



INSPECTION AUTHORIZATION - ARE YOU ACTIVELY ENGAGED?

AUTHOR: Mike Jordan - Editor

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Well. Here it is the end of the year and I've been **working at the speed of government**, to answer an issue that came out four months ago, so the way I figure it I'm right on time.

The issue exploded last March when some IA's were not renewed by the Friendly Aviation Administration (FAA) because they did not meet the requirements of 14 CFR part 65.91 (c) (2) which states in part that to be eligible for an Inspection Authorization you have to have been actively engaged for at least the 2 year period before the date he applies in maintaining aircraft that are certificated and maintained in accordance with this chapter. Many IA's have been renewed based on their attendance at an 8 hr. recurrent training seminar and nothing else. This is just flat out wrong and many applicants and FAA Inspectors are guilty of not following the regulations.

Lets look at what it takes by the rule to get your IA renewed.

Abbreviated - You must present evidence in March to the FAA that you still meet the requirements of 65.91 C 1-4 which are: 1. Hold a current and effective A&P Certificate. 2. Been actively engaged for the last 2 years. 3. Have a fixed base of operations where you can be located. 4. Have available the tools and equipment, and data to properly inspect airplanes, powerplants, and propellers.

Additionally, You must have completed one of the following activities for each

Year: 1. Performed at least one annual inspection for each 90 days. 2. Performed at least two major repairs or alterations for each 90 days. 3. Performed or supervised at least one progressive inspection. 4. Attended and completed an 8 hr. IA refresher course. 5. Passed an oral exam on IA privileges given by an FAA Inspector.

Remember, You only have to complete **one** of the above items for renewal and **also** meet **all** of the 65.91 requirements for the original issuance of your IA.

Are you with me so far? If you're a sharp IA and I know you guys and ladies are, you noticed that there is absolutely nothing that has changed in the regulations regarding renewal of IA's.

In my 21 years of watching the wheels of bureaucracy turn I have come to the conclusion that the FAA's business policy should be "If it's Not Broke, We'll Fix it Until it is". In many cases the agency tries to fix something that desperately needs fixing and by the time the original plan is put on paper and butchered by the writers and attorneys it sometimes comes out worse than the original product. Having experienced that tragedy I am proud to say the agency shocked me by not goofing up this IA renewal issue. They could have easily turned it into a nightmare that would have caused the lose of IA privileges' for lots of deserving A&P mechanics. In fact, what they did was exactly what needed to be done.

LET'S NOT
MEET BY
ACCIDENT

ARE YOU ACTIVELY ENGAGED? - continued

They revised the FAA Inspectors guidance. FAA Order 8900.1, Vol. 5, Chap. 5. They did this because there was never anything wrong with the rule, the problem was that the term actively engaged was too ambiguous for FAA Inspectors to apply properly and consistently across the country. Believe it or not FAA Inspectors are not hatched out of a single mold in Oklahoma City, each one is a unique individual with different and varying backgrounds and experiences. So, to fix the problem the FAA gave us a little more guidance including some examples of what they consider actively engaged. However, in the process they clearly left it up to the Inspector to make the decision on that little part about actively engaged. Isn't that a new concept!! Hire Inspectors with extensive experience and backgrounds so they can make intelligent and rational decisions and then let them make decisions all by their selves. Wow, what will they think of next.

Here is some good information that came out in the NPRM that's worth saving: **Actively Engaged means:** an active role in exercising the privileges of an airframe and powerplant mechanic certificate in the maintenance of civil aircraft. Applicants who inspect, overhaul, repair, preserve, or replace parts on aircraft or who supervise (i.e. direct and/or inspect) those activities are actively engaged. Technical instructors or people that instruct at a FAA part 147 AMT school are also considered actively engaged.

IA's that are employed in a position that does not require a tool box flash light and mirror need to be prepared to show the FAA Inspector proof that you are actively engaged. That proof might be in the form of employment records showing performance or supervision of aircraft maintenance, return to service documents, and or copies of maintenance record entries.

