecond spacing and with the correct time interval between them. This pattern is determined by each individual aircraft's particular interrogation.

The aircraft equipment locks on to the DME ground station once it

comprehends the particular pulse sequence and verifies alignment with the interrogation sequence it sent out originally. Once the receiver is locked on, it has a narrower window in which to look for the echoes and can retain the lock.

## A radar-mile

A radio pulse takes 12.36 microseconds to travel 1 nautical mile to and from. This is also referred to as a radar-mile. The time difference between interrogation and reply 1 nautical mile minus the 50 microsecond ground transponder delay is measured by the interrogator's timing circuitry and translated into a measurement in nautical miles which is then displayed in the cockpit.

The distance formula, Distance = Rate x Time, is used by the DME receiver to calculate its distance from the DME ground

station. The rate or speed in the calculation is the velocity of the radio pulse, which is the speed of light (186,000 miles per second). DME transponders transmit on a channel in the 962 to 1,150 MHz range and receive on a corresponding frequency between 962 to 1,213 MHz. The band is divided into 126 channels for interrogation and 126 channels for reply. The interrogation and reply frequencies always differ by 63 MHz with spacing of all channels at 1 MHz and a signal spectrum width of 100 kHz.

## Morse Code identifier

DME facilities identify themselves either audibly or visually using a 1,350 Hz Morse Code three letter identity. Some newer displays can produce the identifier for visual reference while older systems require listening to the



Greenwich AeroGroup®

We have the Expertise *and* Inventory to Keep You Flying



Every minute is critical when looking for the part you need to keep you flying. In business for more than 25 years, Professional Aviation Associates has a vast inventory including hard to find items, with quick delivery and competitive pricing.

BELOW ARE SOME OF OUR MOST POPULAR ITEMS THIS SEASON. CALL FOR A QUOTE TODAY.



### PPG Windshield

- OEM overhaul with manufacturer warranty
- Rebuilt to latest design configuration
- Reliability and performance of a new windshield



### Hose Shop

- Fast Service and quality workmanship
- Complete engine kits
- Custom fabricated

4694 AVIATION PARKWAY SUITE K ATLANTA, GA 30349 P: 800.283.2105 F: 404.767.1467 WWW.PROAVIATION.COM

DME receiver and interpreting the Morse Code letters. In the event of reported malfunction, this check is a quick means of telling if at least the system has a station responding. If collocated with a VOR or ILS, it will have the same identity code. Additionally, the DME will identify itself between those of the parent facility. The DME identity is 1,350 Hz to differentiate itself from the 1,020 Hz tone of the VOR or the ILS localizer.

The original specification for the ground based equipment was to have adequate capacity to be able to communicate with up to 100 aircraft at a time. More modern equipment can handle twice that. Above the design limit the transponder avoids overload by limiting the gain of the receiver. Replies to weaker more distant interrogations are ignored to lower the transponder load. The technical

term of the DME station when it is overloaded and cannot accept more than 100 aircraft is called "Station Saturation."

Considering the similarity in principle and operating frequencies of DME and ATC, most aircraft including both kinds of equipment incorporate a DME inhibit feature called a "Suppression Bus." Anytime the ATC transponder is replying to an interrogation the DME is placed on standby for the duration of the ATC transmission. A malfunction in this interconnect may impede DME operation.

Many of today's interrogators have the ability to lock on up to three different ground stations. Associated DME control heads include a "DME Hold" switch. When actuated, the DME will continue to communicate with the last station entered while the navigation radio can be tuned to another facil-

ity. This feature too, can provide for flight squawks and should always be checked prior to beginning serious diagnostic techniques.

In more modern aircraft, DME information is also utilized by long-range navigation and flight management systems (FMS). Another troubleshooting technique is to enter the FMS "Sensors" page and check the status of the respective DME. This often provides clues if a problem is associated with an indicator versus an interrogator. There are strong probabilities that DME will remain a useful tool for navigation well into the next generation.

I still like the star gazing concept even when I don't have to steer by the constellations. **AMT**

*Jim Sparks has been in aviation for 30 years and is a licensed A&P. He can be reached at sparks-jim@sbc-global.net.*



Join Us in Orlando, FL for  
HAI's annual Heli-Expo  
March 5-8 @ **Booth #1341**



**I**nventory  
**S**upported  
**M**aintenance  
**R**epair &  
**O**verhaul®



Atlanta (404) 768-9090 Fax: (404) 768-9006  
Vancouver (604) 542-8820 Fax: (604) 542-8829

- Exclusive Provider of ISMRO®
- More Than 50,000 Line Items In stock For Sale Or Exchange
- 21 Sales Professionals Handling Day-To-Day Operations
- More Than 50,000 Square Feet in Two Locations — Atlanta & Vancouver
- MRO Capability On Over 8,000 Different Items
- 1,000+ Linear Feet Of Benches W/ Over 650 Pieces Of Test Equipment
- Distributor For 16 Different Manufacturers
- Aircraft Supported Include Agusta, Bell, Eurocopter, MD & Sikorsky

**"Others sell parts, WE SELL SUPPORT"®**

[www.heliparts.com](http://www.heliparts.com)



PRESENTS

## Moving from Technician to Technical Supervisor/Manager

FREE LIVE WEBCAST

WEBINAR SPONSOR:



- Is your aviation maintenance career taking off?
- Are you in line for a promotion to supervisor or manager?
- Considering advancement to maintenance department manager?
- Wondering what new skills are necessary?
- You're a top-notch technician. Will you be the same type of supervisor?

Join *AMT Magazine* for a FREE LIVE WEBCAST!

**March 16 / 1 p.m. CST**

Register today at: <http://www.amtonline.com/webinars/managerupgrades>

Join *AMT* Editor Ronald Donner as he talks with Brandon Battles and Bob Hobbi about management training for technical personnel promoted to supervisory positions within their organizations.

- Hear from industry professionals on moving from technician to first-time supervisor/manager
- Discussion designed for people promoted from technician
- Helpful tips for technical personnel promoted to first-time supervisor/manager
- Financial tips for maintenance supervisors and managers
- Learn which organizational skills are most important
- Moving from technician to a customer service role
- Managing people vs. managing processes



**Ronald Donner, *AMT* Editor**

Ronald (Ron) Donner is the current editor of *Aircraft Maintenance Technology (AMT)* magazine. He's spent his entire life devoted to aviation and he holds FAA certificates as an A&P/ IA, and a Commercial Pilot with Single and Multi Engine Land, Instrument Airplane and Glider ratings. Ron has worked in a variety of maintenance related roles, both technical and management in general aviation as well as with a major airline.



**SPEAKER: Brandon Battles**

Brandon Battles is vice president and co-owner for Conklin & de Decker. Battles' current primary responsibilities include oversight of the development of the company's products; initial development of MxManager, a maintenance tracking, inventory, and work order software system; AMAS, an internal effort that analyzes maintenance costs; and a variety of studies in the consulting area of the company. Prior to joining Conklin & de Decker, he served as the manager of Bell Helicopter's Direct Operating Cost programs for eight years.



**SPEAKER: Bob Hobbi**

Bob Hobbi is founder of ServiceElements International, Inc., which specializes in customer service workshops for aviation businesses. His resume includes MedAire, Honeywell International's Aerospace Academy, and Flight-Safety International.

# Tom Hendershot

The road to the Colorado Aviation Hall of Fame

**T**om Hendershot's career and love for aviation began at a very young age. At 7 he was rewarded for a successful Sunday school project with ride in a Piper J-3 Cub with Alice Gates, a well-known aviatrix at the time.

To satisfy his love of aviation, he built and flew U-control models into his early teens. He joined the Civil Air Patrol as a cadet, and attended West Technical High School specializing in aviation.

In May 15, 1955, Hendershot started part time as a maintenance apprentice for Sundoroph Aeronautical Corporation (SAC) in Cleveland, OH. After graduation from high school he was off to the U.S. Air Force. Due to the Civil Air Patrol training, he entered as an A 3/C and attended maintenance school for the B-52H, T-33, and T-38 aircraft achieving a 43151 skill level.

## Flying instructor to management

He started flying when he was 15 with the hope of having his private license by 16. Working for Sundoroph and Rusk Aviation in Kankakee, IL, he was able to obtain both private and commercial licenses.

After working his way through flight schools for a few years, Tom ended up working as chief flight instructor at General Aviation in Willoughby, OH. One



*Tom Hendershot at the Hall of Fame Awards with Jennifer Baker, president of Baker's School of Aeronautics.*

of his students owned a land ambulance business, and he ended up as director of operations. At the same time he was also vice president of operations and one-third owner of Air-Motive Specialties Inc. at the Willoughby airport.

From there it was on to a host of charter and scheduled service airlines. Tom held positions as a line pilot, check airman, instructor pilot, mechanic and inspector. He also held positions in management as director of operations, director of maintenance, and director of compliance.

His wife was asked by Jeppesen to move back to Denver, so they moved, and Tom worked for Mile High Aviation as director of maintenance, then to High Winds Aviation where he created the certified repair station from scratch and had the position of chief inspector and pilot.

At Casper Air Service, he served as director of compliance and chief inspector. He had a lot of FAA involvement, a characteristic that continues to this day.

## Frontier Airlines

Then Frontier Airlines called and he worked as a quality assurance inspector, maintenance instructor, and director of the AMT program starting in 1999. While at Frontier Airlines, the airline became the first FAR 121 certificated airline to receive the FAA Diamond of Excellence Award.

*JoAnn and Sandy Hill of Master Instructors with Hendershot at the Colorado Hall of Fame awards.*





*Some of Tom Hendershot's many industry awards.*

duties he organizes annual Inspection Authorization renewal seminars

working with industry speakers and the FAA for approval.

### Industry involvement, recognition

Hendershot is involved in many industry organizations. He is on the boards of aviation schools and associations

"This program included every A&P in the company from the vice president of maintenance to all on the floor, Hendershot says. "This was done for nine consecutive years."

Bill O'Brien described him as a zealot in an *AMT* article, "History in the Making" (March 2000), "A year ago this undercover zealot, this man who passionately believes in our profession, arbitrarily decided that he was going to do something that was never done before. He was going to make Frontier Airlines the very first, large air carrier to have 100 percent of its 232 eligible mechanics earn FAA Aviation Maintenance Technician (AMT) awards."

