

A Newsletter Written by Mechanics For Mechanics



Nuts And Bolts

FAASTeam Introduces The “Managers Creed”

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- **If you are interested in safety and would like to help the FAASTeam spread the word in your local aviation community, we need to talk to you. Contact your local FAASTeam Program Manager. See page 7.**

Heads up, aircraft maintainers, there are changes on the horizon. I don't mean changes to the way you work with your hands, but changes in management mind set, which has a direct effect on us mechanics on the floor. I'm talking about the Safety Culture at your place of business. It seems that a Safety Management System (SMS) is inevitable in our future. We expect the requirements to show up in rule making beginning next year. A big piece of making SMS work is a Safety Culture that includes a personal commitment to safety from management. The FAASTeam is not involved in the rule making process but we are involved in the safety making process. Being proactive, the FAASTeam developed a Managers Creed as a starting point to get on board with a positive Safety Culture, therefore supporting SMS and our Mechanics Creed. Look them over on page two and three and note the similarities. If you think this is the direction your company needs to be headed in, contact your FAASTeam Representative.

Read below what Brian Capone, SW Region FAASTeam Asst. Manager has to say about it.

Mike Jordan
Editor

In our last issue, the “Ask the Fed’s” column asked the question: “Do I really want to be the Director of Maintenance for a small Part 135 operator?” It delved into the requirements and regulatory knowledge to act as a DOM. This issue I would like to take the question to a higher level. In particular, what is a DOM or better yet, what is an Aviation Maintenance Manager? Well, if we look at the definition of management and Part 1 definition of maintenance, I guess all technicians are maintenance managers of sorts. In the working world, we generally consider someone that establishes schedules, supervises people, directs work, etc., is considered “supervision/management, or better yet, the infamous “they”. You know “they” say don't do that, “they” say we aren't getting a raise, “they” just don't know what's going on!

Well, how do “we” become “they”? How does one become a manager in our industry? If you're like most mechanics, you are a hard worker, recognized as someone dependable and next thing you realize is that “they” have retired or moved on and now you are promoted to “they”! Wow, what training did you have to “assume the position”? Many of us had to learn through the school of hard knocks. Maybe that's why sometimes “they” aren't quite perfect. One thing for sure is that most of us, as mechanics, lived by the “Mechanics Creed”. We understood the rules of the game. Now as a “manager”, whether as a DOM, Lead, Supervisor, Department Head, etc., you should have a set of rules and commit to your hard working technicians. Well, it just so happens that the FAA Safety Team has created a “Managers Creed” for you to read, contemplate, and follow in order to continue fostering good working relationships that yield safe flying aircraft. Contact your FAASTeam Program Manager for a copy. Most importantly, frame it, discuss it and commit to your technicians that you will obtain the required skills to foster good safe maintenance in a desirable atmosphere.

If you are part of a large organization containing many facets of aviation management, I have a program that will introduce the Managers Creed, describing positions, qualifications, knowledge, and skills needed to be effective. It will spark your desires to obtain more training in many areas required to become a successful manager.

Brian Capone
Assistant Manager, SW Region FAASTeam

MANAGERS CREED DOCUMENT



MANAGERS CREED

I consider our maintenance department to be a team. As leader of that team I will strive daily to build a positive safety culture. I will encourage open lines of communication among all members of our team. It is my responsibility to provide a work environment in which safety is paramount before, during, and after every task we perform.

I pledge my commitment to the "Aviation Mechanics Creed" and will demonstrate that commitment through my leadership. I will learn and use the "Maintenance Personal Minimums Checklist" and will encourage each of my technicians to do the same. I will ensure that my technicians have the tools, equipment, and resources necessary to perform any task asked of them. I will also ensure that they have the current and applicable maintenance instructions and that those instructions are understood and properly followed.

I hold myself to the highest standards of excellence and expect the same of each person under my supervision. The safety of our customers and our team will always come before an expectation to meet a deadline. I will not allow pressure from any source to deter my judgment and will make every effort to limit the pressures imposed on my technicians.

