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IA RENEWAL.

It is a renewal year, and it is never too early to talk about IA Seminars, and any time after March 31st is a good time to start thinking about the next renewal or staying current. We do not have to wait until February or March to take IA renewal classes, it could happen in any month. So, with the current state of affairs, we have to think forward and look at the IA Seminar. For the few of us that fall short of the renewal requirements called out in CFR 65.93, there are always options. Most of us have attended an IA Seminar in the past, big room, lots of people, and setting all day. This can be broken up by finding a local Industry Training or utilize FAASTeam Safety Seminars these can offer IA credits. Another option is to use some of the online services to get the training required for IA renewal. (And yes, this was a good place for a FAASTeam plug)

For your information, I have enclosed, Appendix A to this information letter, it contains a list of AMT Courses that are available on FAASafety.gov to take at your leisure so you can be better prepared for the next renewal cycle, and they are free.

If you have any IA Renewal question reach out to your Principal Inspector, don't know your Principal Inspector, call the office and ask. The Principal Inspectors assignments changes on a regular basis.

Information worth sharing. I was visiting a repair facility a few years back and a mechanic share with me a finding during an Annual Inspection, it was a rotted-out Heat Muff (muffler). This muffler came off an aircraft that was in for annual and it appears it had been overlooked for several years.

Don't be that guy, CO can be a deadly issue.

From the NTSB Safety Alert



The Problem

Carbon monoxide (CO) is a colorless, odorless, tasteless gas by-product of internal combustion engines found in exhaust gases. Sufficiently high levels of CO in the bloodstream will lead to oxygen starvation and the onset of symptoms (such as headaches, drowsiness, nausea, or shortness of breath).

Many aircraft internal combustion engines are utilized to heat the cabin air. This air is warmed by circulating air around the exhaust system using a heater shroud. A defect or leak in the exhaust system or muffler can introduce CO into the cockpit.

Cracks in exhaust/heater mufflers and tubes and unplugged holes in the firewall can go unnoticed during inspections and lead to CO entering an airplane's cabin during flight. Degraded door and window seals or leaks in the air ducting can also allow CO into the cabin.

Related accidents

The National Transportation Safety Board NTSB) has investigated several accidents (some fatal) in which pilots were incapacitated following CO exposure, such as the following:

age.

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A Mooney M20C airplane crashed in a field following the pilot's incapacitation; the pilot was seriously injured. Shortly after departure, the pilot lost consciousness and air traffic control was unable to contact the pilot. The airplane continued to fly for about 1.5 hours until the fuel in the selected tank was exhausted. The pilot's CO level was at least 28% (and likely higher) at the time of the accident. CO levels between 10% and 20% can result in confusion, impaired judgment, and difficulty concentrating. Post accident examination of the airplane found a fracture in the exhaust/heater muffler (see left photograph in figure 1) and exhaust deposits inside the muffler shroud (right photograph in figure



Figure 1. Photographs of a cracked muffler and exhaust deposits in the muffler shroud.

This allowed the exhaust gas to enter the cabin, exposing the pilot to CO. (CEN17LA101)

Witnesses observed an experimental amateurbuilt, Hefty Polar Cub airplane flying erratically at a low altitude before A post-crash fire ensued, and the pilot was fatally injured. Toxicology testing revealed that the pilot's CO level was 48%; no soot was found in his airways, indicating the CO was not a result of the fire; thus, the NTSB determined that the pilot's severe CO impairment likely caused the pilot's loss of airplane control. Examination of the airplane's exhaust system revealed that the exhaust/heater muffler was fractured, allowing CO to enter the cockpit (see figure 2). (ANC16FA065)



Figure 2. Fractured exhaust muffler from a Hefty Polar Cub airplane (Top) and a close-up photograph of the fracture in the exhaust muffler (below).



About 3 hours into a 3.5-hour post maintenance flight, a Cessna 207 airplane impacted trees and a river.

The pilot was fatally injured. Toxicology tests identified a CO level of 21% in the pilot's blood, which likely adversely affected his performance. The airplane's original cabin heat system had been modified with a "winter heat kit" that, according to maintenance records, had not been installed in accordance with Federal Aviation Administration (FAA) field approval procedures. The full heat system was not recovered, and it was not possible to determine the exact source of the CO. (ANC15FA032)

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A Bellanca, 14-19-3A descended from cruise flight at a rate of 2,900 ft per minute and collided with power lines and trees. The pilot was fatally injured. The wreckage examination revealed cracks and holes in the muffler wall and exhaust gas penetration into the interior of the shroud. Toxicology tests identified a CO level of 37% in the pilot's blood. Most of the CO detected in the pilot's blood was likely from inhalation during the flight; the CO levels would have impaired his ability to safely fly the airplane. (CEN14FA024)

What can you do as Mechanics? One more time, what can we do as Mechanics.

