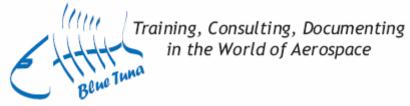


#### Slide 1

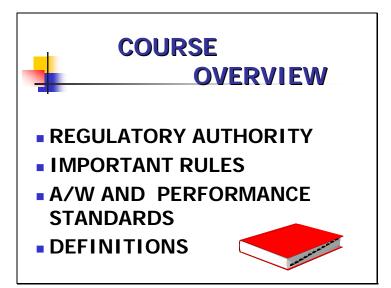


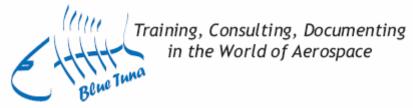




#### Slide 3





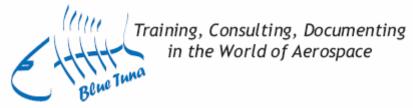


#### Slide 5

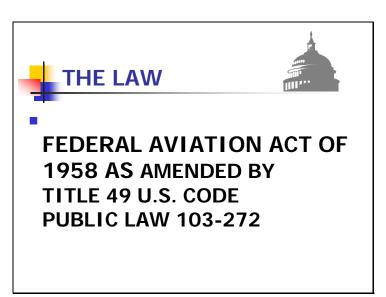


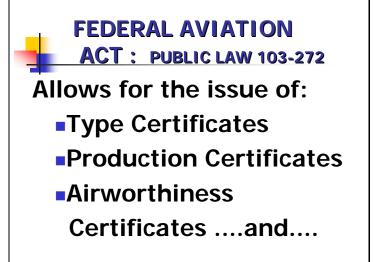
- MAJOR REPAIRS
- MAJOR ALTERATIONS
- Data (Approved and acceptable)
- STC PROCESS
- FAA FIELD APPROVALS

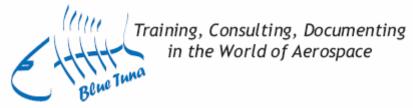




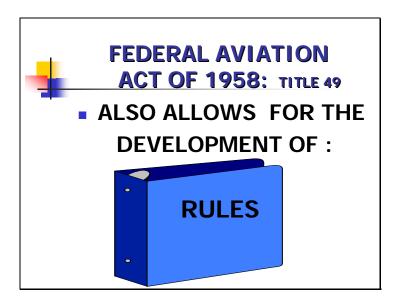
#### Slide 7







#### Slide 9



#### Slide 10

## RULES YOU SHOULD KNOW

■ LET'S GO OVER SOME OF THE AIRWORTHINESS RULES THAT DEFINE ONE OF THE MINIMUM STANDARDS THAT A MAJOR REPAIR OR ALTERATION MUST MEET.



#### Slide 11



### **RULES:**

<u>PART 21</u> - Certification Procedures for Products and Parts.

<u>PART 23</u> - (CAR--3) Airworthiness Standards, Normal, Utility, Acrobatic and Commuter.

PART 25 - (CAR--4b) Airworthiness Standards, Transport.

#### Slide 12



PART 29 (CAR 7) Airworthiness
Standards) Airworthiness Standards,
Transport Helicopters

Part 31, Manned Free Balloons.

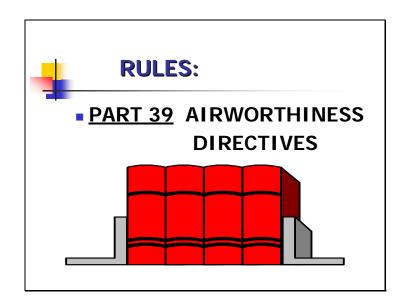
PART 33 (CAR 13) Airworthiness Standards, Aircraft Engines.

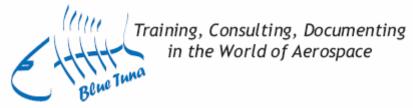


#### Slide 13



 PART 36, AIRCRAFT NOISE REQUIREMENTS, EXCEPT FIRE FIGHTING AND AGRICULTURAL.





Slide 15



## **Question?**

What do all these regulations have in common?

Slide 16

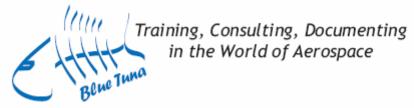


## **Answer**

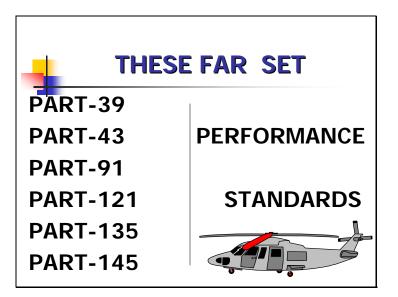
They set:

Airworthiness
Standards!



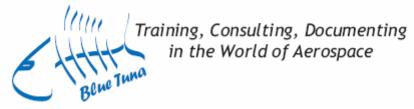


#### Slide 17





- Airworthiness Standards and
- Performance Standards



#### Slide 19







Slide 21



## DEFINITION OF "AIRWORTHY"

 Airworthy is when the aircraft meets its <u>type design or</u> <u>properly altered condition</u> and is <u>in a condition for safe</u> operation.

