



## Nuts And Bolts - A Newsletter Written By Mechanics For Mechanics

# It's Better to Be Torqued Up Than Torqued Off!

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LET'S NOT  
MEET BY  
ACCIDENT

The other day an inspector told me that he had performed a routine inspection on an independent mechanic that was in the process of installing a propeller on a Cessna 172. The mechanic was using a torque wrench so the inspector asked to see the required calibration record for the torque wrench. Not an unreasonable request, right? Well, the mechanic got really **torqued off** over it and told the inspector he did not have to have calibration records, because he was not an FAA certified repair station. The mechanic said he was working under the authority of his mechanic certificate with airframe and powerplant ratings. This is when the arguing started. Unfortunately it took a while for the mechanic to realize that **arguing with an FAA inspector is like rolling in the mud with a pig, sooner or later you figure out that the pig likes it!!**

This is not the first time this issue has come up, and obviously both people felt strongly about their position, so let's figure out who was right.

As always, let's start with the applicable regulation; 14 CFR part 43.13 (a) and (b) which states in part, (I cut out some of the text to make it easier to get the point)

- (a) Each person performing maintenance, on an aircraft, engine, or propeller shall use the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or other methods, techniques, and practices acceptable to the Administrator. He shall use the tools, necessary to assure completion of the work in accordance with accepted industry practices. If special equipment is recommended by the manufacturer involved, he must use that equipment or its equivalent acceptable to the Administrator.
- (b) Each person maintaining, shall do that work in such a manner that the condition of the aircraft, airframe, aircraft engine, or propeller worked on will be at least equal to its original condition (with regard to structural strength, resistance to vibration and deterioration, and other qualities affecting

airworthiness).

OK, now that we know the regulation, let's diagnose what part of it the mechanic is obligated to comply with. 43.13 (a) is applicable because he was performing maintenance on an aircraft by installing a propeller on it. Therefore, he must use the instructions in the Cessna 172 maintenance manual for installation of the propeller. Additionally, 43.13(b) now applies because he is "maintaining", so he must do the work in a manner that ensures the condition of the aircraft will be equal to its original condition with regards to structural strength resistance to vibration and /or other qualities affecting airworthiness.

So what must he do to meet the intent of the regulation and make the inspector go away. Easy, He **must** do whatever the maintenance manual says to do to install the prop. This might include using a calibrated torque wrench to tighten the prop bolts to a specified torque.

In the case of the Cessna 172, the manual does not specifically say that your torque wrench has to be calibrated. It does however give us instructions to use a torque wrench and tighten the bolts to ## inch pounds. So I ask you, how are you going to know that you tightened the bolts to the required torque without knowing that your torque wrench is accurate by having been calibrated? Your not!

So, in this particular case the mechanic was right because there was no legal requirement for the tool to be calibrated, but there was a legal requirement for the mechanic to tighten the bolts to a certain torque value, and when he signs the maintenance record he is attesting that he did just that. The mechanic wins the battle but may have lost the war.

I have said many times that nothing happens until something happens. So let's just imagine that in this case the mechanic either over or under torqued the bolts due to an inaccurate torque wrench. As a result of the improper torque the prop bolts shear and the prop

## It's Better to Be Torqued Up Than Torqued Off!

**Continued**

comes off in flight. The aircraft crashes and several people are injured or killed. Here comes the inspector again and this time he is not going to lose the argument.

He is going to take the broken bolts to a metallurgist and get a report that says the bolts failed due to an over torque condition that stretched the bolts and caused them to fail in the threaded area (I've done this for real). In addition the propeller was found a long ways from the crash site which supports the inspectors allegation that the prop separated in flight due to broken attachment bolts. Then the inspector is going to violate the mechanic on FAR 43.13 (b) because the mechanic performed maintenance on the aircraft by the installation of a propeller and failed to ensure that work performed was equal to its original condition with regards to structural strength, resistance to vibration and other qualities affecting airworthiness, when he failed to tighten the propeller bolts to the torque value required by the manufacturer.

And the sad part of this is that it all could have been avoided if the mechanic had simply had his special measurement tools calibrated.

