

Kansas City Flight Standards Office

Airworthiness Facts

Date FY19 2nd Quarter



Federal Aviation
Administration

Airworthiness Section

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Inspection Authorization

Information:

Did you forget to renew? Yes, it does happen. If this happened to you see below or contact your Principle Inspector.

DURATION OF AN IA. An IA expires March 31 of each odd-numbered year (i.e., 2009, 2011, etc.) and ceases to be effective whenever any of the following occurs:

- The authorization is surrendered, suspended, or revoked. When this occurs, the inspector will request that the holder return the authorization, FAA Form 8310-5, Inspection Authorization.
- The holder fails to meet the renewal requirements of § [65.91\(c\)\(1\)](#) through (4).
- The holder fails to meet the first year's activity (i.e., 2008, 2010, etc.) requirements as described in § [65.93\(a\)\(1\)](#) through (5).
 - The holder no longer has a fixed base of operation or no longer has the equipment, facilities, and inspection data required by § [65.91\(c\)\(3\)](#) and (4).

FAASTeam Airworthiness,

Topic of the Quarter:

Pre-Ignition

Pre-Ignition, in a spark-ignition engine, is a technically different phenomenon from engine knocking, and describes the event wherein the air/fuel mixture in the cylinder ignites before the spark plug fires.

Detonation, as the name suggests, is an explosion of the fuel-air mixture inside the cylinder. During detonation, the fuel/air charge (or pockets within the charge) explodes rather than burning smoothly.

Because of this explosion, the charge exerts a much higher force on the piston and cylinder, leading to increased noise, vibration, and cylinder head temperatures. The violence of detonation also causes a reduction in power. Mild detonation may increase engine wear, though some engines can operate with mild detonation regularly. However, severe detonation can cause engine failure in minutes. Because of the noise that it makes, detonation is known as "engine knock" or "pinging" in cars.

The explosion of pre-ignition and detonation is like hitting the piston with a sledgehammer. The automotive term for the sound it makes is "Ping" (Something pilots cannot hear in aircraft). The ping sound is the entire engine resonating at 6400 hertz. Sounds like a ping, but it is an explosion with enough power to make the engine resound like a gong.

Both pre-ignition and detonation put tremendous mechanical stress on the engine, and transfer a great deal of heat into the piston deck. This can scour the protective layer of insulating air that separates the hot gasses from the aluminum piston surface causing the piston to melt (EGT is 1600 degrees. Aluminum pistons melt at 1200 degrees.) The force of these

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explosions can knock holes in pistons, bend connecting rods, overcome the lubrication film in the rod bearings, and hammer the babbitt out of rod bearings. Engine failure can happen in minutes.

Special Flight Permits (ferry permit):

Need a Ferry Permit, and the Local Flight Standards Office is closed? You can reach out and request the service from a Designated Airworthiness Representative (DAR).

How do you find a DAR?

Follow this link:

https://www.faa.gov/about/office_org/field_offices/fsdo/mci/local_more/media/dar.pdf

Notice of Proposed Rules

Airworthiness Directives:

Notice of Proposed Rule Making is your chance to make a difference. If you go through the process you can make a difference.

This link is for Proposed Rules Airworthiness Directives;

http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgADNPRM.nsf/MainFrame?OpenFrameSet

New Airworthiness

Directives:

This link is for Airworthiness Directives, for all aircraft engines, airframes, and appliances.

[http://rgl.faa.gov/Regulatory and Guidance Library/rgAD.nsf/MainFrame?OpenFrameSet](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAD.nsf/MainFrame?OpenFrameSet)

Service Difficulty Program:

When a system, component or part of an aircraft (powerplants, propellers, or appliances) functions badly or fails to operate in the normal or usual manner, it has malfunctioned and should be reported. Also, 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 is designed to detect trends. Any report can be very constructive in evaluating design or maintenance reliability.

The reports can be filed electronically or by paper. For electronic go to:

<http://av-info.faa.gov/sdrx/>.

For paper submission the form can be downloaded:

www.faa.gov/documentlibrary/media/form/faa8010-4.pdf

You may have to cut and paste this Link into your browser.

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Special Airworthiness Information Bulletins:

A Special Airworthiness Information Bulletin (SAIB) is an information tool that alerts, educates, and makes recommendations to the aviation community. SAIBs contain non-regulatory information and guidance that does not meet the criteria for an Airworthiness Directive (AD).

[http://rgl.faa.gov/Regulatory and Guidance Library/rgSAIB.nsf/Frameset?OpenPage](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/Frameset?OpenPage)

ADS-B out, the clock is ticking.

By January 1, 2020, ADS-B Out will be required to fly in [most controlled airspace](#). Federal Regulations [14 CFR 91.225](#) and [14 CFR 91.227](#) contain the details.

A reminder that 80% of the ADS-B Rebates have been claimed, there is still time to reserve one, but they are going fast.

Has the ADS-B system been tested? The FAA has a web site to get a free report on the operation of an installed system.

This information can be found using this link:

<https://adsbperformance.faa.gov/PAPRRequest.aspx>

Kansas City Flight Standards Office Information

Have you ever used an FAA Designee?

Designees are individuals and organizations in the aviation industry authorized to conduct examinations, perform tests, and issue approvals and certificates on behalf of the FAA.

For information on the local Designees, Designated Airworthiness Representatives (DAR), Designated Mechanic Examiners (DME), Designated Parachute Rigger Examiners (DPRE)

Use this link:

https://www.faa.gov/about/office_org/field_offices/fsdo/mci/

Next Quarter:

TBD

Airworthiness Facts are published on a quarterly basis and available via email only. If you would like to receive Airworthiness Facts or be removed from the mailing list, contact the Kansas City FSDO FAAS Team

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