FEDERAL AVIATION ADMINISTRATION
SAFETY TEAM

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Nuts And Bolts - A Newsletter Written By Mechanics For Mechanics

What Does "CURRENT" Mean To You ?

Inside this issue:

- **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.**

The answer depends on who you are. If you are Mr. Webster it means "belonging to the present time". If you are the operator of a large airplane on a maintenance/inspection program under Title 14 CFR section 91.409(f)(3) then current means current at the time you selected the program. If you are a mechanic, current means it was current at the time you performed the maintenance or inspection.

I know you're thinking, here comes more bureaucratic confusion. It's not, let me explain what's going on.

Last December the FAA put out an internal memo from Chief Council that gave a legal interpretation on the use of the phrase "current maintenance instructions". The issue was to address whether or not an aircraft operator using a current maintenance/inspection program for it's large aircraft under 91.409(f)(3) was obligated to amend it's inspection program to align with the manufacturers instructions whenever a revision was made. This all started when Cessna developed a new structural inspection program and Gulfstream reduced it's inspection threshold by one half. The December 2008 memo from chief council declared that the operator is not obligated because the changes imposed on the operator had not gone through the notice and comment procedures required by the Administrative Procedures act, (APA) , (5 U.S.C. §553). The memo used language that further indicated that this decision included maintenance instructions. Well guess what? The memo, like anything else written, leaked out to the public which was not the intended reader. And as expected, someone obviously twisted the intent of the memo to support their use of that stack of dirty, dusty, outdated, and illegal maintenance manuals that we all have rat-holed somewhere in the shop. I say that because I have recently had numerous inquires about this very subject that seems to have started after the memo came out.

Let's straighten this out. The memo, which was a great piece of work, is intended to clarify oversight issues for Inspectors assigned to operators of aircraft like Citations or Gulfstreams that are using a manufacturers recommended inspection or maintenance/inspection program under 91.409(f)(3).These operators are obligated at the time they acquire and put into service these type aircraft to select and identify in the maintenance records of that equipment what inspection program they are going to use. The program they identify is the one to be used from that point on and is not subject to change even if the manufacturer changes the program. The operator is obligated to provide his inspection program to whoever is doing the inspection if it is not the most recent version. The program identified must be the current program at the time it is identified and may not be retroactive. The only way the program is required to change is through an FAA rulemaking (APA) or an AD note, or the owner elects to adopt a more current version.

The FAA published INFO 09008 dated: 5/22/09, (Information for Operators) does a great job of explaining this subject, including a frequently asked questions section. This InFO is available at

http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info/all_infos/media/2009/info09008.pdf

So, contrary to the rumor mill, the December memo does not apply to you if you are exercising the privileges of your mechanic certificate or if you are a repair station. Think about it like this, the memo only mentions Part 91 (General Operating and Flight Rules), we (maintenance folks), are bound to the rules in Part 43, (Maintenance, Preventative Maintenance and Rebuilding, and Alteration). Section 43.13(a) states in part: Each person performing maintenance, alteration, or preventive maintenance on an aircraft, engine, propeller, or appliance shall use the methods, techniques, and practices prescribed in the **current** manufacturer's maintenance manual or Instructions for Continued Airworthiness prepared by its manufacturer.

CONCLUSION: If you think you don't have to have **current** maintenance manuals to work on aircraft I have a bridge I'd like to sell you.

Author: Mike Jordan

AMT On-Line: Change is at hand and it's hard!

By: Brian Capone

FAASTeam Assistant Manager

Southwest Region

Any change in life and business is difficult. We humans have a difficult time with change. Our reactions have been studied for years. Recently the FAA sent me to a management course entitled "Managing Change" and I was wondering if some spies have been watching me as I worked with change through the years. They spoke of these change phases and as I looked back at my 25 year government career, I realized my actions were "by the book"; I guess just like my work as an aircraft technician, by the book. Think back at all the changes you've come through and see if the phases fit. Things like computers, glass cockpits, new company procedures, new regulations, and the list goes on.