When I did the research for this article I was shocked to find that the manufacturers' requirements for calibrated tools was all over the chart, some require it some don't. Some require you use wet torque and others dry. Some don't give any torque values at all and others have torque charts on every other page.

So here is my recommendation and its one that the FAASTeam has been preaching for a long time now. When you perform maintenance you are mandated legally and morally to **FOLLOW THE MANUFACTURERS PROCEDURES**. Remember, we don't design or manufacture aircraft, we maintain them, and to do that, the rules require us to follow the maintenance instructions that were part of the type certification process.

The scenario described above could apply to any maintenance performed that requires a precision measuring tool to make final airworthiness determination. Those tools could include; Torque wrenches, cable tensiometers, pressure gauge,s calipers, micrometers, multimeters, spring scales, etc., etc.

So get it torqued up (properly) before someone gets torqued off. See you later, I'm headed to the calibration Lab with all of my precision measuring tools.

Author: Mike Jordan - Editor

## Scholarship for Aviation Maintenance Technicians Now Available

**If you are about to graduate, or have recently graduated from an FAA Part 147 AMT School, you are eligible to apply to the Helicopter Foundation International (HFI) 2010 Bill Sanderson Aviation Maintenance Technician (AMT) Scholarship Award Program.**

**Enhance your studies and career options by attending one of the eight manufacturer courses:**



- **Agusta Aerospace Corporation (A109 series)**
- **Bell Helicopter Textron, Inc. (any model)**
- **Eurocopter (except Super Puma)**
- **MD Helicopters (500/600/900 series)**
- **Pratt & Whitney Canada, Inc. (PT6T, PT6B- 36/-37 or PW-206 engines)**
- **Rolls Royce (250 engine - any model)**
- **Turbomeca (Arriel 1 & 2 series and Arrius 2 series engines)**
- **Schweizer (269C-C-1), (300C/300CBI) (This is a ten day course)**

**To apply, please use this link:**

**<http://helicopterfoundation.org/Default.aspx?tabid=1751#2>**

# Fatigue Survival Toolbox

By: Katrina E. Avers and William B. Johnson

## Would you go into the desert without water?

Unless you're part camel, the obvious answer is "no" since we all know how important water is for survival. However, this same acknowledgment of a life-sustaining necessity doesn't always seem to apply to sleep with the same level of urgency. Going to work without adequate sleep is like going into the desert without water: It is dangerous! Yet, it's startling how few of us actually get the required winks needed each night and come to work fatigued time and time again. Recognizing this, the FAA created several new tools for aviation maintenance technicians (AMT) to heighten awareness of this vital issue and to help keep the dangerous consequences of fatigue at bay.

## A Few Keys to Survival

Some in the aviation industry continue to see fatigue as a normal and unavoidable part of aviation maintenance. They consider that with enough effort, tired workers can continue to perform their jobs effectively. However, the evidence shows that fatigue has a very real detrimental impact on not only your personal safety, but also flight safety. Fatigue is a known contributor to on-the-job mishaps, personal injury, poor personal health, injury to others, and the quality of your family and social life. To be fully prepared for long work days, night work, and an unpredictable schedule, you need to be aware, plan, and take action. FAA has put together several new tools to help. Key among them is a 2010 pocket calendar for AMTs entitled Fatigue Survival Toolbox. The portable calendar identifies and features 12 critical issues that can influence fatigue and provides you with the tools necessary to combat fatigue both on and off the job.

## Be Aware

The first step to surviving fatigue is recognizing that fatigue is not something you can just "work through." You must recognize that fatigue is a hazard that can lead to increased errors and greater safety risks. Most of us cannot accurately assess when we are fatigued. However, there are a number of physical, mental, and emotional symptoms to help determine if fatigue has become a safety risk. By reviewing the list of symptoms provided in the calendar and listed below, you'll have a good idea if you may be experiencing some level of fatigue or reduced alertness. If you exhibit fatigue-related symptoms regularly, you should consider seeing a doctor.

