

2012 Recurrent Training Exam (Based on 2011 issues)

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Written by aircraft maintenance professionals
for the professional maintenance team

Official publication for AMTSociety



Course: C-IND-IM-111003-K-006-001

Expires: October 31, 2013

Instructions for marking this answer sheet:

Completely darken only one box for each question. Do not use (X) or (✓). Use black lead pencil to mark. To make corrections erase darkened-in box and place a slash (/) through the incorrect answer to indicate a change has been made.

Questions are arranged in vertical sequence as indicated by the arrows. IAs MUST RETURN THE EXAM BY MARCH 6, 2012, TO ENSURE RECEIVING THEIR FOUR-HOUR CERTIFICATE BY THE END OF MARCH. OTHERWISE PLEASE ALLOW SIX TO EIGHT WEEKS FOR RETURN OF CERTIFICATE. EXAM EXPIRES DEC. 31, 2012.

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1	A	B	C	D	E	47	A	B	C	D	E	93	A	B	C	D	E	139	A	B	C	D	E
2	A	B	C	D	E	48	A	B	C	D	E	94	A	B	C	D	E	140	A	B	C	D	E
3	A	B	C	D	E	49	A	B	C	D	E	95	A	B	C	D	E	141	A	B	C	D	E
4	A	B	C	D	E	50	A	B	C	D	E	96	A	B	C	D	E	142	A	B	C	D	E
5	A	B	C	D	E	51	A	B	C	D	E	97	A	B	C	D	E	143	A	B	C	D	E
6	A	B	C	D	E	52	A	B	C	D	E	98	A	B	C	D	E	144	A	B	C	D	E
7	A	B	C	D	E	53	A	B	C	D	E	99	A	B	C	D	E	145	A	B	C	D	E
8	A	B	C	D	E	54	A	B	C	D	E	100	A	B	C	D	E	146	A	B	C	D	E
9	A	B	C	D	E	55	A	B	C	D	E	101	A	B	C	D	E	147	A	B	C	D	E
10	A	B	C	D	E	56	A	B	C	D	E	102	A	B	C	D	E	148	A	B	C	D	E
11	A	B	C	D	E	57	A	B	C	D	E	103	A	B	C	D	E	149	A	B	C	D	E
12	A	B	C	D	E	58	A	B	C	D	E	104	A	B	C	D	E	150	A	B	C	D	E
13	A	B	C	D	E	59	A	B	C	D	E	105	A	B	C	D	E	151	A	B	C	D	E
14	A	B	C	D	E	60	A	B	C	D	E	106	A	B	C	D	E	152	A	B	C	D	E
15	A	B	C	D	E	61	A	B	C	D	E	107	A	B	C	D	E	153	A	B	C	D	E
16	A	B	C	D	E	62	A	B	C	D	E	108	A	B	C	D	E	154	A	B	C	D	E
17	A	B	C	D	E	63	A	B	C	D	E	109	A	B	C	D	E	155	A	B	C	D	E
18	A	B	C	D	E	64	A	B	C	D	E	110	A	B	C	D	E	156	A	B	C	D	E
19	A	B	C	D	E	65	A	B	C	D	E	111	A	B	C	D	E	157	A	B	C	D	E
20	A	B	C	D	E	66	A	B	C	D	E	112	A	B	C	D	E	158	A	B	C	D	E
21	A	B	C	D	E	67	A	B	C	D	E	113	A	B	C	D	E	159	A	B	C	D	E
22	A	B	C	D	E	68	A	B	C	D	E	114	A	B	C	D	E	160	A	B	C	D	E
23	A	B	C	D	E	69	A	B	C	D	E	115	A	B	C	D	E	161	A	B	C	D	E
24	A	B	C	D	E	70	A	B	C	D	E	116	A	B	C	D	E	162	A	B	C	D	E
25	A	B	C	D	E	71	A	B	C	D	E	117	A	B	C	D	E	163	A	B	C	D	E
26	A	B	C	D	E	72	A	B	C	D	E	118	A	B	C	D	E	164	A	B	C	D	E
27	A	B	C	D	E	73	A	B	C	D	E	119	A	B	C	D	E	165	A	B	C	D	E
28	A	B	C	D	E	74	A	B	C	D	E	120	A	B	C	D	E	166	A	B	C	D	E
29	A	B	C	D	E	75	A	B	C	D	E	121	A	B	C	D	E	167	A	B	C	D	E
30	A	B	C	D	E	76	A	B	C	D	E	122	A	B	C	D	E	168	A	B	C	D	E
31	A	B	C	D	E	77	A	B	C	D	E	123	A	B	C	D	E	169	A	B	C	D	E
32	A	B	C	D	E	78	A	B	C	D	E	124	A	B	C	D	E	170	A	B	C	D	E
33	A	B	C	D	E	79	A	B	C	D	E	125	A	B	C	D	E	171	A	B	C	D	E
34	A	B	C	D	E	80	A	B	C	D	E	126	A	B	C	D	E	172	A	B	C	D	E
35	A	B	C	D	E	81	A	B	C	D	E	127	A	B	C	D	E	173	A	B	C	D	E
36	A	B	C	D	E	82	A	B	C	D	E	128	A	B	C	D	E	174	A	B	C	D	E
37	A	B	C	D	E	83	A	B	C	D	E	129	A	B	C	D	E	175	A	B	C	D	E
38	A	B	C	D	E	84	A	B	C	D	E	130	A	B	C	D	E	176	A	B	C	D	E
39	A	B	C	D	E	85	A	B	C	D	E	131	A	B	C	D	E	177	A	B	C	D	E
40	A	B	C	D	E	86	A	B	C	D	E	132	A	B	C	D	E	178	A	B	C	D	E
41	A	B	C	D	E	87	A	B	C	D	E	133	A	B	C	D	E	179	A	B	C	D	E
42	A	B	C	D	E	88	A	B	C	D	E	134	A	B	C	D	E	180	A	B	C	D	E
43	A	B	C	D	E	89	A	B	C	D	E	135	A	B	C	D	E	181	A	B	C	D	E
44	A	B	C	D	E	90	A	B	C	D	E	136	A	B	C	D	E						
45	A	B	C	D	E	91	A	B	C	D	E	137	A	B	C	D	E						
46	A	B	C	D	E	92	A	B	C	D	E	138	A	B	C	D	E						

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2012 Recurrent Training Exam

(based on 2011 AMT issues)

- Good for four hours of credit toward IA renewal and six hours credit for the FAA Aviation Maintenance Technician Awards Program or Transport Canada's recurrent training requirements.
- Select only one answer per question on the answer sheet.
- Must pass with 85 percent or better for credit!
- Four hours credit is only accepted for year in which exam is published. (Note: For Canadian approval, the associated organization (AMO) must be TC approved for this recognition by amending its MCM.)
- To order back issues at \$10 a copy, call (920) 563-6388.