Phase	Description
Shock and Surprise	Confrontation with unexpected situations. This can happen 'by accident' (e.g. losses in particular business units) or planned events (e.g. workshops for personal development and team performance improvement). These situations make people realize that their own patterns of doing things are not suitable for new conditions any more. Thus, their perceived own competence decreases.
Denial and Refusal	People activate values as support for their conviction that change is not necessary. Hence, they believe there is no need for change; their perceived competency increases again.
Rational Understanding	People realize the need for change. According to this insight, their perceived competence decreases again. People focus on finding short term solutions, thus they only cure symptoms. There is no willingness to change own patterns of behavior.
Emotional Acceptance	This phase, which is also called 'crisis' is the most important one. Only if management succeeds to create willingness for changing values, beliefs, and behaviors, the organization will be able to exploit their real potentials. In the worst case, however, change processes will be stopped or slowed down here.
Exercising and Learning	The new acceptance of change creates a new willingness for learning. People start to try new behaviors and processes. They will experience success and failure during this phase. It is the change manager's task to create some early wins (e.g. by starting with easier projects). This will lead to an increase in peoples perceived own competence.
Realization	People gather more information by learning and exercising. This knowledge has a feedback-effect. People understand which behavior is effective in which situation. This, in turn, opens up their minds for new experiences. These extended patterns of behavior increase organizational flexibility. Perceived competency has reached a higher level than prior to change.
Integration	People totally integrate their newly acquired patterns of thinking and acting. The new behaviors become routine.

So did you remember going through these phases? Be truthful now! I did and I still go through them; I just realize it and it helps me to transition a lot better. Most things I was dead set against are now advocated the most by me!

AMT On-Line continued:

Since 1991 our beloved friend, co-worker, and infamous Washington bureaucrat, Mr. Bill O'Brien was the mainstay in creating the AMT Awards program and elevating our status as true professionals. It is with deep sadness that we all mourn his passing but his spirit will continue to live with us. Since implementation in 1992, a lot of changes have come forth, one of which is moving to a system safety approach and risk mitigation. To this end, the AMT program is changing again and being automated. Now is going to be the time for going through the phase changes! In addition to on line application, there are other significant changes to the program. The FAA Safety Team (FAASTeam) has had success with the redesign of the Pilot Proficiency Program (read Wings) to a risk management program and that is what the new AMT Program is going to be!

The Airworthiness FAASTeam is studying the accident causal factors and preparing training courses to address those issues, thereby providing risk mitigation and accident reduction. We will target core training toward this effort in addition to your industry training. We will provide this information and policy issues that tend to be a problem via an on line system, hence the changes! So here we go for a brief synopsis:

Change one: In order for us to get you the targeted training, you will have to register on line at FAASafety.gov and take the targeted training. This targeted training is designated on-line Core Training and is required to receive an award. Data currently shows the number one enemy of technicians in contributing to accidents and incidents is a failure to follow procedures. It's free training and you will have to be on line anyway to track your training for the award.

Change two: Instead of filling out paper forms and submitting to FAA for your award, you will upload your training at FAASafety.gov in a simple log of training title, who conducted and date received. The good thing, you will have a record that you can take to anywhere you work!

Change three: In January of the year following your training, you will claim your award certificate and apply for your decal on line. The levels have changed to:

a. Phase I. Bronze: obtain minimum of 12 hours of Eligible Aviation Maintenance Training

b. Phase II. Silver: obtain minimum of 40 hours of Eligible Aviation Maintenance Training.

c. Phase III. Gold: obtain minimum of 80 hours of Eligible Aviation Maintenance Training plus satisfactory completion of a college-level course of 3-credit hours or 40 classroom hours in mathematics, English, science, aviation safety, human factors, management, quality control, or similar aviation career related courses.

Additionally, the FAA will not continue to fund lapel pin purchases due to costs. At this time we do have a commitment from the SAE Institute, one of the FAASTeam National Industry Members to provide a nice decal with the year of award.