Inspect exhaust systems, air ducting, firewalls, and door/window seals thoroughly at every 100-hour or annual inspection to reduce the chance of CO being introduced into the cockpit.

Inspect heater air inlet cockpit vents for evidence of scooting, consistent with the presence of CO.

Talk to pilots about installing electro chemical CO detectors with aural and visual alerts in the cockpit.

Be informed and review and comply with any airworthiness directives and service bulletins regarding the exhaust system. Speak with the owner about regular inspections and the replacement schedule of parts.

Interested in more information?

The following FAA resources are accessible via <u>www.faa.gov:</u>

"Acceptable Methods, Techniques, and Practices -Aircraft Inspection and Repair" (AC 43-13-18) contains inspection methods and repair techniques in chapter 8 to prevent exhaust system failures that could lead to CO exposure. Special Airworthiness Information Bulletin CE-04-22 addresses the importance of properly inspecting and maintaining components to prevent CO poisoning.

AC 91-59A, Inspection and Care of General Aviation Aircraft Exhaust Systems emphasizes safety hazards of poorly maintained aircraft exhaust systems and highlights points at which exhaust system failures occur.

FAA brochure Carbon Monoxide: A Deadly Menace contains medical information concerning the symptoms of CO exposure and methods of avoiding exposure.

A companion video to this safety alert can be accessed from the Aviation Safety Alerts link. The reports for the accidents referenced in this safety alert are accessible by NTSB accident number from the Aviation Accident Database link, and each accident's public docket is accessible from the Accident Dockets link for the Docket Management System. Related Safety Alert SA-022, "Mechanics: Manage Risks to Ensure Safety," can be accessed from the Aviation Safety Alerts link.

Additional Useful Information:

Please note the URL for the following site have changed with introduction of the Dynamic Regulatory System If you have not looked at the Dynamic Regulatory System, check it out.

https://drs.faa.gov/browse/doctypeDetails

Notice of Proposed Rules Airworthiness Directives:

Notice of Proposed Rule Making is your chance to make a difference and stay informed on future changes.

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Yes, if you go through the process, you can make a difference.

The URL for Proposed Rules Airworthiness Directives: <u>https://drs.faa.gov/browse/doctypeDetails</u>

New Airworthiness Directives:

Airworthiness Directives, for all aircraft, can be found at:

https://drs.faa.gov/browse/doctypeDetails

Service Difficulty Program:

When a system, component, or part of an aircraft (power plants, propellers, or appliances) functions badly or fails to operate in a normal or usual manner, it has malfunctioned and should be reported. In addition, if a system, component, or part has a flaw or imperfection which impairs function or which may impair future function, it is defective and should be reported. While at first sight it appears, this will generate numerous insignificant reports, the Service Difficulty Program design is to detect trends. Any report can be very constructive in evaluating design or maintenance reliability. These reports can be filed electronically or by paper. For electronic filing go to https://sdrs.faa.gov/. For paper submission, the form is available to download at: http://www.faa.gov/documentLibrary/media/Form /FAA 8010-4 7-19.pdf. You may have to cut and paste this link into your browser.

Service Airworthiness Information Bulletins (SAIB):

This is good information for issues that do not rise to level of an Airworthiness Directive. <u>https://drs.faa.gov/browse/doctypeDetails</u>

Can you tell me how many SAIB's came out last year?

How about new Airworthiness Directives? The links above are a good place to start. Kansas City Flight Standards Office Information:

If you are looking for a Designees, Airworthiness Representatives, Designated Mechanic Examiners, and Designated Parachute Rigger Examiners information.

The current link is: <u>https://www.faa.gov/about/office_org/field_office</u>s/fsdo/mci/

Airworthiness Facts are published quarterly and available via email only. If you would like to receive Airworthiness Facts, register on FAASafety.gov and keep your Email address current on FAASafety.gov

Donald Halbert, <u>Donald.D.Halbert@FAA.gov</u>

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Appendix A:

Free IA Renewal Courses are always available online at FAA Safety.gov. Yes, training can happen anytime, so do not wait until the last minute.

To receive credit for these courses, you must sign in to your FAASafety.gov account. If you do have an account, you can set one up at FAASafety.gov.

To sign up for your free account go to FAASafety.gov, and Under Welcome Guest block - New to FAA Safety.gov - Create an Account. Fill in the requested information.

If you have a FAASafety.gov account: LOGIN TO YOUR ACCOUNT. Once you are logged in – on the blue bar select Activities, Courses & Seminars. – Select Courses and toward the bottom of the page select "Available Courses" – Show AMT Courses – Under the "Credit" column select the AMT courses that show - (↑ Also accepted for IA Refresher Training) and list cost as free.