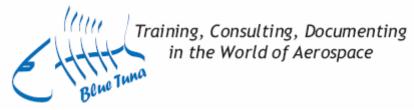
(Ref: Act of 58 and the Standard A/W certificate and the glossary of AC 43.13-1B)

Slide 22

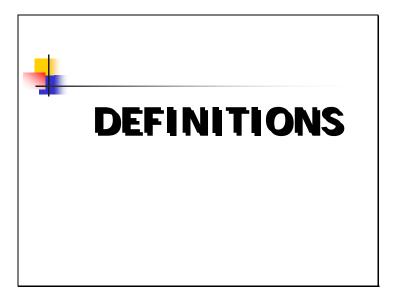


### **AIRWORTHY**

- TYPE DESIGN = AIRWORTHINESS STANDARD
- CONDITION FOR SAFEOPERATION = PERFORMANCESTANDARD



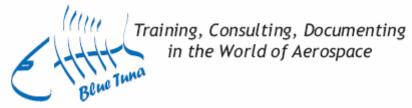
Slide 23



Slide 24

# Major Repair (Ref: FAR 1)

- 1. A repair that, if improperly done might appreciable effect weight, balance, structural strength, performance characteristics or other qualities affecting airworthiness or:
- 2. That is not done according to ACCEPTED practices or cannot be done by elementary operation.



Slide 25



# Major Alteration (Ref: FAR 1)

is an alteration not <u>listed</u> in the A/C, engine, or propeller specifications.

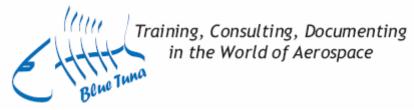
1. That might appreciable affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness: or

Slide 26



# Major Alteration (Ref: FAR 1)

2. That is not done according to <u>accepted</u> practices or cannot be done by <u>elementary</u> operations.



Slide 27



## **Question?**

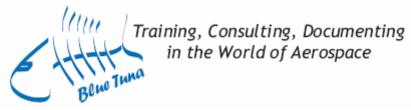
What do the words:
"Other qualities affecting
airworthiness" mean to
you?

Slide 28



### **OTHER QUALITIES**

- TYPE OF OPERATIONS
- ENVIRONMENTAL CONDITIONS
- UTILIZATION RATE
- AGE OF THE AIRCRAFT AND IT'S COMPONENT PARTS
- PREVIOUS MAINTENANCE HISTORY



Slide 29



### **QUESTION?**

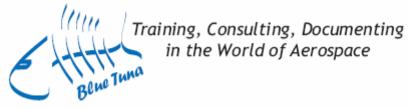
WHAT IS THE BASIC <u>DIFFERENCE</u> BETWEEN A MAJOR REPAIR AND A MAJOR ALTERATION?

Slide 30



## MAJOR REPAIR ? MAJOR ALTERATION?

- A MAJOR REPAIR ALWAYS <u>RETURNS</u> THE ITEM BACK TO ITS ORIGINAL TYPE DESIGN.
- A MAJOR ALTERATION IS A <u>CHANGE</u> TO THE ORIGINAL TYPE DESIGN.



Slide 31

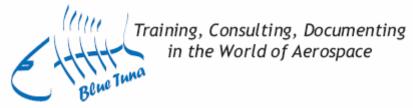


Slide 32



## **QUESTION?**

- SINCE IT IS THE <u>AIRCRAFT</u> <u>MECHANIC</u> WHO DECIDES IF A REPAIR IS MAJOR OR MINOR,
- DOES THE FAA GIVE MECHANICS ANY OTHER GUIDANCE ON WHICH IS WHAT?



Slide 33



## **SURE DO!**

■ <u>APPENDIX (A)</u> OF PART 43 LISTS MAJOR REPAIRS AND ALTERATIONS TO AIRFRAME, ENGINES, PROPS, AND OTHER COMPONENT PARTS.

Slide 34



## **QUESTION?**

- WHAT HAPPENS IF THE REPAIR OR ALTERATION IS NOT IN APPENDIX A OF PART 43?
- WHAT ELSE CAN THE MECHANIC DO?



Slide 35



## THREE POSSIBLE SOLUTIONS

- <u>FIRST SOLUTION</u>: CONTACT THE MANUFACTURER.
- SECOND SOLUTION: CONTACT THE NEAREST FAA DISTRICT OFFICE AND ASK FOR HELP.
- <u>THIRD SOLUTION</u>: ASK THREE (3) QUESTIONS.