More good things to know about IA renewal:

- ▶ None of the requirements of 14 CFR part 65.91 (C) 1-4 May be waived by an Aviation Safety Inspector.
- ▶ The Inspector may contact the applicants employer to verify the part 65.91 requirements
- ▶ The number of annual inspections and/or major repairs or alterations may not be mixed.
- ▶ If you use an eight hour recurrent training course to renew you must provide proof of attendance.
- ▶ If you did not have enough activity and did not attend a renewal course you must subject yourself to an oral exam with an FAA Inspector. You may not exercise the privileges of your IA until you have passed the oral exam. The inspector will question you about your IA activity during the time it was not legally in effect and will take enforcement action against you if you have signed anything off with your IA during that period.
- ▶ The requirements above apply to each of the two years that your IA card is effective.

MY ADVISE: (Free) Do not let your IA expire unless you are retiring. Remember how hard that IA test was.

Document all activity that involves use of your IA. Even if you don't need it to renew it makes a great record for the future in case you have to prove what you did or did not do. This documentation could be as simple as a \$2.00 spiral notebook.

If in doubt about your eligibility for renewal, call your local FAA Flight Standards District Office and talk to an Airworthiness Inspector, he/she will be glad to coach you. And do it before your IA expires.

And one last thing - You guys are the checks and balances of good, safe maintenance, so always do the right thing, even when no one is watching.

HUMAN INTEREST

Paul Loewen and long time friend Jerry Manthey Receive **Charles Taylor Master Mechanic Award** at the Mooney Convention in Kerrville, Texas



Mike Jordan - Editor

Paul Loewen

Jerry Manthey

On October 22, 2011 the Mooney Aircraft Pilots Association (MAPA) held their annual convention at the home town of Mooney, Kerrville, TX. During the convention I had the pleasure of presenting the Charles Taylor Master Mechanic award to Mr. Paul Loewen from Lakeport, California, and to Mr. Jerry Manthey from El Dorado Hills, California.

Paul is owner of Lake Aero Styling and Repair, (LASAR). Paul's company holds over 25 Supplemental Type Certificates for the Mooney. Paul has in excess of 52 years experience as a Mechanic and Pilot and is still very active in both roles. Paul has a great support team at LASAR including his wife Sherry and their kids who are all aviators and married to aviators. Paul and Sherry consider the staff at LASAR as part of their family and it shows. Paul is a Master Mechanic.

Jerry has over 60 years in aviation maintenance and 52 years experience as a pilot. Jerry spent 21 years in the USAF and worked on everything from the F84 to the B29. He served as maintenance Flight Chief for the prestigious USAF Thunderbirds for three years. Jerry and his wife Ethel have run several FBO's in California. He has served as a corporate mechanic and pilot for companies such as Domar Jet Charter flying a Lear 35, and IBM. Jerry owns a Mooney 20 and was an Instructor for the Mooney Safety Foundation. As an Instructor, Jerry's expertise had a huge impact on hundreds of pilots and mechanics. Jerry has had a fascinating career and his passion for aviation still shows. He is truly a Master

APPROVED DATA ?

Author: L. Bruce Jeffcoat - FAAS Team Program Manager, Albuquerque, FSDO



Approved data is a controversial issue among many mechanics and IAs. Everyone has their own interpretation, including FAA Inspectors. There are many places to obtain approved data for performing your major repairs and alterations. Here is a list of items that are directly from two sources: FAA Order 8900.1, Volume 4, Chapter 9, Section 1, Paragraph 4-1178(A)(4) and the FAA Inspection Authorization Information Guide FAA-G-8082-19, Chapter 2, Approved Data.

This should help in obtaining approved data. Care should be taken if using the data in the last subparagraph because not all manufacturer's manuals contain enough information for making major repairs in just one section. Multiple references in the manufacturer's manuals may be required.

Approved Data. Substantiating and descriptive technical data, used to make a major repair or alteration that is approved by the Administrator. The following list, although not all-inclusive, contains sources of approved data:

- 1) Type Certificate Data Sheets (TCDS).
- 2) Supplemental Type Certificate (STC) data, provided it specifically applies to the item being repaired/alterd. Such data may be used in whole or part as included within the design data associated with the STC.
- 3) Appliance manufacturer's manuals or instructions, unless specifically not approved by the Administrator, are approved for major repairs.
- 4) Airworthiness Directives (AD).
- 5) FAA Form 337, which has been used to approve multiple identical aircraft (only by the original modifier).

NOTE: Aviation safety inspectors (ASI) no longer approve data for use on multiple aircraft.

