



## Were Back

From Mike Jordan - Editor

## It's IA Time Again

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LET'S NOT  
MEET BY  
ACCIDENT

In case you didn't notice, it's been a while since we published this newsletter. We sincerely apologize to our readers, most of them have been squealing very loudly. It is however rewarding to find out that a lot of folks really did miss the newsletter. The problem has been time and participation. Not enough time and too little participation. The editor has been overwhelmed with other special assignments and has been working on a variety of national work groups that hopefully will enhance the efficiency of the FAASTeam. These other assignments have forced the newsletter onto the back burner. Additionally, there has been a large reduction in the amount of articles and suggestions for articles submitted by you folks. Those are my excuses and I'm sticking to them.

But guess what? There is a golden nugget in the major budget cuts coming our way. The brass has been canceling a lot of our meetings, special projects, and any travel not directly related to safety and oversight. This of course means that if they don't fire me I will have more time to dedicate to the newsletter. Not to mention my boss, who is great guy, is on my case to get the newsletter out. Did I say my boss is a great guy?

All joking aside, we do apologize for any inconvenience and will do our best to be on time in the future. That means we need your help. Please submit your articles or any suggestions for articles on issues or concerns you are having. Did I mention my boss is a great guy?

This is the year and the month for all you Inspection Authorization holders to get re-blessed by the FAA. It's time to get your card signed if you haven't already done it. In case you have forgotten, here's the drill. Make an appointment with you local Flight Standards Office, (that's where the Feds hang out). Show up with 2 copies of [FAA Form 8610-1](#) properly filled out. Make sure you have the current form it's dated (07-2010, click link above). We are now asking that you include your e-mail address. Also bring proof that you met one of the qualifications found in FAR part 65.93 (a) 1-5. These are 4 annuals, or eight Form 337's, or completed one progressive inspection, or completed 8 hours of recurrent training, or have passed an oral exam given by an FAA Inspector. And remember, you must have one of the above for each year and you cannot mix them up or have partial combinations of the requirements in a single year. If you are renewing based on training, be sure to bring the original certificate of training, no copies. And don't forget to bring your IA card.

You also might want to be prepared to prove to the Inspector that you have been actively engaged for the last 2 years in maintaining aircraft that are certificated and maintained in accordance with the Federal Aviation Regulations. That's a hot new subject which will be in a later newsletter. Good Luck and Get-Er-Done. Mike Jordan

## Burned By Fatigue? By Dr. Katrina Avers & Erica Hauck

*About the Authors: Dr. Katrina Avers is a research psychologist in the Human Factors Research Lab at the Civil Aerospace Medical*

*Erica Hauck is a graduate student intern in the Human Factors Research Lab at the Civil Aerospace Medical Institute.*

The old adage says "If you play with fire, you're gonna get burned." A mechanic surveyed by the FAA describes the aviation maintenance approach to playing with fire:

**"I have been a lead mechanic for over 25 years for the airlines. Have I ever worked tired when I shouldn't have or seen others who worked tired when they shouldn't have? Yes. Do other mechanics, leads, and management know about it? Yes. Have mistakes been made due to fatigue? Yes."**

Fatigue – a feeling of tiredness, exhaustion, or lack of energy – has been repeatedly identified as a dangerous contributor to aviation maintenance errors – errors that have lead to incidents, accidents, and loss of life.

In the maintenance hangar, fatigue is often battled with a continuous supply of coffee and a false belief that you can work through any fatigue challenges without consequence. Do these kinds of efforts contribute to a healthy lifestyle, high quality work, or safety in the skies? The answer is ...NO.

Science tells us that individuals working more than 17 hrs straight begin to make decisions and perform like an individual that is considered legally drunk (.05-.10 BAC). What does this mean? It means the aviation industry needs to change its approach to managing fatigue in the maintenance environment.