## Planning Is Important

Most of us would not even think of going into the desert without a plan, yet many of us only think of the next thing that has to be done in our daily lives. To have quality of life, we must plan and set aside time for sleep, work, family, and friends. We must prioritize our time and prepare in advance. For example, you probably shouldn't plan to perform a complex maintenance activity on a Friday night after you have worked a full day, run errands, mowed the lawn, and helped

**The first step is recognizing that fatigue is not something you can just "work through."**

put the kids to bed. Although you may think you are okay to do the job, your body's internal clock will be telling your brain to go to sleep. The bottom line: We must be aware of our limitations and plan accordingly.

## Take Action

Planning is effective only if it is paired with action. So, don't delay—request a copy of the Fatigue Survival Toolbox calendar now. Ask your local FAASTeam Program Manager (FPM) for details. You can identify your FPM by going to [www.FAASafety.gov](http://www.FAASafety.gov), then go to the "Directory" where you can search for the appropriate person to contact. In addition to the calendar, there are other tools that can help guide your plan of action against fatigue. An FAA workgroup involving scientists, mechanics, and regulators recently launched a new fatigue section of the Maintenance Human Factors Web site, along with a new fatigue-focused newsletter for AMTs. Both of these are available at [www.mxfatigue.com](http://www.mxfatigue.com). Even with these fatigue identification and risk mitigation tools available, the most powerful and direct way to confront fatigue is individual responsibility. Now, get some sleep!

This article was reprinted from FAA Aviation News, January/February 2010. Katrina Avers Ph.D. is a research scientist at CAMI and William Johnson Ph.D. is the FAA's Chief Scientific Advisor - Human Factors

# YOU GOT THE POWER

**Author: Buddy Evans, FAASTeam Representative and Owner, School-Of-Wrench**

[www.School-of-Wrench.com](http://www.School-of-Wrench.com)

I know this may sound a little morbid, but I have always enjoyed reading and attempting to actually understand the Federal Aviation Regulations. I have found that reading a particular regulation typically requires reading it several times, and NOT putting any conjecture into the text.

I am not completely convinced most technicians truly understand the enormous responsibility they possess when it comes to performing an Annual or 100 hour inspection. The only difference between the Annual and 100 hour inspection is who can sign it off. Obviously, you must be in possession of a current Inspection Authorization to sign off the Annual Inspection. Nevertheless, allow me to bring attention to FAR 91.409, paragraph (a). This small yet powerful FAR provides the owner/operator a choice between having an Annual Inspection performed within the proceeding 12 calendar months, OR the inspection for issuance of an airworthiness certificate in accordance with FAR 21.

This little paragraph in FAR 91 tells me the inspection to issue an airworthiness certificate, and an Annual Inspection is identical. If you have ever accompanied a Designated Airworthiness Representative (DAR) around the effort to get an Airworthiness Certificate, you know those DAR's don't pass out Airworthiness Certificates like a brand new Airworthiness Inspector with his first box of business cards. That's pretty serious business to get an Airworthiness Certificate, yet this regulation is clearly advising us the efforts are identical. And as we mentioned before, the only difference between the Annual Inspection and 100 hour inspection is who can sign off the inspection; would that not lead us to believe the 100 hour inspection effort is identical to the inspection for the issuance of an Airworthiness Inspection?

If we look at the importance of the Annual and 100 hour inspection from another angle, and that is the sheer volume of text the FAA has dedicated to describe in innate detail

how to perform the Annual and 100 hour inspection; when compared to other regulations in the FAR's, it appears based on sheer volume of text, they are pretty serious about the importance of the Annual and 100 hour inspection

Additionally, we are required by FAR 43.15 (c) (1), to use a checklist when performing an Annual or 100 hour inspection. They even go as far as to provide a Checklist in Appendix D, of FAR 43. There again, given the fact we are required by regulation to use a checklist while performing the inspection, and the fact they provide a checklist, I'm convinced, this Annual and 100 hour inspection must play an important role in the Safety of Flight.