O'Brien was there to present the awards at Frontier when Hendershot made it happen. And O'Brien awarded Hendershot a Diamond Award that same day, recognizing the fact that he had received an AMT award every year for the last five years.

### AMTSociety

In 2005, an A&P affinity group was formed and in January 2007, Hendershot assumed the role of executive director of *AMTSociety*. The membership has grown to 2,900 and is still climbing. Under his leadership, *AMTSociety* has developed three scholarship awards worth \$1,500: Charles E. Taylor, William F. "Bill" O'Brien, and Thomas E. "Tom" Hendershot (*the board of directors surprised him with this one*) awards.

As part of his *AMTSociety*

**GO GLOBAL**

90,000+ AIRCRAFT PARTS IN STOCK. SAME DAY SHIPPING.  
100,000 SQUARE FOOT WAREHOUSE.

Your time is valuable. Don't waste it searching the world for parts.  
**GO GLOBAL** and get what you need **now**.

**YOUR ONE SOURCE  
AVIATION PARTS SOLUTION**

PLEASE VISIT US AT THE  
AEA INTERNATIONAL CONVENTION - BOOTH #501

Authorized Hawker Beechcraft Parts Distributor - Mexico/Central America  
ISO 9001:2000/AS9120:2002 Certified ASA-100 Accredited  
GLOBALPARTS.AERO +1.316.733.9240 or 24-hour AOG line +1.316.351.5511

**GLOBAL**  
Parts.aero



*Patrick Nadler, Cygnus Aviation executive vice president; Mark Collins, AMTSociety board member; Hendershot, Joe Hawkins, AMTSociety board member; and Teresa Durham, Safety-Net.*

including the National Center for Aerospace & Transportation Technologies (NCATT), Aviation Technical Education Council

(ATEC), National Business Aircraft Association (NBAA) Maintenance Committee, Northrop-Rice Foundation

Executive board, and the General Aviation Awards Program advisory board.

He has received many awards over the years, including the Aviation Maintenance Technician of the Year Award for 2003, the Charles E. Taylor Master Mechanic Award in 2005, and the Wright Brothers Master Pilot Award in 2005. And in October of last year he was inducted into the Colorado Aviation Hall of Fame.

He doesn't seek awards, he'll say he's just doing his job. And his dedication to aviation helps to improve the status and safety of the aircraft maintenance technician. Congratulations Tom!

**AMT**

*For more on Tom Hendershot, visit [www.amtonline.com](http://www.amtonline.com).*

## Industry recommendations

### **Jennifer Baker, Owner of Baker's School of Aeronautics:**

"I have known Tom for many years and can honestly say that I have never met anyone that has more compassion and drive to lift the status of aviation maintenance technicians. He has tirelessly served on many aviation committees over the years. During the past 10 years, he has served as the chairman of the FAA's AMT Awards Program. I worked closely with him, as I served as the secretary of this program."

"Tom constantly amazed me on the long hours and his unselfish volunteer work. He still maintains this same type of schedule even though he is past retirement age."

"He has conducted training programs and presentations to thousands of AMTs and aviation maintenance owners and supervisors to promote aviation safety and to encourage them to participate in refresher training programs. He is a strong advocate in both of these areas."

### **Ken MacTiernan, AMTSociety Director and AMTA Director:**

"The cornerstones of the AMT craft and profession are knowledge, skill, and integrity; all of which Tom possesses in abundance. As a director for AMTSociety I have the good fortune of working with Tom and I can state firsthand that Tom's passion is focused on

promoting aviation and helping those both in the industry and those entering. Tom Hendershot not only enjoys his craft and his profession but does it not for the recognition but because it is what he feels is right."

### **Brad Townsend, NBAA Maintenance Committee Chairman:**

"There is something to be said about being in the right place at the right time with the right passion. Plotting the professional advancement of a large disoriented blue collar class is hard work and requires wit, perseverance, and wisdom. All three qualities inhabit Tom Hendershot."

### **Peter Zeeb, Director of Maintenance for Harrah's Entertainment and Chairman of AMTSociety**

"Tom and I have worked closely together over the years helping to actively promote and protect the professional aircraft maintenance technician's craft and profession. Tom has worked tirelessly to enhance the future of the profession."

"Tom is a person who lives for aviation. His vast knowledge and experience has earned him numerous awards and recommendations. Some of those outstanding awards include: national AMT Award of 2003, Wright Brothers Master Pilot Award of 2005, and the Charles E. Taylor (Master Mechanic) Award in 2005. His resume reads like a 'Who's Who in Aviation.'"

# A SALUTE:

**TO THE ONE WITH SCARRED KNUCKLES..AND  
THE HEAVY BOX OF WELL KEPT TOOLS..**

---

Your hands brought the airplane from its frail beginning....to its rightful place as the thundering giant of modern transportation

Your skill is an accepted guarantee of safety both for pilots and passengers. Faith in your ability is a strong shield against fear of those dangers that must lurk in the high places. You bear the burden of absolute and unquestioning trust.

Not much of the glamour falls your way.....but you are big enough to shrug that off and put your integrity on the line every time an airplane leaves the ground.

We salute you.....wherever you practice your skills.

---

**YOU ARE THE BACKBONE OF AVIATION.**



# Helicopter MRO

## Heli-One's AgustaWestland AW139 tailboom repair program



Lanny Reynolds

**T**he AgustaWestland AW139 is a very successful medium-sized aircraft that has reliably secured its role in the world of helicopter operations. But, like many new aircraft types that experience teething problems after introduction to service, the AW139 has had to face this challenge, specifically with issues relating to its tailboom. However, Heli-One, a large helicopter MRO located in Delta, British Columbia, Canada, is working with the OEM on an interesting tailboom repair and replacement program.

The AW139 is a conventional twin-engine medium size transport helicopter, powered by two Pratt & Whitney PT6C-67C turboshaft engines which drive a five-blade fully articulated main rotor system and a four-blade tail



*Inside Heli-One's Boundary Bay helicopter maintenance, repair, and overhaul facility. Photo by Ronald Donner.*

rotor. The first AW139 flew in February 2001 in Italy and the first customer aircraft was delivered in 2003. The AW139 helicopter is successfully used in a variety of roles including emergency medical service, law enforcement, executive transport, search and rescue, maritime, and offshore oil and gas operations.

On Aug. 25, 2009 an incident occurred

involving an AW139 operated by Gulf Helicopters in Doha, Qatar. During the taxiing phase the aircraft experienced a structural problem with its tailboom. No one was hurt as a result of this event.

### Background

Prior to the Qatar event operators started to report debonding of the tailboom's lateral panels. On Aug. 27, 2008, European Aviation Safety Agency (EASA), alongside AgustaWestland issued an EASA AD 2008-157 for inspection to detect debonding of the panels by tap-hammer within 100 flight hours, then at 300-flight hour intervals. The inspection was performed in accordance with Agusta Bollettino Tecnico (Technical Bulletin) BT139-134.

In reaction to the Qatar event, on Sept. 4, 2009, EASA AD 2009-198-E was issued which superseded AD 2008-157. This AD reduced the inspection interval to a 25-flight hour or 30-day initial inspection interval, and a 50-flight hour recurring inspection to be completed in accordance with BT139-193. Some specific aircraft serial numbers had the initial



*Heli-One technicians working on an AW139 tailboom rebuild and modification project. Photos by Lanny Reynolds.*

inspection reduced even further to a five-flight hour initial inspection in accordance with BT139-194.

Less than two months later on Oct. 28, 2009, EASA AD2009-234-E was issued to supersede AD2009-198-E. One day later it was revised to the now current and still applicable EASA AD2009-234-E R1, in order to change serial number applicability in one section of the initial issue of the AD.

This latest AD changed the inspection requirements to include a daily general visual inspection of the tailboom right hand side skin. The tap-hammer inspection remained at 50-flight hour intervals for most aircraft, except a few tailboom part number and aircraft serial number combinations. Aircraft fitted with these tailbooms had the inspection interval reduced to 25 flight hours.

All the inspections called out in EASA AD2009-234-E R1 are to be accomplished in accordance with BT139-195 Rev. B. At this time, any defects found that are beyond the set limits must be reported to the

manufacturer. Repair schemes are created by AgustaWestland product support engineering department on an aircraft by aircraft basis.

### Tailboom construction

The construction of the tailboom assembly consists of two separate pieces, the tail cone and the vertical

fin. The tail cone is between STA 8,700.09 mm and STA 11,020.0 mm, and includes two lateral bonded sandwich-panels having aluminum skins and nomex honeycomb core, a bottom sandwich-panel of the same construction, a front aluminum frame, and six short longerons, attached to the lateral panels and to the front frame. Six fittings with bolts attached to the short longerons connect the tail cone to the fuselage.

The vertical fin is attached to the tail cone at STA 11,020.0 mm and extends aft from STA 11,020.0 mm to STA 13,349.3 mm. The vertical fin includes the frame at STA 11,020.0 mm, the front and rear longerons, and a top rib and middle rib with attachment points for the tail gearbox, intermediate gearbox, and horizontal stabilizer or "tail-plane."



### IT'S IN OUR POWER™

At Pratt & Whitney, we keep you flying. Our Customer Training team is dedicated to advancing jet engine knowledge and maintenance techniques. From standard courses to customized solutions, whether instructor-led or on the web, we provide an innovative learning experience to support your maintenance, engine performance and fleet management needs. Backed by a global network that supports you anytime, anywhere. Pratt & Whitney. **Learn more at [www.pwcustomertraining.com](http://www.pwcustomertraining.com).**



**Pratt & Whitney**  
A United Technologies Company

[www.pw.utc.com](http://www.pw.utc.com)

### The tailboom modification

There are two technical bulletins, BT139-159 Rev. B, and BT139-200, currently issued by AgustaWestland that strengthen the tailboom structure. These two bulletins are fully compatible with each other and can be applied together to the same tailboom in order to achieve maximum tailboom strength.

After operators had started reporting debonding of the tailboom panels but before the event in Qatar, AgustaWestland issued a technical bulletin BT139-159. This bulletin is aimed at improving the structural strength of the tailboom by replacing the original two lateral sandwich-panels with new bonded panels having aluminum skin and aluminum honeycomb core. The weight and balance changes for this bulletin are negli-



Another full paint project in the Heli-One paint shop. Photo by Ronald Donner.

gible and so far AgustaWestland is keeping this bulletin optional.