Written by aircraft maintenance professionals
for the professional maintenance team
Official publication for AMTSociety

Tips for completing this exam:

Mark all answers on the answer sheet provided. This is an open book exam. So place all issues in a pile, beginning with the January/February 2011, Airframe

Technology section, and follow through all 2011 issues until the exam is complete. You can find the articles on www.AviationPros.com by putting the headline in the search box or checking Archived Issues.

January/February 2011

Airframe Technology:

A Look at the UH-60A Black Hawk Helicopter

1. The maintenance program used by the United States Army consists of _____ maintenance levels.

- a. 1
- b. 2
- c. 3
- d. 4

2. The inspection interval which includes vibration checks of the engine high-speed shafts, tail rotor, and oil cooler fan on the Army's Black Hawk Helicopter is:

- a. 30 days
- b. 90 days
- c. 40 hours
- d. 120 hours

3. The term "five-pack" on the Army's Black Hawk Helicopter includes the main module or gearbox, the two engine input modules, and two accessory drive modules.

- a. True
- b. False

4. The rigging of the main rotor system includes possible adjustment of the stabilization augmentation system, control mixing unit, main rotor system forward, aft, and lateral servos, and the tail rotor drive synchronizer.

- a. True
- b. False

5. The Army Aviation Support Facility (AASF) located at Downtown St. Paul Airport in Minnesota performs which levels of maintenance:

- a. Unit and Intermediate level
- b. Unit and Depot level
- c. Intermediate and Depot level
- d. All of the above

Recip Technology: *The Schweizer 300CB*

6. The lubrication chart in the 300CB Handbook of Maintenance Instructions (HMI) states the same lubricant is OK to use on all the pulleys for the belt drive assembly.

- a. True
- b. False

7. Purge lubrication means to pump new grease into a grease fitting until all the old grease has been visibly displaced.

- a. True
- b. False

8. The Schweizer 300CB HMI requires the tail and main rotor to be balanced within _____ inches per second (IPS).

- a. .2
- b. .22
- c. .02
- d. .022

9. The main rotor blade lead-lag dampeners have cylinders charged with 700 psi of nitrogen.

- a. True
- b. False

MRO Operations: *AW139 Tailboom Repair*

10. The AW139 is a twin-engine medium size transport helicopter equipped with:

- a. A four-blade fully articulated main rotor system
- b. A five-blade tail rotor
- c. Two PT6 turboshaft engines
- d. All of the above

11. European Aviation Safety Agency (EASA) issued EASA AD 2008-157 for inspection to detect debonding of the lateral tailboom panels on which date:

- a. August 25, 2009
- b. August 27, 2008

- c. September 4, 2008
- d. October 28, 2009

12. The construction of the AW139 tailboom assembly consists of:

- a. The tail gearbox and the intermediate gearbox
- b. The horizontal stabilizer and tail-plane
- c. The tail cone and the vertical fin
- d. The tail rotor main and secondary drive shaft

13. The AW139 tail cone lateral panels are bonded sandwich construction having aluminum skins and nomex honeycomb core.

- a. True
- b. False

Turbine Technology: *Chromalloy Castings Tampa, FL*

14. Chromalloy Castings manufactures gas turbine engine parts for:

- a. Aircraft turbine engines
- b. Power generation industrial engines
- c. Both a and b
- d. Neither a or b

15. Investment casting is a process in which molten metal is poured into a ceramic mold.

- a. True
- b. False

16. The investment casting process is typically used for parts having simple shapes.

- a. True
- b. False

17. Investment casting of turbine engine parts requires:

- a. Wax mold creation
- b. Ceramic slurry application
- c. Autoclaves
- d. Grinding
- e. All of the above



Avionics Technology: Measuring the Miles

18. The basic radio navigation principles employed by ADF and VOR do not easily lend themselves to what calculation:

- a. Area factor
- b. Distance factor
- c. Time factor
- d. Course factor

19. An aircraft will most often pick up the DME signal ahead of the VOR due in part to:

- a. The physical characteristics of the radome shape
- b. The physical characteristics of the UHF wave
- c. The physical characteristics of the DME wave
- d. The physical characteristics of the VOR wave
- e. The physical characteristics of the antenna shape

Online: Management Matters: Professional Training

20. Some of the key tools described in the article that effective leaders use are:

- a. Communication
- b. Performance reviews
- c. Conflict resolution
- d. a and b
- e. a and c

21. Individual technicians have control over their attitude and can choose to be positive or negative.

- a. True
- b. False

Staying Legal: Are You Actively Engaged?

22. In November 2010 the FAA published a notice of proposed _____ change having to do with the Inspection Authorization.

- a. Rule
- b. Regulation
- c. Policy
- d. Timeframe

March 2011

MRO Operations: Large Aircraft Modifications

23. Transport aircraft are sometimes delivered from the factory with wingtip devices known as winglets or they are installed later as retrofit installations.

- a. True
- b. False

24. Aviation Partners Boeing (APB), a joint venture between Aviation Partners Inc. and the Boeing Company, engineered and obtained approval via a _____ for retrofit installation of blended winglets.