The FAA has gone as far in FAR 43.11 as to provide us an example of the sign off for the Annual/100 hour inspection, and in the example it states we have determined the aircraft is in an airworthy condition. There is a big difference between a "Safe" aircraft, and an "Airworthy" aircraft. Here is an example of the difference: That ballast placard required by FAR 23.1557 is required by FAR. Unless your Airworthiness Certificate under the "Exemptions" section list FAR 23.1557 "Ballast Placard" as an exemption, and your aircraft has ballast locations, then you have to have ballast placards for the aircraft to be considered Airworthy. Would the aircraft fly safely without these placards, probably so, but in our Annual/100 hour sign off, we're attesting to "Airworthy".

The Annual/100 hour inspection is a scheduled event. It's an opportunity to take the aircraft out of service, slow down, and take a very serious look, at not only items of Safety, but items concerning AIRWORTHINESS". The checklist contained in Appendix D of FAR 43, is comprehensive if you seriously study the checklist. The effort to establish and determine Airworthiness is equally as comprehensive. The Annual/100 hour inspection is our opportunity to erase all the assumptions and replace them with affirmative validations. Inspect your aircraft, and the items of Airworthiness as if you were going to issue an Airworthiness Certificate.

Please allow me to Thank You for your continued contributions to the Safety of Flight.



# Accident Case Study

## A Fatal Case of a Little Corrosion in the Worst Place

In November of 2009 about noon CST, an experimental amateur built aircraft was destroyed when it impacted terrain as it was attempting to fly to a nearby airport after encountering engine trouble. The pilot in command, who was the sole occupant of the two place aircraft, received fatal injuries. The highly experienced ATP pilot was not wearing his seatbelt and was flying with an expired third class medical certificate, There was no flight plan filed for this Part 91 flight and visual meteorological conditions prevailed at the time of the accident.

The accident flight was the return leg of a short cross country flight to attend a fly in pancake breakfast. The pilot did not report any engine trouble after the first leg of the flight to his friends at the fly in breakfast. During the return flight the pilot in command decided to fly back as a flight of two with a friend from his home base airport. Approximately 25 minutes into the flight the pilot of the accident airplane reported to his wing man that he was having a little engine trouble and had decided to make a quick precautionary landing at the airport they had just passed to check something, and encouraged his friend to keep going and that he would see him back at the home airport.

Witnesses on the ground reported the engine as sputtering with moments of very high RPM just seconds before the aircraft descended into the trees. The physical evidence at the scene clearly show that the wooden propeller was not turning when it impacted the ground approximately 1 mile south of the airport.

Physical evidence at the crash scene indicated a low energy accident consistent with a stall from low altitude. The initial ground scar was right beside the aircraft. The wings and fuselage did not exhibit damage consistent with high energy impact which would have caused severe damage to the wings and fuselage. Fuel was present in both the main and reserve tanks. Although the Jabiru 3300 engine had received some damage the engine and accessories were intact.

During post accident interviews with a close friend of the pilot/owner, the investigating inspector learned that the owner and his friend had recently replaced the carburetor float and float valve. This maintenance was done because it appeared that the carburetor bowl was overflowing and leaking gas. Because this was the most recent maintenance on the engine it became suspect in our investigation.

The single Bing carburetor was removed from the engine and sent to the manufacturer for evaluation. The following is what was found:



### Float Shut Off Test

The carb was installed on our engine run stand and connected to the electric boost pump. Approximately 4 PSI of pressure was applied to the carb. The float bowl filled normally and the float valve shut off the flow of fuel when the bowl was full. The 4 PSI pressure was maintained for 3 minutes with no sign of leaking or bowl overflowing.

