

Cessna Pilots Association



CESSNA PILOTS ASSOCIATION

Santa Maria Public Airport

Headquarters, Educational and Technical Center

3940 Mitchell Rd, Santa Maria, CA 93455

(800) 343-6416 or (805) 934-0493 Fax (805) 934-0547

Website: www.cessna.org

E-Mail: www.cessna.org/inquiry

Dear Cessna 150 Owner:

FAA records indicate that you are the registered owner of a Cessna 150 aircraft. I am writing to brief you on several safety-critical topics that we believe every Cessna 150 owner should know about. Many Cessna 150 owners (even experienced ones) are not aware of certain important characteristics of this aircraft that are critical to safety.

I'm going to discuss the idiosyncrasies of the Cessna 150 fuel system and several other little quirks and areas to pay attention to on the Cessna 150. At the end of this letter, I'm going to tell you a little about the Cessna Pilots Association and urge you to become a member of this valuable technical information service for Cessna owners. But whether you decide to join CPA or not, I want you to be safe when you fly your Cessna 150. So please take a few minutes to read this letter carefully.

UNEVEN FUEL FEEDING

Have you been flying along and watched your fuel gauges show that your left tank is going down while the right tank remains full? This is a common problem with Cessna 150s. And the real shocker is that while the right tank is remaining full, the engine is actually running off of fuel from both tanks! What is causing the situation is the way Cessna designed the fuel tank venting system. When fuel is used from a tank it must be replaced with something, otherwise a vacuum is created which will either cause interruption of fuel to the engine or cause the fuel tank to begin to collapse. To avoid this in almost all fuel systems, whether they are in an aircraft, a car, or a lawn mower, fuel that is used from the tank is replaced by air from the outside. On all Cessna 150s this venting occurs by connecting the upper outboard portion of the left tank to the "I" shaped vent tube underneath the wing behind the left wing strut. This allows air into the left fuel tank as fuel is used. To vent the right tank, a vent inter-connect line is run from the upper inboard area of the left tank to the upper inboard area of the right tank thus, in theory, venting the right tank to the vented airspace of the left tank. Unfortunately, wing dihedral, where the wing tip is higher than the wing root, was not sufficiently considered. When the wing tanks are full, the vent inter-connect line is actually submersed in fuel and thus as fuel is used from the left tank, the air coming in from the vent pushes fuel from the left tank through the vent inter-connect line into the right tank, thus replacing fuel that is used from the right tank. And even after enough fuel is used from the left tank to bring the fuel level below the vent inter-connect line, the condition will continue as fuel sloshing in the tank periodically gets into the inter-connect line and pushed through to the right tank. In really severe cases, fuel usage from the right tank might not be indicated on the gauge until the fuel level in the left tank is as low as 1/3 capacity. The positive thing to keep in mind when experiencing this condition is that fuel is actually being used from both tanks and that fuel being used from the right tank is merely being replaced by fuel from the left tank. This means that even if the left fuel tank should go to empty, you will not experience fuel flow interruption as long as there is fuel in the right tank.

This condition can be minimized somewhat by adjusting the position of the fuel vent behind the lift strut on the left wing, making sure that fuel caps seal tightly so that the "head pressure" in one tank is not altered by a leaking cap, and assuring that the wing strut fairing is sealed against the strut, thus avoiding burbling air right in front of the vent. However, in the end the design of the system does not allow for

complete resolution of the problem. The Cessna Pilots Association has a handout available to its members that discusses this situation in even greater detail.

