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➤ JANUARY 2016

Frequently Asked Questions

1. Repair stations are required to have an A&P with inspection authorization (IA) on staff.
   - A. True
   - B. False

2. The inspection authorization (IA) is _____.
   - A. Required when working outside of a repair station's [authority] but not inside
   - B. An authorization to a certificated mechanic not a certificate itself
   - C. The next level of certification for an A&P
   - D. All of the above
   - E. A and B only

3. Part 145 Subpart D requires that supervisors and individuals with return to service authority be _____.
   - A. A&P mechanics
   - B. Inspection Authorization holders
   - C. Appropriately certificated mechanic or repairman under Part 65
   - D. None of the above

➤ FEBRUARY 2016

Frequently Asked Questions

4. Repair stations with limited ratings are required to list their capabilities.
   - A. True
   - B. False

5. Repair station capabilities can be listed on a repair station managed capability list or an FAA managed operations specification.
   - A. True
   - B. False

6. Listing repair station capabilities on the FAA operations specifications is _____.
   - A. Not allowed for repair stations
   - B. Ideal if the list is constantly changing
   - C. More of an administrative burden
   - D. Cost effective if there are few changes

7. The range of ADS-B ground stations _____.
   - A. Depends on aircraft altitude
   - B. Depends on terrain that may block line of sight
   - C. Subject to transmitter power and receiver sensitivity
   - D. Line of sight range to radio is typically 150 nautical miles or greater
   - E. All of the above

ADS-B Countdown

8. The FAA cites which of the following as reasons for its move to ADS-B technology
   - A. It's the foundation for many other NextGen technologies.
   - B. It maximizes the reach of the current radar-based ATC system.
   - C. Safety, capacity and efficiency gains as a result of moving to a satellite-based system.
   - D. All of the above
   - E. Both A and C only

9. WAAS GPS data is accurate to _____.
   - A. 1/10 of a nautical mile
   - B. 1/1000 of a nautical mile
   - C. 60 feet laterally
   - D. 100 feet vertically

10. In the U.S., which of the following is required for flight above 18,000 feet to meet the ADS-B Out requirement?
    - A. 1090 ES transponder
    - B. 978 MHz UAT
    - C. Both A and B can be used
    - D. None of the above

11. The first major area of ADS-B coverage to benefit operators (outside of the FAA's test areas) was _____.
    - A. Alaska
    - B. Rocky Mountains
    - C. Washington, D.C.
    - D. Gulf of Mexico

LED: Light-emitting diodes light the way for aircraft outside and in.

12. Which of the following are advantages LEDs have over incandescent bulbs?
    A. Require less energy than incandescent bulbs
    B. Emit significantly more heat than incandescent bulbs
    C. Outlast incandescent bulbs by thousands of hours
    D. A and B only
    E. A and C only

13. An LED replacement for the typical 100-watt landing light used on most 14-volt aircraft will draw _____.
    A. 4 amps
    B. 1.2-1.4 amps
    C. 8.33 amps at 12 volts
    D. Twice that of a halogen bulb

14. LEDs produce a more stable light over the life of the bulb where incandescent bulbs degrade quicker with use.
    A. True
    B. False

Legal Ease: Aviation Law Made Simple

15. One thing all TSOs have in common is they have the potential to be used for equipment that could be installed in multiple aircraft.
    A. True
    B. False

16. Which of the following are true about TSOAs?
    A. They establish installation eligibility.
    B. They have correlative programs for being issued in Canada and Europe.
    C. They are both a design and production approval.
    D. All of the above
    E. Both B and C only

➤ MARCH 2016

Frequently Asked Questions

17. It is acceptable to leave item 5 blank on FAA Form 337 after performing a major repair on a component part if it has not yet been installed on the aircraft.
    A. True
    B. False

18. ADS-B In broadcast services include which of the following?
    A. Terrain, FIS-B, and TIS-B
    B. NEXRAD, TFRs, and TIS-B
    C. Traffic, Terrain and PIREPS
    D. XM weather, NOTAMs, and SUAs

19. TIS-B is an advisory service available only to UAT equipment users.
    A. True
    B. False

An Aircraft is an Aircraft, Right?

