FEDERAL AVIATION ADMINISTRATION
AVIATION SAFETY PROGRAM

Arizona Airman
Aviation Safety Review

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Title: Deferred Maintenance

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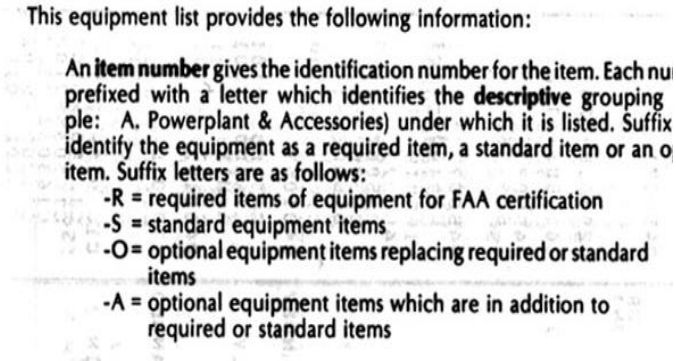
In order for an aircraft to be in an "Airworthy Condition" means that the aircraft meets its *type design* or is in a *properly altered condition*, and that the aircraft has been determined *safe for flight*. This statement means, literally, everything on the aircraft must work the same as when the aircraft was certificated from the factory. There was a time that if you were to make a day VFR flight to the next town, everything including the wing navigation lights, would have to function! However, some time ago certain groups wanted a procedure, written into the regulations, that would allow the pilot/owner to operate their aircraft with certain equipment inoperative, as well as not having to obtain, and use, a complicated approved Minimum Equipment List (MEL). These inoperative components would all be based under the conditions of the intended flight.

Enter FAR 91.213, inoperative instruments and equipment. This FAR states that; unless the aircraft you operate already has an approved MEL or a Master MEL issued to it, the operator can, with certain conditions, operate the aircraft with some non-essential equipment inoperative. Equipment that would still be *required* is:

1. Components required as part of the Day-VFR type certification.
2. Equipment listed on the aircraft equipment list, required for certification.
3. Equipment required by an Airworthiness Directive.

Beyond that, common sense and knowledge of your aircraft systems become important. For example, Let's say you're planning a VFR cross-county flight to a city you've been to before, and the only *navigation* radio installed has malfunctioned. You have good visual landmarks and current charts on board the aircraft. You might ask yourself, "can I make this flight today?" If you can answer some questions referred to in FAR 91.213, you may be able to.

In this example our aircraft is a 1985 Cessna 152, but you should consult the flight manual for your particular aircraft. Because the route is familiar to you, with good landmarks, and the weather being day-VFR, you've determined this navigation radio would not be necessary for this trip and pilotage would be adequate. The next step would be to review the aircraft's equipment list located in the flight manual. If there's not a flight manual for the aircraft, then refer to FAR 91.205(b) for the day-VFR flight minimum equipment requirements. You'd want to ensure that the component that's malfunctioned isn't required under the original certification of the aircraft. The front page of the equipment list, for this aircraft, lists an item number that identifies a part as *required*, *standard*, *optional replacing standard* and *optional,* (See Figure 1).



This equipment list provides the following information:

An **item number** gives the identification number for the item. Each nu
prefixed with a letter which identifies the **descriptive** grouping
ple: A. Powerplant & Accessories) under which it is listed. Suffix
identify the equipment as a required item, a standard item or an o
item. Suffix letters are as follows:

-R = required items of equipment for FAA certification
-S = standard equipment items
-O = optional equipment items replacing required or standard items
-A = optional equipment items which are in addition to required or standard items

Fig 1

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In this example we'd look for equipment with an **A** code, meaning optional. Which is the letter code given to the com/nav radio, (Figure 2).