To avoid getting burned by fatigue, regulators, operators, and labor must take a shared responsibility and implement science-based preventive action. The FAA has sponsored a multi-disciplinary work group that includes representatives from industry, labor, research, and government to do just that. The goal of the work group is to identify the real-life issues (e.g., economy, pay, family life) surrounding fatigue and develop a practical, scientifically-based approach to managing fatigue risk in the maintenance environment. With these goals in mind, the work group is developing a fatigue risk management system (FRMS) that has the flexibility to be a win-win for everyone involved. Ultimately, fatigue management can improve quality of life, quality of services, and overall aviation safety. For a FRMS to work, everyone (top leadership, middle management, and mechanics) must be on board and doing their part. The working group has strived to improve fatigue awareness and provide easy, short-term solutions for managing fatigue. Some of the recent tools developed by the work group include the "Fatigue Survival Toolbox" calendar, the "MX Fatigue Focus" newsletter, fatigue awareness posters and the Maintenance Fatigue Website ([hfskyway.faa.gov/HFSkyway/FatigueHome.aspx](http://hfskyway.faa.gov/HFSkyway/FatigueHome.aspx) OR [mxfatigue.com](http://mxfatigue.com) ). Next, the work group will develop a toolbox to provide mechanics, middle management, and top leadership with all of the necessary information and tools for implementing a successful fatigue risk management system. Keep checking the Maintenance Fatigue Website for updates and newly released tools – this is your opportunity to avoid getting burned by fatigue!

# A Hose is a Hose , Right?

There are many types of coiled air tubing for aircraft. Many mechanics don't understand the differences between all of them. Here are the differences.

## ***CAT Ducting***

CAT ducting is an extremely lightweight, highly flexible, low-pressure ducting which is suitable for conveying fumes and air. It is not recommended for handling liquids or materials that are highly abrasive. Short lengths can be screwed together easily to form a continuous length. The use of short lengths eliminates waste.

## ***CEET Ducting***

CEET ducting is recommended for use in hot or cold air applications and for conveying fumes. The fabric liner on the inside diameter of the ducting allows for the air to flow smoothly, even in tight bends. Thus, this type of ducting has less air friction loss than ducting which is unlined. CEET ducting is not recommended for conveying liquids or highly abrasive materials.

## ***SCEET Ducting***

SCEET ducting is ideal for use in conducting extremely cold or hot air at temperatures ranging from -80°F to +550°F, and for conveying fumes. This ducting is highly flexible and can be easily installed around obstructions and sharp bends. It has less air-friction loss than similar non-lined ducting. SCEET ducting is not recommended for applications involving liquids or highly abrasive materials

## ***SCAT Ducting***

SCAT ducting is recommended for use in conducting extremely cold or hot air where temperatures range from -65°F to +550°F. It is lightweight and extremely flexible. This ducting minimizes waste because short sections which are normally unusable can be screwed together to form a continuous length, as shown.

## ***Special Ducting***

For certain installations, CAT/CEET/SCEET/SCAT may be perfectly interchangeable with what was installed. But be cautious. Other installations may require a hose section that is specially designed for a specific installation. One type is intake ducting. Some "aircraft" manufacturers may call out a specific part number for engine intake ducting. This may be a special piece that has been designed to not fail in a negative pressure environment. Any engine moves massive amounts of air through it and normal SCAT and SCEET can fail internally and cause damage and/or sudden engine failure. SCAT can have corrosion of the coil wiring and pieces can break off and be ingested in the engine. SCEET can have the inside liner dis-bond and cause an obstruction.

So, remember to do your research first and use only what is recommended by the manufacturer.

Author - Unknown Donator

## Accident Case Study

### An Almost Fatal Case of Pencil Whipping

One evening in late summer of 2002, a pilot operating a Piper PA-28-161 Warrior departed on a short flight OK to TX to pick up some friends for a return trip to Oklahoma. During the return trip the pilot and passengers would experience a horrific flight due to an in-flight fire.

The aircraft had recently been approved for return to service after an annual inspection. The aircraft owner stated on a couple of occasions prior to the annual inspection he had reported to his independent maintenance provider, a local Aviation Maintenance Technician, (AMT) who held both an FAA Airframe and Powerplant rating with Inspection Authorization (IA), the aircraft had been experiencing electrical problems. Some of these problems were dimming of panel lights, cabin lighting problems, and other electrical equipment and charging system anomalies, including the battery not holding a proper charge. A review of the aircraft records indicated there were several of these effected components replaced as corrective action, but there were no entries concerning the aircraft battery inspection, servicing, or condition.

Upon departing from TX at 8:42 PM, the pilot and passengers, one sitting in the left rear seat, one occupying the right front seat, and the other sat in the right rear seat, all bound for Oklahoma on a VFR GPS direct flight assisted by Air Traffic Control (ATC) by a flight following. Shortly after approaching the airspace over Oklahoma the pilot noted the aircraft's panel lights dimming and then returning to normal, followed by the right rear passenger reporting a burning smell.

Directly afterward the right rear seat passenger released their seat belt and slid to the left reporting fire coming up from under her seat.