20. Which of the following provides a formal description of the aircraft, engine or propeller and is the basis for issuing an airworthiness certificate?
    A. Supplemental Type Certificate
    B. Data plate
    C. FAA Form 8100-2
    D. Type Certificate Data Sheet

➤ APRIL 2016

Frequently Asked Questions

21. After initial approval, applicable ADS-B Out systems can be installed on aircraft not covered by that approval.
    A. True
    B. False

22. The step or series of steps in the process of performing maintenance, preventative maintenance or alterations, which may result in approving an article for return to service is _____.
    A. Contract maintenance
    B. Return to service authority
    C. A maintenance function
    D. Repair station privileges

23. Which of the following are allowed for maintenance functions to be considered contract maintenance?
    A. The repair station must hold the authority to do the work being contracted.
    B. The repair station must be exercising the privileges of its certificate.
    C. Use of another repair station's work outside of the original repair station's ratings.
    D. All of the above
    E. A and B only

Analog or Digital

24. For Part 23/CAR 3 aircraft under 6,000 pounds, it is acceptable to replace vacuum-driven attitude instruments with electronically-driven attitude indicators.
    A. True
    B. False

25. Installation of electronically-driven attitude indicators can be done as a minor alteration even if the existing airspeed, altitude and turn/bank indicators are moved from their originally certificated basic "T" locations.
    A. True
    B. False

26. A dedicated circuit breaker, or other appropriate circuit protection device and a standby power source are requirements to install an electronically-driven attitude indicator as part of a minor installation.
    A. True
    B. False

➤ MAY 2016

Frequently Asked Questions

27. The reuse of ADS-B Out STC data is allowed without additional approval unless _____.
    A. There is a minor deviation needed for wire routing issues
    B. There is an equipment substitution
    C. Both A and B
    D. None of the above

28. Typically, data that meets a more stringent airworthiness standard when applied to an alteration requiring less stringent airworthiness standard is acceptable.
    A. True
    B. False

29. Certificated pilots are not allowed to return to service preventative maintenance even on approved units designed to be readily and repeatedly removed and replaced.
    A. True
    B. False

30. Per 14 CFR Part 43, Appendix A, paragraph c (31), which of the following are excluded from preventative maintenance?
    A. Distance measuring equipment
    B. Flight control systems
    C. Transponders
    D. All of the above
    E. Both B and C only

A Brighter Idea All Around

31. Before LEDs, instrument lighting would consist of _____ bulbs consuming more than ____ of electricity at 12 volts.
    A. 100 watt, 1.4 amps
    B. .4 amps, 5 watt
    C. 5 watt, .4 amps
    D. 15 watt, 1.2 amps

32. LEDs designed for the human eye's sensitivity spectrum are perfectly suited for the use of night vision gear and a major reason airports started upgrading from incandescent runway and taxiway lighting.
    A. True
    B. False

➤ JUNE 2016

Frequently Asked Questions

33. Under the current regulations, a repair station with an appropriate instrument rating does not need an associated airframe rating to install, inspect or test the instrument worked on when it is installed in an aircraft.
    A. True
    B. False

34. 91.411(a) tests and inspections must be conducted by _____.
    A. An A&P mechanic
    B. An avionics technician
    C. A properly equipped certificated repair station holding the appropriate ratings
    D. Any certificated repair station

Moving Onward On Part 23

35. FAA Advisory Circular AC-23.1311-1 states that an instrument that provides PFI (primary flight information) _____.
    A. Should meet the minimum standards of applicable TSOs
    B. Should meet equivalent standards to applicable TSOs
    C. Must be TSO'd or PMA'd
    D. None of the above
    E. Both A and B only