- 6) U.S. Civil Aviation Authority (CAA) Form 337, dated before October 1, 1955.
- 7) FAA-approved portions of SRMs.
- 8) Designated Engineering Representative (DER)-approved data, only when approval is authorized under his/her specific delegation.
- 9) Organization Designation Authorization (ODA)-approved data, when the major alteration is performed specific to the authorization granted.
- 10) Data in the form of an Appliance Type Approval issued by the Minister of Transport Canada for those parts or appliances for which there is no current Technical Standard Order (TSO) available. The installation manual provided with the appliance includes the Transport Canada certificate as well as the date of issuance and an environmental qualification statement.
- 11) Foreign bulletins, for use on U.S.-certificated foreign aircraft, when approved by the foreign authority.
- 12) Data describing an article or appliance used in an alteration which is FAA-approved under a TSO. As such, the conditions and tests required for TSO approval of an article are minimum performance standards. The article may be installed only if further evaluation by the operator (applicant) documents an acceptable installation which may be approved by the Administrator.

APPROVED DATA ? - Continued

- 13) Data describing a part or appliance used in an alteration which is FAA-approved under a Parts Manufacturer Approval (PMA). An STC may be required to obtain a PMA as a means of assessing Airworthiness and/or performance of the part.
NOTE: Installation eligibility for subsequent installation or reinstallation of such part or appliance in a type certificated (TC) aircraft, other than the aircraft for which Airworthiness was originally demonstrated, is acceptable, provided the part or appliance meets its performance requirements and is environmentally and operationally compatible for installation. The operator/applicant must provide evidence of previously approved installation by TC, STC, or field approval on FAA Form 337 that will serve as a basis for follow-on field approval.
- 14) Any FAA-approved Service Bulletins (SB) and letters or similar documents, including DER approvals.
- 15) Foreign bulletins as applied to use on a U.S.-certificated product made by a foreign manufacturer located within a country with whom a Bilateral Agreement (BA) is in place and by letter of specific authorization issued by the foreign civil air authority. The Bilateral Web site is located at:
http://www.faa.gov/aircraft/air_cert/international/bilateral_agreements/baa_basa_listing.
- 16) Other data approved by the Administrator.
- 17) AC 43.13-1, current edition, for FAA-approved major repairs on non-pressurized areas of aircraft only when the user determines that it is:
 - i) Appropriate to the product being repaired;
 - ii) Directly applicable to the repair being made; and
 - iii) Not contrary to the airframe, engine, propeller, product, or appliance manufacturer's data.
- 18) AC 43.13-2, current edition, for FAA-approved major alterations on non-pressurized areas of aircraft 12,500 lbs gross weight or less only when the user determines that it is:
 - i) Appropriate to the product being repaired;
 - ii) Directly applicable to the alteration being made; and
 - iii) Not contrary to the airframe, engine, propeller, product, or appliance manufacturer's data.
- 20) Service and repair data provided by small airplane manufacturers, although, in most cases, not specifically approved, has provided for continued Airworthiness of their product. Service experience in using this data when performing major repairs to non-pressurized airplanes that are 12,500 pounds or less maximum certificated takeoff weight, and were originally TC'd before January 1, 1980, has proven to be very reliable if followed and not deviated from. Follow-on TC'd of the same model airplane, or a derivative thereof (may be assigned a later TC date), is considered to meet this criteria. When the data is used in this manner, the manufacturer's data (with page, paragraph, etc.) must be referred to in block 8 of FAA Form 337.

TID BITS

FAA Releases Aviation Maintenance Alerts (#401)

- **Beechcraft: V35A; Cut Rudder Control Tube; ATA 2720** A general aviation submitter says, "During the performance of an Annual Inspection, an IA found the right ruddervator trim control cable was routed incorrectly and had cut through the right ruddervator control tube (approximately 75%). The tube also had signs of a crack originating from the damaged section of the tube (cut area), and had begun to bend as a result of weakening of the tube as it was being cut. There were no maintenance entries noted in the logbook to determine when this may have occurred." Part Total Time: (unknown)



Cessna Launches New Safety Initiative

Cessna Aircraft Company launched a new safety initiative this month to educate owners about new inspection procedures designed to help safeguard against corrosion and fatigue. The initiative affects 145,000 airplanes of the 100- and 200-series built between 1946 and 1986. The program stresses visual inspections for both corrosion and cracks caused by metal fatigue.