- a. PMA
- b. TC

- c. STC
- d. None of the above
- e. All of the above

25. The Boeing 767-300ER winglet installation requires removal of a 14-foot section of the original upper wing-skin only to accommodate the addition of new structure.

- a. True
- b. False

26. During workload planning Aviation Technical Services (ATS) describes the UAV crew concept as:

- a. Unmanned aerial vehicle
- b. Unscheduled aircraft visit
- c. Unique aircraft visit
- d. Unique airport vehicle
- e. None of the above

27. Scripting before starting a large project is described as a dry run consisting of the following departments or functions:

- a. Inspection
- b. Tooling
- c. Materials
- d. Workcards
- e. All of the above

Recip Technology: The Propeller

28. According to technical support representatives with Hartzell Propeller Inc., you can place the most common questions from the field into one of about _____ categories.

- a. 5
- b. 10
- c. 15
- d. 20
- e. 25

29. How big of a nick can be filed out of the leading edge of an aluminum blade propeller is the most common question asked.

- a. True
- b. False

30. Propeller minimum width and thickness criteria is generally included in which manual:

- a. Aircraft maintenance manual
- b. Propeller overhaul manuals
- c. Engine overhaul manual
- d. Propeller owners manual

31. The three general criteria for determining whether a prop needs to go to a prop shop after a object strike event are: 1) Is the track or angle of the blade out of tolerance, 2) Has there been a diameter reduction 3) Has the prop governor been damaged.

- a. True
- b. False

32. With which of the following Hartzell propellers is there a method to grease prop hubs by pumping grease into one fitting until it came out of the opposite removed fitting.

- a. Certain aluminum hubs only
- b. Certain steel clamped hubs only
- c. Both types
- d. Neither type

Turbine Technology: Remote Visual Inspection

33. Remote visual inspection (RVI) is widely used throughout the aerospace industry for examining the insides of a wide range of aircraft components.

- a. True
- b. False

34. Comparison measurement is based on the following:

- a. A known inspection image
- b. A known split image
- c. A known reference dimension
- d. All of the above
- e. None of the above

35. Measurement of blade tip to shroud clearance is extremely important because:

- a. Gaps can increase efficiency
- b. Gaps can increase time on wing
- c. Gaps can reduce efficiency
- d. Gaps can reduce rpm
- e. None of the above

Airframe Technology: Intermittent Faults in Aging Aircraft

36. Intermittent interconnectivity problems can result from poor:

- a. Solder joints
- b. Wiring
- c. Crimps
- d. Splices
- e. All of the above

37. The intermittent fault detection and isolation system (IFDIS) is state-of-the-art testing technology designed to find and isolate intermittent events as short as:

- a. .5 nanoseconds
- b. 5 nanoseconds
- c. 50 nanoseconds
- d. 500 nanoseconds
- e. None of the above

38. Accurately detecting and identifying intermittent faults is currently an:

- a. Industry level problem
- b. FAA problem
- c. Airline problem
- d. Air Force problem
- e. NextGen problem

Online: Industry Viewpoint: 5 Habits of Effective Inspectors

39. The best inspectors know that they need to focus on the task at hand and this can be easier while listening to soothing music on your iPod.

- a. True
- b. False



40. Preparing for an inspection may include the following items:

- a. Reviewing appropriate manuals
- b. Reviewing maintenance history
- c. Reviewing the daily delay statistics
- d. a and b only
- e. a and c only

Avionics Technology: Magnetic Headings

41. The magnetic compass is the simplest of all flight deck instruments and is not susceptible to outside forces.

- a. True
- b. False

42. An airport Compass Rose was commonly referred to as:

- a. A location adjacent to the airport flower garden
- b. A location free of stray electromagnetic fields
- c. A location adjacent to metal buildings
- d. A location adjacent to the control tower
- e. A location free of stray VOR signals

April 2011

MRO Operations: A380 Maintenance

43. The Lufthansa Technik (LHT) A380 maintenance facility built in Frankfurt, Germany was considered a clean sheet design regarding Processes, Technology, Facility, Organization, and _____

- a. Location
- b. Work rules
- c. Leadership
- d. Aircraft
- e. Supply chain

44. The following aviation authorities were involved in the early stages of development of the LHT A380 maintenance facility.

- a. FAA and EASA
- b. NAA and EASA
- c. LBA and EASA
- d. FAA and LBA
- e. LHT and MRO

45. The Lufthansa A380 transmits a current flight report (CFR) to maintenance control every:

- a. 15 minutes
- b. 3 hours
- c. 30 minutes
- d. 1 hour
- e. A post flight report only

46. The current maintenance program on the Lufthansa A380 calls for an S-service check to be accomplished:

- a. Daily
- b. Weekly
- c. Monthly
- d. Annually

47. The A380 RCBS allows a technician to deactivate and reactivate a system directly from the:

- a. main circuit breaker panel
- b. secondary circuit breaker panel
- c. onboard maintenance terminal
- d. external computer hookup only
- e. remote maintenance terminal only

From the FAA: BASA/MIP

48. The acronym BASA stands for:

- a. Bilateral Airworthiness Agreement
- b. Bilateral Airport Standards Agreement
- c. Bilateral Aviation Safety Agreements
- d. None of the above

49. The Maintenance Implementation Procedures (MIP) is basically the handshake between two countries agreeing to Part 145 repair stations being allowed to operate in the other's country.

- a. True
- b. False

50. A National Aviation Authority (NAA) is a given country's regulatory agency similar to the FAA for the United States.

- a. True
- b. False

51. To conclude a MIP, the FAA follows a four-phased process together with NAAs with a BASA. Which of these is not one of those phases?

