

PRIVATE PILOT GROUND SCHOOL

MODULE 3-2 — AIRWORTHINESS: ACS TASK B IN FULL

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FACTS TO REMEMBER

KNOW THESE COLD

- "Airworthy" is a two-part legal test: the aircraft conforms to its type design AND is in a condition for safe operation.

Source: 14 CFR 3.5(a) TB

- The owner or operator is primarily responsible for maintaining the aircraft in an airworthy condition.

Source: 91.403(a) eCFR*

- The owner/operator's maintenance responsibility explicitly includes compliance with part 39, the airworthiness directives.

Source: 91.403(a) eCFR*

- The pilot in command is responsible for determining whether the aircraft is in condition for safe flight.

Source: 91.7(b) eCFR*

- The pilot in command must discontinue the flight when unairworthy mechanical, electrical, or structural conditions occur.

Source: 91.7(b) eCFR*

- The owner must ensure maintenance personnel make the return-to-service entries in the records.

Source: 91.405(b) eCFR*

- The owner must have discrepancies repaired between required inspections.

Source: 91.405(a) eCFR*

- After any maintenance, the aircraft may not be operated until it has been approved for return to service by an authorized person.

Source: 91.407(a)(1) eCFR*

- After any maintenance, the aircraft may not be operated until the required maintenance record entry has been made.

Source: 91.407(a)(2) eCFR*

- "Calendar month" arithmetic: a 12-calendar-month interval runs to the last day of the month, not to the anniversary date.

Source: 91.409(a) eCFR*

- The 100-hour inspection is required only when carrying persons for hire, or when giving flight instruction for hire in an aircraft the instructor provides.

Source: 91.409(b) eCFR*

- An annual inspection can substitute for a 100-hour inspection, but a 100-hour never substitutes for an annual.

Source: 91.409(a),(b) eCFR*

- The 100-hour limit may be exceeded by up to 10 hours, and only while en route to a place where the inspection can be done.

Source: 91.409(b) eCFR*

- Maintenance records come in two kinds: work/inspection records, and permanent status records.

Source: 91.417(a)(1),(2) eCFR*

- Work and inspection records must be kept until the work is repeated or superseded, or for one year.

*Source: 91.417(b)(1) eCFR**

- Status records — total time, life-limited parts, overhaul times, inspection status, AD status, Form 337s — stay with the aircraft and transfer when it is sold.

*Source: 91.417(a)(2), (b)(2) eCFR**

- Maintenance records must be made available to the FAA or NTSB on request.

*Source: 91.417(c) eCFR**

- A maintenance record entry needs a description of the work, the completion date, and the signature, certificate number, and certificate kind of the person approving return to service.

*Source: 43.9(a) eCFR**

- Deciding an airplane is legal to fly requires reading its maintenance records — the cockpit documents alone cannot prove it.

Source: 91.409, 91.417 eCFR; TB*

- The transponder check every 24 calendar months applies to VFR aircraft too, whenever the transponder is used.

Source: 91.413 TB

- An airworthiness directive is a regulation: operating a product that does not comply violates part 39.

Source: 39.7 TB

- AD compliance is required at all times, not just at inspections — an aircraft can be inspection-legal and AD-unairworthy at the same time.

Source: AC 39-7D ¶11a TB

- ADs may be one-time or recurring; recurring ADs repeat at stated intervals of hours or calendar time.

Source: part 39; AC 39-7D TB

- A SAIB is non-regulatory, non-mandatory information — never a compliance requirement.

Source: FAA Order 8110.100B TB

- A special flight permit lets an aircraft that does not currently meet airworthiness requirements, but is capable of safe flight, fly to a place where repairs or storage can be done.

Source: 21.197(a) TB

- A private pilot may perform preventive maintenance on an aircraft they own or operate, as long as it is not used under parts 121, 129, or 135.

*Source: 43.3(g) eCFR**

- The preventive maintenance list in part 43 Appendix A(c) is exclusive: if a task is not on the list, it is not preventive maintenance.

Source: 43 App. A(c) eCFR; AC 43-12A TB*

- Listed examples: tires, spark plugs, batteries, position and landing light bulbs, safety belts, prefabricated fuel lines, oil and fuel strainers/filter elements.

*Source: 43 App. A(c) eCFR**

- The pilot must log preventive maintenance: description of work, date, signature, and certificate kind and number.

Source: 43.9(a) eCFR; AC 43-12A TB*

- When equipment is found inoperative, the governing rule is 91.213 — 91.205 enters later, inside the process, never first.

Source: 91.213 eCFR; AC 91-67A TB*

- Three legal paths to fly with inoperative equipment: an approved MEL with letter of authorization, the

91.213(d) process, or a special flight permit.