The revised inspection program will be published in the airplane service manual in December 2011 for the 200-series, and in April 2012 for the 100-series. According to a Cessna engineer, the program is primarily a "visual process aimed at supporting the continued airworthiness of aging airframes." The criteria for inspections will vary by model and aircraft age or hours of operation.

Cessna's website contains more details on the program along with links to a video and interactive presentation:

www.cessna.com/NewReleases/FeaturedNews/NewReleaseNumber-1192361531220.html

Tires - By: John Goglia - AMT Magazine

NTSB records are full of accidents and incidents that were caused by poorly maintained tires.

The number one tire maintenance issue is under inflation, and it's 100% avoidable.

7 Easy Steps to Proper Inflation

1. Check pressure daily when the tires are cool.
2. Use dry nitrogen to inflate tires.
3. Allow for a 12 hour stretch after mounting.
4. Never reduce pressure on a hot tire.
5. Equal pressure on each gear.
6. Use a quality, accurate, properly calibrated gauge to check tire pressure.
7. Consult the aircraft maintenance manual for proper inflation pressure and procedures.

MORE TID BITS

FAASTeam Maintenance Safety Tip

Notice Number: NOTC3416

Differential Compression Test

The differential pressure tester is designed to check the compression of aircraft engines by measuring the leakage through the cylinders caused by worn or damaged components.

The operation of the compression tester is based on the principle that, for any given airflow through a fixed orifice, a constant pressure drop across that orifice will result. The restrictor orifice dimensions in the differential pressure tester should be sized for the particular engine as follows:

(Although AC 43.13-1B was revised in 1998, the following information was revised in Chg. 1 in September 2001. The identification criteria was revised from using "engines with a certain cubic inch displacement" to cylinder bore)

- (1) For an engine cylinder having less than a 5.00-inch bore; 0.040-inch orifice diameter; .250 inch long; and a 60-degree approach angle.
- (2) For an engine cylinder with 5.00 inch bore and over: 0.060 inch orifice diameter, .250 inch long, and a 60 degree approach angle.

Remember, some of the smaller production engines have 5 inch or larger cylinder bores (e.g. Lycoming O-320-A1A has a cylinder bore of 5.125 inches). Therefore, an orifice of 0.060 diameter should be used to perform the compression test.

See [AC 43.13-1B](#), Chapter 8, paragraph 8-14 for more information.

Human Factors Training

Human Factors training is nothing more than training a person on [how to avoid the error they never intended to make](#).

Take an on line course at "[faasafety.gov](#)" and get credit towards your AMT Award. Questions? See your local FAASTeam Representative.

Executive guilty of faulty Calif. aircraft repairs

The Associated Press

Posted: 12/16/2011 02:37:25 PM PST

SACRAMENTO, Calif.—A former employee of a Northern California aircraft repair company has pleaded guilty to conspiracy to commit fraud by using unapproved parts to fix aircraft.

Anthony Zito is one of six former executives and supervisors charged with conspiring to use uncertified parts and falsely certifying that the Federal Aviation Administration approved their use.

Zito, who is 48, was the Burbank facility manager for Lincoln-based WECO Aerospace Systems.

The charges allege the faulty repairs were made to small, private aircraft between October 2006 and February 2008. Prosecutors say the bad repairs did not cause any crashes or flight emergencies.

Zito, of Saugus, is set for sentencing May 14. The conspiracy charge carries a maximum 15-year prison sentence and \$500,000 fine

The other five employees still face charges.

IA Renewal Time is Approaching Fast

Even though your Inspection Authorization card will not be signed this year, it's your responsibility to ensure and document that you meet all the requirements for renewal. If you don't have enough activity, i.e.. Annual inspection or major repairs /alterations then you had better be finding an 8 hour renewal seminar to attend or make arrangements to receive an oral exam from an FAA Inspector. If you do the later, be sure you get a signed document from the Inspector to verify that you passed the oral exam. Don't forget that the renewal requirements are for each year of the two year period. You can't do eight annual inspections in the last month of 2013 and expect to get renewed. Warning, do not exercise the privilege of your IA if you have not met the minimum renewal requirements. The Inspectors are looking for that and they will file a violation on you.