After the event in Qatar the second bulletin, BT139-200, was issued. This bulletin consists of four longeron reinforcement or extensions to be installed on both the upper and lower right and left hand sides to extend the existing

longerons from STA9140 mm to the STA 11,020 mm butt splice that attaches the vertical fin to the tail cone. With the extensions installed, the longerons extend the complete length of the tail cone assembly greatly improving its strength.

This bulletin however comes with a weight and balance price. Eighteen kilograms is added at an arm of 10,081 mm shifting the center of gravity aft. On the long nose AW139 this is of no concern, however it may cause some hesitation on the short nosed aircraft depending on its configuration and operations. Carrying out BT139-200 eliminates the inspections called out in BT139-195 Rev. B as it is now not applicable. Performing BT-200 can be done on its own without removing the tailboom from the aircraft; however, paint damage will be done to the tailboom.

Performing BT139-159 Rev. B requires a need for a full shop with specialized tooling and technicians. The tailboom must be removed from the aircraft and disassembled using specialized tooling, a jig, and a holding fixture for reassembling the tailboom parts.

This project requires several technical experts familiar heavy structural repairs and with the AW139, the tailboom history. There are three of these fixtures in the world, only two of them are currently in operation. One



# SPARTAN

## COLLEGE OF AERONAUTICS AND TECHNOLOGY

FOUNDED 1928

PROFESSIONAL PILOT PROGRAM  
AVIATION MAINTENANCE TECHNOLOGY  
AVIONICS MAINTENANCE TECHNOLOGY  
QUALITY CONTROL & NONDESTRUCTIVE TESTING

### YOUR FUTURE IN FLIGHT

- » Over 247,000 square feet of training facilities
- » Financial Aid to those who qualify
- » 80 Years in Aviation and over 90,000 graduates
- » Hands-on training on industry current equipment
- » Accredited member: ACCSCT
- » Licensed by: OBPVS
- » Programs approved for Veterans benefits



**CALL SPARTAN TODAY!**

**1-800-331-1204**

**www.spartan.edu**

**8820 East Pine Street • Tulsa, OK 74115**

Visit us at Cygnus Aviation Expo, Booth #1630



## About Heli-One

In December of last year I had the opportunity to visit Heli-One, a large helicopter maintenance, repair, and overhaul organization. Heli-One is a division of CHC Helicopter. Heli-One vice president Norbert Marx took me on a personal tour of the facility located at Boundary Bay Airport in Delta, British Columbia, Canada.

Marx says, "Heli-One provides comprehensive helicopter support services to customers around the world."

Some of the other services it provides include interior completions, painting, and avionics. It also has a large engine, gearbox, and component repair and overhaul shop, and specialty shops for machining, welding, blade repairs, and nondestructive testing. Heli-One can also provide integrated logistics support, engineering and design support. The Boundary Bay facility was impressive and I found the gearbox test cell to be fas-

cinating. The technicians operating this test cell explained to me in great detail how the gearbox test cell functioned. My tour continued through all the back-shops and a large aircraft paint area. Lanny Reynolds, the lead-hand on the AW139, showed me the buildup of a tailboom as he described in the article.

In addition to the AgustaWestland, other helicopter capabilities include Sikorsky S61, S76 and S92, Eurocopter Bk117, 350, 332, 225, Bell CSF servicing – 212, 214, and 412s. With other facilities, including a network of service centers in Newfoundland (Canada), Stavanger (Norway), Amsterdam (The Netherlands), Adelaide (Australia), and Fort Collins (Colorado, U.S.), Heli-One has nearly 600,000 square feet of facilities and 1,100 employees worldwide. For more information visit its web site at [www.heli-one.ca](http://www.heli-one.ca).

— Ronald Donner



**WichiTech's Composite Repair Equipment—**  
**THE Industry's Work Horse in the Repair Shop**

**DISCOVER For Yourself Why The World's LARGEST AIRLINES Demand WichiTech Quality. The HB-1 and HB-2 Hot Bonders and the RD<sup>3</sup> Tap Hammer— Powerful, Reliable, Simple and Safe.**

**WICHITECH** INDUSTRIES, INC.

Call us for a personal demo:  
 WichiTech Industries, Inc.  
 1120 N. Charles Street  
 Baltimore, MD 21201  
 (410) 244-1966 Phone  
 (410) 244-1968 Fax

**MACHIDA**  
 Borescopes

**Make your visual inspections easier!**

**Machida, Inc. offers a variety of flexible borescopes, videoscopes, accessories, and approved kits for the internal inspection of various engine models.**

**800-431-5420 • [www.MachidaScope.com](http://www.MachidaScope.com)**

is located at AgustaWestland in Italy, and one at Heli-One in British Columbia, Canada. Heli-One has a dedicated crew that has visited the Italian facility for specialized training to perform this work. Panel replacement also will require a painting facility in order to restore the paint scheme on the tailboom. Considering the tailboom must be removed from the aircraft for this bulletin, it is recommended that BT139-200 is also performed at this time.

The labor hours required will be reduced by performing the two bulletins together, and the tailboom will only need to be repainted once. Performing both bulletins is ideal to obtain the strongest possible tailboom structure. Tailboom removal can be accomplished using an overhead hoist and sling. When the tailboom is being removed for

replacement, it is recommended that it be removed "undressed" of all components, wiring, and plumbing before tailboom removal. Document this by taking pictures of the removal of the wiring harnesses as it helps when it comes time to lay them out in the new panels. Once everything is stripped from the tailboom it will be very light and will make removal very easy. It is a very manageable 73 Kg.

Removing the tailboom in order to accomplish BT139-159 Rev. B will cause extensive downtime, especially once you factor in shipping to a facility with the proper tooling, modification of the tailboom, paint, and return shipping. This is a great example of an MRO partnering with an OEM on a specialized repair/modification project, and providing AW139 operators an alternative to extensive downtime.

Heli-One is currently offering a tailboom exchange program, where an operator can exchange their unmodified tailboom for a fully modified tailboom from Heli-One retrofitted with bulletins BT139-159 Rev. B and BT 139-200. Heli-One is an official AgustaWestland service center for the AW139 and has the full support of AgustaWestland in carrying out these modifications.

**AMT**

*Lanny Reynolds is certificated by Transport Canada as an aircraft maintenance engineer with nearly 10 years experience in a range of helicopter maintenance roles. He has worked overseas with CHC Helicopter International supporting offshore oil and gas operations and has supported heavy lift utility operations. He joined Heli-One in 2007 and is now currently the AW139 lead-hand.*

**TURBOMECA APPROVED**



**Wrap Up Balancing and Vibration Analysis With One Instrument...**


**The New VIPER 4040!**  
 The VIPER (Vibration and PERFORMANCE) 4040 analyzer revolutionizes aviation maintenance analysis with more capability in one sleek, light-weight instrument than ever before...

- 4-Channel Simultaneous Data Acquisition** for coordinated analysis of vertical, lateral, and longitudinal main rotor data in one run
- Digital Signal Processing (DSP) Circuitry** for superior vibration analysis with transient recordings of engine startups and run-downs
- Automated Balance Solutions** eliminate manual calculating and charting, saving time and maximizing accuracy





ACES Systems/TEC Aviation Div. • Ph. 865-671-2003 • Fax 865-675-1241 • www.acesystems.com • ISO 9001

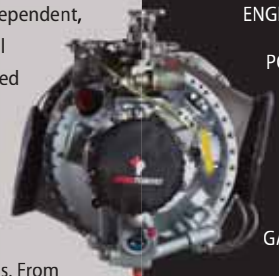
**Visit us at Cynus Aviation Expo, Booth #1518**



**Freedom to fly... Freedom to choose**



**PRIME TURBINES**  
**PT6A Repair & Overhaul**




Prime Turbines is an independent, FAA authorized overhaul facility. We're not confined to the OEM's limiting policies, and you shouldn't be either. You deserve to choose your MRO facility and find value-saving alternatives. From fuel nozzle flow to engine overhaul, Prime Turbines gives you the options you need. Each engine is different, which is why we are dedicated to serving your individual needs.

**Explore the alternatives... call Prime Turbines.**

- ENGINE OVERHAUL
- POWER SECTION
- ENGINE TESTING
- HOT SECTION
- GAS GENERATOR
- FUEL NOZZLES
- M.O.R.E. PROGRAM
- BLEED VALVE

Dallas • Hyannis • Pittsburgh  
 1.800.282.4744  
[www.primeturbines.com](http://www.primeturbines.com)



# Helicopter Repairs

Aircraft maintenance with a twist



By John Goglia

**H**elicopters have become the main players in emergency response in the United States, responsible for saving thousands and thousands of critically injured victims of car or industrial accidents every year, especially those that occur in remote locations away from major trauma centers. In fact, highway fatalities are down across the country at least in part because of the work of helicopter EMS operations in getting the most severely injured patients to hospitals.

Helicopters are an indispensable tool for police in fighting crime, crowd control, and monitoring traffic. Firefighters use them to spot fires and even fight them. Helicopters have made electric power line inspections markedly more efficient especially in areas difficult to access by road. Offshore drilling as we know it today would not be possible without helicopter support. And they remain the transportation of choice for many high-powered executives.

While they perform an increasingly critical function, helicopters often do not get the public credit or respect for the out-size role they play in modern society. Needless to say, mechanics who work on these rotary wing aircraft are also rarely recognized for the skills and abilities they must possess to keep these whirlybirds flying through the stresses and strains of frequent takeoffs and landings, low altitude flights, and operations in often marginal weather conditions.

As helicopters have become more ubiquitous in everyday life, they have also become increasingly more sophisticated and complex. Maintaining them has similarly become an even more difficult job. When I first started working on aircraft in 1962 — as a line boy at an FBO at Hanscom Field near Boston — commercial helicopters were not very common. In terms of maintenance, the initial helicopters were pretty basic machines with spartan interiors and instrumentation for basic VFR flight only. The most complex and critical part

was, of course, the rotor mechanism. Even then, while the helicopters remained relatively simple machines, it took a skilled mechanic to keep the rotor mechanism functioning properly. Rigging the rotor head required solid knowledge of how the system was designed and operated and skilled hands to perform the myriad adjustments necessary to get the rigging right.