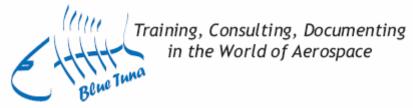
Slide 36



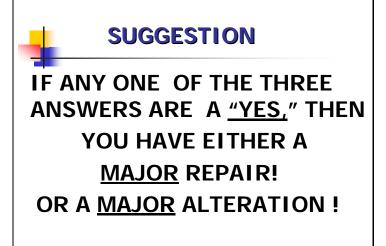
### **SOLUTION #3**

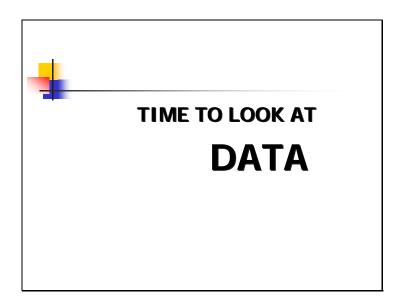
If the repair or alteration <u>fails</u> in such a way that would :

- 1. prevent continued safe flight
- 2. prevent a safe landing or
- 3. adversely affect the safety of the crew and passenger.



Slide 37







Slide 39



### Data can be:

Written/Typed Instructions
WEIGHT AND BALANCE REPORTS

DESIGN Drawings Photographs

**Documents** *STRESS* ANALYS IS ELECTRICAL LOADS CHARTS

Slide 40



### **DATA MUST PROVIDE**

- A DETAILED, COMPLETE, AND ACCURATE DESCRIPTION OF THE PROPOSED ALTERATION OR REPAIR.
- A DESCRIPTION OF REQUIRED TESTING PROCEDURES. (E.G. FLAMMABILITY OR NOISE)



#### Slide 41



- <u>TYPE DESIGN</u> (FAR 21.31)
- METHODS, TECHNIQUES, AND PRACTICES TO PERFORM MAINTENANCE.

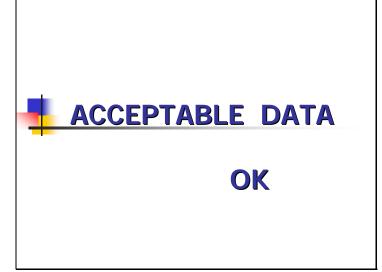
#### Slide 42



"Acceptable" and "Approved"



Slide 43



Slide 44



### **ACCEPTABLE DATA**

Acceptable Data is used for all maintenance, except major repairs and major alterations.

(Ref: 43.13)



#### Slide 45



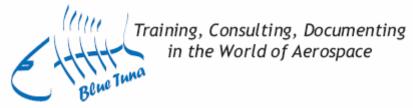
## KINDS OF ACCEPTABLE DATA

- •AC 43-13-1B or 2A.
- •MFG's Service Manuals for aircraft originally TC <u>after</u> Jan. 1, 1980.
- MFG's Service Bulletins.
- PART 121/135 Operator's Manuals.

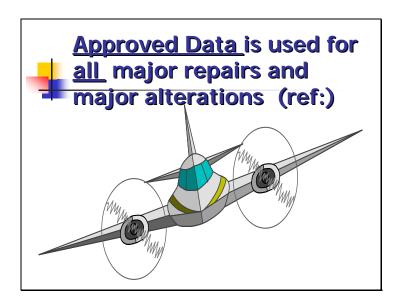
#### Slide 46

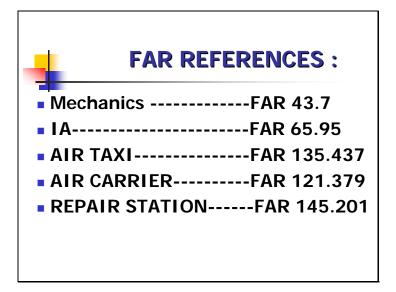


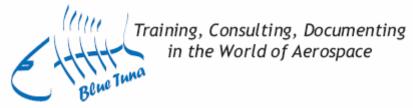
## APPROVED DATA



#### Slide 47







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#### KINDS OF APPROVED

DATA: FAA ORDER 8300.10 CHG 15

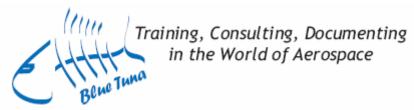
- TYPE CERTIFICATE DATA AND SPECIFICATIONS.
- S. T. C.
- ADs
- FAA APPROVED STRUCTURAL REPAIR MANUALS.

Slide 50



## KINDS OF APPROVED DATA:

- DESIGNATED ENGINEERING REPRESENTATIVE. (DER) (8110-3 statement of compliance)
- DESIGNATED ALTERATION STATION. (DAS)
- APPLIANCE MANUFACTURER'S MANUALS. (for repairs only)



Slide 51



## KINDS OF APPROVED DATA:

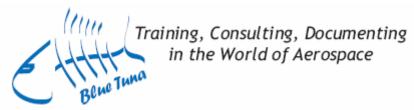
- MFG's Service Manuals for aircraft originally TC prior to Jan. 1, 1980.
- ■The data must be appropriate,
- Applicable, and not contrary to manufacturer's instructions.
   Same as AC 43.13-1b requirements.

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## KINDS OF APPROVED DATA:

- FAA APPROVED DATA.
- SFAR 36 REPAIR DATA.
- FAA FORM 337 USED TO APPROVE MULTIPLE REPAIRS OR ALTERATIONS BY THE ORIGINAL MODIFIER.