The pilot declared an emergency, reported the in-flight fire and remained extremely calm communicating with ATC. ATC provided vectors to a nearby airport, but the pilot responded they would not make it much longer and opted to land the aircraft off airport. The recording from ATC of the event captured the calmness of the pilot and the indescribable fear of the passengers. With open flames and smoke in the aircraft cabin the pilot executed a textbook emergency landing and all were able to exit the aircraft as it filled with thick smoke and flames without any injuries.





The accident investigation showed the aircraft battery positive terminal had come in contact with the rear seat's seat springs beneath the seat covers. This caused an electrical short which fused the terminal to the seat spring and transformed the seat springs into toaster oven like heating coils which ignited the seat cushion.

Other factors which played into this case were the IA and an assisting AMT who conducted the annual inspection were not aware of the modification requirements of one time Airworthiness Directive (AD) 81-23-05 which applied to this aircraft. This one time AD was a corrective action for the battery and seat spring contact issue that had been originally complied with in 1982.

A review of the aircraft records identified two cabin interior changes that had taken place following the compliance time of this one time AD between 1982 and 2002. It was determined this aircraft had been taken out of compliance during one of the interior changes by removing a piece of plywood which had been installed in accordance with (IAW) Piper Service Bulletin 631B, as instructed by AD 81-23-05, and was repeatedly missed during all annual inspections conducted after it was taken out of compliance. This easily verifiable missed item of inspection was also overlooked during periods of battery servicing during periodic required maintenance during the same time period.

During the post accident investigation, interviews with the AMT who had worked with the IA that signed off the last inspection, told the Investigating Inspector that the IA had trusted his work and refused the offer to actually look at the aircraft during the maintenance and inspection.



The interview of the AMT made easy work out of what might have been very difficult to prove. In this case the IA was clearly guilty of 14 CFR part 43.12 **FALSIFICATION!!** The IA made a false entry in a document that is required to be kept when he affixed his name and certificate number to an entry that said he had conducted an annual inspection on the aircraft when in fact he had not personally performed the inspection. The NTSB agreed with the FAA Investigator and the IA's authorization was **REVOKED**.

I was an A&P Mechanic long before I was an FAA Inspector. Because of that we know how things are really done when we're not watching. It's not uncommon that an A&P

opens the aircraft performs his own inspection and then calls in the IA. The IA inspects the aircraft verifies all applicable AD's are complied, all discrepancies are corrected and signs off the annual. Not exactly the way the FAA intended it to happen but at least you get two sets of eyes on the aircraft. Legal interpretation has said the IA may be assisted on an annual but he must actually perform the inspection.

In this case the IA failed to perform the inspection. It is not clear whether he even looked at the airplane. Who knows, his experience might have detected the missing plywood over the battery. However, because this mechanic's inattention to details, the flight came within a just seconds of being catastrophic. Would you like to have to live with that on your mind. Remember the following: **Always do the right thing, even when nobody is watching.**

## TID BITS

### I Fought the Law and I Won

( From the lyrics of an old song)

-----Terry Wrote to the Editor-----

Thank you for the FAA Safety email briefings. I find them useful and informative. I particularly like the "real world" orientation of the articles. They appear to be written by mechanics who know that work in the aviation world doesn't always progress via the text or inspector's manual.

I'm both a pilot and mechanic. I fly an air ambulance Lear but previously flew FAR 135 freight. I've also worked a little as a 121 mechanic.

Several years ago I argued with an FAA Ops inspector who said that a 135 mechanic could not also be a pilot on the plane that he / she signed off.

I challenged him to show me the reg and never heard back from him.

It would be an interesting article to explore this small subset of pilots / mechanics who do both jobs.

Thank you, Terry Spath

ATP DA-10, LR-JET, A&P, IA  
[www.spathengineering.com](http://www.spathengineering.com)

-----Editors Response-----

Terry, Thanks for your kind words. I love the story about challenging the FAA Inspector to show you the regulation that he/she was coming from. This is always the right thing to do if you disagree or don't understand the requirements imposed by an FAA Inspector. The Inspector should always be able to back up whatever he or she is asking you to do with a regulation. I'll look into the issue and see if it warrants an article. Thanks for the suggestion.

Mike Jordan

### Non-Pilots Must Convert

### Paper Certificates to Plastic

The FAA is converting pilot and non-pilot certificates from paper to plastic. Active pilots made the conversion last year when paper pilot certificates expired on March 31, 2010. Non-pilots—including mechanics, flight engineers, repairmen, aircraft dispatchers, and airmen issued certificates under part 63 and part 65—have until March 31, 2013, to obtain plastic certificates. The reason for the conversion from paper certificates to plastic is to provide enhanced security features as required in the Drug Enforcement Administration Act of 1988 and the Intelligence Reform and Terrorism Prevention Act of 2004.