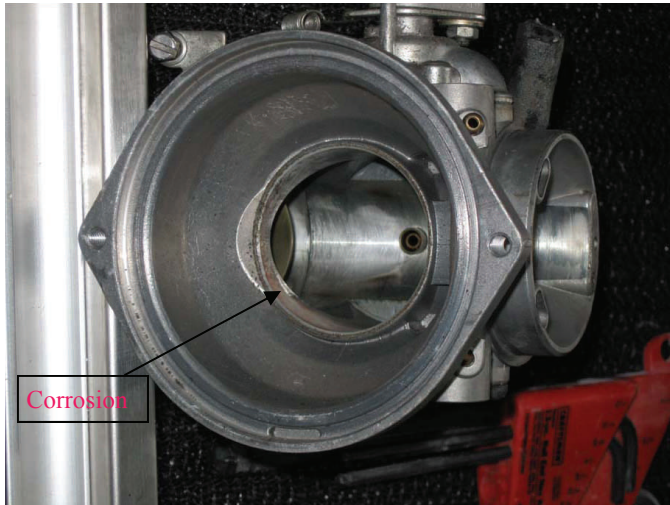
Shaking of the carb similar to engine vibration did not dislodge the float valve and cause the bowl to overflow.

It appeared that the float valve and floats functioned normally.

### Inspection

Upon disassembly of the carb we found evidence of corrosion and foreign matter build up on the inside of the carb body and on the carb needle itself.

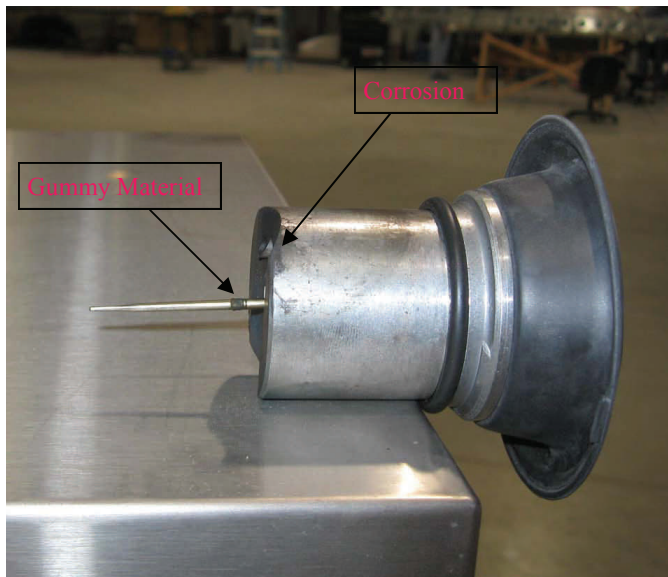
Corrosion was evident on the carb body casting in the area where the carb slide is positioned. The corrosion appeared as raised bumps on the metal surface of the carb. It did not appear that corrosion had eaten into the metal casting but was located on the surface. See photo 1.



Corrosion was also observed on the carb slide itself (sometimes called piston) as well as some buildup of a varnish like substance.

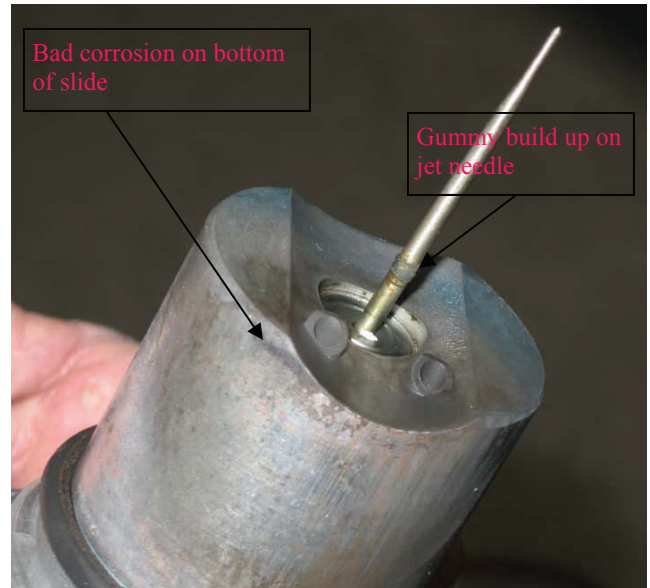
The jet needle has a ring of gummy build up around it which may have affected the engine's ability to idle smoothly.

No defects were found in the diaphragm. The diaphragm was installed correctly in the carb dome.



Inspection of the slide revealed significant build ups of corrosion on the slide. The corrosion was especially thick on the bottom edge of the slide.