---

Today, helicopters often utilize the latest in electronic technology, such as glass cockpits and digital systems, including digital engine controls.

---

Over the years, maintaining the rotor mechanism remains arguably the most critical and complex task for a helicopter mechanic. If the rotor is not rigged correctly, the aircraft will not fly right and you risk losing the aircraft. Today, however, in addition to the complexity of rotor maintenance, helicopters often utilize the latest in electronic technology, such as glass cockpits and digital systems, including digital engine controls. The latest helicopters even include fly-by-wire and automatic flight control systems. Mechanics who work on these latest technical marvels require in-depth, specialized training in digital electronics.

Although the aviation industry's attention is often focused on fixed-wing aircraft, the knowledge, skills, and abilities necessary to maintain today's rotary wing aircraft are second to none. We owe the extraordinary reliability of these machines in no small part to the men and women who maintain them day in and day out. **AMT**

*John Goglia has 30 years of experience in the aviation industry. He was the first NTSB board member to hold an FAA aircraft mechanic's certificate. He can be reached at [gogliaj@yahoo.com](mailto:gogliaj@yahoo.com).*

# Both Sides Now

A look at safety from both the NTSB and the FAA perspective



By Stephen M. Carbone

In 1968 Judy Collins recorded a song by Joni Mitchell called 'Both Sides Now' in which she opines about Clouds, Love, and Life; yeah, in that order and neither making sense. She first compares clouds to feathers, angels, and ice cream before going dreary by saying clouds only bring rain and snow. It was at this part that I changed the knurled radio dial (we had those back then) to a better AM station (we used to listen to those back then). Stay with me here ...

## NTSB recommendations

I read a Sept. 29, 2010 article in the *Washington Post* where the reporter says, "The NTSB issued 21 recommendations after the Air Midwest crash. The FAA still has not implemented two of them: to prohibit the person training a mechanic from serving as the inspector on that same part and to increase oversight of work done by contracted mechanics."

The article throws blame on the FAA for dragging its feet on reacting to NTSB recommendations. Now this lends itself to the reader's interpretation, but as the sole NTSB A&P investigator at the time, I worked this accident; I led the Aircraft Maintenance and Records group. In fact, I conducted the interview where these facts came out so I'm able to look at this "cloud" from both sides.

When a reporter misstates information, it draws the public's attention in any direction but the real issue. For instance, the reporter says there were 21 recommendations related to this accident, NTSB/AAR-04/01, which is true. However seven of them dealt with weight and balance, which was also a probable cause of the fatal accident; minor point, but misstated nonetheless.

There were actually 14 recommendations concerning maintenance and the two the FAA allegedly didn't implement were: 1. prohibiting the person training a mechanic from serving as the inspector on that same part (actually the word 'task' was used), and, 2. increase

oversight of work done by contracted mechanics. So, let's take a look at these ...

## Trainer not also the inspector

No. 1. Prohibiting the person ... same task. I remember my jaw hitting the ground when the required item inspector (RII) in this accident admitted to inspecting his own work, albeit while training the mechanic. When I worked for Brand X in Omaha, NE, I held a RII and one of the biggest Bozo-no-no's was to sign off your own work — training or no training. That being said, the FAA addressed this issue with a regulation 38 years before this unfortunate accident. In 14 CFR 121.373 (c), which says of a RII, "No person may perform a required inspection if he performed the item of work required to be inspected."

Now I've met many of you folks while working this job, working for the NTSB, and when I was in industry; I could count on one hand the mechanics that can't employ common sense in interpreting that regulation. But the reporter's question was: why didn't the FAA address the recommendation?

The answer is: How many times do you have to say the same thing? You ladies and gentlemen, with the rare exception, know what a regulation means. If you don't, you'll ask your fellow mechanic, management, or your FAA office inspector, etc. For the FAA to re-regulate issues would be like saying your state should write a stronger law saying, "You really, really can't go through red lights, and we mean it this time ... a lot." At what point does redundancy become redundant?

## Increased oversight

Then there's No. 2. Increase oversight of contracted workers. A change like this doesn't qualify as a regulation; the topic is too broad to be all inclusive. So what the FAA doesn't address in the regulations to the industry it addresses in policy and procedures to itself. I never wrote that recommendation for industry to police contractors; I wrote it for the FAA

to accomplish internally.

During this investigation I remember this issue very well; it involved a lot of sleight of hand and shell game tactics, so the FAA had to address this recommendation through internal policy. It spoke directly to the inspectors, the folks that actually conduct oversight and on-site surveillance of air carriers and their contracted workers.

In the Flight Standards Information Management System (FSIMS), the FAA Inspector's Handbook, the requirements of contract maintenance oversight are laid out for the inspector(s) to continually and proficiently keep a close eye on operator/contractor interaction and what kind of product they're putting out. To make allegations that the FAA ignores recommendations in favor of political stalling or lip service is irresponsible.

### Rewriting a regulation

So what goes into rewriting a regulation? I asked the late Bill O'Brien that question years ago when I sought to change a Part 135 reg. He said, "It takes three years and a bunch of money."

Let's see what that means. A quorum must meet to determine the feasibility of even changing the rule in question, e.g. how will it affect the industry financially, what will be the impact, how many will it impact, and will the industry be better off for it as proposed? In the quorum many people get involved: budget experts, legal counsel, subject matter experts, and industry analysts. The studies, meetings, and legal deliberations take many months before finally resulting in a new rule. So then it's put on the books, right?

Nope, not quite. Now it goes out to industry for comment — your comment, specifically — which is handled through the Notice of Proposed Rule Making (NPRM) in the *Federal Register*. This is where

industry, unions, manufacturers, and private owners get to read and comment on what regulations are being proposed or their changes. This is also where the politicians get involved when their constituents write for help fighting a proposed rule. A NPRM may undergo many revisions ranging from the grammatical to a complete rewrite of the proposed rule. Finally when all the T's are dotted and everyone's eyes are crossed, the three-year journey ends: the rule is placed in the books.

### Policy change

By comparison, a policy change (as in answer to the second recommendation) may take a few weeks and some internal review before it becomes official and enters the FSIMS, which is updated daily on the website. Recommendation No. 2 was handled internally; the answer was made.

Changes like these are open to the public and may require use of a search engine to verify.

### The FAA

Organizations that question the integrity of FAA action may not verify their information, but may base their findings without research. The FAA operates transparently; there should be more reliance on what the FAA makes available and their experienced voices.

The NTSB itself relies heavily on FAA experience when

investigating accidents, not only for the knowledge of aircraft models and certification standards, but because the FAA acquires its talent from industry; these men and women know where to look for hidden answers and how to bring them to light.

The political environment today often requires organizations to fingerpoint, but I don't think the public benefits from being placed on the sidelines thinking no one cares or listens. No organization is perfect, but while a cloud may be dark and malignant on its underside, it's brighter topside; it's dependent on which side you look at. **AMT**

*Stephen Carbone is an aviation industry veteran of 28 years. He works at the Boston regional office in the Flight Standards Airworthiness Technical Branch. He holds a master's degree in aviation safety systems.*

# browntool

The professional's choice!



GENERAL PNEUMATIC RIVET SQUEEZER



GAGEBILT POWERMAX RIVETER



JIFFY PALM DRILL

»» [www.browntool.com](http://www.browntool.com)

TOLL FREE 800.587.3883 FAX 405.688.6555 E-MAIL [information@browntool.com](mailto:information@browntool.com)




brown aviation tool supply company  
2536 SE 15th Street, Oklahoma City, OK 73129

Visit us at Cygnus Aviation Expo, Booth #1920



## Corporate Sponsors



## State of AMTSociety Address

On behalf of *AMTSociety*, the board of directors, and staff, I would like to wish you good health and happiness during the year ahead!

As you know, our industry has not been immune to the impact of the recession. The good news is that we believe aviation is on the upswing and we are part of the solution. The skills and dedication of our aircraft maintenance professionals set us apart. Each of us lives and breathes our industry and I am sure you share my belief that we will not only survive, but thrive, during the months and years to come.

*AMTSociety* has existed to serve your IA renewal needs for four years by offering quality education programs in convenient locations. Our relationship with the FAA has ensured our ongoing ability to meet your continuing education hours.

Please note that due to the current economic conditions, we will be introducing an \$18 IA renewal fee for all registrations received after Dec. 31, 2010. The fee will be payable online or during on-site registration of the event. My team will continue to work diligently in maintaining a program that offers great value and convenience to our members.

I appreciate your continued commitment to *AMTSociety* and promise, individually and as an organization, we remain committed to promoting, protecting, and enhancing our craft and the aviation industry. *Be safe.*

— Tom Hendershot

## Ground operations

As winter gets in to full swing across the country,

as mechanics we should be aware of its impact on our surface operations at the airport. Operating on a snow or ice-covered surface — either in a ground vehicle or an aircraft — requires an extra degree of caution. Movement of ground equipment should be done in a manner that allows you to avoid sliding or skidding into other equipment or aircraft, or skidding across hold lines.

Extreme caution also is required/needed when towing an aircraft due to the added weight, and the fact that most of the time you are relying solely on the braking action of the tug to stop both the aircraft and the tug. On wet, slick, or icy surfaces, the aircraft in tow can suddenly jackknife out of control as you turn or attempt to stop. The same cautions must also be adhered to when taxiing on aircraft in these conditions.

When diminished braking action is present, the aircraft can slide off taxiways and/or runways if one is not careful. When you are taxiing and approaching hold lines and turns, be sure to use minimal speed to ensure your ability to come to a stop prior to the hold line or to avoid skidding off the taxiway. Another very important factor, as with all ground operations, keep your eyes outside the cockpit while taxiing and be sure to adhere to all ATC instructions.

## Toolbox raffle

To support the *AMTSociety* Scholarship Awards program, Snap-on Industrial is donating a \$2,500 seven-drawer toolbox, Model KRA4107D, along with \$2,500 Snap-on tools of the winner's choice. Measuring 40" x 20", the toolbox will be awarded to the winner of a drawing following the

Maintenance Skills Competition on Feb. 25, 2011 in Las Vegas. The winner can decide on the color along with \$2,500 worth of Snap-on tools of his or her choice.