Mike Jordan - Editor

Malfunction and Defect Reports

AUTHOR: Lana Boler - Acting Manager SW Region Technical Support Branch ASW-230

In scanning the June 2011 issue of Advisory Circular AC43-16A – Aviation Maintenance Alerts, a particular report caught my attention. In October of 2009, the reporter had discovered two cracked MT propeller mounting nuts on a Diamond DA40 aircraft. The propeller had only been installed for 93.5 hours.

Reading that report brought up the age-old question: What really happens to information contained in the Malfunction or Defect (M or D) Reports/Service Difficulty Reports (SDR) that mechanic's and repair facilities so diligently file when a discrepancy is found? Some of the reports are eventually listed in the AC, but oftentimes, we are unaware of other results they generate. The following account of a separate but identical report to the one mentioned above, is just one of many instances where the information in an M or D report had an impact on safety:

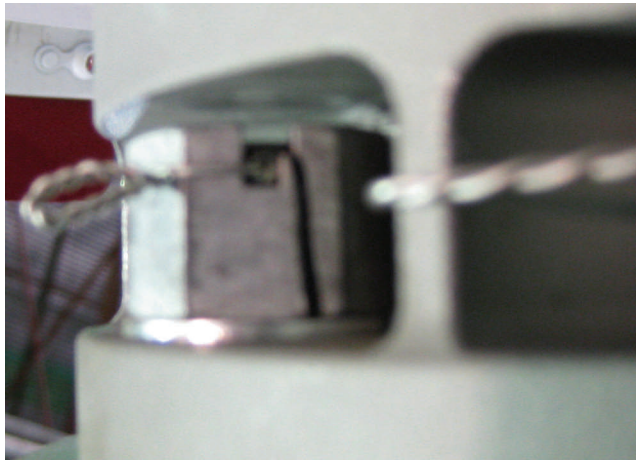
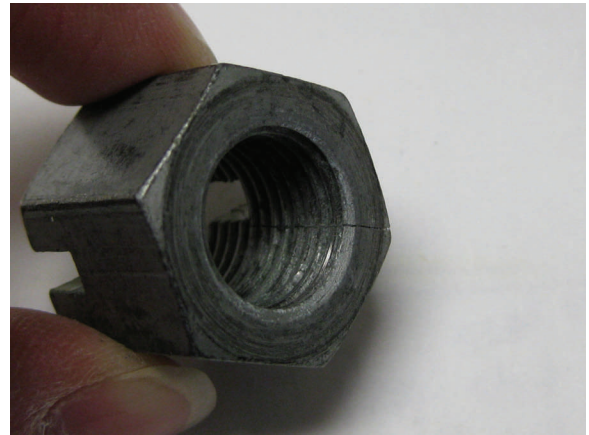


Photo Photos of first nut before removal (above) (still safetied); and after its removal (below) when it broke in half as it was removed.



In late March of 2010, a repair station called our FSDO to discuss a rather unusual finding: cracked propeller nuts. These nuts were two of six nuts holding the MT propeller onto an Extra 300 aircraft equipped with an engine that produces about 350 hp. Extra 300's are used worldwide by several professional aerobatic teams, and individual air show performers. An important note about these nuts was their total time in service was only 26.4 hours. In addition to the concern shown by the maintenance facility, the pilot of this privately-owned aircraft was quite unnerved when shown the discovery by the lead mechanic. At the time, we were unaware that the same nuts were also used to install the propellers on Diamond Aircraft, a popular flight training aircraft.



By the time these photos were taken, the chief inspector had already completed the M or D Report. We also used his information to file an interagency FAA Safety Recommendation. We felt the situation was urgent, with our main concern for the aircraft preparing to begin the yearly air show circuit.

With the permission of the owner, the nuts were sent with the findings report to Office of Accident Investigation and Quality Assurance Division of the FAA in Washington, DC. Not quite a year later, a response to the Safety Recommendation was received. Due in part to our reports, the manufacturer had issued Service Bulletin No. 25, late in the month of April of 2010. Their bulletin addressed the manufacturing flaws that had been discovered in a series of nuts they had produced, and provided a corrective action. Their bulletin affected a total of 5 different propeller models. During the course of the investigation, the manufacturer also disclosed that back in July of 2009; they discovered two additional cracked nuts. Ultimately, while no propeller had been lost in flight due to these defective nuts, the possibility existed.