- a. FAA familiarizes itself with the NAA system
- b. The MIP is developed
- c. Regulations are checked for compatibility
- d. Repair station receives EASA approval
- e. The U.S. State Department concurs with the MIP

Recip Technology: Did I Hear a Radial

52. Pratt & Whitney Canada (P&WC) had stopped producing the R-985s in the early:

- a. 1930s
- b. 1940s
- c. 1950s
- d. 1960s
- e. They are still producing them

53. The general operating time between overhaul (TBO) for the R-985 and R-1340 P&WC engines is:

- a. 1,200 hours
- b. 1,200-1,600 hours
- c. 1,600-2,000 hours
- d. Mandatory 2,000 hours
- e. None of the above

Airframe Technology: To Weigh an Aircraft

54. When using platform scales to weigh aircraft the technician places the platform beneath the:

- a. Aircraft wing
- b. Aircraft empennage
- c. Aircraft wheels
- d. Tail stand
- e. All of the above

55. The National Institute of Science and Technology (NIST), provides a standard that can be used for:

- a. Weighing an aircraft
- b. Weighing a helicopter
- c. Calibration of a scale
- d. Verification of your calculations
- e. None of the above

56. When selecting a scale system it is very important to select a scale that is:

- a. The correct type, length, and weight range for the application
- b. The correct type, length, and weight range of 1,000 to 100,000 pounds
- c. The correct color, size, and weight range of 1,000 to 100,000 pounds
- d. The correct type, size, and weight range for the application
- e. None of the above

57. The top of jack system requires the user to place what type of unit on top of the jack?

- a. Inch-based adapter
- b. Cell-based transducer
- c. Cell-based adapter
- d. Inch-based transducer

Management Matters: What's in Your Toolbox?

58. The FAA regulations on the requirements for an aviation safety management system (SMS) are in place and prescribe exactly how to implement it in your own organization.

- a. True
- b. False

59. An SMS is directed toward which department(s) within an aviation organization:

- a. Maintenance
- b. Flight operations
- c. Ground handling
- d. Aircraft cleaning
- e. All of the above

60. The acronym ICAO stands for which of the following:

- a. International Airline Aviation Organization
- b. Individual Airline Aviation Organization
- c. Individual Civil Aviation Operation
- d. International Civil Aviation Organization
- e. International Civil Aviation Operation

Industry Viewpoint: How to Manage Fatigue Without A Duty Time Rule

61. Fatigue in aircraft maintenance technicians can result from:

- a. Inadequate sleep
- b. Poor lighting
- c. Extreme noise



- d. Extreme temperature
- e. All of the above

62. The _____ is responsible for coming to work with adequate rest to perform their jobs.

- a. FAA
- b. ICAO
- c. Individual
- d. Company
- e. None of the above

May 2011

Why Charles Taylor Should Matter to You

63. In the USA May 24 is celebrated as:

- a. National AMT Day
- b. Charles Taylor's birthday
- c. Orville Wright's birthday
- d. The day of first powered flight
- e. a and b

64. Prior to building the engine for the 1903 Wright Flyer, Charles Taylor worked as a:

- a. Plumber
- b. Railroad worker
- c. Newspaper reporter
- d. A&P school instructor
- e. Bicycle repairman

Turbine Technology: Turbine Seal Applications

65. Turbine engine gearboxes are used to _____ the main engine shaft's rotational speed in order to drive certain components:

- a. Increase
- b. Decrease
- c. Disengage
- d. b and c
- e. None of the above

66. Carbon seals are composed of fine-grained substances impregnated with inorganic chemicals to:

- a. Create friction
- b. Decrease friction
- c. Improve rotational qualities
- d. Improve lubricating qualities
- e. All of the above

67. Face seal rings are used in aircraft engine main shaft seals to control:

- a. Internal temperatures
- b. Internal airflow
- c. Internal combustion gas flow
- d. b and c
- e. a and c

68. Mechanical carbon materials possess a unique combination of characteristics that make them ideal for use in turbine engine seal applications. Which is not one of these characteristics?

- a. Self-lubricating
- b. Self-polishing

- c. Dimensionally stable
- d. Dimensionally instable
- e. None of the above

Airframe Technology: A Clear Look

69. Acrylic aircraft transparencies are known to discolor with age.

- a. True
- b. False

70. Ammonia-based cleaner is great for cleaning:

- a. Acrylic
- b. Glass
- c. Landing light lenses
- d. Taxi light lenses
- e. All of the above

71. To inspect a window properly it is recommended you shine a proper light directly at the window from which direction:

- a. Up
- b. Down
- c. Sideways
- d. Forward
- e. All of the above

72. A prism directs the light and allows you to view damage directly on the outer surface of the windshield.

- a. True
- b. False

MRO Operations: Enabling Lean MRO

73. When implemented correctly Lean principles along with Six Sigma help reduce and eliminate the root causes of defects and process variability.

- a. True
- b. False

74. MRO operations account for what percent of the fleet aircraft operator's total operating costs?

- a. Less than 10 percent
- b. 12-15 percent
- c. 15-18 percent
- d. 18-20 percent
- e. Greater than 20 percent

75. MRO software solutions should provide maintenance and engineering organizations which of the following improvements?

- a. Planning
- b. Email
- c. Reporting
- d. a and c
- e. b and c

Avionics Technology: Preventative Maintenance

76. According to the FAA Administrator, "Preventive Maintenance means simple or

complex preservation operations and the replacement of small standard parts not involving minor assembly operations."

- a. True
- b. False

77. If corrosion is noted on the terminals or in the lead acid battery box area, a baking soda solution works well for cleaning and should be followed by a complete flush using:

- a. Acid
- b. Leaded water
- c. Fresh water
- d. Colored water
- e. Do not flush with water

78. Pilots are authorized to remove and replace self-contained, front instrument panel-mounted navigation and communication devices, provided they employ tray-mounted connectors secured in the rack.

- a. True
- b. False

Online: Management Matters: Continuing Analysis and Surveillance System

79. The Continuing Analysis and Surveillance System (CASS) rule is mandated by what regulation(s):

- a. Part 145
- b. Part 121
- c. Part 135
- d. a and c
- e. b and c

80. Within the new FAA guidance there are four major activities of a CASS. Which of the following is not one of them?

- a. Inspection
- b. Surveillance
- c. Analysis of data
- d. Corrective action
- e. Follow-up

81. CASS like SMS has a one size fits all model.

- a. True
- b. False

82. All 10 elements of the maintenance program must be reported on every:

- a. week
- b. month
- c. twice per year
- d. annually
- e. no specific requirement

Staying Legal: Public Aircraft

83. Public Aircraft means any aircraft used by the government engaged in carrying persons or property for commercial purposes.

