

SESSION 20: AIRCRAFT SYSTEMS — REQUIRED INSPECTIONS: AVIATE

1. The AVIATE mnemonic is used to recall the inspections required to keep an aircraft:
 - A. Within weight and balance limits
 - B. Airworthy and legal for flight, particularly IFR
 - C. Current for night VFR only
 - D. Eligible for experimental certification

2. The "A" (first) in AVIATE refers to which required inspection?
 - A. Annual inspection, required every 12 calendar months
 - B. Altimeter system check every 6 months
 - C. Avionics bench test every 12 months
 - D. ADS-B compliance check every 24 months

3. The "V" in AVIATE represents:
 - A. Vacuum pump overhaul
 - B. Voltage regulator inspection
 - C. Vertical speed indicator calibration
 - D. VOR equipment check (required for IFR within the preceding 30 days)

4. The VOR check required for IFR operations must be accomplished within the preceding:
 - A. 12 calendar months

- B. 24 calendar months
- C. 30 days
- D. 7 days

5. The "I" in AVIATE refers to:

- A. The 100-hour inspection (required for aircraft operated for hire or flight instruction for hire)
- B. Inverter functional check
- C. Instrument panel illumination test
- D. Inertial reference alignment

6. A privately operated aircraft not flown for hire is:

- A. Not required to have a 100-hour inspection, but still requires the annual
- B. Required to have a 100-hour inspection regardless of use
- C. Exempt from the annual inspection
- D. Required to have both inspections every 50 hours

7. The first "A" of the "ATE" portion (the third inspection letter) commonly represents:

- A. Audio panel test
- B. Annunciator inspection
- C. Airframe overhaul
- D. Altimeter and static system inspection (required every 24 calendar months for IFR)

8. The altimeter and static system inspection for IFR operations is required every:

- A. 12 calendar months

- B. 6 calendar months
- C. 24 calendar months
- D. 30 days

9. The "T" in AVIATE refers to:

- A. Tachometer calibration
- B. Turn coordinator overhaul
- C. Transponder inspection, required every 24 calendar months
- D. TKS fluid system service

10. The transponder inspection required by §91.413 must be accomplished every:

- A. 12 calendar months
- B. 6 calendar months
- C. 30 days
- D. 24 calendar months

11. The final "E" in AVIATE represents:

- A. Engine overhaul at TBO
- B. Encoder calibration every 12 months
- C. Exhaust system inspection
- D. ELT (Emergency Locator Transmitter) inspection, required every 12 calendar months

12. The ELT inspection under §91.207 must be accomplished every:

- A. 12 calendar months

- B. 24 calendar months
- C. 6 calendar months
- D. 30 days

13. An ELT battery must be replaced (or recharged, if rechargeable) when:

- A. The unit is more than 5 years old regardless of use
- B. After every annual inspection
- C. The transmitter has been in use for more than 1 cumulative hour, or 50% of useful life has expired
- D. The aircraft is repainted

14. A pilot finds the aircraft's pitot-static/altimeter inspection expired last month. For IFR flight, the aircraft is:

- A. Legal, since the inspection is advisory
- B. Legal for VFR and IFR both
- C. Not legal for IFR until the inspection is completed
- D. Legal for IFR if the autopilot is operative

15. The VOR equipment check for IFR may be accomplished using which method?

- A. A bench test by the avionics shop only
- B. A VOT, designated ground checkpoint, airborne checkpoint, or dual-VOR cross-check
- C. A GPS cross-reference exclusively
- D. A magnetic compass comparison

16. The permitted bearing error for a VOR ground checkpoint check is:

- A. ± 2 degrees

- B. ± 4 degrees
- C. ± 6 degrees
- D. ± 10 degrees

17. The permitted bearing error for a VOR airborne checkpoint check is:

- A. ± 6 degrees
- B. ± 4 degrees
- C. ± 2 degrees
- D. ± 10 degrees

18. When performing a dual-VOR cross-check, the maximum permissible difference between the two indicated bearings is:

- A. 2 degrees
- B. 4 degrees
- C. 6 degrees
- D. 10 degrees

19. The VOR check must be recorded with which information?

- A. The pilot's medical certificate number
- B. The date, place, bearing error, and pilot's signature
- C. The aircraft's weight and balance
- D. The next required annual inspection date