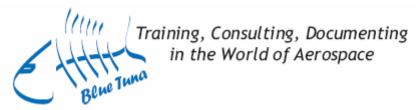
Slide 53



- TECHNICAL STANDARD.
   ORDER AUTHORIZATION. (TSO)
- PARTS MANUFACTURER.
   AUTHORIZATION. (PMA)
- DELEGATED OPTION.
   AUTHORIZATION. (DOA)



- CAA FORM 337, DATED PRIOR TO 10/1/55.
- FOREIGN DATA IN THE FORM OF A SERVICE BULLETIN, FOR USE ON U.S. CERTIFICATED, FOREIGN MFG. AIRCRAFT WHEN APPROVED BY THE FOREIGN CAA OF THE COUNTRY OF DESIGN UNDER A BILATERAL AGREEMENT.



Slide 55



## KINDS OF APPROVED DATA:

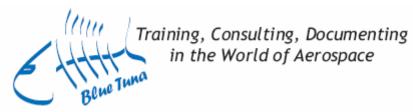
- FAA AND TRANSPORT CANADA CIVIL AVIATION (TCCA) HAVE A M.O.U. THAT SAYS THAT CERTAIN TCCA AND TCCA DELEGATE REPAIR DESIGNS ARE CONSIDERED FAA APPROVED. THESE ARE LISTED ON THE WEBSITE BELOW:
- HTTP://WWW.TC.GC.CA/AVIATION/REGSERV /CARAC/CARS/CARS/A513S10E.HTM

Slide 56

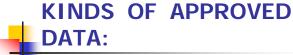


## KINDS OF APPROVED DATA:

 DATA IN THE FORM OF APPLIANCE TYPE APPROVAL ISSUED BY THE MINISTER OF TRANSPORT CANADA FOR THOSE PARTS THAT DO NOT HAVE A TSO. (DOT CANADA CERTIFICATE IN INSTALLATION MANUAL)



Slide 57



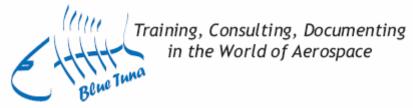
- ANY FAA-APPROVED SERVICE BULLETINS AND LETTERS OR SIMILAR DOCUMENTS.
- ANY OTHER DATA APPROVED BY THE ADMINISTRATOR.

Slide 58



Use AC 43.13-IB if the repair is:

- Appropriate to the product.
- Applicable to the repair.
- Not contrary to mfg's data.
- Must reference AC's chapter, page and paragraph where data is found.



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### **QUESTION?**

WHERE IS THE <u>AUTHORITY</u> THAT GIVE THE MECHANIC, IA TO USE THE ACCEPTABLE REPAIR DATA IN AC 43.13-1B AS APPROVED DATA FOR A MAJOR REPAIR?

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### **ANSWER**

PERMISSION BY THE FAA TO
 USE THE ACCEPTABLE DATA IN
 AC 43-13-1B AS <u>APPROVED</u>
 <u>DATA</u> IS FOUND ON THE FIRST
 PAGE (SIGNATURE PAGE) OF
 THE AC.



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## HERE IS ANOTHER POLICY CHANGE:

• FAA NOTICE 8300.122, dated 7/28/05, now permits Manufacturer's repair data to be used as "approved data". So a field approval is not required for repairs listed in MFG. Maintenance manuals.

Slide 62

# Data that is not approved or acceptable

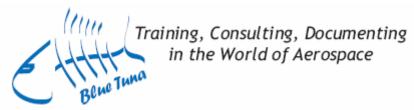
- Sales Catalog Information.
- Newsletters.
- Magazines articles.
- Parts Manual (Illustrated).
- (FAA Order 8130.2E page42 para 44)



#### Slide 63







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## Supplemental type Certificate (STC) is:

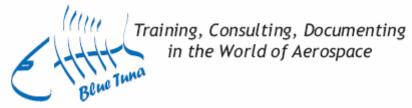
A major change to a type design but not great enough to require a new application for type certificate. (Ref: 21.113)

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## S.T.C. Process: Data submitted

- Application made to FAA
- ■FAA assigns an engineer
- Applicant and FAA meet
- Development of a mutually acceptable program



#### Slide 67



# STC PROCESS: Data submitted (cont.)

- SUBMIT DATA: SUCH AS DRAWINGS, PROCESSES, PARTS USED, ETC.
- FLIGHT MANUAL SUPPLEMENTS.
- OPERATING MANUALS.
- COPY OF INSTALLATION INSTRUCTIONS.

#### Slide 68



# S.T.C. Process Data submitted (cont.)

- Rating of electrical equipment
- Weight and balance
- Placards
- Markings on instruments



Slide 69



# T.C. Process: Data submitted (cont.)

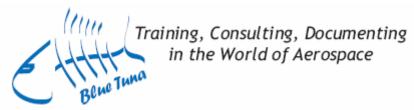
- •Any aircraft certified after January 28, 1981 a manual for continued airworthiness is required. (Ref 21.50)
- One copy of all substantiating data showing compliance to the applicable FAR or CAR.