- a. True
- b. False



84. The FAA recognizes that the definitions of public aircraft are _____ to apply to aircraft operations conducted by civil contractors for government entities.

- a. Easy
- b. Difficult
- c. Not required
- d. Required
- e. Required for international

Online: Airframe Technology: Scratches and Dings

85. Modern aircraft cabin windows are usually made of _____ layers of acrylic.

- a. One
- b. Two
- c. Three
- d. Four

86. Cockpit windows are generally made of multiple layers of:

- a. High-impact glass
- b. Stretched layers of acrylic
- c. High-impact acrylic
- d. a and b
- e. b and c

87. What are the primary determining factors of any window repair?

- a. Windshield heat element damage
- b. Cost of replacement
- c. Window thickness and damage depth
- d. Pressurized vs. non-pressurized

88. Some OEMs are using _____ in the attaching bolt holes of windows.

- a. Interference fit
- b. Oversize holes
- c. Pilot holes only
- d. Bushings

June 2011

Tools and Equipment Supplement: Best Practices When Handling Oxygen Booster Pumps

89. There is an inherent risk associated with handling pure oxygen under pressure.

- a. True
- b. False

90. All oxygen supplies used to service aircraft should contain which of the following component(s)?

- a. Shutoff valves
- b. Pressure gauges
- c. Pressure regulators
- d. Manufacturer's recommended hose
- e. All of the above

91. Maintenance and inspection on an oxygen booster should only be undertaken by a technician holding an A&P/IA.

- a. True
- b. False

Tools and Equipment Supplement: Hydraulic Hose Safety in GSE

92. Fluids in high-pressure applications can escape from even a tiny pinhole leak in a hose.

- a. True
- b. False

93. The hose assembly selection process known as STAMP means, size, temperature, application, measurement and pressure.

- a. True
- b. False

94. The safest, highest quality hydraulic hose assemblies are made with components from:

- a. An equivalent manufacturer
- b. Braided and spiral hose
- c. Any replacement hose
- d. Petroleum-based fluid
- e. The same manufacturer

July 2011

Cover Story: Vintage Piper Restoration

95. Which of the following factors affects the lifespan of any fabric covering on an aircraft?

- a. Maximum airspeed
- b. Operating environment
- c. High wing vs. low wing
- d. Natural fabric vs. synthetic fabric
- e. All of the above

96. The fuselages of many older aircraft were constructed using steel tubing in a _____ built structure style.

- a. Box
- b. Track
- c. Ladder
- d. Cross beam
- e. Truss

97. Careful inspection of the lower fuselage structure near the tail-post area during restoration of older tailwheel type airplanes may reveal:

- a. Heavier tubing
- b. Lighter tubing
- c. Corroded tubing
- d. Painted tubing
- e. All of the above

98. Synthetic fabrics available for use on vintage airplanes originally covered in natural fabrics are approved with a:

- a. Form 337
- b. PMA
- c. STC
- d. TC
- e. SMS

99. Silver pigment added to clear butyrate protects the fabric against damage caused by:

- a. Water ingestion

- b. Not enough dope
- c. Incorrect fabric
- d. Sunlight
- e. Incorrect color

100. The final color coat of dope will cover most imperfections created by earlier silver pigmented dope application.

- a. True
- b. False

From the FAA: Say Goodnight Gracie

101. An Instruction for Continued Airworthiness (ICA) including an Airworthiness Limitations is only required to be acceptable to the FAA, not approved.

- a. True
- b. False

102. The FAA acronym FSIMS stands for:

- a. Flight Standards Inspection Management System
- b. Flight Standards Inspection Maintenance System
- c. Flight Standards Information Management System
- d. Flight Standards Information Maintenance System

Recip Technology: The Golden Age of Aircraft Engines

103. Rotec Engineering Pty. Ltd. was established in the year 2000 by developing the R2800 seven-cylinder radial engine.

- a. True
- b. False

104. In 2005 the Rotec R3600 went into production as a nine-cylinder engine with how much more horsepower:

- a. 10
- b. 20
- c. 30
- d. 40
- e. 50

105. The ignition system consists of two auto type spark plugs per cylinder that independently fire using:

- a. Two self-energized magnetos
- b. Two 12-volt electronic ignition systems
- c. One self-energized magneto and one 12-volt electronic ignition system
- d. One 12-volt battery

106. Fuel is supplied to the engine by which configuration:

- a. An engine-driven mechanical fuel pump
- b. An electric fuel pump
- c. a and b configure in parallel
- d. a and b configure in series
- e. Gravity feed



Airframe Technology: Repair on Thin Skinned Aircraft

107. Practice shrinking and stretching on a scrap piece of metal the same thickness and temper as the aircraft skin being repaired will:

- a. Determine jaw affect
- b. Determine handle pressure
- c. Determine shrink rates
- d. Determine stretch rates

108. Using a hammer and dolly to straighten stretched thin skin will result in:

- a. Same results as using a shrinker
- b. A flush repair
- c. An external doubler repair
- d. More stretched aluminum

109. Smaller shrinks over a larger area is much better than a large shrink in one area.

- a. True
- b. False

110. Marking the high spots on stretched material with a pencil helps identify where to:

- a. Add stop drill holes
- b. Center the shrinker jaws
- c. Center the doubler
- d. Add pilot holes

MRO Operations: Aircraft Painting

111. Which of the following is not one of the 15 steps for the paint process regardless of aircraft size?

- a. All aluminum surfaces are etched
- b. At-risk components and flight controls are covered or removed
- c. Acidic chemical stripper is applied
- d. The aircraft is weighed if required
- e. All aluminum surfaces are treated with alodine

112. Florida State College at Jacksonville (FSCJ) Aircraft Coating Technician program is a 16-week, 1,600-hour program with a 40-hour (minimum) internship.