The cost of the tickets is one for \$5 or three for \$10 and is tax deductible as the scholarship fund is under 501(c)3 status. Tickets will be available at IA seminars, Cygnus Aviation Expo, and from the board of directors.

## Mark your calendars 2010-2011 IA Roadshow

Please take the time to review the schedule below, and keep in mind that this training is not just for the holders of Inspection Authorization but for all personnel involved in the aircraft maintenance process. The previous IA renewals have been well attended and we appreciate you taking the

time to attend and benefit from the speakers and training that we provide. If you are going to attend, please preregister so we can plan accordingly.

Feb. 16, 2011, Kansas City, MO  
Feb. 23-24, 2011, Aviation Industry Expo, Las Vegas  
March 16, 2011, Aurora, CO  
April 9, 2011, ATEC Annual Meeting & FAA/DME Renewal, Orlando, FL

## AMTSociety scholarships

At the December board of directors' meeting, it was unanimously decided that notification will be sent to each of the winners upon the committee's selection. That will give the recipient of each award the chance to attend (at their expense) the Cygnus Aviation Expo to be held in Las Vegas where the winners will be

formally announced on Friday, Feb. 25, 2011. Contact Joseph C. Hawkins, scholarship chairman or Tom Hendershot for additional information.

AMTSociety would like to thank Michael A. Molzahn for his very gracious donation again this year to the scholarship program. It is very much appreciated. This is one way we can give the students today the financial help to keep this great industry trained and well-prepared.

## Maintenance Skills Competition

The AMTSociety's 4th Annual Maintenance Skills Competition (MSC) will be held in just a few short weeks, Feb. 23 -25th, 2011. It is again being held in Las Vegas during the Cygnus Aviation Expo. The MSC has grown from just nine

**TAUGHANNOCK AVIATION**  
*Business Jet Services*

*Advanced Technology*  
**Oxygen & Nitrogen Booster Pumps**



Taughannock Aviation offers:  
mini-mules, pail-pumps, complete cart systems & much more.

**ADDED SAFETY**  
Automatic shut off when desired pressure is reached.

**RUGGED & PORTABLE**  
Lightweight and compact. Driven by compressed air or bottled nitrogen.

**EASY-TO-USE**  
Free's up mechanics to perform other preflight duties. Eliminate time consuming supply bottle top off, consolidation, and cascading.



**607-257-7500**


Web: [www.flytac.com](http://www.flytac.com) or e-mail: [garth@flytac.com](mailto:garth@flytac.com) or Fax 607-257-6419  
TAUGHANNOCK GROUND SUPPORT EQUIPMENT 66 Brown Road Ithaca, NY 14850

**Visit us at Cygnus Aviation Expo, Booth #927**

## We're very big on small parts.



Long known as the industry leader in PMA carbon brushes, we have expanded our market and product offerings to include our new line of PMA bearings and other products for a variety of aircraft motor applications. We work closely with our customers to identify potential replacement part needs and have the ability to move quickly on a range of new products from design to PMA.



345 Rt. 17, Hasbrouck Heights, NJ 07604  
201-288-8877 • Fax: 201-288-7356 • email: [mirajcorp@aol.com](mailto:mirajcorp@aol.com) • [www.mirajcorp.com](http://www.mirajcorp.com)

**PMA DESIGN, MANUFACTURE AND SALES.**



teams in 2008 to 15 teams in 2010 to 25 teams in 2011. There doesn't seem to be a slow down in the interest in companies, organizations, or individuals teaming up who want to compete.

The 2011 MSC will again see the return of international teams from China and Australia as well as a scheduled team of AMTs forming Team Mexico! The 2011 MSC will see the entry of some new teams most notably Team Boeing, Team Alaska, and Team UPS. But there is also an entrant that is competing to show the industry that they are serious about the AMT craft and profession. This team is the Association of Maintenance Professionals (AMP) and they are currently in the process of trying to represent the AMT craft and class at American Airlines. MSC provides an opportunity to showcase the knowledge, skill, and integrity each and every AMT/AME possesses in order to provide safe, airworthy aircraft.

As the chairman for the MSC it is my honor to assemble the events for the MSC, which would not be possible without the support of the companies who supply the events, but my privilege to be associated with the many men and women who compete in each and

every MSC! See you in Las Vegas!

— Ken MacTiernan, Director AMTSociety, Chairman MSC

## Corporate Sponsors: Bell Helicopter

Founded in 1935 as Bell Aircraft Corp., Bell continues to set the pace for the industry and expand the scope of vertical lift. Bell Helicopter was the first to obtain certification for a commercial helicopter. Over its rich history, Bell has delivered more than 35,000 aircraft to its customers around the world.

With forward thinking in advanced concepts, Bell Helicopter invented tilt rotor aircraft. These unique aircraft lift like a helicopter, then fly like an airplane with twice the speed, three times the payload, and five times the range of traditional helicopters.

Headquartered in Fort Worth, TX, Bell Helicopter has additional plants in Amarillo, TX, and Mirabel, Canada. It maintains key logistics supply and service centers in Europe, Canada, and Singapore as well as in the United States.

## Dassault Falcon

Dassault Falcon is responsible for selling and supporting Falcon business jets throughout the world. It is part of Dassault Aviation, with a presence in more than 70 countries across five continents. Dassault Aviation produces the Rafale fighter jet as well as the complete line of Falcon business jets.

The company has assembly and production plants in both France and the United States and service facilities on multiple continents. It employs a total work force of more than 12,000. Since the rollout of the first Falcon 20 in 1963, 2,000 Falcon jets have been delivered to 67 countries worldwide. The family of Falcon jets currently in production includes the tri-jets — the Falcon 900EX EASy, 900LX, and the 7X — as well as the twin-engine Falcon 2000LX.

Falcon Customer Service provides product support and assistance to operators of all Falcons, from legacy aircraft to the most modern models. Call anytime at: (201) 541-4747 or (33) 1 4711 3737.

*Joshua Smith, executive director, Aviation Institute of Maintenance Oakland Campus, receives a plaque for becoming an AMTSociety corporate member, the 10th AIM campus to do so.*



**7638-44**  
FAA-PMA

7000 SERIES

QUALITY, DURABILITY,  
AND RELIABILITY WHEN  
YOU NEED IT.

SEALED, NON-SPILLABLE

The Original Equipment Aircraft Battery

**State of the art features:**

- Improved Shelf Life – Best Shelf Life in Lead-Acid Chemistry
- Lower Weight
- Dependable
- Durable
- High Reliability through Engineered Processes
- Improved Energy Density
- Best Discharge and Recharge Efficiency in Valve-Regulated Lead-Acid
- Robust Construction
- Tested and Approved to DO-160E
- FAA/PMA Approved

for information call:

TELEDYNE  
BATTERY PRODUCTS

A Teledyne Technologies Company

840 W. Brockton Ave., Redlands, CA 92374

(800) 456-0070 • (909) 793-3131 • Fax: (909) 793-5818

www.gillbatteries.com

Gill AMT0902



# INSPECTION AUTHORIZATION AIRCRAFT MAINTENANCE TECHNICIAN TRAINING Coming to a City Near You!

**February 16, 2011**

Holiday Inn KCI Expo Center  
11730 NW Ambassador Drive  
Kansas City, MO 64153

**February 23 & 24, 2011**

**At Cygnus Aviation Expo**  
Las Vegas Convention Center  
3150 Paradise Rd  
Las Vegas, NV 89109

**March 16, 2011**

The Summit Event Center  
411 Sable Blvd.  
Aurora, CO 80011

**April 09, 2011**

**ATEC Annual Meeting & FAA/DME Renewal**  
International Palms Resort & Conference Center  
6515 International Dr.  
Orlando, FL 32819

For a complete list of training locations, visit [www.AMTSociety.org](http://www.AMTSociety.org).

**Limited Space is Available!**

Register to attend today at [www.AMTSociety.org](http://www.AMTSociety.org).

**Cost:** \$18 to AMTSociety member, \$67 for non-members.

**BONUS!** Registration fee includes one-year membership to AMTSociety.

**Questions?** Email [angela@amtsociety.org](mailto:angela@amtsociety.org) or call 800.827.8009 x3322.



**The Premier FAA Accepted Training Association**  
**All AMTs are encouraged to attend!**

*Each seminar in AMTSociety's IA Renewal Consortium meets the requirements contained in FAR 65.93(a)(4) for Inspection Authorization (IA) Renewal Training and is acceptable towards 8 hours of training for IA renewal and the FAA AMT Awards Program.*

# IA? Are You "Actively Engaged?"

FAA's Notice of Proposed Policy Change Re: 14 CFR Part 65; Federal Register Vol. 78, No. 214, Friday, Nov. 5, 2010



By Stephen P. Prentice

In case you missed it ... the FAA has published a proposed new *policy change regarding the issuance and renewal* of the Inspection Authorization (IA) authority routinely issued and renewed now every two years by your local FSDO. It has published this proposed policy change on the date noted above and it asked for your comments by Dec. 6, 2010.

Due to the large number of expected comments the cutoff date has now been extended to Jan. 17, 2011 to allow for further comment which of course will have passed by the time you read this. There may however be some people who are not even aware of this proposed change as they read this article. Late filed comments will be considered if they do not cause delay or added expense. So file your comments as soon as you can.

The *Federal Register* piece sets out a definition of "actively engaged" as follows ...

## Actively engaged

Actively engaged means exercising the privileges of an airframe and powerplant mechanic certificate in the maintenance of civil aircraft. Applicants who are employed full time in inspecting, overhauling, repairing, preserving, or replacing parts on aircraft are considered to be actively engaged.

However, the definition goes on to say that part-time or occasional work will have to be evaluated by an ASI to determine if the applicant is "actively engaged."

The problem here is simply that the regulation in Part 65 clearly provides for renewal of the IA authority with the attendance at approved continuing education programs as an alternative to hands-on work. The proposal fails completely to address this critical aspect of Part 65.

## Policy change not regulatory

This policy change is not a change to any regulation, at least at this time. What is being proposed is a more current understanding of what constitutes "actively engaged" which is in the language of the Part 65 regulation ... A regulatory change would clearly be opposed in a most vigorous fashion and take much longer to implement. That is the reason the use of a *policy change* is perceived by FAA to be an easier route to a change.