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## Suggestion

Designated Engineering Rep. (DER) can be a engineer or test pilot who for <u>a fee</u> will represent the FAA for specific certification functions. They can speed up the process but use of DER's are <u>not mandatory</u>.



#### Slide 71



### S.T.C. Process

- Development of the type inspection authorization (T.I.A.)
- TIA sets the requirements for
  - Conformity Inspections
  - Flight tests
- Satisfactory Completion of the Inspections and Tests an S.T.C. is issued.

#### Slide 72



### S.T.C. can be:

- Transferred from one individual to another or:
- Sold an an "approved" process for a major repair or alteration



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### Warning!

#### Before you Buy an S.T.C.

- Ensure that it is compatible with other STC on your aircraft.
- Ensure it is for your particular make and model aircraft.

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### **WARNING**

- PART 91.403 GENERAL: REFLECTS THE 1996 LAW TO PROTECTED INTELLECTUAL DATA.
- IT REQUIRES INSTALLERS OF AN STC TO HAVE PERMISSION FROM THE STC HOLDER TO USE THE STC. THIS IS USUALLY IN THE FORM OF A LETTER FROM THE STC HOLDER TO THE BUYER.



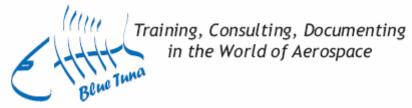
#### Slide 75



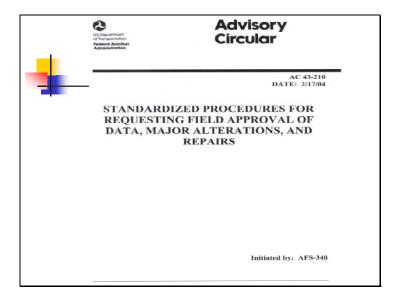
#### Slide 76



 FAA ADVISORY CIRCULAR (AC)43.210
 STANDARDIZED FIELD APPROVAL OF DATA, MAJOR ALTERATIONS AND REPAIRS



#### Slide 77



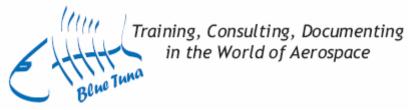
#### Slide 78



### **DEFINITION:**

#### Field Approval:

ONE OF THE MEANS THE FAA USES TO APPROVE TECHNICAL DATA FOR MAJOR REPAIRS OR MAJOR ALTERATIONS. TECHNICAL DATA SO APPROVED BECOMES "TECHNICAL DATA APPROVED BY THE ADMINISTRATOR"



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### **Field Approval Facts**

- Not found in the FARs
- Policy only
- FAA AirworthinessInspector sign Block 3 of FAA Form 337

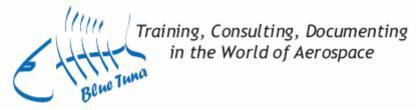
Slide 80



### **Field Approval Facts**

There are 2 kinds of field approvals:

 Examination of Data only!
 "Approves" acceptable data for major repairs/major alterations.



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#### **FIELD APPROVAL FACTS**

2. Physical inspection, demonstration, or testing of the repair or alteration.

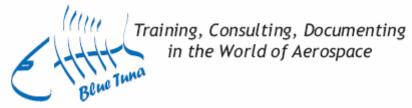


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### **Notice**

You <u>are not</u> entitled to a Field Approval even if the Form 337 is "perfect."



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- 1. Field Approvals are <u>policy</u> only and are not regulatory.
- 2. Authority to grant a field approval rests on the FAA A/W Inspector alone!

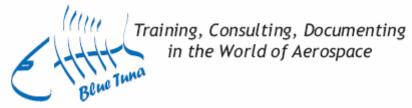
Slide 84



### **Suggestion**

If your field approval request has been denied try another inspector.

If it is denied twice--check your paper work.



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A SUGGESTION TO IMPROVE YOUR CHANCES OF GETTING A FIELD APPROVAL.

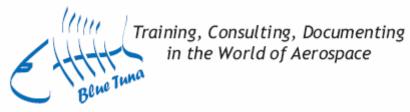
- IN APPENDIX A OF AC 43-210 IS AN "OPTIONAL" FIELD APPROVAL CHECKLIST AND DIRECTIONS.
- IT CONTAINS JUST 12 ITEMS OR MEMORY JOGGERS THAT WILL ENSURE THAT THE REPAIR OR ALTERATION YOU WANT TO PERFORM WILL BE DONE RIGHT!

Slide 86



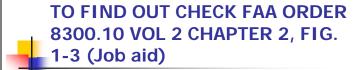
### **Question?**

What <u>can not</u> be field approved?



