Dead Cat's Replacement

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In the April issue of this magazine, I wrote an article titled "Red Tape," in which I presented to the world, the new FAA policy requiring a technician to develop instructions for continuing airworthiness (ICA) when requesting a field approval for a major alterations from the local FAA Inspector.

In the now legendary epistle, along with the new FAA's requirements, and questions and answer format, I publicly confessed that I was the sole author of the FAA's Flight Standards Information Bulletin (FSAW 98-03) that created the policy, that requires ICA. First big mistake of 1998.

But being first generation tater-eating Irishman, and not one to stop at making only one big mistake, I made the unparalleled, second, colossal, bureaucratic mistake in a row, by publishing in the very same article, my telephone number and fax number where I could be reached if there were any questions on the policy. To be brief, all hell broke loose.

My phone never stopped ringing, the fax machine ground to a halt only after its one ream of paper supply ran out. Internet, and cc-mail messages concerning FSAW 98-03 filled in the rest of my day for almost three straight weeks after the FSAW and the article came out. I was being beaten up verbally, electronically, and in print on a daily basis, by FAA inspectors and technicians alike.

Despite defending my self valiantly, I had moments of self doubt. I remember thinking to my self, "Could I have been this wrong? Have I lost all contact with the field? Have I been in Washington too long? Have I misread the bureaucratic tea leaves?"

Small wonder that with all the negative feedback I was being subjected to, I was beginning to feel as insecure as a saber-toothed tiger's orthodontist.

It was also during this period of trial that I noticed my fellow workers who, somehow sensed my wounded ego, began treating me as if I had a rare, incurable, social disease that they could catch if they were within 40 feet downwind of me. The Maintenance Division's coffee pot, conveniently

located right outside of my door, is usually a busy area of rapier wit and politically-correct conversation, but would suddenly empty when I showed up.

Required conversations with other inspectors were short, and always were accompanied with side glances to the inspector's left or right as if to check if anyone witnessed their private dialogue with me. Whispered conversations, and finger pointing from the administrative staff, shadowed my comings and goings. Oh boy, it didn't take a Vulcan mind-meld to know, I was in big trouble. What to do? The FSAW (dead cat) was in my backyard!

The answer of course if you have a problem, is to fix it! As a technician, when I had a problem I approached it in a systematic way, using the five rules of troubleshooting I learned at Pittsburgh Institute of Aeronautics, so many years ago.

First rule, identify the problem. This is the hardest of the five rules, because it required me to sit down on my scar tissue, and objectively review the faxes, e-mail, and notes of telephone conversations that I have received. My review uncovered a central theme. Both FAA inspectors and technicians alike, said that ICA was a good idea, and it made sense to have maintenance information available to maintain a major alteration in the near and distant future, but they wanted more guidance on what constitutes an "acceptable" ICA.

The FAA inspectors wanted to be sure they did not "accept" anything less than what the new policy required when issuing a field approval, and the technicians did not want to give the FAA anything more than what the new policy required. Both parties wanted the guidance standardized. Both wanted a C.Y.A. (cover your anatomy) check list that filled in all the blanks. In other words a replacement set of instructions for my dead cat.

The second rule of troubleshooting is to list some solutions. Burying the dead cat in someone else's backyard, or ignoring the rather strong offensive odor, or taking extensive leave, didn't seem like something I could get away with easily, so they were quickly discarded.

After exploring what was left of my alternatives, and following the third rule of troubleshooting, I picked one. My solution was to create a check list on how to develop an ICA, in which both the FAA inspector and the technician had a standard to go by. To ensure that my dead cat's replacement did not go belly up and make my backyard a toxic waste dump eligible for EPA clean up super funds, I coordinated the document with FAA and industry and got their approval in writing.

The fourth rule was to implement the solution. This I have done, after extensive FAA and industry input, the check list is in the form of an FAA Handbook Bulletin for Airworthiness (HBAW-98-18) it will already be sent to the local FAA offices by the time you read this paragraph.

What follows is a paraphrasing of the seven page handbook bulletin. Note: a copy of this handbook bulletin is available on the FAA website: http://www.faa.gov/avr/afs/hbaw/hbawl.htm, or pick up a copy from your local Flight Standards District Office (FSDO).

Check list for Instructions for Continued Airworthiness for major alterations (ICA) approved under the field approval process

Purpose
The ICA is to provide instructions on how to maintain aircraft which are altered and appliances which are installed in accordance with a field approved, major alteration. The ICA checklist is a guide for both the inspector and the technician who creates the ICA. The ICAs developed in accordance with this guidance constitutes methods, techniques, and practices "acceptable" to the administrator. If the ICA is not acceptable to the FAA inspector, that inspector should not field approval the installation.

In addition to the required maintenance log book entry required by section 43.9, a reference to the ICA, and its location should be included to advise maintenance personal performing future inspections or maintenance.

Discussion
The ICA is prepared by the technician and presented to the FAA inspector, along with the unsigned Form 337 identifying the major alterations, and the acceptable data requiring field approval. The FAA inspector "accepts" the ICA if it meets the requirements of the applicable requirements in sections 23.1529, 25.1529, 27.1529,29.1529, 31.82, 33.4, 35.4.

The major alteration must meet the original type design under the CAR or FAR the aircraft was built to. However, if the major alteration is a totally new design, or of substantial complete redesign, the major alteration must meet section 21.101.

Because the majority of field approvals for major alterations are simplistic in design, an execution of extensive detail in an ICA is not required. Manufacturer's information can be referenced, however, because of legal interpretations on the use of manufacturer's proprietary instructions, in order to reference the manufacturer's instructions on the ICA, the applicant must first secure the manufacturer's permission. Reference to FAA documents such as AC43.13.1B and 1A are public use documents and permission from the FAA is not required.