The proposal states that the term "actively engaged" has caused confusion among ASIs and maintenance personnel, although if you talk to the many IAs in the field this is a non-issue and is not confusing to anybody. This seems to many as simply an excuse to do what they want to do, if in fact one is needed. The field personnel simply say that the system as presently existing has served us well and should be left alone. There are many other more significant matters to address rather than one that is a non-issue, so say many working technicians. Many IAs have stated, for example, that the regulatory alternative of sanctioned and approved training programs are more important and produce equally qualified IAs vs. hands-on employment.

One can only speculate what the *real* reason for raising this non-issue at this time? Some have suggested that since there is a similar change in the works for flight instructors, as discussed recently during a meeting in Washington, D.C., adding to the requirements to renew their certificates.

Some say that it is being prompted by an ill-timed and poorly thought out attempt to *harmonize* our regulations with European EASA regulatory mandates. Who knows? It could even be all about training money. But

the action is certainly felt by many to be suspiciously related to EASA regulatory schemes. We will see what develops on this front.

### FAA's Guidance Document 8900.1

The document being proposed for amendment is the FAA "guidance" (to the FSDOs) for the issuance of Inspection Authority, in the Flight Standards Information Management Systems (FSIMS), FAA Order 8900.1, Vol. 5, Chapter 5, Sections 7 and 8. The reference ASIs means FAA aviation safety inspectors. Here is the way the proposal in the *Federal Register* reads regarding renewal ...

*Amend Section 8 Paragraph 5-1309 by adding a Note after subparagraph (A)(1) to read 5-1309 ...*

#### *Renewal of Inspection Authorization*

*a. Application Requirements: Application for renewal may be required to comply with the following: (1) Show evidence that applicant still meets the requirements of 65.91(c) (1) thru (4). Note: Refer to Paragraph 5-1279(A)-(C) of this document for information on meeting section 65.91(c)(1) through (4) requirements. Because Volume 1, Chapter 3, Section 2 of this order limits the type of maintenance that ASIs can perform, an ASI may renew an IA regardless of the volume of maintenance work (he or she) performed. (This of course refers to inspectors who happen to have Inspection Authority. ASIs are not permitted to perform maintenance in the field except for their own aircraft.)*

This proposal clearly does not affect ASIs who also have IA authority and they can certainly work on and certify the airworthiness (perform annual inspections) on their own aircraft and perhaps others under certain restrictions. In this proposal, they do not have to show that they meet the requirements of 65.91(c)1 thru 4. Many airmen in their comments to the

proposal have voiced objection to this "carved out exception" for ASIs. Most comments oppose the granting of automatic renewal for anyone including ASIs and that they should at least be required to participate in the approved seminar training activities that other IAs utilize to renew their authority as provided for in Part 65.

Further, many IAs maintain that this proposed change utterly fails to consider the unique nature of the contributions to overall safety in the general aviation field that senior IAs contribute, but who do not necessarily turn a wrench or are not employed full time as technicians. This clearly would contribute to a negative feeling toward the FAA and affect the morale of maintenance people at a time when our maintenance activities have been faced with serious economic challenges and jobs are scarce. This proposal seems to be poorly timed to say the least.

### Bill O'Brien

Bill O'Brien, the former national resource specialist for the FAA in Washington, may he rest in peace, must be rolling over in his grave on hearing of this proposal which many comments by technicians suggest is a transparent attempt to disenfranchise a whole segment of our GA industry, in a failed attempt to clarify what does not need to be clarified. Indeed, O'Brien would most likely appeal to the Almighty, as the Man on the Cross exclaimed ... *Father forgive them for they know not what they do ...*

Most IAs' comments would acknowledge that O'Brien would strongly disagree with the proposal as it is currently written. He addressed IAs for many years and his strong support of the IA system as it presently exists is legion. In one of his most memorable writings he refers to the IA as a "Silverback," *the 800-pound gorilla of general aviation maintenance.* (See

"Silverback" by Bill O'Brien, May 1995 *AMT* magazine.)

The FAA has long considered the IA designation as akin to a higher educational degree and is looked upon as a measure of the professional status of the holder. The FAA has itself elevated this person to a higher status than the certificated technician. This recognition of career advancement by the FAA, appears to be compromised in its proposal. It would have the effect of removing this recognition from the mostly senior IAs who work in management in the industry and or perform fewer maintenance tasks. It takes much experience and study to acquire the authority and it should not be so cavalierly threatened or removed by Flight Standards. Most of the persons concerned are senior members of the general aviation community and it would appear that they may be unfairly and perhaps unlawfully, targeted by this proposal. **AMT**

*Stephen P. Prentice is an attorney whose practice involves FAA-NTSB issues. He has an A&P certificate and is an ATP rated pilot. Send comments to aerolaw@att.net.*

## Comments to FAA

Comments, even at this late date, can still be filed by email or U.S. Mail, as noted in the Federal Register, filing to the attention of: Docket No. FAA 2010-1060. U.S. Mail: Docket Operations, Docket FAA 2010-1060, M-30 U.S. Dept. of Transportation, 1200 New Jersey Ave., S.E., West Building Ground Floor, Room W12-140, West Building Ground Floor, Washington, D.C. 20590-0001. Email: Federal Rulemaking Portal, <http://www.regulations.gov> (follow online instructions). For further info contact: Mr. Ed Hall AFS-350, Re: Docket 2010-1060, Tel: (804) 222-7494 x240, email: [ed.hall@faa.gov](mailto:ed.hall@faa.gov).

### Maintenance scholarship

The Aeronautical Repair Station Association (ARSA) has established a \$500 aviation maintenance scholarship through the Northrop Rice Foundation (NRF). The award will go to a student attending an FAA certificated Part 147 school, with the winner selected by NRF's board of directors. For more information visit [http://www.northropicefoundation.org/index.php/scholarships](http://www.northropricefoundation.org/index.php/scholarships).

### Helicopter maintenance seminar

Conklin & de Decker offers Helicopter Maintenance Management – Essential Tools for Your New Role, a seminar aimed at providing helicopter maintenance managers the tools needed to master their new position. It will be held on March 28 and 29 in the Dallas/Ft. Worth area. To register or to learn more about this seminar go to [www.conklindd.com](http://www.conklindd.com).

### Master Mechanics

Dave Stevenson received the FAA's Charles Taylor Master Mechanic Award and the Wright Brothers Master Pilot Award on the same day in November. Gerald Martelli with the FAA's Nashville office presented the awards to Stevenson who thought he was just going to a cookout.

Ron Utecht, TIMCO Aviation Services Co-CEO, president and COO, has received the Charles Taylor Master Mechanic Award.

Prior to joining TIMCO in 2005, he had retired from United Airlines after a 39-year career.

### Master Aviation Educator

Gary M. Brossett, a Pratt & Whitney quality engineer and resident of Midland, GA, recently was accredited as a Master Aviation Educator (MAE) by Master Instructors LLC, the international accrediting authority for Master Instructor designations as well as the FAA-approved "Master



*Dave Stevenson with wife Helen as he receives his Master Mechanic Award. Photo by Damon Lawrence.*

Instructor Program." Fewer than 700 aviation educators worldwide have achieved one or more of the Master accreditations thus far. Brossett is one of only 13 Georgia teachers of aviation to earn this prestigious "Master" title. Brossett is an *AMTSociety* member and frequent member of *AMT Forum*.

### 2011 Aviation Summit

The Center for Aviation and Aerospace Leadership (CAAL) at Embry-Riddle Aeronautical University – Worldwide will host its second Aviation and Aerospace Manufacturing Summit on Feb. 23-25, 2011, at Disney's BoardWalk Inn in Orlando, FL. The two-day summit will present data and address issues on the state of aerospace manufacturing in the United States and around the world for both military and commercial markets, as well as address key trends and industry projections. Events will include workshops on leadership and strategy, lectures, and panel discussions. For more information, visit [www.embryriddle.edu](http://www.embryriddle.edu).

### Weight and Balance Handbook

The essential guide for pilots, flight crews, and aircraft mechanics, *Aircraft Weight and Balance Handbook*, FAA-H-8083-1A, by the Federal Aviation Administration is

available. Beginning with the basic principles of aircraft weight and balance, *The Aircraft Weight and Balance Handbook* is the official U.S. government guide for pilots, covering procedures for preparing to weigh and actually weighing an aircraft. The FAA emphasizes the importance of this meticulous work, including examples of documentation furnished by the aircraft manufacturer and by the FAA to ensure the aircraft weight and balance records contain the proper data. It is available from Skyhorse Publishing, [skyhorsepublishing.com](http://skyhorsepublishing.com).

### SCLA School of Aviation

A class of 43 is the first graduating class from the Southern California Logistics Airport (SCLA) School of Aviation, with full certification in general aviation mechanics, and the more comprehensive power plant and airframe mechanical training. The SCLA School of Aviation was formed in 2006 with the intent of educating Victor Valley residents in aircraft mechanics, making them ready for employment as jobs become available with companies located at SCLA. With this graduating class, nearly 50 percent are either already employed or will soon be employed by SCLA companies. Other graduates have found employment at other area airports or aviation companies, including Lockheed and the Marine Corps Logistics Base in Barstow.

### Chromalloy opens Beijing office

Chromalloy has opened an office in Beijing, China, to better serve customers in the region. The new office expands the company's staff to a group of sales leaders with deep industry expertise in each key segment. It has completed the expansion and doubled capacity recently at its turbine component repair and manufacturing center in Bangkok, Thailand. And last year the company invested more

than \$27 million to expand its turbine engine component casting operation in Tampa, FL (See page 18). To better serve customers in China, Chromalloy also launched its web site in Chinese. The site, at [www.chromalloy.com](http://www.chromalloy.com), is available in Chinese and English.

**Compound achieves NAS specification**

Simrit's E454 EPDM (ethylene-propylene rubber) compound was recently certified to NAS (National Aerospace Standard) 1613 Revision 5 Specification. The certification, which establishes the requirements for elastomer seal elements used in hydraulic systems using phosphate ester fluids, applies to all commercially available phosphate ester hydraulic fluids.