Change four: Employers will apply for their award in February of the next calendar year after employees have finished inputting their training and claiming their award in January for the previous year. As an example, employees have completed training in 2009. In January of 2010, they can complete any further inputs of training received in 2009 that wasn't inputted in 2009. Upon entering the training the employee can claim their award. The next month in February 2010, the company can determine all employee awardees, upload a spreadsheet, and apply for the 2009 Company Award that covers all training in 2009.

The award levels for employer have also changed to:

a. AMT Gold Award of Excellence. An eligible employer with a minimum of 50% of its eligible employees receiving an individual AMT award for a given calendar year is eligible to receive special recognition in the form of an AMT Gold Award of Excellence.

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AMT On-Line continued:

b. AMT Diamond Award of Excellence. An eligible employer with a minimum of 100% of its eligible employees receiving an individual AMT award for a given calendar year is eligible to receive special recognition in the form of an AMT Diamond Award of Excellence.

Change five: Employers will also register as an **employer** at FAASafety.gov and use the on line system. It's as easy as uploading a list of eligible employees that have obtained an award. The number of awards against the number of eligible employees determines the company award level as in the past. The computer will do the math for you.

Now I can hear all of the large companies: "What, I have to get all of my people to register on line and take some course, heck, we have mandated training that is a lot better!" My answer:

This program is changing to bring accidents down. The on line course is focused towards data based causal factors. The factors should be in everyone's mind, no matter what type of work you do and where you do it. Whether you are in a large facility or on your own, it only makes sense to be aware of the current accident trends and causal factors. Your company training may be so specific, it may not be related to current causal factors. Would not it broaden your knowledge base in our ever changing industry?

To be effective in addressing accident/incident causal factors a company will take this new program, realize the benefit and find ways to encourage and reward their employees to take the on line courses. Resourceful training officers and managers embracing system safety and wanting their company award (based on their employees!) will find creative ways to encourage their employees to become engaged, i.e., contests, time at work to complete on line training, awards, etc.; thus informing their technicians of the existing current accident causal factors or regulatory weak areas based on data.

The FAA and FAASTeam are charted to reduce accidents and protect the flying public. We see in the future those dedicated companies that have the resources and talent actually developing programs and courses that address the data trended accident factors and providing to FAA for inclusion of on line training. Instead of "Why can't FAA make this work for us?" we will hear "What can we do to assist in accident reduction through effective technician training!"

As these companies and all of us work through the phases of change, I see a great AMT program evolving! The details and operation of the program are located on the FAASafety.gov website and the new Advisory Circular 65-25E. Register for site access if you haven't already and enter the Maintenance Hangar on the left side of the screen. View the tutorials under the help tab. Go ahead and enroll into My AMT and start earning toward your award! If you are new to FAASafety.gov, then explore and see all the great programs and knowledge available to keep you as the greatest AMT in the world! If you were already using the site and taken the core course, you will be given credit when you enroll.

A&P School in Somerset Kentucky Records the First Song and Video for Aircraft Mechanics

The students at Somerset Aviation Maintenance School, located in Somerset Kentucky created a video for You Tube as a school project. A couple of the students and an instructor also wrote a song called "I'm an Aircraft Mechanic" to accompany the video. Their video captures the students in action around the school and the music is awesome. I knew aircraft mechanics could do about anything, but this is over the top. I hope you enjoy it as much as I did. Cut and paste link in your browser:

http://www.youtube.com/watch?v=8uyStvU5eKM

Author: Mike Jordan

Legal Matters

Annual = Conformity

How many times have you performed an annual inspection with your eyes shut? What I mean is it's easy to just run the checklist with your mind at sea level or somewhere else. This is "complacency" which is one of the Dirty Dozen. Sometimes we have to take a look at what we are doing from 30, 000 feet to get the big picture.

Conformity inspections are not something that's reserved for FAA Inspectors putting an aircraft on a Part 135 certificate or a DAR issuing an airworthiness certificate. Conforming the aircraft to the Type Certificate Data sheet is what you should be doing every time you perform a 100 hr. or an annual inspection. If you are not then you are in violation of the number one violated rule in the book, Title 14 CFR section 43.15(a)(1). The rule states in part: Each person performing an inspection required by Part 91, 125, or 135 of this chapter, shall—(1) Perform the inspection so as to determine whether the aircraft, or portion(s) thereof under inspection, meets all applicable airworthiness requirements. This means the aircraft or portion under inspection meets it's type design or properly altered condition.