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Major Repairs & Major Alterations



THIS ORDER IS ON THE FAA WEBSITE

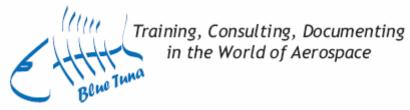
#### http://www.faa.gov/avr/afs/faa/8300/

- Job aid addresses major alterations only and is divided into 5 categories:
- GA, Rotorcraft, Transport, Engines, Propellers and APU.

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- Each category is sub divided into sections.
- Weight and balance.
- Structural strength.
- Reliability.
- Operational characteristics
- Airworthiness
- Crashworthiness



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# Installations that affect WEIGHT AND BALANCE:

- Increase in gross weights.
- ■Major changes in C.G. range.
- Changes in maximum speeds, such as stall, never exceed, maneuvering speed.
- Change in service ceiling.

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## Installations that affect: STRUCTURAL STRENGTH

- CHANGES TO PRIMARY STRUCTURES
  AS IDENTIFIED IN AC 25.571-1

  DAMAGE TOLERANCE AND FATIGUE
  EVALUATION OF STRUCTURE.
- SUBSTITUTION OF ENGINE, PROPELLER, ROTOR OR AIRFRAME PRIMARY STRUCTURE MATERIALS.



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### Installations that affect: RELIABILITY

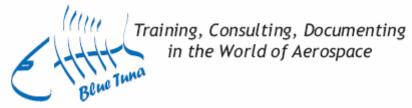
- Changes to manifold, air induction, engine cowling, or baffles that affect engine cooling or carburetor heat.
- Changes to basic engine or propeller design, controls, and operating limitations.

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### Installations that affect: RELIABILITY

- Changes to engine/propeller adjustments and settings that affect power output.
- Modifications to approved avionics such as change to software, environmental performance, wire shielding, manufacturer's operating limitations.



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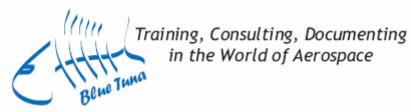


 CHANGES OR RELOCATION OF HYDRAULIC, OIL, FUEL, SYSTEMS AND EQUIPMENT THAT AFFECT THE AIRCRAFT'S STRUCTURAL INTEGRITY, FLIGHT, GROUND HANDLING OR INCREASES NOISE.

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- CHANGES THAT AFFECT STATIC OR DYNAMIC BALANCE, THE CONTOUR, OR WEIGHT OF MOVEABLE FLIGHT CONTROLS.
- CHANGES TO CONTROL TRAVEL OR DIRECTION OF MOTION.



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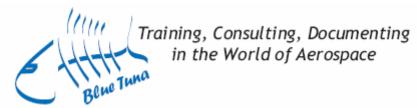


- CHANGES IN BASIC DIMENSIONS OR EXTERNAL CONFIGURATION OF THE AIRCRAFT.
- INSTALLATION OF STRUCTURES OR APPLIANCES TO THE EXTERIOR, SUCH AS NIGHT SUN, SPRAY EQUIPMENT ETC TO ROTOR-CRAFT ONLY.

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# Installations that affect: OPERATIONAL CHARACTERISTICS

- CHANGES TO FLIGHT CRITICAL ELECTRICAL/ELECTRONIC SYSTEMS (E.G. FADEC, FLY BY WIRE ETC.)
- CHANGES THAT AFFECT AIRCRAFT PERFORMANCE, DRAG, RPM, OR MUFFLER.



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- CHANGES AFFECTING NOISE OF FLIGHT CHARACTERISTICS.
- EXTERNAL LIGHTS, SKIS, BASKETS ON ROTOR-CRAFT.
- CHANGES TO LANDING GEAR AND RELATED COMPONENTS.

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# CHANGES THAT AFFECT: AIRWORTHINESS

- RELOCATION OF EXTERNAL FUEL AND BATTERY VENTS.
- CHANGES TO ON BOARD LOX GENERATING SYSTEMS.
- MAJOR DEVIATION TO STC OR EXTERNAL CRITICAL ACCESS DOORS,



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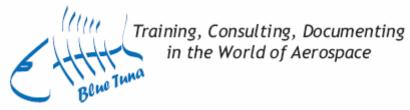


- CHANGES TO OIL, HYDRAULIC, PNEUMATIC, FUEL LINES ON SYSTEMS THAT WOULD HAVE AN EFFECT ON OPERATION AND FLAMMABILITY.
- CHANGES IN FIXED FIRE EXTINGUISHER OR DETECTOR SYSTEMS THAT MAY HAVE AN EFFECT ON SYSTEM RELABILITY.

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# CHANGES THAT AFFECT: AIRWORTHINESS

- CHANGES THAT INCLUDE THE SUBSTITUTION OF ENGINE/APU/ PROPELLER MATERIALS THAT MIGHT AFFECT STRUCTURAL INTEGRITY, LIGHTING PROTECTION, FLIGHT CHARACTERISTICS, INCLUDING THE SUBSTITUTION OF FASTNERS.
- ANY OTHER COMPLEX SPECIAL PROCESS.