36. The decision by aircraft manufacturers to use an (instrument, avionics) system that does not have a TSO approval on its own but will be certified together with the airframe is _____.
    A. Still illegal per FAA Part 23.1301
    B. Desired for controlling costs and flexibility for future system upgrades
    C. Allowed with the use of equivalency standards like those from ASTM
    D. Both A and B only
    E. Both B and C only

37. Federal Aviation Regulations does not require TSOs for transponders in VFR aircraft.
    A. True
    B. False

38. WAAS GPS IFR navigators are required to have TSO for installation in certified aircraft.
    A. True
    B. False

➤ JULY 2016

Frequently Asked Questions

39. According to 14 CFR 145.12, postdating maintenance records is prohibited and may result in which of the following?
    A. Suspension or revocation of the repair station certificate
    B. Civil penalty
    C. Denial of application under Part 145
    D. All of the above
    E. Both A and C only

40. According to FAA Advisory Circular 43-210, there are circumstances like a partial installation where the field-approved equipment does not need to be operational.
    A. True
    B. False

NextGen Update: 2016

41. Pilots of properly equipped ADS-B In aircraft can see the same traffic picture as air traffic controllers.
    A. True
    B. False

42. Which of the following are enabled by GPS and WAAS and make it possible for instrument-rated pilots to file a flight plan and fly to a greater number of airports during low visibility?
    A. Ground-based navigation aids
    B. Area navigation procedures
    C. ILS
    D. None of the above

43. LPV minimums provide capabilities similar to instrument landing systems with horizontal and vertical guidance.
    A. True
    B. False

44. Non-precision LP minimums are generally _____ LPV minimums.
    A. Equal to
    B. Higher than
    C. Lower than

45. The growing availability of LPV and LP procedures and the high equipage rates in the general aviation fleet are enabling the FAA to retire which of the following navigation aids from service?
    A. VOR and DME
    B. ILS and TACAN
    C. ADF and ILS
    D. NDB and VOR

➤ AUGUST 2016

Frequently Asked Questions

46. Receiving hand carried new and used equipment directly from a customer for installation on their aircraft is not allowed for certified repair stations.
    A. True
    B. False

You Copy Me Now?

47. The most common and the most affordable type of headsets that reduce noise by using insulation built into the ear cups are called _____.
    A. In-the-ear headsets
    B. On-the-ear headsets
    C. Passive headsets
    D. ANR headsets

48. Advantages of passive headsets over ANR headsets include _____.
    A. No need for power
    B. Less likely to silence a sound that could signal a developing mechanical problem
    C. Typically, more affordable
    D. All of the above
    E. Both A and B only

49. Wireless headsets employ this technology to keep the pilot connected to the audio panel:
    A. Active noise reduction
    B. Stereo
    C. Bluetooth
    D. 802.11 b/g/n

50. One sound channel played in both ears of two-ear headsets is a feature best described as _____.
    A. Monaural
    B. Stereo
    C. Bluetooth
    D. ANR

➤ SEPTEMBER 2016

Frequently Asked Questions

51. There is a regulatory requirement that all modifications being done via an STC must be recorded on the FAA Form 337.
    A. True
    B. False

52. The responsibility to determine whether an installation is major or minor lies with the _____.
    A. FSDO
    B. ACO
    C. Administrator
    D. The installer

53. FAA Order 8110.37E, Designated Engineering Handbook, generally describes a _____ as a restoration and a _____ as a modification to its design.
    A. STC, repair
    B. Alteration, repair
    C. Repair, alteration
    D. Repair, installation

54. Replacing a broken analog gauge with a digital gauge is a corrective action modifying the aircraft's design and is accomplished via _____.
    A. Repair
    B. Alteration
    C. STC
    D. Major repair

55. For ADS-B Out compliance, aircraft flying above Flight Level 180 are required to equip with 1090 MHz transponders, and aircraft below FL 180 can equip with 978 MHz UAT or 1090 ES.
    A. True
    B. False

56. Which of the following are the better ADS-B Out option for aircraft that will fly internationally?
    A. 1090 MHz ES transponders
    B. 978 MHz UAT
    C. Mode S transponders
    D. None of the above as other countries require different equipment