Source: AC 91-67A TB

– 91.213(d) screen one: the item must not be part of the VFR-day type certification instruments and equipment.

*Source: 91.213(d)(2)(i) eCFR**

– 91.213(d) screen two: the item must not be indicated as required on the aircraft's equipment list or on the KOEL for the kind of flight.

*Source: 91.213(d)(2)(ii) eCFR**

– A KOEL lists which equipment is required for each kind of operation (day VFR, night VFR, IFR); many light aircraft have none.

Source: 91.213(d)(2)(ii) eCFR; TB*

– 91.213(d) screen three: the item must not be required by 91.205 or any other rule for the specific kind of flight being conducted.

*Source: 91.213(d)(2)(iii) eCFR**

– 91.213(d) screen four: the item must not be required to be operational by an airworthiness directive.

*Source: 91.213(d)(2)(iv) eCFR**

– Disposition: the item is either removed, the cockpit control placarded, and the work recorded — or deactivated and placarded "Inoperative."

*Source: 91.213(d)(3) eCFR**

– Final step: a certificated pilot or mechanic determines the inoperative item is not a hazard to the aircraft.

*Source: 91.213(d)(4) eCFR**

– Legal is not the same as safe: after the 91.213 paperwork, the PIC's hazard judgment and 91.7(b) still decide the flight.

*Source: 91.213(d)(4), 91.7(b) eCFR**

– The airworthiness certificate must be displayed at the cabin or cockpit entrance, legible to passengers or crew.

Source: 91.203(b) TB

– A standard airworthiness certificate stays valid only as long as maintenance is performed per parts 43 and 91 — its blank expiration is conditional, not eternal.

Source: 21.181(a)(1) TB

– Aircraft registration expires 7 years after the last day of the month it was issued (the old 3-year answer is stale).

Source: 47.40(a) TB

GOING DEEPER

– An aircraft with an unapproved part installed is unairworthy even if everything works — the conformity prong fails.

Source: 14 CFR 3.5(a) TB

– A fully stock aircraft with a cracked spar is unairworthy — the safe-condition prong fails.

Source: 14 CFR 3.5(a) TB

– The rule says owner OR operator: a renter operating the airplane shares legal exposure for a lapsed inspection.

Source: 91.403(a); AC 39-7D TB

– Making a fraudulent statement about airworthiness is itself a violation.

Source: 14 CFR 3.5(b) TB

– The mechanic's signature approves return to service only for the work performed — it is not a statement that

the whole aircraft is airworthy.

*Source: 43.9(a)(4) eCFR**

- If maintenance may have appreciably changed flight characteristics, no passengers may be carried until a pilot flies an operational check and logs it in the aircraft records.

*Source: 91.407(b) eCFR**

- A private pilot certificate is the FAA's minimum qualification for that post-maintenance operational check flight.

*Source: 91.407(b) eCFR**

- The check flight is not required if ground tests or inspection show conclusively that flight characteristics did not change.

*Source: 91.407(c) eCFR**

- The first flight after maintenance is the highest-paperwork-risk flight: before accepting the airplane, read the return-to-service entry for the work that was done.

Source: 91.407(a) eCFR; TB (ratified framing)*

- The annual and the 100-hour have the same scope — part 43 Appendix D covers both; the difference is who may sign.

Source: 43 App. D; 65.95(a); 43.11 TB

- An annual must be signed off by a mechanic holding Inspection Authorization (IA); an A&P without IA may sign a 100-hour.

Source: 65.95(a); 43.11 TB

- Overflight time is not free: the excess hours count toward the next 100 hours of time in service.

*Source: 91.409(b) eCFR**

- If an annual finds the aircraft unairworthy, the inspector gives the owner a discrepancy list — the fix path is repair or a ferry permit, not a permanently grounded airplane.

Source: 43.11(a)(5) TB

- A progressive inspection program may replace the annual/100-hour cycle; it must completely inspect the aircraft within each 12 calendar months.

*Source: 91.409(d) eCFR**

- Aircraft on special flight permits and current experimental certificates are excepted from the annual/100-hour rules.

*Source: 91.409(c)(1) eCFR**

- The AD status record must show, for each AD, the method of compliance, the AD number and revision date, and the next due time for recurring ADs.

*Source: 91.417(a)(2)(v) eCFR**

- Major repairs and major alterations get an extra document: FAA Form 337.

Source: 43.9(d); Plane Sense ch. 7 TB

- ELT battery replacement is due after more than 1 cumulative hour of use, or at 50 percent of useful battery life.

Source: 91.207(c) TB

- The 24-calendar-month altimeter/static check of 91.411 is an IFR requirement, not a VFR one.