- a. True
- b. False

113. According to Associated Painters Inc., painting a Boeing 737 takes approximately how much paint?

- a. 150 to 175 pounds
- b. 150 to 175 gallons
- c. 50 to 75 gallons
- d. 50 to 75 pounds

Online: Management Matters: What's in Your Toolbox – Part 2

114. A phased approach to implementing an SMS allows you to plan and _____ in practical consecutive steps.

- a. Develop
- b. Prepare
- c. Implement

- d. Evaluate
- e. All of the above

115. Which early step is often underestimated during SMS development and can cause the complete SMS to suffer?

- a. Gap analysis
- b. Documentation
- c. Communication
- d. Organizational baseline
- e. Investigation policy

Online: Avionics Technology: Portable Electronic Device

116. The impact of a PED on an operating aircraft has not as yet been fully explored.

- a. True
- b. False

117. Regulations regarding sterile flight decks prohibit crewmembers from participating in activities not related to the safe operation of the aircraft.

- a. True
- b. False

August 2011 Issue

Transitioning From a Technical to a Management Role

118. Accomplishing which two activities will help an AMT determine if a supervisor or manager's role is right for them.

- a. A self-assessment
- b. Company organizational assessment
- c. Risk assessment
- d. a and b
- e. b and c

119. On your first day as a new manager both front line employees and senior management will expect you to:

- a. Do budgets
- b. Lead
- c. Prepare for vacation
- d. Finish your degree
- e. Answer emails

Selecting Aircraft Maintenance Technicians

120. Most Fortune 500 companies prefer their new-hires to have a four-year degree and look for individuals who want to:

- a. Gain experience and leave
- b. Grow with the company
- c. Take a pilot job
- d. Join the FAA
- e. Join the FAASTeam

121. One of the biggest challenges with finding and selecting technician candidates today is:

- a. Certification
- b. Education

- c. Wages
- d. Relocation
- e. Benefits

Virtual Paint Training

122. The variation in color on the accumulation mode of VirtualPaint shows:

- a. Paint thinning ratios
- b. Paint thickness
- c. Paint mix ratios
- d. Painter speed
- e. Painter accuracy

123. Factors like transfer efficiency and film thickness can be viewed and analyzed:

- a. After computer download
- b. After instructor approval
- c. The next day
- d. Immediately

124. The acronym VOC stands for:

- a. Very over compensated
- b. Volatile organic compounds
- c. Volatile organic concepts
- d. Visual overspray condition
- e. Visual organic compounds

125. The biggest environmental benefit from using the virtual paint training system is:

- a. Reduction of supplies and materials
- b. Reduction of classroom time
- c. Reduction of masking paper
- d. Reduction of air emissions

Online: From the FAA: W-Hotline

126. The Whistleblower Protection Program (WBPP) and the Aviation Safety Hotline (ASH) both allow for:

- a. OSHA to get involved
- b. An investigation
- c. Anonymity
- d. Interviews in Washington
- e. Inspector General always gets involved

127. Investigating safety violations by the FAA is usually limited to one of which two complaint process systems:

- a. WBPP
- b. ASH
- c. CSR
- d. b and c
- e. a and b

128. The ASH program is aimed at:

- a. General aviation
- b. Airlines
- c. All aviation
- d. Repair stations
- e. Overseas carriers

September 2011

Aircraft Interiors: Cabin Modifications



129. More than any other communication tool business executives using corporate use aircraft today want ready access to:

- a. Cockpit
- b. Telephone landlines
- c. Internet
- d. Moving map display
- e. Baggage compartment

130. One quick and simple method for refurbishment of aircraft seats is:

- a. Replacing the seat leather
- b. Re-dying the seat leather
- c. Replacing the seats
- d. Re-upholstering the seat leather

Aircraft Interiors: Interior Care and Maintenance

131. Steam cleaning the carpet while it is still installed in the aircraft runs the risk of:

- a. Moisture retention
- b. Corrosion
- c. Discoloration
- d. b and c
- e. a and b

132. Polishing the finish of wood grain interior parts should be done with care because:

- a. Veneers are thick
- b. Use of water is prohibited
- c. Veneers are thin
- d. Paint is thin
- e. Wax finish is thin

133. Some of the details important to technicians doing interior related work are:

- a. Certification of avionics
- b. Certification of materials
- c. Expansion of parts
- d. b and c
- e. a and b

134. Which two of the following are known to change dimensions of aircraft interior components:

- a. Altitude and pressure
- b. Humidity and temperature
- c. Pressure and temperature
- d. Veneer thickness and fit
- e. Veneer thickness and polish

Airframe Technology: Aircraft Fasteners

135. When engineers design an aircraft the type of joint the fastener will be exposed to is considered such as:

- a. Weight and tension
- b. Tension and pressure
- c. Pressure or shear
- d. Shear or tension
- e. None of the above

136. The number and diameter of fasteners are calculated to ensure correct transfer of:

- a. Shear
- b. Load

- c. Lift
- d. Weight
- e. Weight and balance

137. Fastener coding can be designated by the fastener manufacturer or by:

- a. EASA
- b. FAA
- c. Industry standard
- d. AC 43.13-1B
- e. Industry committee

138. Fastener edge-margin is the distance from the edge of the fastener head to the edge of the part.

- a. True
- b. False

139. Some fastener substitutions are allowed if the replacement fastener meets or exceeds original:

- a. Strength, diameter, and corrosion protection characteristics
- b. Structural applications only
- c. Non-structural applications
- d. Strength, length, and corrosion protection characteristics

Recip Technology: The GA Shop in Rural Europe

140. The EASA 145 certificate authorizes this shop as a maintenance organization to maintain aircraft registered in what country?

