

open book exam 2013

AIRMAINTENANCE UPDATE is Transport Canada-approved for recurrent training. This is our 11th exam, published annually in our June-July anniversary issue, in accordance with our agreement with Transport Canada. The exam consists of questions based on articles appearing in all six issues from the past year: June-July 2012, Aug.-Sept. 2012, Oct.-Nov. 2012, Dec.-Jan. 2013, Feb.-March 2013, and April-May 2013. You will require all six issues in order to write the exam. If you are missing any issues, call us at (604) 214-9824 or email us at amu.magazine@telus.net, and we will mail them to you at a cost of \$6.95 per magazine postpaid.

A 75% pass rate is required in order to qualify for your 16 hours toward RT. The questions in the exam are arranged in order of their appearance in AirMaintenance Update according to issue and individual article. The exam can also be downloaded as an Adobe Acrobat PDF file via our website: www.amumagazine.com. Answers should be printed in the spaces provided and must be drawn directly from the text of the articles in order to be considered correct. All questions requiring a longer answer than the space allowed must be typewritten on a separate sheet of paper. Completed exams should be submitted to: AirMaintenance Update, Unit 7, 11771 Horseshoe Way, Richmond, BC, V7A 4V4.

The exam must be postmarked no later than October 31, 2013. We will mark your test and return it along with documentation supporting your submission. We will keep a copy of your written test and results on file for future reference, and a copy will be forwarded to Transport Canada. Once again, good luck to all participants!

Your Contact Information

For a prompt and accurate response to your 2013 Exam answers, please fill in the following information (print clearly)

Name

Address

.....

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Phone

Email

June – July 2012 (Volume 11/Issue 1)



Clarifying More Regs

1) Name two things that a training program must include according to Standard 573.06.

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2.
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2) According to the same standard, what is the maximum time for the initial cycle for update training?

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3) What does the Transport Canada Small Operator Maintenance Control Manual specify as the minimum amount of time spent in update training during a 3-year period?

.....

4) Name the three areas that the above time is divided into.

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.....

5) State the series of tasks an accountable executive must perform according to CAR 573.03 and 706.03.

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Cleaning Deep

6) What prevents braze alloy from flowing into cracks in turbine engine airfoils?
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7) What alloys are used to make turbine airfoils?
.....

8) What other elements are used in the turbine airfoil alloys to improve strength?
.....

9) What does the presence of the elements mentioned in question 8 cause?
.....

10) What has been the traditional cleaning method of removing oxidants from components?
.....

11) What is the more recent cleaning process?
.....

12) State a safety issue with HF gas.
.....

13) What separates the dynamic FIC process from first generation fluoride ion cleaning equipment?
.....

14) What difficulties occur with the use of chromium in cobalt-based alloys in jet engine turbine blades?
.....

15) What risk is reduced by using less HF?
.....

Microwave Landing Systems Explained

16) Are pilots allowed to manually land aircraft in category III conditions?
.....

17) On what principle does MLS work?
.....

18) How does an airborne MLS receiver determine the position of the aircraft relative to the runway?
.....

19) What information is added to complete the positional fix?
.....

20) With MLS, do all aircraft have to follow a straight-in approach path?
.....

21) Is there a problem with commercial FM broadcast interference with microwave landing systems?
.....

Aug. – Sept. 2012 (Volume 11/Issue 2)



Stalling aka Delaying

1) What happens when a compressor blade of a turbine engine stalls?
.....

- 2)** What often causes the unstable condition of air that can result in compressor stall?

- 3)** What can be the symptoms of a sufficiently pronounced surge?

- 4)** What can be done by a pilot or operator to correct surge?

- 5)** Name two things that can be used to minimize the tendency of a compressor to surge?
 1.

 2.

- 6)** Name the three basic types of compressor designs in use today.
 1.
 2.
 3.
- 7)** Which of these types is most prone to blade stall?

- 8)** Which type is least prone to blade stall?

- 9)** On a Pratt and Whitney PT6 turboshaft engine, what system is used to relieve the compressor from the possibilities of stall during starting?

- 10)** When are bleed valves always open?

- 11)** When are variable inlet guide vanes mainly working?

- 12)** From a maintenance perspective how can you prevent a compressor stall?
 1.

 2.

 3.

 4.

The Misinformation About Importing

- 13)** What are the two separate topics involved in a major modification?
 1.
 2.
- 14)** What type of organization do you have to be to do specialized work in Canada?

- 15)** Give an example of a major modification that may not implicate specialized work.

- 16)** Can a major modification that does not implicate specialized work be performed by an AME if he or she is not part of an AMO?

Passenger Address Systems Explained

- 17)** Is a passenger address system identified as a NO GO item in most minimum equipment lists?