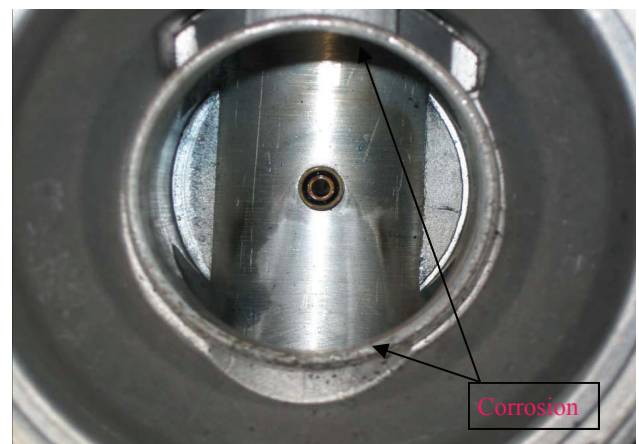
In addition to the corrosion there was a build up of a varnish like residue on the sides of the slide.



The Bing carb controls fuel mixture by moving a tapered needle (jet needle) into and out of a fixed orifice (needle jet). Engine vacuum is fed to the top side of a diaphragm in the carb dome. When the throttle butterfly (which controls airflow in to the engine) is opened more vacuum reaches the top of the diaphragm pulling it upward.

The slide is attached to the diaphragm and the jet needle is attached to the slide. The net result is the more open the throttle the higher the diaphragm will pull the needle. Since the needle is tapered the orifice size increases as the smaller diameter of the needle is pulled into place.

If the slide sticks in the open position but the throttle is pulled back, airflow would slow but fuel delivery would stay at a high rate (because of the smaller end of the jet needle remaining in the orifice). The result would be an excessively rich mixture at any throttle setting other than full open.







In a normally operating Bing carburetor the slide would always be pushed down to the bottom of the carb body by a combination of gravity and pressure from a compression spring in the carb dome that pushes down on the slide itself.

As the photo above shows, the slide sticks open. Even a sharp bang downwards on the counter top did not displace the slide back to its normal position.

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It is safe to assume the pilot used a full throttle setting for take off from the pancake breakfast. It is likely that the carburetor did what it was supposed to do and pulled the slide to the full open position where it stuck due to the corrosion in the body and on the slide as demonstrated in the above photo. From this point to the crash site the engine ran roughly due to an excessively rich mixture. When the pilot decided to turn back to an airport he had just flown over to make a precautionary landing he would have at some point had to pull the throttle back to a reduced power setting, thus creating such an overly rich mixture that the engine flooded and quit running. Unfortunately the rest of the flight is in the NTSB history books.

There is no one to point the finger of blame at in this case because the aircraft was experimental and there is no requirement for maintenance to be performed by a certified person. In fact there is no requirement for any maintenance period. When the owner and his friend replaced the float and float valve it's likely that they did not

disassemble the carburetor to a point where the corroded slide would have been detected. Their work in fact was tested by the carburetor manufacturer and tested OK.

I do however believe that if whoever conducted the last condition inspection would have done so diligently and in accordance with the scope and detail of FAR part 43 Appendix D that he might have discovered the defective carburetor slide. The requirement to conduct the condition inspection in accordance with 43 app. D is found in the FAA issued operating limitations which are part of the special airworthiness certificate for the aircraft.

Maybe that's wishful thinking, I'm sure there is more than meets the eye to get a good look at the slide. I do know that if I were "FAA King For A Day", I'd issue an Airworthiness Directive that required us to inspect all Bing carburetors for corrosion on the slide and body, but that probably won't happen. At least I can hope that you, who have read this article, will remember this and if given an opportunity to share this information with the owner of an experimental aircraft that has Bing carburetors installed you will tell this story.

Recently the national management of the FAA Team has identified a spike in the accident rate involving the operation and maintenance of light sport and amateur built experimental aircraft. Because of this the FAA Team is redirecting our limited resources to a proactive approach of education and awareness for owners and maintainers of these aircraft. If you get the opportunity to attend one of our meetings on this subject, please come and bring a buddy, who knows you might learn something that could prevent an accident. Better yet, if you are a subject matter expert on anything to do with the operation or maintenance of light sport or experimental amateur built aircraft we would love to have your help. You can volunteer to share your knowledge with the rest of us in the form of a presentation or perhaps an article for this newsletter. If you're interested in participating contact your FAA Team Program Manager, they can be identified on [faasafety.gov](http://faasafety.gov).