DRIPPING FUEL FROM THE VENT ON THE GROUND

Earlier I mentioned that the fuel tanks are vented to replace the fuel being used with air. To prevent fuel from going the other way, that is fuel leaking out the vent when the tanks are full or the left wing with the vent is lower than the right wing, a check valve is installed in the vent line. However, fuel is not a totally stable product, it will contract when cooled and expand when warmed. This means that if your aircraft is topped off with cool fuel from an underground tank, the fuel caps seal tightly and the check valve seals tightly, then as the fuel warms and expands there would be no way to relieve the pressure and eventually the tank would fail. To prevent this Cessna uses a check valve with a small hole in it to allow fuel to drip out the vent line when pressure builds up in the tank. Normally this drip will stop when the fuel cools or the fuel level drops a little bit. However, sometimes the pressure can build up so rapidly that a solid stream of fuel can come out the vent which is situated below the tank and a siphon effect can be established where several gallons will drain out before the stream stops. In addition, if the aircraft is parked in such a manner that the wing with the vent is on a low side, then fuel could continue to siphon for some time as the fuel siphoning out of the tank is being replaced by fuel from the other tank passing through the vent inter-connect line.

A FAA Airworthiness Directive required the use of fuel caps that have vents installed in them in case the primary venting system became blocked by such things as bugs or ice. The vent is visible as the shiny button in the center of the top of the fuel cap with an orange rubber seal on the bottom of the fuel cap. These cap vents are only secondary vents that are normally closed and only open if a vacuum is being created in the tank. In the case of the Cessna 150 only one vented cap is required to be installed, on the right fuel tank. You can have vented fuel caps on both tanks, and the only replacement caps Cessna sells are vented but if the particular Cessna 150 only has one vented fuel cap it must be on the right tank.

SEAT TRACKS

There have been a number of accidents caused by the pilot's seat slipping aft just as the aircraft rotates. Normally the seat is kept from sliding after the pilot releases the latch by one pin from the seat that fit into holes in the seat tracks. However, if the seat tracks or seat latching mechanism become worn, the pin may hang up on the edge of the hole and not be fully engaged thus allowing the seat to slip when the nose of the aircraft pitches up. The FAA issued Airworthiness Directive AD 87-20-03 R2 which calls for seat tracks and latching system inspection at every annual or 100 hour inspection.

A good habit to get into is having a 'Cessna Fanny'. That is every time you pull the seat into position on a Cessna single engine aircraft, you wiggle your hind end to try to dislodge the seat from it's latched position.

AUTO GAS

All Cessna 150s with the stock Continental O-200 engine can receive STC approval to operate on auto gas. The makeup of auto gas coupled with the Cessna 150s induction system produce a couple of interesting operating characteristics. First of all, because auto fuel vaporizes more readily than aviation gas, it is possible to develop carburetor ice at higher outside air temperatures on auto gas than on aviation gasoline. The amount of ice that is produced remains the same, but pilots will notice carburetor icing occurring at higher ambient air temperatures on auto gas than they are used to experiencing with aviation fuel.

Another characteristic on auto fuel is that when the engine is shut down remaining auto fuel in the induction system will condense in the intake tubes, run back down to the carburetor and drain out on the

ground. The amount of fuel that will drain out will vary from a teaspoon to a cup or so. Members of the Cessna Pilots Association report seeing this situation most often in the fall of the year when conditions are most conducive to producing the condensation of fuel in the intake. While this is a normal situation when operating on auto gas, if bothersome to the operator, can be minimized significantly by idling at a lean mixture with the carburetor heat on for thirty seconds or so immediately prior to shutdown.

It should be mentioned that most auto gas available at gas stations today contains ethanol. Ethanol laced gas does not meet the STC or TCDS requirements for use in a Cessna 150. If operating on auto gas the Cessna 150 operator needs to be sure that the fuel source meets the proper specifications.

NOSE WHEEL SHIMMY

We have all experienced nose wheel shimmy with Cessna 150 aircraft. Some will say that is just something you have to put up with. Not True. Cessna Pilots Association has researched this subject thoroughly and has put together a detailed Tech Note, free to members, that calls out all the causes for nose wheel shimmy and how to correct them. You can operate your Cessna 150 without any nose wheel shimmy.

CRACKS, CRACKS, CRACKS

While the Cessna 150 has shown itself to be a structurally sound aircraft, the service history indicates that there are areas on the aircraft that are prone to developing cracks that can be of significant concern.