- 18)** State the order of the priority input protocol inputs.
1.
 2.
 3.
 4.
- 19)** What happens to the PA system when an engine is started and oil pressure is developed?
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Raising the Bar

- 20)** What did the National Transportation Safety Board determine that the probable cause was of the inflight fire in this incident?
-
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Oct. – Nov. 2012 (Volume 11/Issue 3)



Aviation Terms

- 1)** What is issued to an aircraft produced under a type certified design?
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- 2)** For what three things are type certificates normally issued?
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- 3)** What is a supplemental type certificate?
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- 4)** Does a product with a TSO automatically get approval for installation?
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- 5)** What does the acronym ICA stand for?
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.....
- 6)** Name five maintenance activities that may be performed under the term, line maintenance
1.
 2.
 3.
 4.

- 7)** Describe the term datum.
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.....
.....

- 8)** What are center of gravity limits?
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Pilot Optional Aircraft Explained

- 9)** Does an inertial navigation system require input from external sources?
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The Regs

- 10)** What must be consulted for non-replacement maintenance tasks?
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- 11)** What is the maximum period of time between update training sessions for maintenance personnel?
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Aviation Terms Part 2

1) Define fatigue failure.

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2) What does the acronym IFR stand for?

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3) What does the acronym VFR stand for?

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Looking for Consistency in Aviation Regulations

4) In what document(s) would we find the approved interior configurations?

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.....

5) If the requirements of the above documents are satisfied what else is required for each configuration?

.....
.....

6) How can governments make design changes mandatory for a previously approved aircraft.

.....

7) What has replaced the “limited supplemental type certificate?”

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HIRF Explained

8) On what concept does the step-up/step-down transformer work?

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9) What happens whenever current passes through a wire?

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10) Name four types of high-powered radio transmitter antennas that can lead to interference with digital avionics systems.

1.
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2.
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3.
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4.
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11) State an advantage of an aluminum airframe over a composite airframe in connection with radio interference.

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12) What can be done to wires to prevent electromagnetic interference?

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.....

13) If the appropriate level of shielding is not employed or is poorly installed or maintained, what could result?

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Helicopter Cocktail Knowledge

1) What does a turbine engine have in common with a piston engine?

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2) What is the above process called in a turbine engine?

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3) What is the process in question 1 called in a piston engine?

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4) Define dis-symmetry of lift.

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5) How is dis-symmetry of lift counteracted?

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6) What causes retreating blade stall?

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7) Name a major airspeed limiting factor for helicopters.

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8) What are blade grips?

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9) What are control tubes?

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Acronyms and Initialisms

10) Define “operator” of an aircraft.

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11) When is a maintainer the operator of an aircraft?

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VRLA Batteries Explained

12) What does the acronym VRLA stand for?

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13) What electrolyte solution does a VRLA battery use?

.....

14) What is contained within the cells of this type of battery?

.....

15) What gasses are generated when a battery is recharged?

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16) What happens to the hydrogen and oxygen gasses in a recombinant gas battery?

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Identifying Errors in the Workplace

17) What are human factors?

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18) What is an unintentional error?

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19) What is an intentional error?

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.....

20) Briefly state the “dirty dozen” in relation to human factors.

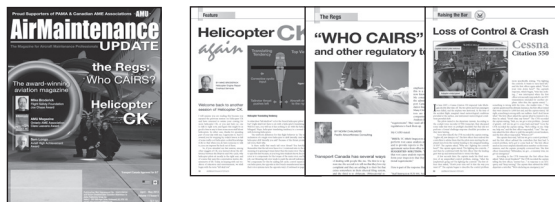
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

Raising the Bar

21) What three actions did the National Transportation Safety Board determine were the probable cause of the accident in this article?

1.
2.
3.

April – May 2013 (Volume 11/Issue 6)



Helicopter CK Again

1) Why does a single rotor helicopter tend to drift laterally?

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2) What is settling with power?

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3) What three key flight characteristics are required for settling with power to occur?

1.
2.
3.

4) What three components are required for dynamic rollover to happen?

1.
2.
3.

Passenger Service and Entertainment Systems Explained

5) When inspecting a galley, what should coffee-maker hoses be checked for?

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.....

6) What should oven power receptacles be checked for?

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.....

7) What can be done to determine the condition of galley circuit breakers?

.....

8) Name three things a maintainer can do to reduce the risk of flight attendant injuries.

1.
2.
3.

Who CAIRS? and Other Regulatory Topics

9) What does the acronym CAIRS stand for?
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10) What is the first document in the process of getting a new aircraft type certified?
.....

11) What is a Type Certificate Data Sheet?
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Raising the Bar

12) Had the 1992 wiring service bulletin been complied with on this aircraft?
.....

13) Might the above have contributed to the crash?
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