**Get Involved, You Can Make a Difference in Aviation Safety!**

Author: Mike Jordan, Editor



Jabiru 3300 Engine - 120 Horsepower

## TID BITS

Reprinted From Aviation Human Factors Industry News, Vol. V, Issue 20

### LA Man Gets Prison for Re-Packaging Plane Parts

A Los Angeles businessman has been sentenced to 2 1/2 years in federal prison for **selling uncertified aircraft manufacturing parts** that were used to make Boeing 737 airplanes.



Prosecutors say 74-year-old Duane Lepire was sentenced Monday in U.S. District Court after pleading guilty in April to fraud for **selling commercial-grade rubber gaskets** that were not approved for aviation manufacturing.

The U.S. attorney's office says Lepire, the owner of Chatsworth Rubber and Gasket Company in Canoga Park, **falsely claimed** the parts were certified for use in aircraft manufacturing. Lepire **painted and repackaged** the cheaper parts with bogus "certificates of conformance."

The nonconforming O-rings were used to make vibration dampeners that leaked hydraulic fluid, which was a safety hazard but didn't cause any accidents.

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### Rag Entangles Tail Rotor Drive Shaft

Approaching the destination, Dunshaughlin, Ireland, at 800 ft during a ferry flight on March 28, 2008, the pilot **heard a loud bang** before the helicopter pitched nose-up and yawed right. The pilot told ATC, "I seem to have a bit of a problem here." He then declared an emergency and said that he had to make an emergency landing.

The helicopter landed heavily on soft ground and **rolled over** onto its left side," said the report by the Irish Air Accident Investigation Unit. During the initial examination of the wreckage, **"some cleaning-cloth material** was found that the drive shaft had completely severed just forward of the second bearing, thus cutting off the vital drive to the tail rotor gearbox.



Investigators were unable to "absolutely determine when and by whom the cloth was left in the area of the tail rotor shaft," the report said.



## PASS THE WORD

The recent article in the October Nuts and Bolts newsletter about the retest of Tobias Aerospace A&P applicants stuck a personal chord with me. Yes, I am one of the 1,400 doing the reexamination.

Mr. Jordan made an interesting point that “if it’s too good to be true, it probably is.”

I suspect most the 1400 were like me and were probably either ex-military or other Part 65 applicants who met the qualifications, looked over the FAR, Advisory Circulars, and self launched to earn our A&P.

So, what is the point of this you ask? Many reading this newsletter know the “guy on the line” who is working in the shop doing his 18 or 30 months to qualify under part 65.

Some of you may know active duty personnel working under the national apprenticeship program.

Some of you may be working for an aircraft manufacturing company, the military, an air carrier, or a repair station and have subordinates or co-workers that are working towards their A&P mechanic ticket.

How many of you have mentored the apprentice not just on how to pass the exams but what to expect from the DME?

Worse yet, are there people out there intentionally directing applicants to less stringent examiners?

If you’re working as an A&P or an IA, you owe it to yourself, our industry, and most importantly the A&P candidate to ensure that not only is he fully prepared and knows what to expect, but that the DME you recommend to him is one you would want working on your aircraft.

For those on the FAAST team as maintenance representatives, are you mentoring the new up and comers you’re encountering? There are probably great mentoring opportunities where you work and certainly at the local FAA Part 147 mechanic schools.

For me, since my experience with Tobias, I have talked to a few Designated Mechanic Examiners to gain a fuller appreciation of what I should have been prepared for, should have expected, and experienced while doing the Oral and Practical. A few glib lines by the DME about their satisfaction and confidence in your experience should be a warning sign.

One day with the DME “aint gonna” cut it.