Pushing down on the horizontal stabilizer to maneuver the aircraft on the ground is really not a good practice. Doing so will lead to cracking of two inboard ribs on the stabilizer. Cracks at the horizontal attach points and loose rivets on the leading edge skin are also a possibility. Better to use the tow bar.

Cracks in the vertical fin attachment brackets as well as the aforementioned horizontal attach bracket are being reported. Cessna has issued several service bulletins on this subject. Cracks in the elevator spar at the outboard pivot bracket are very common.

Knowing where and how to inspect these areas for cracks at annual inspection will allow for early discovery and simple solutions before the damage and solution becomes significant. This is the sort of information the Cessna Pilots Association brings its members on an on-going basis.

BULLETINS, BULLETINS, BULLETINS

Owners of any year Cessna should be aware of the status of the aircraft in regards to service bulletins. The Cessna Pilots Association has a free service available to members where they can print out a list of all Cessna service bulletins applicable to their specific serial number aircraft.

AND NOW...A WORD FROM YOUR SPONSOR

The Cessna 150 is a great aircraft. It has a excellent safety record, is a good trainer, does well as moderate range cross country aircraft and maintenance is fairly simple and inexpensive. But as with any mechanical device, time and service have shown that there are areas of concern that owners/operators need to be aware of, which is why CPA exists. The principal purpose of the Cessna Pilots Association is to provide our members with in-depth technical information about their aircraft that is simply not available anywhere else. Members receive our monthly CPA Magazine; each issue is jam-packed with news, technical articles, details of ADs and service bulletins, service difficulty reports, general aviation alerts, and other vital Cessna-specific information.

One of the most valuable aspects of CPA membership is access to the CPA website, www.cessna.org members-only section. You can read or download informational handouts that deal with the most frequently seen problems and frequently-asked questions about Cessnas: nosewheel shimmy, hot starts, oil on the belly, uneven fuel feeding, plus other technical information. The Members Only Forums area is a place where

members can communicate with other members, post questions, etc. If you need help troubleshooting an elusive problem or locating a hard-to-find part, the forums are the best place to get questions answered in a timely manner.

The response you receive in the forums represent the collective wisdom and experience of several thousand Cessna operators. The CPA tech staff also monitors the forums to see that the information that gets posted is accurate and complete.

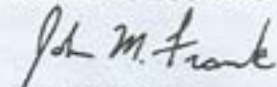
CPA is the only Cessna owners association with a full-time staff of A&P mechanics and pilots available daily to answer your questions. Each one is a real Cessna expert. CPA also maintains the largest Cessna technical library outside of the factory. If you join CPA and call with a 150-related problem, you'll wind up talking to one of our Tech Reps. Their job at the Cessna Pilots Association is to provide technical support to our members who own 150s. They know the aircraft intimately and can answer almost any 150 question you might have. Two of our Tech Reps own Cessna 150s themselves and one of them just completed converting a 150 to tail wheel configuration.

The Cessna Pilots Association also has a great aircraft insurance program managed by the Falcon Agency. Should you wish information on the program, call Falcon's Bob Haag at 800/880-2727.

CPA also offers a terrific two-day Cessna 150 Systems and Procedures Course. Our instructors are all world-class 150 experts. When you graduate from this course, you will know more about your Cessna 150 than 99% of all 150 owners, and you'll probably understand its systems better than most A&Ps do. There is no better way to learn so much about your aircraft so quickly.

Most of our members feel that CPA membership is one of the best bargains in aviation. But whether or not you choose to join CPA, please pay careful attention to the information in this letter. Even though the 150 has an excellent safety record, accidents and incidents do occur to Cessna 150 operators. A little knowledge and reasonable caution will prevent you from adding to the statistics. It is easy to join The Cessna Pilots Association, simply return the enclosed application or call our Headquarters at 800/343-6416. You can also join on line at the Cessna Pilots Association web site, www.cessna.org.

Lets All Of Us Be Careful Up There,



John M. Frank
Executive Director