THE POINT IS - Your M or D Report could save a life!

Four Fatalities, Two Serious Injuries, and Total Hull Loss of Lear 60 Due to Underinflated Tires

Author: Human Factors Industry News and modified by Mike Jordan - Editor

According to the NTSB, “The cause of this accident was the operator’s **inadequate maintenance of the tires**, which resulted in multiple tire failures during takeoff roll due to **severe underinflation**, and the captain’s execution of a rejected takeoff after V1, which was inconsistent with her training and standard operating procedures.”

According to the Safety Board, tires **lose 2 percent of pressure every day**. The full inflation of 219 psi drops to 185 after eight days and after three weeks reaches 140 psi, the level estimated in the accident airplane. During the takeoff sequence, the outboard right tire burst first at 137 knots followed by the other tires, due to excessive flexing of the tires and heat damage caused by under-inflation. Tire fragments damaged the **squat switches, and the logic switched to air mode**, which automatically stowed the thrust reversers and resulted in high forward thrust when the pilots were trying to slow the airplane during the rejected takeoff.

The NTSB concluded that the insufficient tire pressure was **a result of the operator’s inadequate maintenance**, which raises questions about who is responsible for tire pressure and how pilots can assure that tires are properly inflated.



Keat Pruszenski, manager of customer support engineering at tire manufacturer Michelin North America, recommends checking tire pressure daily or before each flight for aircraft that don’t fly every day.

Pilots are responsible for airworthiness, Pruszenski said during the interview. Pilots cannot ensure airworthiness if the tire pressure isn’t checked frequently?

Tire manufacturer Goodyear also recommends daily tire pressure checks. Both companies recommend using dry nitrogen to fill tires and calibrated gauges when checking pressure.

Although the Captain was ultimately responsible for this accident, I’m sure she relied on the companies AMT staff to attend to the routine maintenance. Yes she should have noticed the under inflation on the pre-flight and called out maintenance but perhaps this was away from the main base. As professional aviation technicians let’s use this avoidable loss of life as a reminder that every day, everything we do and every decision we make could be life or death. Never take even the smallest task for granted. And, always do the right thing even if no one is watching.

11-02 Newsletter, "What Is It?" The Winner Is



The first correct responder to what is it was Mr. Kirk Shaw who correctly identified the aircraft as the "German built Junkers, JU287". Mr. Shaw is the Hangar Operations Manager / Instructor with Hallmark College of Aeronautics in San Antonio, Texas. Hallmark College is an FAA certified FAR Part 147 Aviation Maintenance Technician school.



Kirk has 31 years experience in aviation. He has been with Hallmark for 7 years after retiring from the USAF. In the USAF he was a B-52G maintenance technician and a flight engineer on C-130H and KC-10A.

Kirk is also an active FAASTeam Representative who keeps the students at Hallmark up to speed on the latest safety initiatives

Kirk also has a passion for aviation history and old or unusual aircraft. Which

explains how he new what this beast was right off the bat.

The Ju 287 was primarily intended to equip the German Luftwaffe with a Jet-powered bomber aircraft that could remain aloof to the enemy interception. It had a unique swept-forward wing design which was the brain child of, Dr Hans Wocke. He wanted to provide it with extra lift at low airspeeds. There were 3 prototypes which were produced and later the Russian Army confiscated them. Later till 1946, the Soviets continued with its further development. August 16, 1944 was when its first flight took place.

4 Heinkel HeS 011 engines were about to be placed in Ju 287 but this engine ran into some trouble which led to the BMW 003 engines to replace the earlier Heinkel engines. Later prototypes were to have six BMW 003 engines. The second prototype had a cluster of three under each wing whereas the third prototype had two under each wing and one on each side of the fuselage just like the first prototype.

The Ju 287 was made from off the shelf products and pieces of a variety of other aircraft. The two main nose wheels were from captured Consolidated B-24 Liberators. The main landing gear wheels were off a Junkers Ju 352. The tail section was from The Junkers 388 whereas the fuselage was comprised mainly from a Heinkel He 177.

WHAT IS IT?

If you know, be the first to send me an e-mail at "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 [Mi-
chael.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.

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