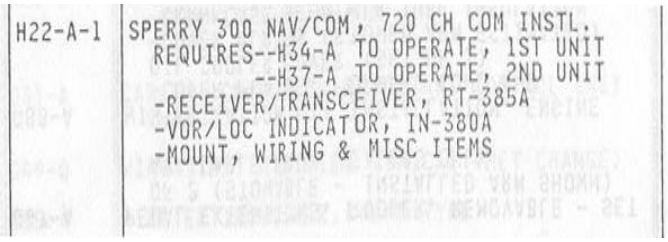

Fig 2

The third determination requires the pilot to understand the aircraft they were flying to determine if the equipment is required by an AD? This is were a review of the aircraft's records would come in handy. If you're having difficulty making a determination, consult your local mechanic for assistance. In this case, the navigation radio is not required by AD. Time to go flying, right? Well, not just yet. For us to fully comply with 91.213 you still must make a *record entry* in compliance with FAR 43.9.

A maintenance record entry is required any time maintenance is being performed. You guessed it, deferring maintenance is maintenance and an entry in the aircraft records, even if you don't fix anything, is required. Additionally, you'll also need to either, remove the component, or placard the switch or control as Inoperative (INOP). Since the communication side of our example works normally, only placarding the navigation control will suffice. Let's say we're on a cross-country flight and find a discrepancy during walk around at a fuel stop. Would this require us to carry the maintenance records with us in order to record a deferral IAW 91.213? No, a record entry can be of any type of medium. You may use the aircraft flight log, index card or a post-it note just as long you include all of the required information and consider it part of the permanent aircraft records. The minimum information required would be;

1. The aircraft serial number and registration number.
2. What equipment you are deferring IAW FAR 91.213
3. What actions you took to secure the component, (placard control or remove affected component etc.),
4. The date and signature with your certificate number and type.

Because this is now part of the permanent records for the aircraft, when we return the aircraft to the FBO (or return to home base), care should be taken to put the record entry produced, with the rest of the aircraft maintenance records as soon as possible. This ensures that all of the maintenance discrepancies can be repaired. This also tells the maintenance personnel that there might be a need to remove placards or re-activate other systems that the pilot may have de-activated.

Now that we've properly altered the aircraft IAW FAR 91.213, then how long can it be operated before it would have to be fixed? Well, unlike the MEL's that mainly airlines work with, non-commercial MELs do not have specific time limits. FAR 91.405(c) states that the owner operator shall have any inoperative component repaired, replaced, removed or inspected at the next required inspection. This would be the maximum time limit but would there would a point that if too many components deactivated or removed could jeopardize safety? "Would the aircraft be safe for flight, which is a condition of airworthiness?" One needs to always evaluate the airworthiness of his/her aircraft before every flight and evaluate how one "non-essential" component affects others. How does the inoperative component affect pilot workload and would that affect safety?

FAR 91.213, if executed properly, allows the pilot in command an option to ensure the airworthiness of the aircraft without sacrificing safety. What used to be a grounding item now allows pilots to continue the flight with a component inoperative that was not needed for the flight. If followed properly the aircraft would meet its type design or be in *a properly altered condition.*

Fly Safe!!!

Aviation Safety Seminars

Know of a meeting that could be turned into a "Wings" qualifying program? Contact this office at least three months in advance so that the proper arrangements can be made and we'll advertise it here?

The Arizona area seminar and special event schedule for April 2002 is as follows: These are WINGS qualifying.

April 11th, 2002 @ 7:00 p.m.
Honeywell Quarterly Seminar

Where: Honeywell Plant @ 19th. Ave & Deer Valley, In the Meeting Room, Cafeteria Entrance off of 19th. Ave.
Subject: "Noise Abatement issues and other various topics".
Presented by: Deer Valley Tower, City of Phoenix, FAA
Sponsored by: The FAA Aviation Safety Program**,**

What's Inside this Issue:

"Deferred Maintenance "
&
Aviation Safety Seminar Notices

(Now Online too!)
http://www.awp.faa.gov/spm2/home_arizona.cfm

April 13th, 2002, 9:00a.m.
PACE Program @ Prescott Municipal Airport

Where: "Arizona Craftsmen", Prescott Airport.
Subject: Various.
Presented by: Prescott Airport Users Assn.
Notes: To reserve an Aircraft inspection and a Flight Evaluation by FAA Inspectors contact: Joyce Hilche 928-771-0939;
Sponsored by: The FAA Aviation Safety Program