20. A transponder that has not been inspected within the preceding 24 calendar months may:

- A. Be used for IFR but not VFR

- B. Be used in all airspace without restriction
- C. Be used only above FL240
- D. Not be used in airspace requiring a transponder until inspected

21. The annual inspection differs from the 100-hour inspection primarily in that the annual:

- A. Is required for all aircraft every 12 calendar months regardless of use
- B. Is required only for aircraft flown for hire
- C. May be performed by the owner-pilot without a mechanic
- D. Replaces the need for a transponder check

22. A pilot who lets the annual inspection lapse finds the aircraft is:

- A. Legal for IFR if the 100-hour is current
- B. Legal for VFR but not IFR
- C. Legal for local flights within 25 NM
- D. Not airworthy and may not be flown until the annual is completed

23. The VOR check requirement applies to:

- A. All VFR flights using VOR navigation
- B. Night operations only
- C. IFR operations using VOR for navigation
- D. Flights above 10,000 feet only

24. An aircraft used for flight instruction for hire requires which inspection in addition to the annual?

- A. A 50-hour oil change inspection

- B. A monthly avionics check
- C. A 100-hour inspection
- D. A weekly airframe inspection

25. The fundamental purpose of the AVIATE inspections is to ensure that:

- A. The pilot is current and proficient
- B. The aircraft remains airworthy and legal, including the IFR-specific equipment checks
- C. The weather is suitable for the flight
- D. The fuel reserves are adequate

ANSWER KEY & EXPLANATIONS — SESSION 20

1. B. Airworthy/legal — AVIATE recalls the inspections required to keep an aircraft airworthy and legal for flight, particularly IFR.
2. A. Annual — The first "A" is the annual inspection, required every 12 calendar months.
3. D. VOR check — "V" represents the VOR equipment check, required for IFR within the preceding 30 days.
4. C. 30 days — The IFR VOR check must be accomplished within the preceding 30 days.
5. A. 100-hour — "I" refers to the 100-hour inspection, required for aircraft operated for hire or flight instruction for hire.
6. A. No 100-hour, still annual — A privately operated, not-for-hire aircraft needs no 100-hour but still requires the annual.

7. D. Altimeter/static — The third inspection letter ("A") represents the altimeter and static system inspection, every 24 calendar months for IFR.
8. C. 24 months — The altimeter and static system inspection for IFR is required every 24 calendar months.
9. C. Transponder — "T" refers to the transponder inspection, required every 24 calendar months.
10. D. 24 months — The §91.413 transponder inspection is required every 24 calendar months.
11. D. ELT — "E" represents the ELT inspection, required every 12 calendar months.
12. A. 12 months — The §91.207 ELT inspection is required every 12 calendar months.
13. C. 1 hr use / 50% life — An ELT battery must be replaced when the transmitter has been used more than 1 cumulative hour or 50% of useful life has expired.
14. C. Not legal for IFR — With the pitot-static/altimeter inspection expired, the aircraft is not legal for IFR until the inspection is completed.
15. B. VOT/checkpoint/dual — The IFR VOR check may use a VOT, designated ground checkpoint, airborne checkpoint, or dual-VOR cross-check.
16. B. ± 4 degrees — A VOR ground checkpoint check permits ± 4 degrees of bearing error.
17. A. ± 6 degrees — A VOR airborne checkpoint check permits ± 6 degrees of bearing error.
18. B. 4 degrees — A dual-VOR cross-check permits a maximum 4-degree difference between the two indicated bearings.

19. B. Date/place/error/signature — The VOR check is recorded with the date, place, bearing error, and pilot's signature.

20. D. Not in transponder airspace — An uninspected transponder may not be used in airspace requiring a transponder until inspected.

21. A. All aircraft, 12 months — The annual is required for all aircraft every 12 calendar months regardless of use, unlike the for-hire 100-hour.

22. D. Not airworthy — A lapsed annual makes the aircraft not airworthy; it may not be flown until the annual is completed.

23. C. IFR VOR navigation — The VOR check requirement applies to IFR operations using VOR for navigation.

24. C. 100-hour — An aircraft used for flight instruction for hire requires a 100-hour inspection in addition to the annual.

25. B. Airworthy + IFR checks — The purpose of AVIATE is to ensure the aircraft remains airworthy and legal, including the IFR-specific equipment checks.