Remember what I've said in other issues, "nothing happens unless something happens". A Cessna 172 made a forced landing into a field due to fuel starvation. There were no injuries and little or no damage to the aircraft. We of course went to the scene and inspected the aircraft and maintenance records. We found several conformity issues. Although these alterations had nothing to do with the loss of power, they were nevertheless illegal due to no documentation or reference to approved data. The 18 gallon auxiliary fuel system in the baggage compartment is actually an STC'd mod but was not installed in accor-

We found, among other things, that the installer used an automotive radiator hose and clamps for the filler . Additionally, the installer failed to change the baggage weight placard that would have been part of the STC

requirements. The owner of the aircraft said the aux tank had been installed since he had owned the aircraft. The A&P/IA that performed the last annual was interviewed or interrogated depending on who you ask. He admitted to having performed the last 15 annual inspections and that the tank had always been there. He assumed it was a factory installation because the illustrated parts catalog shows a similar installation.

Because there were no injuries in the incident, there was no damage to the aircraft, the IA involved was very cooperative with a positive attitude towards compliance and had no previous violation history of non compliance, we found the individual to be eligible for remedial training. The IA completed the prescribed remedial training vice a lost of his certificate. The tank and all associated hardware and controls were removed from the aircraft and it was approved for return to service. The moral to the story: If you are performing a required inspection, never take anything for granted and always conform the aircraft to the type certificate data sheet or approved alteration data.

Author: Mike Jordan

CASE STUDY

NTSB Determines Maintenance Error Was Probable Cause in Fatal Accident

This case involves a Helton Lark 95 aircraft that had recently been sold. The aircraft broker contracted with the pilot to

Helton Lark 95 - Generic Photo

move the aircraft from Moraine, Ohio to the new owner in Reno, Nevada. The pilots girlfriend was onboard the aircraft. This was the first flight of the aircraft since completion of an annual inspection three days earlier.

The pilot was a 37 year old male. He held an Airline Transport Pilot certificate, multi engine land with commercial privileges for single engine land. He held type ratings for A-320, CL-65, and DC-3. He had a CFI certificate with airplane multi engine land, airplane single engine land, and instrument airplane. The pilot had a total flight time of approx. 10,328 hours. According to his mother he started flying when he was 14 years old. The investigation showed that the pilot did not have any prior flight time in a Lark 95.

According to the mechanic that performed the inspection, prior to the flight the pilot reported the battery was dead and he needed to go to the pumps for fuel. The mechanic towed the aircraft to the pumps and the aircraft was topped off. The mechanic hand propped the aircraft and then discovered that the landing light was inoperative, so the aircraft was taxied to the hangar where the mechanic connected the landing light wire. The mechanic again hand propped the airplane to get it started. The mechanic reported that he heard the aircraft take off and the engine sounded healthy.

Shortly after takeoff, the airplane entered a descending left turn. The airplane contacted a utility pole, a light pole, and a tree prior to coming to rest. A witness stated the airplane sounded fine on takeoff, but the engine began to lose power shortly thereafter. The pilots injuries were fatal. The girlfriend survived but received serious injuries and was transported to the hospital.

Post accident inspection of the airplane and engine revealed the number four cylinder sustained impact damage in the area of the top spark plug. The top spark plug on this cylinder was found separated from the engine. The top spark plugs on the remaining cylinders were less than finger tight. The mechanic who signed off the inspection stated he checked the torque on the spark plugs after they were installed.

The National Transportation Safety Board determines the probable cause of this accident as follows:

The improper installation of spark plugs during the annual inspection which resulted in a loss of engine power shortly after takeoff. Contributing to the accident was the lack of suitable terrain during the forced landing.

The FAA of course investigated the mechanic/IA that performed the last annual inspection. The FAA filed an enforcement case against the mechanic for the violation of several regulations in the performance of the annual inspection. The FAA was seeking suspension of the individuals mechanic certificate. However, because the FAA failed to process the case in a timely manner (due to unknown circumstances), it was closed with “no action” as required by the NTSB stale complaint rule. Therefore the mechanic involved was not legally determined to be guilty of any wrong doing or lack of performance.