➤ OCTOBER 2016

The Cold Soaked Cockpit

57. Cold temperatures caused which of the following to require a warmup period just to function?
    A. LED
    B. LCD
    C. CRT
    D. All of the above

58. Minus 40 degrees Fahrenheit equals _____.
    A. Minus 112 Celsius
    B. The lowest temperature TSO'd avionics are required to be exposed to for certification
    C. Minus 40 degrees Celsius
    D. None of the above

59. Cold temperatures have much less impact on modern avionics display performance compared to heat, which requires more mitigation.
    A. True
    B. False

Did You Notice your Destination Airport Just Went IFR?

60. The weather observation information, taken at the end of each hour, with color changing symbols depicting a change from VFR to IFR status is called _____.
    A. NEXRAD
    B. METAR
    C. TFR
    D. PIREP

61. Half of general aviation weather-related accidents that result in fatalities are due to _____.
    A. Wind shear
    B. Inadequate weather information
    C. Lightning strikes
    D. Limited visibility

62. NEXRAD is a long-range, strategic planning tool that is used by pilots for avoiding hazardous weather areas, and its data is _____.
    A. Real time
    B. Lags by only a few seconds
    C. 5 to 20 minutes old
    D. One-hour old

➤ NOVEMBER 2016

Frequently Asked Questions

63. The geographical restrictions for conducting recurring business outside of the United States for a repair station with D100 include:
    A. Canada
    B. Europe
    C. Mexico
    D. All of the above
    E. None of the above

64. The ICAO 24-bit address used to set up ADS-B Out transponders is _____.
    A. Set per ADS-B equipment manufacturer's instructions
    B. A function of the aircraft's registration or "N" number
    C. Always a hexadecimal number
    D. All of the above
    E. Both A and B only

ADS-B Out: Compliant Options Abound

65. The specifications for WAAS GPS navigators requires the avionics to provide position accuracy of _____.
    A. At least 50 feet
    B. Within 100 feet vertically
    C. 25 feet or better, vertically and laterally
    D. 1 meter

66. Category 1 precision approaches require lateral accuracy of _____ and vertical accuracy of _____.
    A. 25 feet and 3.3 feet
    B. 50 feet and 10 feet
    C. 7.6 meters and 1 meter
    D. 16 meters and 4 meters

67. TSO-C146b approved WAAS GPS allows pilots to use these navigators as their sole source of guidance for en route and terminal airspace and instrument approaches.
    A. True
    B. False

Don't Be Late to Meet this Very Important ADS-B Date?

68. Aircraft, such as balloons or gliders, that do not have an electrical system are still required to equip with some ADS-B Out solution.
    A. True
    B. False

69. When the ADS-B mandate takes effect, uncontrolled airspace below 10,000 feet is an area where aircraft owners _____.
    A. Can operate without being ADS-B equipped
    B. Are required to have at least 978 MHz UAT ADS-B Out
    C. Are required to have a 1090 ES ADS-B Out solution
    D. Can only operate balloons or gliders

70. Which of the following information is included in ADS-B transmissions?
    A. Position, altitude, terrain, attitude
    B. Terrain, weather, traffic, aircraft speed
    C. Position, altitude, velocity, aircraft number
    D. Weather radar, attitude, velocity, TFRs

71. GPS fixes an aircraft position at a rate of _____ per second, while radar updates every _____ seconds.
    A. Twice, 10
    B. Once, 12
    C. 12 times, 12
    D. Once, 1

➤ DECEMBER 2016

Frequently Asked Questions

72. A compliance checklist is not a regulatory requirement, but much like tool control it is an invaluable tool in the development and potentially the acceptability of the repair station manual.
    A. True
    B. False

73. Installation of ADS-B Out compliant systems are considered _____ alterations and require _____.
    A. Minor, logbook entries
    B. Major, FAA Form 337
    C. Major, STCs
    D. Minor, Flight Manual Supplement

No ADS-B Out?

