



August 29, 2019

Boyce Jones
ASE – Propulsion
Federal Aviation Administration, Atlanta ACO
1701 Columbia Ave
Atlanta, GA 30337

RE: FAA Airworthiness Concern Sheet; Piper PA-28-140/-150/-160/-180 Cherokee, PA-28R-180/-200 Cherokee Arrow; Flat Plate Fuel Selector

Dear Mr. Jones,

On August 12, 2019, the FAA notified AOPA of an Airworthiness Concern Sheet (ACS) for certain Piper PA-28 models. The ACS was targeted at Piper's first-generation fuel selector mechanism that does not include any protection against inadvertent disruption and/or over-rotation which could result in an operator mistakenly selecting the OFF position. Due to a recent reported concern, the FAA is looking into the possibility of an unsafe condition and issued the ACS to gather additional information. AOPA notes that it is unaware of the recent reported concern or its details since it was not shared with or included in the ACS.

The intent of the ACS was to request information from owners and operators of the affected PA-28 models and serial numbers. Specifically, the ACS asked the following questions –

1. Do you currently have the Generation 1 round, flat plate fuel selector installed on your aircraft?
If 'Yes' –
 - a. Have you had any issues with the operation of the Generation 1 fuel selector that resulted in fuel management concerns (i.e. mistakenly selected the OFF position instead of the intended tank)?
 - b. Do you have any concerns with the operation of the Generation 1 fuel selector, regardless of whether you have had any issues with the fuel selector that resulted in fuel management concerns?
2. Does anyone have any specific concerns related to a possible FAA action to issue an AD mandating the removing of the Generation 1 fuel selector and installation of the Generation 3 fuel selector?

Upon receipt of the ACS, AOPA published a story (link provided below), on our website, dated August 14, 2019 and included it in our weekly electronic newsletter that went out to 215,000 members.

<https://www.aopa.org/news-and-media/all-news/2019/august/15/some-piper-fuel-selectors-hoses-draw-faa-scrutiny>

In response to the story and web article, ten members contacted AOPA and provided written comments, provided below –

Comment 1 –

I own a 1966 PA 28 180 with 2 other people. This plane has the first-generation fuel selector. We have never had a problem with the selector and selecting the position that we intended. If the detents are working properly it is easy to select the wanted position. We see no need to replace this selector. Maybe some that aren't working properly need to be rebuilt so the detents are positive.

Comment 2 –

I wanted to comment on the Piper fuel selector issue. I've had a 1968 PA-28-180 for about six years and have flown about 600 hours in it, and I've not had any concerns about the fuel selector. Both the left and right positions have a definite 'detent' feel about them, and I've never had an issue with setting the selector where I want it.

I'd suggest the fuel selector is very safe and reliable, and I'd vote to keep them in service.

Comment 3 –

1967 PA-28-180. I have Generation 1 fuel selector. I've had the plane 2 years.

No issues with fuel selection when doing preflight and during flight when selecting appropriate tank. The detents work perfect and the placard is highly visible even being located to the left of my knee. I see no reason to upgrade or change the current design.

Comment 4 –

I am the owner and sole operator of a 1965 PA28-180.

In response to your Airworthiness Concern Sheet I submit the following responses:

1. Do you currently have the Generation 1 round, flat plate fuel selector? Answer: Yes
 - a. Have you had any issues with the operation of the Generation 1 fuel selector that resulted in fuel management concerns (i.e. mistakenly selected the OFF position instead of the intended tank)? Answer: No
 - b. Do you have any concerns with the operation of the Generation 1 fuel selector, regardless of whether you have had any issues with the fuel selector that resulted in fuel management concerns? Answer: No
2. Does anyone have any specific concerns related to a possible FAA action to issue an AD mandating the removing of the Generation 1 fuel selector and installation of the Generation 3 fuel selector to minimize the risk of unintended fuel management errors?
 - a. Answer: Yes, SAIB CE-14-22 was issued based on a single report of a pilot inadvertently selecting the off position of the fuel selector valve and a lack of fuel selector valve maintenance in a PA28-180C. A pilot may inadvertently leave a mixture leaned during descent and starve an engine of fuel on landing, fail to switch tanks and starve an engine of fuel on landing, fail to turn on the electric fuel pump and subsequently encounter an engine driven fuel pump failure causing fuel starvation on landing, or any other number of human errors. An AD dictating an engineering solution to an isolated incident of human error is not a proportional response and raises a significant concern regarding the correct installation of replacement fuel selector valves. Additionally, aircraft with the Generation 1 fuel selector are primarily operated by owners whom are intimately familiar with their operation and not used in training or rental fleets due to the age of the airframe.

Comment 5 –

I've owned my 1967 PA28-140 for over 20 years now. I regularly have my IA lube up this selector at each annual and I occasionally tighten the hold-down bolt that goes down through the middle of the selector. In my 20+ years of ownership and using this 1st-gen selector, I have never had any issue at all with wrong tank selection, or worse, accidental shutoff resulting in fuel flow interruption. My guard against that is to glance at current selector position, glance outside, then move the selector to the

desired position and glance at it again to assure it is where I want it. The detents definitely help assure it is centered where I want it. I see no reason at all to change the way this operates.

