AIRMaintenance Update is Transport Canada-approved for recurrent training. This is our 14th 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 2015, Aug.-Sept. 2015, Oct.-Nov. 2015, Dec.-Jan. 2016, Feb.-March 2016, and April-May 2016. 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 amumag2015@gmail.com, and we will mail them to you at a cost of $7.95 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, 2016. 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 2016 Exam answers, please fill in the following information (print clearly)

Name.............................................................................................................
Address.............................................................................................................
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June - July 2015 (Volume 14/Issue 1)

The Evolution of a Light Jet

1) What powers the HondaJet?
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2) What unique configuration was developed to provide a larger space in the HondaJet’s fuselage?
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3) What did Honda engineers develop to reduce drag and thereby achieve higher fuel efficiency in the HondaJet?
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4) What was the major design decision in the development of the HondaJet configuration?
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5) What did Honda engineers have to say about an over-the-wing engine-mount configuration versus the conventional rear-fuselage engine-mount?
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6) What was the main goal for the aerodynamic design of the HondaJet’s wing?
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The Regs: No Word Yet
7) In Canada, what is a MPM?
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8) In Canada, what is the TATC?
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9) What is probably the most valuable of our senses when it comes to snag analysis?
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10) A tell-tale whiff of fuel in an oil sample can be a clue towards what?
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11) What does secondary surveillance radar send from an ATC facility to transponder-equipped aircraft in the vicinity?
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12) What does ADS-B allow aircraft to send and receive?
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Raising the Bar: Merely a Matter of Millimetres
13) What was the manufacturer-designated lifespan of the blades on Bell 206L helicopter C-GDQH?
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14) The main rotor blades on the Bell 206L are an all-metal bonded assembly consisting of what three structural members?
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15) What is bonded to the blade butt end on the Bell 206L?
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16) The TSB Laboratory concluded that the main rotor blades on Bell 206L helicopter C-GDQH were manufactured with defects. True or False?
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17) After the August 2008 occurrence of its 206L helicopter C-GDQH, what did Bell Helicopter implement?
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Aug. - Sept. 2015 (Volume 14/Issue 2)

Unleash the Power: MRO Data Management
1) What is needed when telemetry data analysis points to potential design issues?
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2) A data management strategy needs to account for what fact?
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Cleaned, Treated, and Good to Go
3) Wet blasting uses a suspension of solid particles in a carrier liquid to treat the surface of a material. True or false?
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4) During Wet Blasting, the “slurry” is mixed with a pressurized gas, and forced through what device?
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5) The liquid nature of wet blasting makes it what:
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6) Preparing a surface for NDT comes at the most abrasive end of the wet blasting spectrum. True or False?
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7) What does Stokes' Law state?
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The Fly-By-Wire Chopper
8) In the case of the Bell 525 Relentless, what does Fly-by-Wire technology replace?
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9) What powers the Bell 525 Relentless?
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10) What helps keep the max gross weight of the Bell 525 Relentless under 20,000 pounds?
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11) The pilot cannot choose to decouple the flight director from autopilot and manually fly the Bell 525 Relentless. True or False?
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Raising the Bar: Didn’t See This Coming
12) In the case of Sikorsky S-76A helicopter 760052, what sound was heard before the No. 2 engine lost power?
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13) What did the pilot do in response to the Sikorsky S-76A's power loss?
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14) The Sikorsky S-76A helicopter is certified up to what maximum gross take-off weight?
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15) What conclusion did the TSB reach about engine outer combustion in the Sikorsky S-76A helicopter 760052?
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Oct. - Nov. 2015 (Volume 14/Issue 3)
16) The in-flight failure of Sikorsky S-76A helicopter 760052’s outer combustion case resulted in a power loss. True or False?
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The Regs: The World Before and After CAR 604
1) Which area of regulations does Transport Canada document AC-600-003 address?
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2) All aeroplanes required to have TAWS will have to be in compliance with the TAWS EAA requirements as of when?
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Life Status Update
3) The effects of hypoxia are completely different than the effects of alcohol. True or False?
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4) If an aircraft depressurizes suddenly, loss of consciousness can occur in a matter of what length of time? Seconds, minutes or hours?
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5) Hypoxia recognition systems are now being used to monitor which flight crew members?
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6) What kind of alerts will a hypoxia recognition system start to issue if it has not detected human activity over a given period of time?
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**Flight of the Catbird**

7) What world-record altitude did the Catbird reach on September 6, 1970?

8) In the Catbird’s “Description of the Flight” it was mentioned that the fuel air mixture setting at takeoff was not optimum. What was the result of that?

9) The pilot of the Catbird says he made an error in the adjustment of the needle valve. What error did he make?

10) What was the name of the first model aircraft to cross the Atlantic Ocean?

**Raising the Bar: Communication Breakdown**

11) While an AME was conducting a maintenance ground run of Beech 1900D aircraft (C-GWGA) at Calgary Airport, the AME did not turn on the transponder. Consequently the controller did not assign what?

12) What does a multilateration (MLAT) system for surface surveillance use to receive signals from transponders?