It is my opinion that even though it was not proven that the mechanic left the spark plugs loose, I’d bet the mechanic thinks about it every time he opens his toolbox. Look at the pilots picture in the first column and try to imagine what it would be like to carry the burden of knowing that you might have been able to prevent this tragedy.

We should all learn from this case. Aviation is not inherently dangerous but it is terribly unforgiving.

Author: Mike Jordan

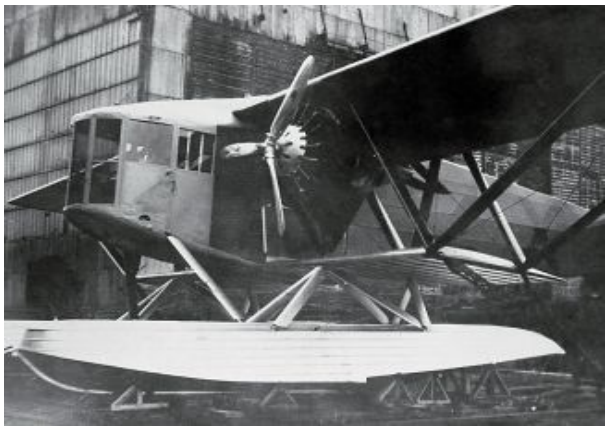
Sources: NTSB website, Denver Post.com

IA's - The Time To Act Is Now

Don't forget that it is your responsibility to meet the yearly requirements of 14 CFR part 65.93 in order to keep your Inspection Authorization valid. "Yearly" means that between April 1, 2009 and March 31, 2010 you must have performed enough inspections, major alterations, or received 8 hrs. of FAA acceptable training to keep your IA current. If you don't get one of these done then you must throw yourself at the mercy of an FAA Inspector's oral exam before the end of March 2010. Whichever one you do be sure to obtain and hang on to some kind of documentation for it, such as an activity report, certificate of training, or an FAA signed 8610-1 form for the oral exam. You'll need it in 2011 when we renew your card. This is a reminder, don't show up at the FSDO on March 31, 2011 and say "I Forgot"

Author: Mike Jordan

09-01 Newsletter, "What Is It?" Winner



The first correct response to the 09-01 edition came from Mr. Nicholas Risk, a senior A&P student at Bob Jones University in Greenville, SC.
Nicholas correctly identified the aircraft as a 1930's Canadian Vickers Velos. It looks like a flying streetcar. This aircraft is on record as being the worst aircraft ever built in Canada – a complete dog that was actually specked out by a committee. The test pilots flew it only under protest, and it was known as the 'The Dead Loss' around the factory.

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.

AIR NOTES

INTERNET SERVICE DIFFICULTY REPORTING (ISDR) WEB SITE

The Federal Aviation Administration (FAA) Internet Service Difficulty Reporting (iSDR) web site is the front-end for the Service Difficulty Reporting System (SDRS) database that is maintained by the Aviation Data Systems Branch, AFS-620, in Oklahoma City, Oklahoma. The iSDR web site supports the Flight Standards Service (AFS), Service Difficulty Program by providing the aviation community with a voluntary and electronic means to conveniently submit in-service reports of failures, malfunctions, or defects on aeronautical products. The objective of the Service Difficulty Program is to achieve prompt correction of conditions adversely affecting continued airworthiness of aeronautical products. To accomplish this, Malfunction or Defect Reports (M or Ds) or Service Difficulty Reports (SDRs) as they are commonly called, are collected, converted into a common SDR format, stored, and made available to the appropriate segments of the FAA, the aviation community, and the general public for review and analysis. SDR data is accessible through the "Query SDR data" feature on the iSDR web site at: http://av-info.faa.gov/sdrx/. (cut and paste this web address on your browser)

The Bill O'Brien Aviation Maintenance Technician Awards Program is now On-Line. (See the article on page 2)

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 nutsand-bolts@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.

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