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- CHANGES TO THE STRUCTURE,
   EQUIPMENT, CABIN INTERIORS ETC.
- CHANGES TO INCREASE THE SEATING CAPACITY, EXCLUDING SPORT PARACHUTING.
- CHANGES IN MATERIALS THAT AFFECT FIRE PROTECTION.

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- NO HEADS UP DISPLAY, TCAS, AUTOPILOT, FLIGHT DATA RECORDER, GPWS, EFIS SYSTEMS, TERRAIN AWARENESS AND WARNING SYSTEMS, EMERGENCY VISION ASSURANCE SYSTEM.
- CHANGES THAT ALTER DYNAMIC COMPONENTS OF ROTOR-CRAFT.



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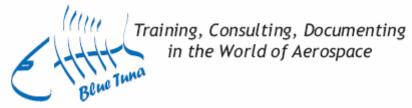
- CHANGES TO TSO, ADS, ETOPS EQUIPMENT, OR PRESSURIZATION.
- ALTERATIONS TO PASSENGER CARRYING AIRCRAFT TO AN ALL-CARGO, OR COMBI CONFIGURATION.



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## FIELD APPROVALS THAT REQUIRE FAA ENGINEERING INPUT:

- SUBSTITUTION OF PARTS.
- CERAMIC COATINGS.
- WELDING OF PROPELLERS.
- ALTERNATIVE MEANS OF COMPLYING WITH AD.
- USE OF SYNTHETIC RESIN GLUES.



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## FIELD APPROVALS THAT REQUIRE FAA ENGINEERING INPUT:

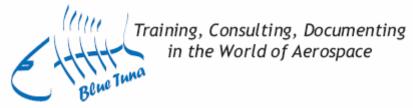
- NEW MAGNESIUM OR CHROME APPLICATIONS.
- NEW WELDING OR BRAZING PROCESSES.
- USE OF SYNTHETIC COVERINGS.

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# FIELD APPROVALS THAT REQUIRE FAA ENGINEERING INPUT:

- ANY CHANGE TO A REQUIRED AIRCRAFT INSTRUMENT SYSTEM NOT SPECIFICALLY AUTHORIZED BY A BULLETIN, FAA ORDER OR AN AC.
- INITIAL INSTALLATION OF A LITTER SYSTEM.
- CHANGES TO EMERGENCY EXITS.
- CHANGES TO THE TC PASSENGER SEATING CONFIGURATION.



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# INCOMPLETE INSTALLATIONS

AIRCRAFT WITH INCOMPLETE
 OR PIECEMEAL INSTALLATIONS
 <u>CAN BE APPROVED</u> FOR RETURN
 TO SERVICE IF THE FOLLOWING
 HAS BEEN ACCOMPLISHED:

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# INCOMPLETE INSTALLATIONS

- THE ALTERATION DATA HAS BEEN FAA APPROVED.
- THE INCOMPLETE INSTALLATION WILL NOT AFFECT THE SAFE OPERATION OF THE AIRCRAFT.



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# INCOMPLETE INSTALLATIONS

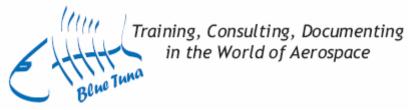
- THE EQUIPMENT INSTALLED IS <u>DEACTIVATED AND PLACARDED</u> TO PREVENT USE.
- WEIGHT AND BALANCE RECORDS ARE CURRENT.
- MAINTENANCE RECORDS ENTRY MADE AND SIGNED OFF.

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# INCOMPLETE INSTALLATION

- OPERATOR IS ADVISED OF THE STATUS OF THE EQUIPMENT INSTALLED.
- WHEN THE INSTALLATION IS COMPLETED A CONFORMITY INSPECTION MAY BE REQUIRED.



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# FIELD APPROVAL FOR MAJOR ALTERATIONS ADDITIONAL REQUIREMENTS

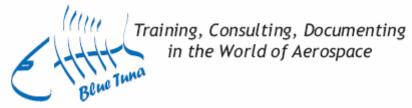
- MECHANICS MUST SUBMIT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS IN A MANUAL FORMAT.
- IN OTHER WORDS HOW ARE YOU GOING TO MAINTAIN THE ALTERATION FOR THE REST OF THE TIME IT IS ON THE AIRCRAFT.

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# FIELD APPROVAL FOR MAJOR ALTERATIONS

- THE FAA INSPECTOR "ACCEPTS" THE INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ONLY.
- THE ICA'S SHOULD BE COMPLETE ENOUGHT SO THE ALTERATIONS IS MAINTAINED IN AN AIRWORTHY CONDITION, THIS INCLUDES THE IDENTIFICATION OF REPLACEMENT OF PARTS.



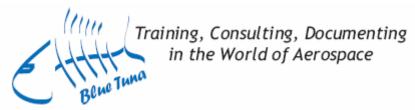
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# INSTRUCTIONS FOR CONTINUING AIRWORTHINESS

- MAKE IT EASY ON YOURSELF---USE THE FAA ICA CHECKLIST. (FAA Order 8300.10)
- REMEMBER: THE ICA IS NOT FOR THE FAA'S BENEFIT BUT FOR THE MECHANIC WHO PERFORMS THE NEXT INSPECTION ON YOUR ALTERATION.