I am honored to work in an industry that provides the safest mode of transportation in the world. As Maintenance Manager I have the opportunity to further improve the safety record our industry has so notably achieved. The continued success of our customers, our maintenance department, and our company begins with my personal commitment to safety:



www.FAASafety.gov

MECHANICS CREED DOCUMENT

Aviation Mechanic's Creed

Upon my honor... I will hold in sacred trust the rights and privileges conferred upon me as a certified aviation mechanic. Knowing full well that the safety and lives of others are dependent upon my skill and judgment, I will never subject others to risks that I am not willing to assume.

☛ I pledge never to undertake or approve work that I feel is beyond the limits of my knowledge, nor will I allow an unqualified person to persuade me to approve aircraft or equipment as airworthy against my better judgment. I will not be influenced by personal gain, nor shall I pass as airworthy, aircraft or equipment about which I am in doubt either as a result of my inspection or uncertainty regarding the ability of others who have worked on it to accomplish their work satisfactorily.

☛ I realize the grave responsibility that is mine - to exercise my judgment on the airworthiness of aircraft and equipment. I pledge unyielding adherence to these precepts for the advancement of aviation and the dignity of my profession.

Adapted through the courtesy of the Flight Safety Foundation.





ASK THE FEDS - Mandatory Service Bulletins By Bill O'Brien for AMT Magazine

This age old question about Service Bulletins has been coming up lately on a regular basis. I would be glad to answer it in my own words but rather than reinvent the wheel, I decided to reprint an (abbreviated to fit the space) article written by your friend and our own retired Bill O'Brien. Bill does an outstanding job on the subject which was published by AMT magazine in October of 2007. Bill is currently in the hospital and not doing so great I am told. Our thoughts and prayers go out to Bill and his family. Read the article on the first page of this months issue of AMT magazine. Go to www.amtonline.com .

Mike Jordan
Editor

To begin, this problem of service bulletins being mandatory or not, has been around since the late '70s. To examine the problem we have to look at three sides of the mandatory service bulletin issue: The manufacturer, the FAA, and the mechanic.

Manufacturer

It has been my experience that in the past when a manufacturer publishes a service bulletin and says it's mandatory, or it says it is an amendment to its maintenance manual, or Instructions for Continued Airworthiness, that product it has produced has a "major" airworthiness defect. The problem today with this approach is that more and more service bulletins of all kinds now have "mandatory" stamped on them.

I believe the manufacturers go the mandatory route at the advice of their corporate lawyers for two reasons. First, even if the service bulletin talks about failures that happen on very high-time aircraft or the aircraft/part is used in unusual operating requirements like fire fighting or pipe line patrol and the chances of the same problem happening in normal

operations is small, there is still a risk of being sued. so to offset the risk it is becoming more common for manufacturers to use the shotgun approach and make their service bulletins mandatory.

The second reason is despite the FAA stance on mandatory service bulletins it can be effectively argued in civil court that the manufacturer did make a good faith effort to advise the owner of the aircraft/product's defect by making the service bulletin mandatory. Judges and juries love the nice guy. Even I must reluctantly agree that in this sue-crazy society where a lawyer can sue a Mom and Pop run cleaners in D.C. for \$54 million for a lost pair of pants, this C.Y.A. approach on service bulletins makes good legal sense.

The FAA

Before I get started it is important that you understand the difference between an FAA order and an FAA advisory circular (AC) that I will quote in this article. An FAA order contains guidance to FAA field offices (FSDO/MIDO) on how FAA General Council (Legal) has interpreted a rule's) and the mandatory policy for FAA inspectors to follow enforcing that rule's). An FAA AC is not mandatory policy, but advisory in nature and describes one way, but not the only way, for industry to comply with a rule or policy.