If I was to suggest a change, it would be a better way of keeping that hold-down bolt tightened, although there are ways to keep it tight longer.

Comment 6 –

My '69 Piper Arrow 200 has the original fuel selector valve and I have had ABSOLUTELY NO PROBLEMS with it in the 17 years I have owned the airplane. I never changed the fuel selector bezel for the same reason. My selector has positive detents and there has NEVER been an issue knowing where the selector handle is pointing.

Comment 7 –

I am the owner of PA 28. I like the fuel selector mechanism as it is. It is stiff enough to make inadvertent changes nearly impossible. Yet it is easy to switch tanks with a positive feel for the selected position. I had it overhauled about ten years ago. It had worked almost as well before the overhaul and no significant wear was found.

I would very much like to avoid having to replace the fuel selector mechanism with something newer and "safer." For safety it is best to avoid unnecessarily opening the fuel system.

Every few years new portable gasoline container designs are mandated apparently because of safety concerns. The net result is that new "safer" designs have become almost impossible to use for filling small power equipment and boats. I hate to imagine what a new "safer" fuel selector mechanism for my Cherokee might be like.

Comment 8 –

1. I am a 50% owner of a 1965 PA-28 aircraft with a serial number within the range specified in your ACS. There is currently a Generation 1 fuel selector installed in the aircraft on the lower left sidewall as per your diagram.
 - a. We have owned this aircraft for two years and have never had any issues with the operation of the fuel selector. We generally move it from L to R to L, etc to manage fuel usage while in operation. We rarely use the OFF position.
 - b. I have never had any concerns with the fuel selector as it operates as expected.
2. I do not see the need at this time to update to a Generation 3 fuel selector as the one in my aircraft functions properly and safely. Therefore, since no benefit (safety or functional) would be obtained with the updated version, I feel there should be no need to issue an AD.

Comment 9 –

I do not consider the fuel selector to be of concern. It is absolutely not possible to "idiot-proof " every single control in an aircraft. If a pilot inadvertently shuts off the fuel supply, it should be considered a fuel mismanagement situation. Any fault should be placed with the instructor for not providing an adequate check-out, and with the pilot who had his head where the sun doesn't shine.

Comment 10 –

I have flown an early model PA28-140 for approximately 11 years and have owned and operated a PA28-140 for the past five years.

My response to this request is as follows:

Question 1) Do you currently have the Generation 1 round, flat plate fuel selector installed on your aircraft (For clarity, the fuel selector is located in the cockpit on the lower left sidewall, near Pilot's left leg)?

YES

If the answer to the previous question was 'Yes':

a. Have you had any issues with the operation of the Generation 1 fuel selector that resulted in fuel management concerns (i.e. mistakenly selected the OFF position instead of the intended tank)?

NO

b. Do you have any concerns with the operation of the Generation 1 fuel selector, regardless of whether you have had any issues with the fuel selector that resulted in fuel management concerns?

NO

Question 2) Does anyone have any specific concerns related to a possible FAA action to issue an AD mandating the removing of the Generation 1 fuel selector and installation of the Generation 3 fuel selector to minimize the risk of unintended fuel management errors?

YES, I am concerned about the FAA issuing an AD mandating removal of the Generation 1 Fuel Selectors.

EXPLANATION: With generation 1 valves the replacement of merely the Cover Plate to an embossed / indented plastic Bezel is not a viable solution as the generation 1 valve has Four positions, not Three, and is "clocked" differently than the generation 2 & 3 valves. An AD mandating this would not only require the replacement of the "Cover Plate and Lever", but possibly the "Selector Valve" itself greatly increasing the cost of compliance. These costs coupled with the added cost of labor and administrative fees (filing of Form 337 and any additional paperwork) will make it at best questionable as to being a viable expense for an Aircraft with a value of only \$17,000.00 to \$25,000.00 and used primarily for recreational purposes. This may be why no previous action on the generation 1 Selectors has been implemented and they remain, specifically, excluded in AD's addressing Piper Fuel Selectors to date.

These aircraft have been in operation for more than 5 decades now with hundreds of thousands of safe operating hours. Mandating a mechanical solution to a perceived concern that I, nor anyone I have encountered, have NOT experienced would most likely force the grounding of hundreds if not thousands of sound, economical GA aircraft - unnecessarily.

Please consider my response to Airworthiness Concern Sheet Dated August 5, 2019 and note my opposition to mandating an AD at this time.

AOPA Comments

Due to not knowing the details or circumstances involved in the recently reported concern or who it came from, coupled with the comments we have received from owners and operators, outlined above and in a number of phone conversations, AOPA would not support any FAA subsequent corrective action to issue an Airworthiness Directive (AD), mandating the removal of Generation 1 fuel selectors and installation of Generation 3.

In lieu of any mandated action, AOPA recommends the agency further its work to make owners aware of the issue through targeted education and outreach. AOPA stands ready and willing to help the agency in that effort.

AOPA appreciates the opportunity to provide comments on this airworthiness concern and stands ready and willing to provide any assistance in making a final determination.

Sincerely,



David Oord
Senior Director, Regulatory Affairs