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### 1. READ THE FOLLOWING:

- AC 43-210 STANDARDIZED PROCEDURES FOR REQUESTING FIELD APPROVAL OF DATA, MAJOR ALTERATION AND REPAIRS.
- FAA ORDER 8300.10 CHAPTER 1 OF VOLUME 2. PERFORM FIELD APPROVAL OF MAJOR REPAIRS AND ALTERATIONS.

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#### 2. Check out the Form 337

- Did you read the fine print on the Form?
- •Have you read AC-43-9-1G Instructions for completing FAA Form 337?

Hint: (Check appendix B of Part 43)



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# 3. IS IT MAJOR OR MINOR?

Make a determination if the repair or alteration is major or minor.

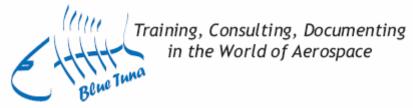
Hint: (Check Appendix A of Part 43 or ask the 3 questions)

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#### 4. SEE THE FAA FIRST!

Do <u>NOT</u> cut metal, splice wire, or install equipment until you received the Field Approval!



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# 5. FIND OUT WHAT THE FAA WANTS OR NEEDS

Talk to the FAA Inspector about the major repair or alteration you are planning.

Find out what data the inspector needs to see!

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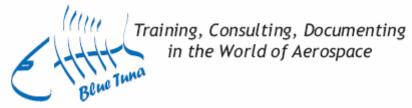


#### 6. BE REASONABLE!

Allow a reasonable time period for the approval.



Hint: (30 days is Reasonable)



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### 7. Gather your Data:

- Check the type Certification rules.
- ■PART 23 or CAR 3.
- PART 25 or CAR 4.
- •AC 43.13 1B or 2A.
- Documents, photos, processes.
  Hint: Are they current?

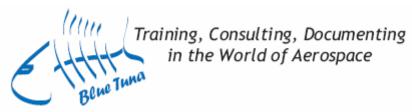
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## 8. CAN THE FAA UNDERSTAND WHAT YOU WANT TO DO?

Format your data in a reasonable straight forward manner.

Hint: Does your data, repair or alteration conflict with other alterations or repairs?



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Have you looked at the aircraft's structural requirements?
Can a new piece of equipment stay where you put it?

Hint: See Chapter 1 of AC43.13-2A on how to work up design loads.

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- Structurally?
- Operationally?
- Are the parts used PMA-TSO approved?



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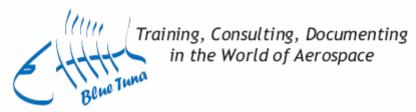
- SUBMIT A COMPLETED BUT UN-SIGNED OR DATED FAA FORM 337 TO THE FAA.
- SUGGEST THAT A DATA PACKAGE THAT DESCRIBES THE REPAIR OR ALTERATION IN DETAIL IS ATTACHED TO THE 337 ALONG WITH THE OPTIONAL FIELD APPROVAL CHECKLIST.

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### **ITS BEEN APPROVED!!!**

BUT WHAT DO YOU
REALLY HAVE?



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# You have one of two Kinds of Field Approvals

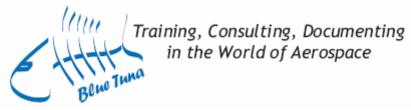
- 1. Data approval.
- 2. Approval by physical inspection or testing.

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# DON'T FORGET, YOU GET TO SHARE THE BLAME!

The Form 337 still needs the conformity statement signed and the approval for return to service block checked, as well as the aircraft's maintenance records completed.



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- 1 goes to the owner/operator.
- 1 to the FAA within 48 hours.

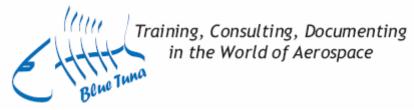
#### A fuel tank in the baggage or Cabin

- 1 goes to the owner/operator.
- 1 to the FAA written 48 hours.
- 1 stays in the cockpit/cabin.

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# FORM 337 RECORD KEEPING REQUIREMENTS

- FAA FORM 337 FOR MAJOR REPAIRS IS KEPT FOR 1 YEAR.
- FAA FORM 337 FOR MAJOR ALTERATION IS KEPT FOREVER. (REF: 91. 417)



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### **Summary:**

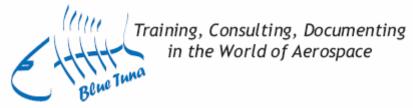
- -Major Repair --returns it to its original type design.
- Major Alteration--alters the type Design.
- Data is required.
- Acceptable / Approved Data.

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### **Summary:**

- AC 43.13-1B "Approved Data"
  - Appropriate to the product.
  - Applicable to the repair.
  - Not contrary to MFR.DATA.
  - Chapter/page/ paragraph.



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### **SUMMARY:**

- UNAPPROVED DATA.
- S. T. C. PROCESS.
- FIELD APPROVAL PROCESS.