Author: *Eric Green*

Field Engineering Associate

Howell Instruments

Fort Worth, TX

## CAN YOU REMEMBER YOUR DRIVE TO WORK TODAY

Author: Allan Burtness - PHI Air Medical Area Maintenance Manager, East Coast

All,

In trying to figure out new ways of getting all of us to be safety minded, I am going to revert back 40 years to something my father told me when I was a kid and it remains with me today as an important thought in my mind.

“In driving a car safely, he said, you must always **re-member** the drive from point A to point B”. He said “if you arrive at your destination and can’t remember details on how you got there, you drove the car in an unsafe manner, not rubber necking at intersections or noticing traffic signs, and are just plain lucky you arrived without harming yourself or someone else”. He went on to say “the only reason you wouldn’t remember the trip is because you were thinking about other things instead of thinking about what you were doing which was driving the car”.

That little talk stuck with me and I have tried to live up to that logic every time I get behind the wheel, heavy emphasis on tried. I can honestly say it hasn’t happened all the time which leads me to believe I have been very lucky over the years but I can also say it has served me well in keeping me on the safe side when I allowed it to. We must all allow it to, every day, during every activity. Although my father directed that philosophy toward driving a car it works well for virtually everything we do.

So I want everyone to try it out.

Next time you drive your car, do an inspection on your aircraft or just about anything else that could cause you or someone else harm, stop at the end of the process and see if you can remember details of what you did. If you can, you can be very proud of yourself for keeping your head in the game, if you find holes in your memory or simply can’t remember...WHAT WERE YOU THINKING! Can you safely say you did everything right when you can’t even remember what you did!

Try it out, it will surprise you. If you remind yourself that you are going to try to remember the details of what it is your about to do, your already “in the game” and thinking safely.

## Attention Pilots, Mechanics, and Avionics Technicians:

### The FAA Wants You!



Here is your opportunity to start a career in the exciting field of aviation safety. The FAA's Flight Standards Service is currently hiring aviation safety inspectors and is seeking individuals with strong aviation backgrounds in maintenance, operations, and avionics.

Starting salaries range from \$40,949 to \$77,194, plus locality pay. Benefits include federal retirement and tax-deferred retirement accounts and health insurance.

For details, please visit <http://jobs.faa.gov/>. Under "All Opportunities" you can search by job series 1825 or title containing "inspector."

Start your application today.

### 09-04 Newsletter, "What Is It?" Winner



The first correct response to the 09-04 edition came from Mr. Bill Chapin, a retired Delta Airlines Mechanic from Fayetteville, Georgia. Bill is also a pilot and flies his trusty 1947 Luscombe 8A whenever he can. Bill Identified the photo correctly as a Piper PA-6 also known as the Sky Sedan. Bill shared that the PA-6 was not a successful design. In fact the only part of the aircraft that survived was the tail design which was used on the PA-23.

### WHAT IS IT?

If you know, be the first to send me an e-mail at "nutsandbolts@faasafety.gov". and we will publish it in the next issue and give you credit for your aviation savvy.



### Gear Swing On B-737-700 Goes Terribly Wrong Due to Hurry- Up Pressure and Distractions

I was working on an aircraft that was in the hangar for the night for a C-check. I was assigned by my lead to work the right wing. The first thing that had to be done was jack the aircraft and perform a gear swing functional check. I started setting up the right wing to be jacked. I removed the screw that holds the jack pad plug on the wing. After I removed the screw, I attached the jack pad to the bottom of the wing without removing the plug. I tightened the jack pad, seated the jack, and started raising the aircraft at the same time and rate as the others. As the aircraft started coming up and there was some weight on the jack pad, the bolt that held the jack pad in place sheared and the jack slid forward, puncturing a hole in the bottom forward part of the wing.

We found that I failed to remove the jack pad plug from under the ring. I have jacked other aircraft many times and this particular time I got in a hurry and had other things going through my mind.....

### MORAL TO THE STORY:

#### Always Follow Procedures and

Always try to learn from the mistakes of others, because in one life time, you can't possibly make all of them yourself !!!!!

## 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 [nutsandbolts@faasafety.gov](mailto:nutsandbolts@faasafety.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.

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