- a. The Netherlands
- b. The United States
- c. EASA member states
- d. NAA member states
- e. Canada

141. N-registered GA aircraft that are owned and operated in Europe must be returned to service by:

- a. An EASA Part 66 technician
- b. An A&P/IA technician
- c. An NAA technician
- d. A CAMO

142. A Maintenance Organization Exposition (MOE) is similar to which FAA manual?

- a. Aircraft maintenance manual
- b. CAMO manual
- c. Federal Aviation Regulations
- d. FAA repair station manual
- e. None of the above

143. The acronym CAMO stands for:

- a. Continuing airworthiness management organization
- b. Continuing airworthiness maintenance organization
- c. Continuing airworthiness management operation
- d. Country airworthiness management organization
- e. Country airworthiness maintenance organization

From the FAA: It's Easy Just Change the Rule

144. The FAA, being a branch of the Department of Transportation, gets its marching orders from:

- a. Congress
- b. Senate
- c. United Nations
- d. ICAO
- e. NTSB

145. Most recommendations can be satisfied through:

- a. ICAO revisions
- b. FAR revisions
- c. Policy revisions
- d. Rulemaking process
- e. Congress

146. FAA rulemaking analysis might consider which of the following:

- a. Impact on certificate holders
- b. Industry standards
- c. a only
- d. b only
- e. a and b

147. The acronym NPRM stands for:

- a. Notice of Presidential Rulemaking
- b. Notice of Permanent Rulemaking
- c. Notice of Policy Rulemaking
- d. Notices of Proposed Rulemaking
- e. None of the above

Online: Airframe Technology: Importance of Battery Testing

148. Testing a battery using a voltmeter measurement will provide specific information on how the battery will deliver the rated current for the specified duration.

- a. True
- b. False

149. Capacity testing is performed by applying a constant current load equal to the battery while monitoring the voltage of:

- a. The battery
- b. The voltage of each battery cell
- c. The amperage of each battery cell
- d. a and b
- e. c and d

Airframe Technology: Parasitic Loads

150. A parasitic load is a small, continuous flow of DC current that takes power from the battery even when the aircraft master switch is:

- a. Turned on
- b. Turned off
- c. Cycled on and off
- d. Bypassed
- e. None of the above



151. In the case of lead acid batteries, this drain causes the plates to become:

- a. Oxidated
- b. Worn
- c. Sulfated
- d. a and b
- e. None of the above

152. When measuring parasitic drag it's best to start measurements using:

- a. The low current jack then switch to the high current jack
- b. The high current jack then switch to the low current jack
- c. The high current meter then switch to the low current meter
- d. The low current meter then switch to the high current meter

153. Repetitive cycling of the battery by a parasitic load may extend the battery service life.

- a. True
- b. False

Avionics Technology: Flight Displays

154. Available instrument panel space for equipment and instruments may have minimum requirements depending on the basis for:

- a. Airworthiness
- b. Flight crew interaction
- c. Maintainability
- d. Cathode ray tube size

155. A Color Cathode Ray Tube (CRT) has three electron beams one for each primary:

- a. Direction
- b. Location
- c. Altitude
- d. Color
- e. Triad

156. Leaving a Liquid Crystal Display (LCD) turned on for significant time periods without ample air circulation may result in:

- a. Full screen overheat
- b. Discolored appearance
- c. Viewing angle change
- d. Low power consumption

157. Many LCDs use an internal heating element which is activated anytime power to the display occurs and ambient temperatures are below a certain threshold.

- a. True
- b. False

158. In the event of flight display malfunction which manual should always be consulted to determine which indications or indicators are considered critical for flight?

- a. Parts manual
- b. Aircraft maintenance manual
- c. Current FAR manual
- d. Advisory Circular 43.13
- e. Aircraft minimum equipment list

Management Matters: Hit The Road Jack

159. In addition to aircraft, typical A&P mechanics continually fix things that are broken which can include:

- a. Tugs
- b. Plumbing in the hangar
- c. Processes and procedures
- d. All of the above
- e. None of the above

160. The author suggests many managers are hands-on until they find themselves dealing with budgets, capital expenditures, manning levels, with less time for:

- a. Interacting with the technicians
- b. Visiting satellite bases
- c. Spending time in the shop
- d. None of the above
- e. All of the above

October 2011

Turbine Technology: Asset Management

161. Asset management companies are generally associated with what type of spare part service?

- a. Leases and exchanges
- b. Overhaul and repair
- c. Repair station certification
- d. MRO services
- e. FAA audits

162. Component lease arrangements generally fit into one of two categories – short-term operating leases and long-term:

- a. Certification leases
- b. Operating leases
- c. Finance leases
- d. Operating exchanges
- e. Certification exchanges

163. When receiving a component, technicians need to ensure that the component part number and description you are leasing or exchanging is correct by:

- a. Review of the shipping documents
- b. Review of the shipping company
- c. Review of the part and its airworthiness records
- d. Review of the part and its shipping container
- e. Review of the shipping label

164. Airworthiness records for a lease/exchange part may include documents such as:

- a. EASA Form One
- b. SB/AD status
- c. Configuration status
- d. Test cell run data
- e. All of the above

Airframe Technology: Kick the Tires and Light the Fires

165. FAA Advisory Circular AC 65-15A (Chapter 9) provides what sort of tire-related information?

- a. Retread criteria
- b. Airline wheel and brake overhaul
- c. Care and maintenance practices
- d. Acceptable equivalent to the AMM
- e. None of the above

166. If a tire is serviced in a warm hangar and then the aircraft is taken outside into a colder condition and it sits, the tire pressure will:

- a. Increase
- b. Decrease
- c. Not change
- d. Drop then rise
- e. Rise then drop

167. Which of the following factors has the greatest influence on the service life of an aircraft tire?

- a. Hangar temperature
- b. Retread numbers
- c. Maintenance
- d. Taxi speeds
- e. None of the above

168. Under inflation of a tire can create increases in the stress and flex resulting in excessive:

- a. Heating in the wheel bearings
- b. Heating in the tire
- c. Cooling in the tire
- d. Cooling in the wheel bearings
- e. a and c