For field approval installations that also includes incorporating Supplemental Type Certificate (STC) or Designated Engineering Representative (DER) data, the ICA should also reference the maintenance instructions or ICAs that came with the approved data.

The owner/operator should be made aware that field approved and STC installed equipment are required to be operational unless specifically listed on the Master Minimum Equipment List (MMEL)/Mimimum Equipment List (MEL) for the aircraft, or deferred in accordance with section 91.213.

Creating an ICA for older, previously installed field approved major alteration, can be incorporated into the aircraft's maintenance program by using the revision process in ICA checklist Item #16.

Ica check list
The ICA submitted by the applicant should include all of the following 16 check list items. The ICA should be included or referenced on Block #8 of FAA Form 337. If referenced, the ICA document must be physically attached to FAA Form 337.

However, many kinds of equipment including avionics, require little or no maintenance during their lifetimes. Some equipment cannot be field repaired, and most are remove and replace items only. For these and similar pieces of equipment, some of the checklist items may not apply. If an item such as check list Item #12: "special tools" does not apply, simply put n/a for "not applicable" after the check list Item.

Item 1: Introduction: This section briefly describes the aircraft, engine, propeller, or component that has been altered. Any other information on the content, scope, purpose, arrangement, applicability, definitions, abbreviations, precautions, units of measurement, referenced publications, and distribution of the ICA as applicable.
Item 2 : Description: Describes the major alteration, its functions including an explanation of its interface with other systems if any.
Item #3: List control, operation information: Special procedures, if any.
Item #4: Servicing information: Data such as type of fluids used, servicing point, and location of access panels as appropriate.
Item #5: Maintenance instructions: Such as recommended inspection and maintenance periods in

which each of the major alteration components are inspected, cleaned, lubricated, inspected, adjusted, and tested; including applicable wear tolerances and work recommended at each scheduled maintenance period. This section can refer to the manufacturer's instructions for the equipment installed where appropriate. It should also include any special notes, cautions, or warnings, as applicable.
Item #6: Troubleshooting information: Information describing probable malfunctions, how to recognize those malfunctions, and remedial actions to be taken.
Item #7: Removal and replacement information: This section describes the order and method of removing and replacing products, parts, and any necessary precautions. This section should also describe or refer to manufacturer's instructions to make required tests, trim checks, alignment, calibrations, center of gravity changes, lifting or shoring, etc.

Item #8: Diagrams: Schematics of access plates and information needed to gain access for inspections.
Item #9: Special inspections requirements: X-ray, ultrasonic testing, or magnetic particle inspection, if required.
Item #10: Application of protective treatments: To the affected area after performing inspection or maintenance.
Item #11: Data: Relative to structural fasteners, such as type, torque, and installation requirements, if any.
Item #12: List of special tools: Special tools required for inspection or maintenance if any.
Item #13: Commuter category aircraft: This information must be furnished, as applicable: a: electrical loads b: methods of balancing flight controls c: identification of primary and secondary structures d: special repair methods applicable to the aircraft
Item #14: Recommended overhaul periods: Are required to be noted on the ICA when an overhaul period has been set by the manufacturer of a component, or equipment. If there is no overhaul period, the ICA should state for item #14: "no additional overhaul time limitations."
Item #15: Airworthiness limitation section: Includes any "approved airworthiness limitation" identified by the manufacturer of FAA type certificated holding office (e.g., an STC incorporated in a larger field approved major alteration), may have an airworthiness limitation. The FAA inspector should not establish, alter, or cancel airworthiness limitations without coordinating with the appropriate FAA type certificate holding office. If there are no changes to the airworthiness limitations, the ICA should state "no additional airworthiness limitations" or not applicable (n/a).
Item #16: Revision: This section should include information on how to revise the ICA. For example, a letter will be submitted to the local FSDO with a copy of the revised FAA form 337 and revised ICA. The FAA inspector accepts the change by signing block 3 in the new FAA form 337.

After listing the checklist items, the handbook bulletin next speaks to implementation and record keeping requirements that reminds the Part 91 owner or operator to incorporate the ICA into his or her inspection program in accordance with section 91.409. To accomplish this, the technician must make an entry in the aircraft's maintenance log in addition to recording that a major alteration was performed, a statement that the ICA is now part of the aircraft's inspection/maintenance requirements.

For aircraft operated as an air carrier, (10 passengers or more) the operator is responsible for ensuring that the ICA is made part of the applicable inspection and maintenance program for his aircraft. If the procedure is not presently included in the operator's manual to incorporate a new ICA, this process will have to be addressed by the operator who will submit a new revision to the manual, explaining how the new ICA will be incorporated into his inspection and maintenance program.

For aircraft inspected under an approved aircraft inspection program (AAIP), the operator will submit a change to the inspection program incorporating the ICA, to the certificate holding FAA office

For air carrier aircraft inspected using an annual/100 hour inspection program, (9 passengers or less), a reference to the new ICA must be made in the aircraft maintenance record. In addition, the operator must request a revision to the operator's operation specifications, under additional maintenance requirements.

The fifth rule of troubleshooting I learned as a neophyte technician is get feedback as quickly as possible. In other words, it is real important to this bureaucrat's job security to find out if the dead cat's replacement is working as advertised. So, it is again time for me to make the same mistake that started this exercise back in April.

Once again, if you need further clarification on this check list, or wish to make a civilized comment or two on the dead cat's replacement, I can be reached at (202) 267-3796 or fax (202) 267-5115.

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