Airmen Certification Branch Manager **Tona Gates** (AFS-760) says it is important for certificate holders to know that if they don't comply with the conversion, they may not be able to exercise their privileges. "The certificate is still valid, but they can't exercise privileges," Tona said.

# Don't Play The Fool

Author: Mr. Fessler - Founder /CEO Hallmark College

I stole this article from "Shakey Jake" The newsletter of Hallmark College here in San Antonio. It was written for the Part 147 school A&P students. I thought in these financially challenging days that it might not hurt us veteran Mechanics to read it.

Mike Jordan - Editor

I know all students are looking forward with great anticipation to graduation, getting that dreamed of job and making more money. One trap I have seen so many times is as soon as more income comes in spending goes up and sometimes even faster than the income. Everything out there seems to scream "buy me", "buy me".

An ancient proverb says:

"The wise man saves for the future, but the foolish man spends whatever he gets".

An interesting phenomenon occurs with financial success. The more income a person has the deeper in debt they go. Life often does not get better, it gets worse because of over-spending and debt. There is power in money, but the only money you have power over is what you keep.

Sometimes great career opportunities come that require a temporary reduction in income but a person cannot afford to seize the opportunity because they have not saved any financial reserves

I remember over forty years ago when I was working for one of the major airlines, well paid, but wanting to do something else with more meaning to me.

Even though I had a great income and was recently married, I had resisted the temptation to spend. Instead I saved and when opportunity presented itself I was in a financial position to leave that high paying job, go without any income for a period of time and help start what are now the Hallmark Colleges.

Saving is a key difference between a wise man and a fool. It is not merely a matter of how much you earn but how much you save. Saving simply means spending less than you earn. Income is what you earn. Wealth is what you keep. You cannot spend your way to prosperity but you can save your way to it. Back in the sixties Volkswagen launched a highly successful campaign to sell the original "Beetle" automobile. Billboards read: "Live Below Your Means!"

Driving a Volkswagen became a status symbol.

Reasons for saving:

- Have a margin for the unexpected. Don't be the victim.

- Save for purchases. Don't mortgage your future.

- Investments or opportunities.

While in school you are investing in yourself. After graduation, if you do not save on a lower income you won't save on a higher income.

When it comes to borrowing one would do well to limit it to two areas.

- 1) Education: because it gives the highest rate of return of all investments.

- 2) A home: but do not go overboard and have the goal of paying it off as soon as possible. They cannot foreclose if you don't have a mortgage.

You will either be the master of your money or it will be your slave master. Make it serve you or you will serve it. So remember:

"The wise man saves for the future, but the foolish man spends whatever he gets."

## SAFO 10016 Missing or Improper Seat Stops in Cessna Models

Editors Comment: This is so important and easily overlooked during the inspection.



# SAFO

Safety Alert for Operators

SAFO 10016

DATE: 8/26/10

Flight Standards Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

[http://www.faa.gov/other\\_visit/aviation\\_industry/airline\\_operators/airline\\_safety/safo](http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo)

*A SAFO contains important safety information and may include recommended action. SAFO content should be especially valuable to air carriers in meeting their statutory duty to provide service with the highest possible degree of safety in the public interest. Besides the specific action recommended in a SAFO, an alternative action may be as effective in addressing the safety issue named in the SAFO.*

**Subject:** Missing or Improper Seat Stops in Cessna Models

**Purpose:** This SAFO reminds inspectors, operators, owners and maintenance technicians that type design seat stops are required to be installed on all seat rails to meet airworthy requirements.

**Background:** Missing or improper seat stops have been found on several Cessna models including 150, 152, 172 and 206. These seat stops are also found on Cessna models 303, 336 and 337; and all legacy (pre-1987) single-engine Cessna models 170, 175, 177, 180, 182, 185, 188, 190, 195, 205, 207 and 210. Cessna has identified seat stops as an important piece of equipment required for safety by inserting a warning note into their service manuals to ensure that seat stops are installed in the proper positions on the rails for each seat.

**Discussion:** Improperly installed, worn or incorrect seat stop installations could allow the pilot and or co-pilot seats to depart the rails during critical phases of flight, such as take-off and landing. The seat stops need to be inspected at regular intervals for condition and proper installation to ensure the continued airworthiness of the seat stops. The Cessna service manual recommends inspection of seat stops at the 100 hour/Annual inspection, although not all of the Cessna service manuals provide instructions that specifically address inspection of the stops for condition, proper location or that the stops are approved parts.