Simrit's E454 black compound is intended for NAS-1611-XXXA

and NAS-1612-YYA (A-code) series O-rings. Developed by Simrit in 2005, the E454 compound is applicable for the following applications: commercial aircraft hydraulic flight control units (primary and secondary); power units and pumps; and aircraft braking systems.

**Sun 'n Fun airshow**

The world's best-known air show performers return to Lakeland, FL, again this year for the 37th annual Sun 'n Fun International Fly-In & Expo, which will be held March 29 to April 3 at Lakeland Linder Regional Airport. Sun 'n Fun will again feature a daily air show that runs from 3:00 to 5:30 p.m. Tuesday through Thursday (April 13 – 15) and from 2:00 to 5:30 p.m. on Friday, Saturday, and

Sunday (April 16 – 18). The night air show will take to the sky on Friday, April 1, at dusk. For the airshow schedule visit [www.sun-n-fun.org/FlyIn/SchedulesMaps/airshowSchedule.aspx](http://www.sun-n-fun.org/FlyIn/SchedulesMaps/airshowSchedule.aspx).

**Repair facility in China**

ST Aerospace's joint venture (JV) company, ST Aerospace (Guangzhou) Aviation Services Company Limited, has received the business licence from the Administration of Industry and Commerce of the Guangzhou Municipality to establish its aircraft repair facility in Guangzhou, China.

The JV company will be an associated company of ST Aerospace and will be operated and managed as a part of ST Aerospace's global network of maintenance, repair, and

**AMT** Aircraft Maintenance Technology  
THE SOURCE for the Professional Maintenance Team

**Book Store**

**How will you grow your career?**

- ...advancement
- ...higher pay
- ...job security

**Inspection Authorization**

**Management**

**General Familiarization**

**It all starts here!**

[www.AMTbooks.com](http://www.AMTbooks.com)  
800 780-4115

overhaul (MRO) facilities. Expected to begin operations in the second half of 2013, it will perform commercial aircraft MRO for Airbus, Boeing, and McDonnell Douglas aircraft.

### NS Aviation to locate in NC

NS Aviation, a start-up provider of aircraft maintenance and repair services, will locate in Forsyth County, North Carolina. The company plans to create 308 jobs and invest \$1.27 million during the next four years in Winston-Salem.

The facility, originally built and operated by Piedmont Airlines, was most recently the home of Pace Airlines which ceased operations in 2009. NS Aviation plans to revive much of the former repair business of Pace Airlines and expects to hire many of the former Pace employees that are currently unemployed.

The project was made possible in part by a \$300,000 grant from the One North Carolina Fund. It provides financial assistance, through local governments, to attract business projects that will stimulate economic activity and create new jobs in the state.

### FlightSafety to offer Bombardier training

FlightSafety International plans to offer training for the Bombardier Challenger 605 aircraft in Europe. Training is scheduled to begin in early 2012 at the company's London Farnborough Training Center in the United Kingdom.

The Challenger 605 training program will be conducted using a new FlightSafety designed and manufactured full flight simulator. It will be qualified to the highest standards by aviation regulatory agencies worldwide and feature the company's industry leading VITAL X Visual System

and advanced electric motion and control loading technology.

FlightSafety has provided professional training for pilots, maintenance technicians, and other aviation professionals who operate and support Bombardier aircraft for more than 40 years.

### Aviaservices receives 145 approval

Aviaservices Ltd (Manston, United Kingdom) has received FAA Part 145 approval. This will provide it with the ability to Dual Release products in conjunction with its already held EASA Part 145 approval. The MRO facility in Manston, Kent, has extensive capability within the following areas: wheels and brakes, oxygen bottles, batteries, ELTs, galley insert equipment, catering equipment, cargo equipment, and aircraft interior refurbishment. For further information visit [www.aviaservices.com](http://www.aviaservices.com).

ENVIRONMENTALLY FRIENDLY PRODUCT FROM ECT

# EcoMat

Chemical Containment Systems

**FEATURES & BENEFITS:**

- Mobile self containment in various sizes small to large
- Two material choices (PVC & Polyurethane) - compatible with full range chemicals
- Reduces or eliminates waste
- Implementation is fast & easy with minimal set-up
- Protects environment from hazards of waste disposal

**NOW AVAILABLE FROM AVIALL**




**AVIALL DELIVERS.**

**ECT**

[www.ectinc.net](http://www.ectinc.net) ■ 800-323-1805


**aviall.com** NORTH AMERICA AND AOC: 1-800-AVIALL-1  
INTERNATIONAL SALES: 1-800-AVIALL-3 AIRLINE SALES: 1-800-AVIALL-9  
INTERNATIONAL DIRECT: +1-972-586-1985

The Environmental Protection Agency (EPA) regulates storm water run off through the Clean Water Act by issuing National Pollution Discharge Elimination System Permits (NPDES).



**WESTERN AIRCRAFT**

PARTS IN STOCK  
**COMMITTED TO YOUR SUCCESS**



Authorized Distributors for Hawker, Beechcraft, Dassault Falcon, Honeywell, Concorde Battery, Michelin and Pratt Whitney.

[WWW.WESTAIR.COM/](http://WWW.WESTAIR.COM/) PARTS | 800.777.4926  
Greenwich AeroGroup

### World's Most Compact, Lightweight, and Affordable Life Rafts!

Survival Products, Inc. servicing/sales of aviation/marine life rafts, vests, slides since 1974, manufactures newly designed emergency inflatable four to six man life raft for private aircraft/pleasure boats; **World's Lightest Weight** (only 12 lbs.); **World's Smallest Package** (only 4"x12"x14"); **World's Least Expensive** price (only \$1,370). 9 to 13 man, 18 lbs, valise 5'x12"x14"; \$1,785. **NEW!!** FAA TSO Approved Life Rafts - Type I and Type II. BUY or RENT. 5614 S.W. 25th Street, Hollywood FL 33023 954-966-7329, Fax: 954-966-3584 Website: [www.survivalproductsinc.com](http://www.survivalproductsinc.com) E-mail: [sales@survivalproductsinc.com](mailto:sales@survivalproductsinc.com)

Survival Products, Inc.





**GSE for Small FBOs  
and Corporate Aircraft**

### Bottled Water Cart

No tank to clean  
12v 4.5 gpm pump  
1000 gal charge  
4 or 6 Bottles  
Metering available  
Heavy duty powdercoat



Potable water you know is clean.

### Lavatory Service Cart

Hose attachments  
HD fill/waste pumps  
16 gal fill/waste tanks  
30" wide waste dump  
22" low clearance  
Std industry parts



Cleaner use, low maintenance

[alberthaviation.com](http://alberthaviation.com) 800.821.9811

Visit us at Cygnus Aviation Expo,  
Booth #1730

### Software

#### The AD Resource System®

*A complete small aircraft IA library*

Includes over 30,000 small aircraft AD  
related Services Bulletins for only \$199/yr.

*Triton Aviation Data Corp.*

[tritonaviationdata.com](http://tritonaviationdata.com) Call 800-888-3575

#### Aircraft Maintenance Logbook Entries Created Quickly & Easily



**Rons Aviation Software**

[www.ronsaviationsoftware.com](http://www.ronsaviationsoftware.com)

(231)709-6744



**MTrax™ by Tdata**

**Maintenance Tracking  
Software** for an unlimited  
number of aircraft \$1995

[www.Tdata.com](http://www.Tdata.com)

800.783.2827



**IA Library  
by Tdata**

IA Approach from \$245/yr  
ADs·SBs·TCDS·FARs·ACs·STCs

[www.Tdata.com](http://www.Tdata.com)

800.783.2827

## CLASSIFIED ADVERTISING

### Advertisers' Index

ACES Systems.....	34	Machida.....	33
Alberth Aviation.....	47	Miraj.....	39
AMT Bookstore.....	45	NBAA.....	19
AMTSociety.....	41	Northland Community & Technical College.....	20
Ansell.....	13	Pratt & Whitney.....	31
AVGROUP Inc.....	52	Precision Airmotive.....	24
Aviall.....	7	Prime Turbines.....	34
Bakers School of Aeronautics.....	29	Professional Aviation Associates.....	23
Bombardier.....	17	Spartan College of Aeronautics.....	32
Brown Aviation Tool Company.....	37	Stanley Proto.....	51
Chromalloy.....	2	Survival Products Inc.....	46
Cygnus Aviation Expo.....	11	Taughannock Aviation.....	39
ECT.....	46	Teledyne Battery Products.....	40
Gage Bilt Inc.....	15	USATCO.....	21
Global Parts.....	27	Western Aircraft Inc.....	46
Gradient Lens Corporation.....	9	Wichitech.....	33
JLG.....	5		

### Tools & Equipment



## BORESCOPIES R US



4mm x 1000mm  
**FLEXIBLE BORESCOPE KIT**

DEM STANDARDS GUARANTEED

**\$3595**

Kit includes:

- BRS CH2-4-1000  
2-Way Articulating Borescope
- 150-Watt Halogen Light Source
- Carrying Case *PT6 and other small engines*



**931-362-4009**

**WWW.BORESCOPESRUS.COM**

*Advertise in Aircraft Maintenance Technology  
and watch your income*

FOR MORE INFORMATION  
CONTACT Kathleen McNamee at  
1-800-547-7377 X 1307  
[Kathleen.McNamee@cygnusaviation.com](mailto:Kathleen.McNamee@cygnusaviation.com)

Tools & Equipment

**BORESCOPIES R US**



**SD Card Image Capture Available**

**PORTABLE VIDEOSCOPE**

**FEATURES:**  
 2-Way Articulation: Approx. 120°  
 Display: 3.5" LCD  
 Angle of View: 95°  
 Observation Depth: 5~200mm  
 Lightsource: Manual control LED  
 Battery: Lithium-ion  
 Steel or Vinyl coated leads

**AVAILABLE OPTIONS:**  
 • Up to 6 meters of working length  
 • 90° Tips available on 6 & 8mm  
 • MP-4 Player for video recording

**Standard Units Starting At**

4mm	- \$6,295
6mm	- \$4,995
8mm	- \$4,995

**931-362-4009**  
**www.Borescopesrus.com**

**Taylor**  
 Pneumatic Tool Company

[www.taylorpneumatic.com](http://www.taylorpneumatic.com)

**Global Borescope**  
 Videoscopes—Fiberscopes—Rigid Borescopes

New & Used Equipment, Repairs, & Rental Support

Call us at 210.520.8900 / 800.833.0445  
 Or visit us at [www.globalborescope.com](http://www.globalborescope.com)

**"Most Affordable AD Library"**  
**The A.D. TOOLBOX**  
 by Zook Aviation Inc

ADs, SBs, TCDs, STCs, 337s, FARs, ACs, CARs, CAMs, Forms & More!