74. Aircraft owners lacking ADS-B Out when the mandate takes effect January 1, 2020, will have their plane grounded.
    A. True
    B. False

75. If a portable ADS-B device meets the TSO technical requirements, it does not need to be installed and can be used for ADS-B Out compliance.
    A. True
    B. False

AVIONICS NEWS

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Choose the best available answer. Work individually.

	(T) (F)		(T) (F)		(T) (F)
1	[A] [B] [C] [D] [E]	26.	[A] [B] [C] [D] [E]	51.	[A] [B] [C] [D] [E]
2.	[A] [B] [C] [D] [E]	27.	[A] [B] [C] [D] [E]	52.	[A] [B] [C] [D] [E]
3.	[A] [B] [C] [D] [E]	28.	[A] [B] [C] [D] [E]	53.	[A] [B] [C] [D] [E]
4.	[A] [B] [C] [D] [E]	29.	[A] [B] [C] [D] [E]	54.	[A] [B] [C] [D] [E]
5.	[A] [B] [C] [D] [E]	30.	[A] [B] [C] [D] [E]	55.	[A] [B] [C] [D] [E]
6.	[A] [B] [C] [D] [E]	31.	[A] [B] [C] [D] [E]	56.	[A] [B] [C] [D] [E]
7.	[A] [B] [C] [D] [E]	32.	[A] [B] [C] [D] [E]	57.	[A] [B] [C] [D] [E]
8.	[A] [B] [C] [D] [E]	33.	[A] [B] [C] [D] [E]	58.	[A] [B] [C] [D] [E]
9.	[A] [B] [C] [D] [E]	34.	[A] [B] [C] [D] [E]	59.	[A] [B] [C] [D] [E]
10.	[A] [B] [C] [D] [E]	35.	[A] [B] [C] [D] [E]	60.	[A] [B] [C] [D] [E]
11.	[A] [B] [C] [D] [E]	36.	[A] [B] [C] [D] [E]	61.	[A] [B] [C] [D] [E]
12.	[A] [B] [C] [D] [E]	37.	[A] [B] [C] [D] [E]	62.	[A] [B] [C] [D] [E]
13.	[A] [B] [C] [D] [E]	38.	[A] [B] [C] [D] [E]	63.	[A] [B] [C] [D] [E]
14.	[A] [B] [C] [D] [E]	39.	[A] [B] [C] [D] [E]	64.	[A] [B] [C] [D] [E]
15.	[A] [B] [C] [D] [E]	40.	[A] [B] [C] [D] [E]	65.	[A] [B] [C] [D] [E]
16.	[A] [B] [C] [D] [E]	41.	[A] [B] [C] [D] [E]	66.	[A] [B] [C] [D] [E]
17.	[A] [B] [C] [D] [E]	42.	[A] [B] [C] [D] [E]	67.	[A] [B] [C] [D] [E]
18.	[A] [B] [C] [D] [E]	43.	[A] [B] [C] [D] [E]	68.	[A] [B] [C] [D] [E]
19.	[A] [B] [C] [D] [E]	44.	[A] [B] [C] [D] [E]	69.	[A] [B] [C] [D] [E]
20.	[A] [B] [C] [D] [E]	45.	[A] [B] [C] [D] [E]	70.	[A] [B] [C] [D] [E]
21.	[A] [B] [C] [D] [E]	46.	[A] [B] [C] [D] [E]	71.	[A] [B] [C] [D] [E]
22.	[A] [B] [C] [D] [E]	47.	[A] [B] [C] [D] [E]	72.	[A] [B] [C] [D] [E]
23.	[A] [B] [C] [D] [E]	48.	[A] [B] [C] [D] [E]	73.	[A] [B] [C] [D] [E]
24.	[A] [B] [C] [D] [E]	49.	[A] [B] [C] [D] [E]	74.	[A] [B] [C] [D] [E]
25.	[A] [B] [C] [D] [E]	50.	[A] [B] [C] [D] [E]	75.	[A] [B] [C] [D] [E]