**Recommended Action:** Recommend operators ensure seat stops are inspected at their scheduled inspections intervals for proper location, seat stops are in airworthy condition by not being bent, cracked or worn and the stops are the proper part identified in the parts catalog.

**Contact:** Questions or comments concerning this SAFO can be directed to Ron Center, Kansas City Aircraft Evaluation Group, FAA, by telephone at (316) 941-1242 or by fax at (316) 941-1279 for more information.



## 10-01 Newsletter, "What Is It?" The Winner Is

The first correct response to the 10-01 edition came from Mr. Dan Shumaker, an Airframe and Powerplant Mechanic that owns Dan's Hangar in Tracy California. Dan does a beautiful job restoring vintage aircraft. Dan correctly Identified the photo as a Russian Tupolev ANT-20.

The ANT-20 was a giant eight-engine propaganda monoplane, developed from the **TB-4**.



The ANT-20 carried 72 passengers. It also lifted a bar and buffet, film processing lab, and a movie theater, besides a laundry, a pharmacy and a printing press. This indicates that it was used in the more remote areas of the USSR. It was also fitted with loudspeakers. Lost in an accident after the pilot of an escorting fighter started to loop around the wing and crashed into it.



Dan and his buddy "Jonny the hangar cat"  
Visit Dan's Hangar at [www.shu-aero.com](http://www.shu-aero.com)

## AVIATION MAINTENANCE TECHNICIAN TRENDS

Did you know that between April 2009 and September 2010 positions for aviation technicians increased 419 percent? This is according to *Simply Hired*, an internet job data base that has tracked the number of job announcements for aircraft technicians over the past year.

Job opportunities are likely to be the best at small commuter and regional airlines, at FAA repair stations, and in general aviation. Commuter and regional airlines are the fastest growing segment of the air transportation industry. Also, some jobs in aviation maintenance will become available as experienced mechanics leave for higher paying jobs with the major airlines or transfer to another occupation. At the same time, general aviation aircraft are becoming increasingly sophisticated, boosting the demand for qualified mechanics. Mechanics will face more competition for jobs with large airlines because the high wages and travel benefits that these jobs offer generally attract more qualified applicants than there are openings.

Mechanics who keep abreast of technological advances in electronics, composite materials, and other areas will be in greatest demand. Also, mechanics that are willing to relocate will have better job opportunities.

So where are the jobs? According to a recent study by the Aeronautical Repair Station Association, as published in *AMT Magazine* in May 2010 the top ten states are:

- |               |              |            |                |
|---------------|--------------|------------|----------------|
| 1. California | 2. Texas     | 3. Florida | 4. Washington  |
| 5. Georgia    | 6. Oklahoma  | 7. Arizona | 8. Connecticut |
| 9. Kansas     | 10. New York |            |                |

Author: Mr. Newton - Hallmark College -San Antonio, TX.

## WHAT IS IT?

If you know, be the first to send me an e-mail at **"[michael.r.jordan@faa.gov](mailto:michael.r.jordan@faa.gov)"**. and we will publish it in the next issue and give you credit for your aviation savvy.



## FAASTeam “Nuts and Bolts” Newsletter Article Submissions

If you are interested in submitting an article please type your article using 10 point Times New Roman font in a word document. Articles should not exceed 800 words maximum. If pictures are submitted, please title by number to match required caption. Best would be to paste into word document with the captions printed.

Limit pictures to reasonable quantity and size for article.

Your submission may be slightly modified to ensure correctness and due to space considerations. No major content change will be made without your notification. You are responsible for content and FAA assumes no liability and/or implied endorsements. Upon completion, please submit to Mike Jordan at [Michael.r.jordan@faa.gov](mailto:Michael.r.jordan@faa.gov)

If you are interested in offering a suggestion for an article or if you have a question or issue that you would like clarification on in our “Ask The Feds” column, simply send us an e-mail with your suggestion or request at the address above, and include the form below.

**Please submit the following information with your article, suggestion or request.**

<b>Your Name:</b>		<b>Phone #:</b>	
<b>Title:</b>			
<b>Company:</b>		<b>email:</b>	
<b>City:</b>		<b>State:</b>	

	<b>YES</b>	<b>NO</b>
Do you wish to have your article published:		
Do you wish to have your name, title and/or company name published:		
Are you a FAASTeam Representative		
I agree and attest to information provided		
<b>Signature:</b>		