Below is a list of the free IA Approved courses that are one hour or two hours long. After successfully completely eight hours of training, follow the instruction for obtaining your certificate for each one. Retain those certificates and submit with your renewal paperwork in March. This list is always changing so check the courses before you take them.

Things that have changed the American Beechcraft Society (ABS) are marked free; they now have a fee. So don't be surprised if you select an ABS Course and it request you to join their group.

ID: TITLE: COST PRESENTED BY: CREDIT:

ALC-817 A Case for Non-Technical Training (AMT Core Course for 2021) Free FAASTeam AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training ALC-952 Aging Aircraft Maintenance Techniques, Ownership, and Upkeep Free Socialflight.com AMT 2 Hours Total for AMT 2 Hours Total for IA Refresher Training ALC-1359 Aircraft Exhaust System Defects Can Lead to Accidents Free FAASTeam AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training

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| ALC-498 | Aircraft Exhaust Systems (AMT Core Course 2018) Free FAASTeam | |
|---------|--|--|
| ALC-180 | Aircraft Maintenance Documentation for AMTs (AMT Cor | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training e Course 2012) |
| | Free FAASTeam | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-808 | Air Venture 2023 Exp. and Light Sport Aircraft Maintenand Free FAASTeam | ee AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-893 | Amateur Aircraft Inspection Case Study Free Socialflight.com | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-792 | Aspen E5 Installation and Support | |
| | Free Socialflight.com | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-794 | Continental Aerospace Technologies - Ignition Maintenance Free Socialflight.com | AMT |
| ALC 702 | Casting to LARS Table 1. Star Making TDO | 1 Hours Total for AM1 1 Hours Total for IA Refresher Training |
| ALC-793 | Continental Aerospace Technologies - Making TBO Free Socialflight.com | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |

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| ALC-799 | Continental Aerospace Technologies Engine Service Clinic Review | |
|----------|---|---|
| | The Socialinght.com | |
| | | 1 Hours Total for AMT |
| | | 1 Hours Total for IA Defresher |
| | | Training |
| ALC 107 | Distr Doron Human Francis Aircraft Maintenance | Training |
| ALC-10/ | Dirty Dozen - Human Error in Aircraft Maintenance | |
| | Free FAAS I eam | |
| | | |
| | | I Hours Total for AMI |
| | | I Hours Total for IA Refresher |
| | | Training |
| ALC-1338 | FAA Compliance Program (2025 AMT Core Course) | |
| | Free FS-910 SASO P | rogram Office |
| | | AMT |
| | | 1 Hours Total for AMT |
| | | 1 Hours Total for IA Refresher |
| | | Training |
| ALC-37 | Failure to Follow Procedures - INSPECTIONS (AM | AT Core Course 2009) |
| | Free FAASTeam | |
| | | AMT |
| | | 1 Hours Total for AMT |
| | | 1 Hours Total for IA Refresher |
| | | Training |
| ALC-67 | Failure to Follow Procedures - Installation (AMT C | Core Course 2010) |
| | Free FAASTeam | |
| | | AMT |
| | | 1 Hours Total for AMT |
| | | 1 Hours Total for IA Refresher |
| | | Training |
| ALC 92 | Failure to Fallow Presedures Janding Geor Failure | Training |
| ALC-05 | France to Follow Flocedures - Landing Ocal Failure | |
| | Free FAAS Leam | |
| | | |
| | | I Hours I otal for AMI |
| | | I Hours Total for IA Refresher |
| | | Training |
| ALC 445 | Failure to Follow Procedures Pationalizations (Core Cou | $r_{50} = 2016$ |
| ALC-443 | France to Follow Troccures - Kationalizations (Core Cou | 180. 2010) |
| | The TAAS Team | |
| | | AIVII 1 5 Hours Total for AMT |
| | | 1.5 HOURS FOUR FOR ANTI 1 Hours Total for IA Defrector |
| | | Training |
| | | Training |

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| ALC-786 | False Targets While Ground Testing | - ADS-B Free FAASTeam | |
|----------|--------------------------------------|--------------------------|--|
| | | | AMT |
| | | | 1 Hours Total for AMT |
| | | | Training |
| ALC-685 | Health as a Human Factor: Solvents (| AMT Core Course 202 | 24) |
| | | Free James Allen MD | , MPH AMT |
| | | | 1 Hours Total for AMT |
| | | | 1 Hours Total for IA Refresher Training |
| ALC-1292 | How to Perform Dynamic Propeller E | Balancing | |
| | | Free Socialflight.com | АМТ |
| | | | 1 Hours Total for AMT |
| | | | 1 Hours Total for IA Refresher Training |
| ALC-1163 | How to Research ADs using the FAA | DRS website | |
| | | Free FAASTeam | ۸MT |
| | | | 1.5 Hours Total for AMT |
| | | | 1 Hours Total for IA Refresher Training |
| ALC-258 | Human Factors Primer for Aviation M | Aechanics (AMT Core | Course 2013) |
| | | The TAAS Team | AMT |
| | | | 1.5 Hours Total for AMT |
| | | | Training |
| ALC-899 | IA Refresher Training A to Z | Free Socialflight com | |
| | | The Socialinght.com | AMT |
| | | | 3 Hours Total for AMT |
| | | | Training |