13) Despite the incident involving Beech 1900D aircraft (C-GWGA), the Calgary Airport Authority still recognizes an AME’s licence as sufficient authorization to tow or taxi an aircraft on the YYC airfield. True or False?


**This Flight Tonight . . .**

1) During Air Canada flight 797 on June 2, 1983, the DC-9’s directional gyro failure meant the loss of what?

2) Where are a DC-9’s two JT8D engines located?

3) A DC-9’s engine-driven generators are each of producing how much power?

**Room for Twelve**

4) What engines power the new Cessna Citation Longitude business jet?

5) What is the factory-spec maximum cruise speed of the new Cessna Citation Longitude business jet?

6) What will the Thales Group of Montreal provide for the new Citation Longitude?

7) What does the “rudder-by-wire” system of the new Citation Longitude eliminate?
8) Unfortunately the “rudder-by-wire” system creates a weight increase. True or False?

Rise of the Real Time Sensors

9) When Bell 206B helicopter C-FZWB crashed, the helicopter’s cabin and fuselage remained in one piece. True or False?

10) When Bell 206B helicopter C-FZWB crashed, the main rotor head shaft had separated below the rotor head. True or False?

11) When Bell 206B helicopter C-FZWB crashed, one main rotor blade remained attached to the rotor head. True or False?

12) When Bell 206B helicopter C-FZWB crashed, there were indications the tail boom had struck a tree. True or False?

13) When Bell 206B helicopter C-FZWB crashed, how was the aft section oriented?

14) Loss of tail rotor effectiveness (LTE) is the occurrence of an un-commanded yaw rate that does not subside of its own accord and, which, if not corrected, can result in the loss of the helicopter. True or False?

15) The examination of Bell 206B helicopter C-FZWB revealed many mechanical issues with the helicopter. True or False?

16) As the pilot of Bell 206B C-FZWB progressively reduced speed, the helicopter became increasingly vulnerable to LTE. True or False?

17) The damage to the under-surface of the main rotor blades indicated that the pilot of Bell 206B helicopter C-FZWB did not attempt to increase his collective control input in an effort to power out of the area. True or False?

Feb. - Mar 2016 (Volume 14/Issue 5)

The Replacements: Boeing’s 737 MAX Family

1) The 737 MAX will retain significant spares commonality with the Next-Generation 737. True or False?

2) The 737 MAX will emit over 310,000 fewer tons of carbon dioxide. True or False?

3) The 737 MAX will be powered by what engines?

4) The 737 MAX engines have been moved up and forward on the wing. True or False?

5) The 737 MAX has a fly-by-wire spoiler system. True or False?

6) Boeing says the 737 MAX’s electronic bleed air system does not contribute to fuel efficiency. True or False?

Raising the Bar: Tripped on a Wire

7) Beechcraft King Air A100 aircraft C-FEYT has tricycle landing gear that is operated via what?
8) By what are the main landing-gear actuators of Beechcraft King Air A100 aircraft C-FEYT driven?

9) Depending on the direction of rotation from the gearbox, the landing gear of Beechcraft King Air A100 aircraft C-FEYT can extend or retract. True or False?

10) After Beechcraft King Air A100 aircraft C-FEYT’s landing-gear shaft system seized and the two generators were disabled, the aircraft still had numerous other sources of electrical power. True or False?

11) What is the normal length of time a fully charged battery is expected to power aircraft systems?

12) During the Beechcraft King Air A100 aircraft C-FEYT’s landing-gear extension, the rotating torque shaft that drives the screw jack actuators to lower the landing gear caught on what?

13) With the landing gear disabled, the crew of Beechcraft King Air A100 aircraft C-FEYT was therefore required to do what?

14) What was the precaution taken after the incident involving Beechcraft King Air A100 aircraft C-FEYT?
The Regs: Canada Transportation Act Review

4) The Canada Transportation Act Review recommends a package of measures that address the three major components of competitiveness. What are those three components?

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5) According to the Review, airport rents in Canada can represent up to 30 percent of airport operating budgets. True or False?

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6) According to the Review, Canada has collected approximately $5 billion in airport rent since 1992. True or False?

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7) The Review recommends phasing out airport rent and increasing capital funding available to smaller airports. True or False?

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Raising the Bar: Shake, Rattle, and Roll

8) Kamov Ka-32A11BC, C-GKHL has counter-rotating rotors (two main rotors, stacked on top of one another, turning in opposite directions). True or False?

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9) Kamov Ka-32A11BC, C-GKHL has a tail boom. True or False?

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10) To induce yaw in Kamov Ka-32A11BC, C-GKHL, torque to one rotor is increased while torque to the other rotor is also increased. True or False?

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11) When TSB Laboratory examined the engine components of Kamov Ka-32A11BC, C-GKHL, it was discovered that all of the blades in the Compressor Turbine (CT) were just fine. True or False?

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12) Detailed examinations of Kamov Ka-32A11BC, C-GKHL’s CT section components revealed manufacturing anomalies. True or False?

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13) The anomalies in the first stage guide vane retention ring would have allowed the guide vanes to do what?

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14) The hole on the low-pressure side of one of the guide vanes may have added to the gas flow pattern changes. True or False?

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