I found that FAA policy goes back to Order 8620.2 Applicability and Enforcement of Manufacturers' Data published on Nov. 2, 1978. Back then when I had hair, the big argument was whether or not service bulletins were mandatory. The background paragraph of the order states: *There exists a difference of opinion among field inspectors concerning the manner in which manufacturer maintenance manual material including service letters and service bulletins, could be enforced by the FAA. FAR 43.13 requires all persons to use methods, techniques, and practices acceptable to the Administra-*



ASK THE FEDS - Service Bulletins by Bill O'Brien Continued.

tor while performing aircraft maintenance. The manufacturer's maintenance manuals, service bulletins, and service letters have always been regarded as a source of acceptable data for complying with 43.13(a)(b), however, such acceptability does not, in itself, impose an enforcement or mandatory compliance requirement. In the summary paragraph of the order it states that compliance with manufacturer's maintenance instructions is required when:

1. Made mandatory by an AD or other specific rule within the FAR.
2. Made mandatory by the type certificate data sheet.

The next bit of research I uncovered is AC 20-115 Manufacturers' Service documents published on Oct. 22, 1981. It is a 4 1/2-page AC that when you boil all the blood and fat out of it the main thrust of the AC is that any change to the aircraft's type design requires FAA Approval. This was an attempt by the FAA to stop manufacturers from using the words "FAA Approved" or similar words in a back door attempt to mandate the operator to have the service bulletin complied with. Paragraph (b)(2) of the AC states: *Service documents should be neither treated or represented as the official FAA approval documents, unless either a letter of design approval from the FAA or a record that compliance has been determined by an FAA designees is on file for recommended actions indicated as FAA-approved in service documents.*

The next bit of research on mandatory service bulletins that I found was in AC 20-177A Use of Manufacturers' Maintenance Manuals. This AC was just published on April 6, 2007. This effort was a response to the hundreds of calls to FAA headquarters each year about the mandatory service bulletin problem. Paragraph 6 of the AC states: The following is a list of situations when service bulletins (SB) would be regulatory and covers most situations ASI's encounter. (Note: reference to manufacturer's SB will encompass all manufacturers' service information.)

- All or a portion of a SB is incorporated as part of an Airworthiness Directive (AD).

- SB are a part of the FAA-approved Airworthiness Limitation section of the manufacturer's manual or the type certificate.
- SB are incorporated directly or by reference into some type of FAA-approved inspection program, such as an Approved Aircraft Inspection Program or CAMP.
- SB are listed as an additional maintenance requirement in the certificate holder's Operation Specifications.

The bottom line, notwithstanding the four exceptions noted above, is the FAA states again that manufacturers' service bulletins are not mandatory because in order to be mandatory, they the manufacturer, must have the regulatory authority to change the product's type design. Only the FAA has that authority.

The Mechanic

Every mechanic, repair station, and FBO has run up against the mandatory service bulletin question, "Do service bulletins apply or not?" To its credit the FAA has not wavered and has stated over the last 30 plus years that service bulletins are not mandatory.

Advice

If I was a mechanic on the hangar floor trying to make a living and stay out of court at the same time, I would do the following: Before performing an inspection on a Part 91 aircraft, I would prepare a list of all the manufacturer's mandatory service bulletins and add YES/NO blocks along each service bulletin. Then I would contact the owner and explain that FAA policy does not require compliance with mandatory service bulletins. Next, I would tell him that as the owner/operator, under section 91.403(a) General, he is primarily responsible for the airworthiness of the aircraft. With that said, I would have the owner pick and choose all, some, or none of the mandatory service bulletins he wants me to do. I would make sure that his choices are in writing and he autographs the list. Then I would attach the paperwork to the service order.

Accident Case Study - Eurocopter EC120B

Fifty six minutes into a day VRF flight, the public use helicopter experienced a catastrophic engine failure. Witnesses reported hearing a “pop” and observed a 2.5 foot flame and smoke coming from the exhaust. Normally operated at 500 - 600ft AGL, the helicopter descended, impacting terrain near the bottom of a 60 degree slope, bounced, rolled inverted, impacted the terrain again and rolled down a hill. The commercial pilot in command, a 36 year old male and front seat observer, a 29 year old male both were ejected and received fatal injuries. The aft-seated observer-trainee, a 29 year old male, was not ejected but suffered severe injuries.