(803) 696-1041 or [www.zookaviation.com](http://www.zookaviation.com)

**ADVERTISE HERE**

CONTACT KATHLEEN MCNAMEE  
 FOR MORE INFORMATION.  
 PHONE: 800.547.7377 EXT. 1307  
 KATHLEEN.MCNAMEE@CYGNUSAVIATION.COM

**Santa Fe Aerospace**

- Avionic/Accessory/Instrument Shop Bench Test Panels
- Commercial & Military
- Exacting to OEM Specs.
- Send us your CMM schematics for quote
- As seen on cover of Avionics Magazine, May 1992
- Mil-Spec Components
- Affordable
- Formerly FAA/EASA Approved Part 145

[www.avionictesters.com](http://www.avionictesters.com) Tel (505) 473-7366

Career Search

**AVIATION MECHANIC SUPERVISOR**

**SALARY: \$64,800 - \$91,100**  
**GRADE: 120**

**POSITION:** An Aviation Mechanic Supervisor schedules, evaluates and certifies maintenance and repair work of the Police Department's Aviation Maintenance program in accordance with manufacturer's specifications and Federal Aviation Administration's regulations. Employees work a conventional work-week and are subject to emergency callback.

**MINIMUM QUALIFICATIONS:** Have current Federal Aviation Administration Airframe and Powerplant Certificate with current Federal Aviation Administration Inspection Authorization; AND Have graduated from an accredited high school or possess a GED certificate; AND Have five years of experience in the repair and maintenance of rotary wing aircraft, including three years of such supervisory responsibilities as disciplining, evaluating the performance of and recommending the hiring, firing and promoting of aviation mechanics and technicians.

**FOR YOUR CONVENIENCE:** Applicants may also obtain and submit applications for this title at the following location:

**Baltimore City Police Department**  
**601 East Fayette Street Main Lobby**  
**Baltimore, MD 21202**  
**Also apply through [www.baltimorecity.gov](http://www.baltimorecity.gov)**

QUESTIONS??? Email: [mark.mason@baltimorepolice.org](mailto:mark.mason@baltimorepolice.org).

Career Search

**Avjobs.com**  
 Making Dreams Reality

All Aviation Jobs, All Categories, All the Time!  
[www.avjobs.com](http://www.avjobs.com) 303.683.2322

**Southern Illinois Airport Authority, Carbondale...**

...invites proposals from qualified firms and individuals to provide Fixed Base Operator services in airport provided facilities and with certain airport owned equipment. An RFP package is available electronically or by mail by contacting the airport at 618-529-1721 or [airport@midwest.net](mailto:airport@midwest.net). Sealed proposals will be due no later than 4pm, local time, March 1, 2011. A non-mandatory pre-proposal meeting and tour will be held on February 15, 2011 at 10 am, local time.

The Airport Authority reserves the right to accept or reject any and all proposals and to waive irregularities in the process and proposals.

**MALABAR 20 TON TAIL**

**15 TON NOSE**

**MALABAR 35 TON MAINS**

Things For Aircraft Support, Inc.  
[www.thingsforaircraftsupport.com](http://www.thingsforaircraftsupport.com)  
[thingsforaircraft@cs.cadence.com](mailto:thingsforaircraft@cs.cadence.com)

**STOP LEAKS FAST WITH SECO SEALS!**

Conical Seals for 37 degree Flared Tube Fittings  
 Aluminum Copper Nickel Stainless Steel

**714-546-3478**  
**www.secoseals.com**



Schools & Training

**ADVERTISE HERE**

Contact Kathleen McNamee  
for advertising information:

Phone: 800-547-7377 ext. 1307  
Kathleen.McNamee@cygnusaviation.com  
Fax: 920-563-1699

\*\*\* [www.avtech-exams.com](http://www.avtech-exams.com) \*\*\*

**A & P** **IA**  
**FCC** **GROL**

For Free Brochure  
**800-216-0930**  
Riverside, California Int'l: 951-352-8180

Writtens, Oral & Practicals,  
Walk to Lodging, Fly-In Airport  
A & P 8 Days, IA 3 Days,

Is old "Benny" still doing  
on-the-job training for your  
**MANUFACTURING and REPAIR TECHNICIANS?**



Perhaps it's time to contact Abaris Training for practical & professional hands-on composite training.

**ABARIS**  
TRAINING

775-827-6568 ♦ [www.abaris.com](http://www.abaris.com)

**A&P - I.A. - I.A.R. - FCC - R.E. - F.O. - CST**

**TURN YOUR EXPERIENCE INTO A LICENSE IN AS LITTLE AS A WEEK!**  
*Obtain Your AAS Degree in as Little as a Year!*  
We Come to You for 15 or More Students

- A&P FAA Airframe & Powerplant
- I.A. FAA Inspection Authorization
- I.A.R. FAA Inspection Authorization Renewal
- FCC General Radiotelephone Operator's License
- R.E. FCC Radar Endorsement
- F.O. Fiber Optics / Advanced Fiber Optics
- C.B.C Computer Building & Configuring
- CST Computer Service Technician

201 S. Railroad Street  
P.O. Box 1810  
Colfax, CA 95713  
Phone: (530) 346-6792  
Fax: (530) 346-8466  
Email: [aesa@aesa.com](mailto:aesa@aesa.com)

 **1-800-345-2742** 

**AVIATION & ELECTRONIC** **www.aesa.com**  
SCHOOLS OF AMERICA **jpdoyle@aesa.com**

**TUITION ASSISTANCE AVAILABLE FOR QUALIFIED PERSONNEL!**

**Facilities/Facilities Maintenance**

**HANGAR FLOORS**  
Manufacturer of PolyMax 5000AC  
Epoxy & Urethane Floor Coating System



  
**PolyMax**

For A Quotation:  
800.459.7659 [www.PolyMax-us.com](http://www.PolyMax-us.com)

**TIRE CAGE**  
800-821-9811  
[www.alberthaviation.com](http://www.alberthaviation.com)

[www.avotekbooks.com](http://www.avotekbooks.com)

  
INFORMATION RESOURCES

Aviation Maintenance Training Resources

Call Kathleen McNamee for advertising information  
1-800-547-7377 ext. 1307

**ADVERTISE HERE TODAY!**



We Want  
To **Work** For **YOU!**

Are you looking to hire someone?

*Aircraft Maintenance Technology* magazine is the place to run your help wanted ad.

Contact Kathleen McNamee for information:  
1-800-547-7377 ext. 1307  
[Kathleen.McNamee@cygnusaviation.com](mailto:Kathleen.McNamee@cygnusaviation.com)

**Target your audience**



**AIRCRAFT MAINTENANCE TECHNOLOGY**

Contact Kathleen McNamee Today!  
Phone: 800.547.7377 ext. 1307  
[Kathleen.McNamee@cygnusaviation.com](mailto:Kathleen.McNamee@cygnusaviation.com)

**Aircraft/Engine Parts**

**Preferred Airparts, LLC**  
Home to 8-million new parts for hundreds of manufacturers!  
800-433-0814 or 330-698-0280  
Visit our website and check stock:  
[www.preferredairparts.com](http://www.preferredairparts.com)

 we buy worldwide **Kidron, Ohio USA**

When you advertise in Aircraft Maintenance Technology...

**THE SKY IS THE LIMIT!**



Contact Kathleen McNamee for more information:  
800.547.7377 ext. 1307  
[Kathleen.McNamee@cygnusaviation.com](mailto:Kathleen.McNamee@cygnusaviation.com)

# AMTonline Presents a New Media Type



Jon Jezo, Publisher

**S**hortly after reading this column AMTonline.com will be introducing you to a new form of AMT media, webcasts. Our webcasts will feature key industry speakers on many topics important to all those who work in the aircraft maintenance industry, whether an aircraft technician, maintenance manager, or other equally important roles. The webcasts will include some great features like polling and question and answer sessions to allow full participation between the speakers and audience.

Our Editor, Ronald Donner will be hosting the new webcast events throughout the year and if there are any topics you'd like to see us cover please drop a note to editor@amtonline.com.

If you'd like to participate in our FREE webcasts simply sign up on AMTonline.com and we'll be sure to send you a reminder before the live event. Can't attend on the



*At each IA renewal event there is a chance to talk to company representatives to learn more about their products and services.*

date/time of the webcast? No worries! The webcasts will be archived on AMTonline for an entire year for your viewing pleasure 24 hours a day, seven days a week.

Stay tuned for the first webinar event in March 2011. You'll get more information on the dates and times for the events via our weekly AMT eNewsletter on Thursdays.

## Let AMTSociety help you stay actively engaged

AMTSociety's road show tour of training events is coming to a city near you! Don't miss the next stops in Kansas City, MO on February 16th; Cygnus Aviation Expo held in Las Vegas, NV, on February 23-24; Aurora, CO, on March 16th; and lastly Orlando, FL, on April 9th. Don't forget each seminar meets the requirements contained in FAR 65.93(A)(4) for Inspection Authorization (IA) renewal training and is acceptable toward 8 hours of training for IA renewal and the FAA AMT Awards Program.

Until next time we'll see you online: forums.AMTonline.com

*Thanks for reading!  
Jon Jezo*

*Here are attendees at the Seattle (right) and Houston (below) IA renewals.*



“ SON, THAT'D BE LIKE  
CHEATIN' ON MY WIFE.  
ONLY I'D LIVE TO TELL ABOUT IT. ”

Ask a Proto® man to use a different brand of tool, and that's the kind of response you'll get. Why? Proto tools breed loyalty. You can count on them to work well and make work easier. They last, so you know they'll be around when you need them. They inspire trust. They fit. Any other tool, just doesn't seem right.



STANLEY  
**PROTO**®



F O R J E T P A R T S

*The Right Part  
at the Right Time...  
Always.*



- **Exchanges**
- **Spares**
- **Repair Services**
- **24 / 7 AOG Support**