Source: 91.411 TB

- "Operate" in the AD rule includes causing or authorizing use — owners and renters are both exposed.

Source: AC 39-7D TB

- The 10-hour inspection overflight never extends an AD compliance time.

Source: AC 39-7D ¶11a TB

- When an AD lists no serial numbers, all serial numbers are affected.

Source: AC 39-7D ¶9a TB

- ADs ruled out by serial or part number still get a recorded N/A determination — the determination is the compliance record.

Source: AC 39-7D ¶9a; 91.417(a)(2)(v) TB

- Every annual and 100-hour inspector must determine AD compliance as part of the inspection.

Source: 43.15(a); AC 39-7D ¶13b TB

- A manufacturer service bulletin is not binding under part 91 by itself, even when stamped MANDATORY.

Source: AC 39-7D (verified negative); TB

- A service bulletin becomes compulsory only through an AD that adopts it or an airworthiness limitations section.

Source: 91.403(c) eCFR*; TB

- Other special flight permit purposes: delivery or export, production flight testing, evacuation from impending danger, and customer demonstration flights.

Source: 21.197(a) TB

- Apply for a special flight permit on FAA Form 8130-6; the permit issued is Form 8130-7.

Source: AC 21-12D; Plane Sense ch. 5 TB

- A ferry permit is itself a special airworthiness certificate.

Source: 21.175(b) TB

- A special flight permit never authorizes deviation from part 91's operating rules.

Source: Plane Sense ch. 5 TB

- When an AD grounds an aircraft away from a repair base, a special flight permit is the legal path home if the AD allows it.

Source: AC 39-7D ¶11d TB

- Even a listed task stops being preventive maintenance if it involves complex assembly operations.

Source: 43 App. A(c) chapeau eCFR*

- The pilot's signature returns to service only the pilot's own work.

Source: 43.9(a)(4) eCFR*; AC 43-12A TB

- Pilot-performed preventive maintenance still triggers 91.407(a): the entry must exist before the next flight.

Source: 91.407(a) eCFR*; AC 43-12A TB

- No application or approval is required to operate under 91.213(d).

Source: AC 91-67A TB

- Step zero is confirming whether the operator holds an MEL and LOA; if an approved MEL exists, the 91.213(d) process does not apply.

Source: 91.213(a),(c) eCFR*; TB

- An approved MEL plus its letter of authorization constitute a supplemental type certificate for that aircraft.

Source: 91.213(a)(2) eCFR*

- An MEL may not include items essential for safe operation under the type certification, items required operative by an AD, or items required for the specific operation.

Source: 91.213(b) eCFR*

- Turbine-powered airplanes cannot use the 91.213(d) shortcut.

Source: 91.213(d)(1); AC 91-67A 4.1.2.2 TB

- Answering screen one is research, not recall: find the TCDS, read the certification basis, then read that rule's equipment requirements.

Source: 21.41; TCDS 2A13 worked example TB

- When the equipment list marks nothing required and there is no KOEL, the conservative default applies: factory-installed means treat it as required and working.

Source: NA (North Aero doctrine, ratified 2026-07-11) TB

- Deactivation is not preventive maintenance; if it involves maintenance, a part-43-authorized person must do it and record it.

Source: AC 91-67A 4.2.2 TB

- Switching an item off is not deactivating it.

Source: AC 91-67A 4.2.2 TB

- An aircraft handled correctly under 91.213(d) is legally "in a properly altered condition acceptable to the Administrator."

*Source: 91.213(d) eCFR**

- Items deferred under 91.213(d) must be repaired, replaced, removed, or inspected at the next required inspection.

*Source: 91.405(c) eCFR**

- An experimental airworthiness certificate carries operating limitations, including limits on carrying persons and property for compensation.

Source: 91.319 TB

THE REGULATIONS BEHIND THIS MODULE

14 CFR 91.403 – General

The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition, including compliance with part 39, the airworthiness directives.

Where it goes deeper: This module, in the responsibility Leg.

14 CFR 91.407 – Operation after maintenance, preventive maintenance, rebuilding, or alteration

No person may operate an aircraft that has undergone maintenance unless it has been approved for return to service by an authorized person and the maintenance record entry has been made.

Where it goes deeper: This module, in the return-to-service Leg.

14 CFR 91.213 – Inoperative instruments and equipment

No person may take off with inoperative instruments or equipment installed unless an approved Minimum Equipment List applies, or the four conditions of paragraph (d) are met. The item is not required by the type certification, the equipment list, 91.205, or an airworthiness directive. The item is removed or deactivated and placarded. A pilot or mechanic determines the item is not a hazard.

Where it goes deeper: This module, in the inoperative-equipment Legs.