169. Chemicals used to clean and make tires look good are known to:

- a. Remove protective waxes and oils from the surface
- b. Add protective waxes and oils from the surface
- c. Cause unwanted tire balance concerns
- d. Aid in tire balance
- e. Act as a water repellant

MRO Operations: Inside American Airlines WBC

170. Initial cleaning done before tire and wheel disassembly is done using:

- a. 180 F high-pressure water
- b. 180 F high-pressure solvents
- c. 120 F high-pressure water
- d. 120 F high-pressure solvents
- e. Hand washing

171. What type of NDT method is used on the non-ferrous wheel and brake part?

- a. Ultrasonic and eddy current
- b. Magnetic particle
- c. X-ray
- d. 10-power magnifying glass

AMT EXAM



172. All B777 wheel halves are painted at each overhaul.

- a. True
- b. False

173. The auto-torque method used to reunite wheel halves holds what percent torque tolerance?

- a. +/- 1
- b. +/- 2
- c. +/- 3
- d. +/- 4

174. In most cases the common hardware such as bolts and nuts that hold the wheels together are re-used at overhaul.

- a. True
- b. False

**Online: From the FAA:
Runway Incursions –
Not Just a Pilot Problem**

175. From a safety perspective, an airport is divided into two distinct areas.

- a. Movement areas
- b. Movement and taxi areas
- c. Movement and non-movement

- d. Movement and ramp areas
- e. Movement and terminal areas

176. A surface incident is a broad term encompassing all movement areas defined as:

- a. Any event where unauthorized or unapproved movement occurs
- b. Any event where the pilot makes an unauthorized turn off
- c. Any event where a technician makes an unauthorized turn off
- d. Any wrong way taxi by either a pilot or technician

177. The current definition of a runway incursion is “any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft.”

- a. True
- b. False

178. Between FY2001 and 2004, mechanics have been involved in approximately _____ surface incidents/runway incursions.

- a. 62
- b. 63
- c. 162
- d. 163
- e. 262

179. The acronym RIIEP stands for:

- a. Runway Incident Information Evaluation Program
- b. Runway Incursion Information Evaluation Program
- c. Runway Incursion Information Equipment Program
- d. Runway Incident Information Equipment Program

**Industry Viewpoint:
Tires: Where the Rubber
Meets the Road**

180. Which of the following methods can be used to determine proper tire pressure?

- a. A pressure gauge
- b. An aircraft electronic pressure monitor
- c. Tread wear
- d. a and b
- e. b and c

181. NTSB records are replete with accidents and incidents caused or exacerbated by poorly maintained tires.

- a. True
- b. False

TECHNICIAN AWARD ELIGIBILITY

The FAA encourages all eligible technicians and employers to participate in the awards program each year. Continuous participation in the FAA William (Bill) O'Brien Awards Program for regulatory, airworthiness, and safety awareness training will reinforce and promote/foster a high level of professionalism and safety within the industry:

- a. An FAA-certificated mechanic or repairman (technician) in general aviation, repair station, or air carrier maintenance working on aircraft component parts for 14 CFR parts 91, 121, 125, 127, 129, 133, 135, 137, 141, or 145 entities.
- b. A noncertificated maintenance technician employed by a part 121/135 air carrier or a part 145 repair station and working on aircraft or component parts.
- c. A student in an FAA-certificated part 147 Aviation Maintenance Technician School who is maintaining a course average grade of “C” or better. The student must receive training required by this award program outside of his or her regular part 147 school curriculum.
- d. An apprentice mechanic working full time or part time performing aircraft maintenance under an FAA-certificated mechanic or repairman is also eligible to receive an award.

All phases require that individuals register at <http://www.FAASafety.gov>, enroll in the William (Bill) O'Brien Awards Program, and complete the Core Training Course/Courses, which can be found in the Aviation Learning Center at <http://www.FAASafety.gov>.

AMT AWARD REQUIREMENTS

a. Phase I. Bronze (total training – 12 hours)

- (1) Complete Mandatory Core Training available at Aviation Learning Center at www.FAASafety.gov.
- (2) Satisfactorily complete 12 hours of aviation maintenance training.

b. Phase II. Silver (total training – 40 hours)

- (1) Complete Mandatory Core Training available at Aviation Learning Center at www.FAASafety.gov.
- (2) Satisfactorily complete 40 hours of aviation maintenance training.

c. Phase III. Gold (total training – 80 hours)

- (1) Complete Mandatory Core Training available at Aviation Learning Center at www.FAASafety.gov.
- (2) Complete college level course or three credit hours or 40 classroom hours in Mathematics, English, Science, Aviation Safety, Human Factors, Quality Control, or similar aviation career related courses.
- (3) Satisfactorily complete 80 hours of maintenance training.

Note from AMT:

Are you ready to take the exam, but don't have all of the back issues of Aircraft Maintenance Technology from 2011?

Well, you have several options. You can go to your buddy who receives the magazine and ask to borrow his issues. If by chance he is unwilling to part with his copies, you still have other options.

You can call us at (920) 563-6388 to order any back issues you are missing. Back issues are \$10 per copy. Or you can also visit our web site www.AviationPROS.com. You will be able to perform a search by article title.

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AviationPROS.com has to offer. Read the latest industry news, go to the Forum to see what issues fellow mechanics are discussing, or browse our numerous links including Maintenance Alerts from the FAA, industry videos, and AMT Webinars. While you're there, be sure to check out the most recent blogs and the AMTSociety IA Renewal schedule.

While there, why not sign up for our electronic newsletter delivered to you weekly via email, or any of the other electronic products we offer.

Just a reminder that things have changed over the last

several years. AC 65-25E requires 12 hours for a Bronze Award, 40 hours for a Silver, and 80 hours for a Gold.

In closing, please be sure that all of the information on the answer sheet is filled in. We receive several tests each year that we can't issue a certificate for because the return address information is not filled out. It would be a shame to spend numerous hours taking the test only to have it stuck in Wisconsin limbo. It is also a good idea to photocopy your completed test just in case it doesn't make it to our offices. Good luck on the exam!

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