

Name _____ Date _____

Hour 1 Subject Area: Airworthiness.

1. Greetings, introductions, 8 hour requirement, attendees requested to participate actively.
2. Inspection Authorization Renewal, FAA Form 8610-1, and Pilot's Bill of Rights.
3. General introduction to Airworthiness: power point presentation.
4. 10 question quiz from Airworthiness Review material. Formative, not summative assessment. Correct in class to 100%. Attendees retain their quizzes.
5. Regulatory Material: 14 CFR Parts 43, 65.

Hour 2 Subject Area: Parts.

1. Incoming Receiving Inspection: serviceability, traceability, life limits, eligibility for installation.
2. Approved / Unapproved parts (SUPS AC 21-29). FAA Form 8130-3 (Order 8130.21).
3. Owner-operator or mechanic produced parts, criticality of parts per AC 20-62: Category I, II, III.
4. Tagging and Part Marking, segregation of parts, disposition of unsalvageable life-limited and flight critical aircraft parts (14 CFR Part 43.10).
5. Cabin interior parts, crash attenuation and flammability requirements.
6. Parts handling: ESD considerations, storage and preservation requirements and record-keeping.
7. Regulatory Material: 14 CFR Parts 21, 43, 45.

Hours 3-4 Subject Area: Major Repairs and Alterations, FAA Form 337.

1. Major Repairs, FAA Form 337, repairs to primary/ secondary structure, restoration of aerodynamic function, structural strength, resistance to flutter, vibration, deterioration, and other qualities affecting airworthiness, "10%" rule of thumb, parent material identification, substitution of materials and fasteners, substitution of blind fasteners for solid rivets, approved data (and deviations) for major repairs, owner/operator approval, instructions for continued airworthiness for major repairs. OEM Structural Repair Manual, Standard Practices Manual. Repair in-process inspection considerations (composite and welded repairs). Restoration of original composite fabric and weave orientation, "plus one ply" rule of thumb (Boeing, Bell Helicopter, Abaris), symmetry of weave orientation about center axis (Abaris). Aircraft quality workmanship.
2. Major Alterations, FAA Form 337, Compliance Checklist, data packages in support of Major Alterations, approved data for major alterations, STC holder approval, deviations from approved data, compatibility of alterations. AFMS/RFMS, Instructions for Continued Airworthiness. Experimental Airworthiness Certificate (R&D, Show Compliance). Aircraft as altered must continue to meet requirements of its initial certification.
3. Submission of 337's to owner-operator and to FAA Aircraft Registry. Extended range fuel tanks. Addendum 337's and 337's documenting previously accomplished work.
4. Regulatory Material: 14 CFR Parts 1, 21, 43. See also AC 43-9.1.

Hour 5 Subject Area: Inspections, Maintenance Record Entries, AD's.

1. Annual Inspection Requirements. 14 CFR Part 43.15: Perform the inspection so as to determine whether the aircraft meets all applicable airworthiness requirements. Scope and detail of 14 CFR Part 43 Appendix D. Additional inspection items required for rotorcraft (14CFR Part 43.15): drive shaft(s), main rotor gearbox, main rotor, main rotor center section (main rotor hub), auxiliary rotor (tail rotor).
2. Use of checklist is required for Annual/100 hour inspection (14CFR Part 43.15(c)(1). Recommendation: start with the aircraft manufacturer's checklist and verify for completeness by comparison with 14 CFR Part 43 Appendix D. Add any ICA items from FAA Form 337 research.
3. Maintenance Record Entry (inspections). 14 CFR Part 43.11 requirements: type and extent of inspection, date, aircraft total time, signature, certificate type and number. Specific wording for approved for return to service and not approved for return to service (with signed and dated list of discrepancies and un-airworthy items).
4. 14 CFR Part 43.13: Performance standards for maintenance: Use methods, techniques, practices prescribed in manufacturer's maintenance manual. Use tools, equipment, and test apparatus in

accordance with industry standard practice and special equipment or test apparatus as recommended by manufacturer. Perform work so that condition of the aircraft is at least equal to its original or properly altered condition.

5. Maintenance Record Entry (maintenance). 14 CFR Part 43.9 requirements: description or reference to data acceptable to the Administrator of work performed, date, name (if other than person signing), signature, certificate type and number. See also AC 43.9.
6. Deferred maintenance, with or without Minimum Equipment List, Deferred Discrepancy Log. Cannot defer instruments required by 14 CFR Part 91.205 (see also 14 CFR Part 91.213).
7. Airworthiness Directives (14 CFR Part 39). Compliance is mandatory. AD's can impose one time and recurring inspection requirements, and can change manufacturer's published service life limits and part effectivity or eligibility.
8. Recommendations concerning AD research: There are AD's for aircraft, engines, props, appliances. Consult FAA AD listings including the Bi-weekly AD Supplements.
9. To extent practical, verify by inspection that the aircraft remains compliant with AD's stated to be "previously complied with." The aircraft may have been modified or parts replaced resulting in non-compliance with the AD. It is not required to disassemble an engine or un-rivet the airframe just to verify previous compliance if already documented in the aircraft records and this level of disassembly is not otherwise required at this time. Try to locate original sign off of AD in aircraft records, not just statement that AD has been previously complied with.
10. AD sign-off: Identify AD by number, effective date, revision level. Specify paragraph(s) of AD being complied with. If recurring, state when next due (ACTT, TTE, TTP, cycles, calendar).
11. Regulatory Material: 14 CFR Parts 39, 43, 65, 91.

Hour 6 Subject Area: Airworthiness Certificates.

1. FAA Form 8130-6 and AC 21-12.
2. 14 CFR Part 21.191: Experimental Airworthiness Certificates. No Experimental Certificate for Convenience of Maintenance. Aircraft must be in approved configuration for flight if under Standard Airworthiness Certificate, otherwise apply for Experimental.
3. 14 CFR Part 43.1(b). Aircraft originally issued an Experimental Certificate: Part 43 does not apply.
4. 14 CFR Part 21.197: Special Flight Permits.
5. Replacing illegible Airworthiness Certificates.
6. Add-on material here (if time allows): A&P 101 and Back to Basics.
7. Regulatory Material: 14 CFR Parts 21, 43.

Hours 7-8 Subject Area: Aviation Maintenance Safety.

1. Human Factors, Airworthiness Decision Making, Crew Management.
2. Hangar safety, Personal Protective Equipment, Jacking / Hoisting / Weight and Balance, Ground Run safety, FOD/Flight Line Tool Control, weather minimums, Maintenance Operational Check flight requirement (14 CFR Part 91.407 and manufacturer Flight Manual / Maintenance Manual requirements), communication between pilot and mechanic prior to MOC flight.
3. Safety Management System (SMS), Risk Management, Safety Reporting: Service Difficulty Reporting (SDR), Aviation Safety Action Program (ASAP), Corrective Action / Preventive Action (CAPA).
4. Safety and practical considerations when troubleshooting.
5. Regulatory Material: 14 CFR Parts 5, 43, 91.
6. Advisory Material: FAA-H-8083 Human Factors and Personal Minimums Checklist.