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| ALC-897 | IA Renewal and how to Use IACRA | to Renew | |
|---------|----------------------------------|----------------------------|--|
| | | Free Sociaringht.com | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-895 | Is it Airworthy | Free Socialflight com | |
| ALC 922 | le Vour Aircreft Engine Healthy | | AMT 2 Hours Total for AMT 2 Hours Total for IA Refresher Training |
| ALC-832 | is Your Aircrait Engine Healthy | Free Socialflight.com | |
| | | | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-592 | Maintenance Error (AMT Core Cou | rse 2020) | |
| | | Free FAASTeam | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-327 | Maintenance Error Avoidance (AM | Γ Core Course 2014) | |
| ALC-409 | PAUSE for Safety (AMT Core Cour | Free FAASTeam rse 2015) | AMT 2 Hours Total for AMT 2 Hours Total for IA Refresher Training |
| | | Free FAASTeam | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-529 | Proper Torque (AMT Core Course 2 | 2019) | |
| | | Free FAASTeam | AMT 1 Hours Total for AMT |

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1 Hours Total for IA Refresher Training

| ALC-457 | Reducing Maintenance Related Engine Failures (AMT Core Course 2017) | | |
|----------|---|-----------------------|--|
| | I | ree FAAS I eam | AMT 2 Hours Total for AMT 2 Hours Total for IA Refresher Training |
| ALC-1164 | Required Inspection Items (RII) | | |
| | Ι | Free FAASTeam | AMT 2 Hours Total for AMT 2 Hours Total for IA Refresher Training |
| ALC-896 | Supply Chain Hazards to Aviation Saf | fety | |
| | I | Free Socialflight.com | ۸MT |
| | | | 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-789 | Tempest Aero: Spark Plug Maintenand | ce | |
| | Ι | Free Socialflight.com | AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-534 | The Buck Stops with Me | | |
| | I | Free Dr. Bill Johnson | ۸MT |
| | | | 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |
| ALC-269 | The Impact of Tire Maintenance on A | ircraft Safety | |
| | Ι | Free Michelin Aircraf | t Tire AMT 1 Hours Total for AMT 1 Hours Total for IA Refresher Training |

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| ALC-924 | uAvionix AV-30 Installer Training | | |
|----------|---|-----------------------|--------------------------------|
| | | Free Socialflight.com | |
| | | | AMT |
| | | | 2 Hours Total for AMT |
| | | | 2 Hours Total for IA Refresher |
| ALC 021 | A :- ···· T - :1 D - · · · · V I - · · - 11 - · · T | • • • | Iraining |
| ALC-931 | uAvionix Tail Beacon X Installer Tra | ining | |
| | | Free SocialIlight.com | 4 N/T |
| | | | AMI 2 Hours Total for AMT |
| | | | 2 Hours Total for IA Defresher |
| | | | 2 Hours Total for IA Refresher |
| ALC 1202 | Understanding Aircraft Oils | | Training |
| ALC-1295 | Onderstanding Alteratt Ons | Erza Sazialflight com | |
| | | Fiee Socialingin.com | АМТ |
| | | | 1 Hours Total for AMT |
| | | | 1 Hours Total for IA Refresher |
| | | | Training |
| ALC 790 | Winline 8750 A Float Maintenance T | raining | Training |
| ALC-770 | wiphile 8750A Float Maintenance Th | Free Socialflight com | |
| | | The Socialinght.com | AMT |
| | | | 1 Hours Total for AMT |
| | | | 1 Hours Total for IA Refresher |
| | | | Training |
| ALC-791 | Wipline Small Float Maintenance Tra | aining | Tunning |
| | ······································ | Free Socialflight.com | |
| | | | АМТ |
| | | | 1 Hours Total for AMT |
| | | | 1 Hours Total for IA Refresher |
| | | | Training |
| ALC-587 | Wiring and Electrical | | 5 |
| | e | Free FAASTeam | |
| | | | AMT |
| | | | 1 Hours Total for AMT |
| | | | 1 Hours Total for IA Refresher |
| | | | Training |
| ALC-117 | Working Healthy - 8 Steps for Protec | ting Your Health | |
| | | Free FAASTeam | |
| | | | AMT |
| | | | 1 Hours Total for AMT |
| | | | 1 Hours Total for IA Refresher |
| | | | Training |