Examination of the powerplant revealed evidence consistent with an over speed. The turbine blades were separated at their shear points and the gas generator exhibited extreme thermal erosion. All the blades were eroded to about 50 percent of normal height. A test bench run of the fuel control produced a fuel flow approximately five times greater than normal. Disassembly of the FCU revealed that the constant delta p diaphragm was installed incorrectly. There was a small perforation and a slight fold around the mid-area of the diaphragm. When the diaphragm ruptured it caused a sudden, massive flow of fuel to the engine.

When inversed, the diaphragm appears to maintain an identical shape. The manufacturer’s maintenance manual contains a note to check the installation orientation of the diaphragm.

The recommended TBO on the FCU is 2,800 hrs. At the time of the accident, the FCU had accumulated 2,391 hrs since new and 1,689 hours since repair by the manufacturer. After repair, it operated in another helicopter for 802 hours before being installed on the accident helicopter. The National Transportation Safety Board determines the probable cause(s) of this accident as follows:

The failure of the constant delta P diaphragm in the fuel control unit, which resulted in an increased fuel flow and subsequent catastrophic failure of the engine. The diaphragm’s failure was the result of improper installation by the engine manufacturer. A factor in the accident was the unsuitable nature of the terrain for a successful autorotation.

Everyone who performs maintenance, including manufacturers are susceptible to Human Factor errors. Complacency is overconfidence from repeated experience on a specific activity. Train yourself to always expect the unexpected. Lack of Knowledge is the failure to have training, information or the ability to perform a task correctly. Don’t assume you know how to perform any task from memory. Always consult the appropriate technical publications. If you become distracted, always go back three steps when you return to the task. If a component can be assembled more that one way, always verify to be sure the final installation is correct.

From The Editor:

This is clearly another case of “Failure To Follow Pro-



cedures”. As you can see in this case following procedures applies to anyone that performs maintenance on aircraft, aircraft engines, propellers, or any parts of them. The rule applies to everyone from an independent self employed mechanic working out of his truck to the largest class IV repair station. If simply asking people to follow procedures is not working for you, let me direct your attention to 14 CFR part 43.13 (a) which states in part: Any person performing maintenance "shall" use the methods, techniques, and practices prescribed in the current manufacturer’s maintenance manual. Not only is it a good idea it’s the law.

Contributed by J.R. Hofmann, Quality Manager for Pratt & Whitney, Coppel, Tx

Let’s Not Meet By Accident !

Do You Need Contact Information For Your FAASafety Program Manager or FAASafety Representative

1. Go to faasafety.gov. and sign in.
2. Click on FAASafety Directory, left side of the page.
3. Click on View All Directory Information.
4. Click on Region, click on your FSDO or region from the drop down box.
5. Click on GO.

The system will display all of the FAASafety folks sponsored by the office you selected.

6. Select the Program Manager or Representative that you need to contact. By clicking on his/her name that persons information will be displayed.

PROUD TO BE AN AMERICAN



THEN DON'T FORGET

The General Election for President of the United States and other Federal and State Officials is November 4, 2008. Go vote!! If you don't vote you forfeit your right to complain.

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 giving you credit for your aviation savvy.



The first correct response to the 08-03 edition came from Mr. Gary Van Farowe, Lead Technician for Johnson Controls Aviation Dept. in Milwaukee, WI.. Gary said "it's a Bellanca/Champion (Model 402) powered by two TCM O-200 with fixed pitch propellers. The aircraft was designed to be a low cost trainer, however, only a few were built. A good friend of mine who flies a Boeing 777 for United Airlines has one".

Do you need to find or get information about any FAA office?

<http://www.faa.gov/about/office.org>

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

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.

Your Name:		Phone #:	
Title:			
Company:		email:	
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Do you wish to have your article published:		
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I agree and attest to information provided and desire my article to be published in Nuts and Bolts.		
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