

CESSNA FLYER

A high-angle, low-altitude photograph of a white Cessna floatplane with blue and green stripes, flying over dark blue water. The plane is viewed from the side and slightly from behind, showing its wings, tail, and floats. The water surface is blurred due to motion, suggesting the plane is moving quickly.

VOL. 16 ★ ISSUE 04 | APRIL 2019 | cessnaflyer.org

**Float Options,
Float Care and More
with Wipaire Inc.**

**A Comprehensive Guide
to ADS-B — Part One**

Oscillating Ammeters

STEVE ELLS



QUESTIONS & ANSWERS

Replacing seat rails and adding secondary seat stops

Hi Steve,

My mechanic just sent me pictures of the seat rails in my 1975 Cessna 172M, Serial No. 63472. He said the rails are no good and that I have to replace them. They have big cracks in them.

He wants to buy new seat rails from a company called McFarlane. Is that a good idea? I thought aftermarket stuff isn't as good as the parts from Cessna.

I don't want to regret buying aftermarket parts. What do you think?

Seat Rail Sandy

Dear Sandy,

From your description of the cracks, your seat rails are beyond worn out. Good find by your mechanic; he deserves a six-pack of doughnuts.

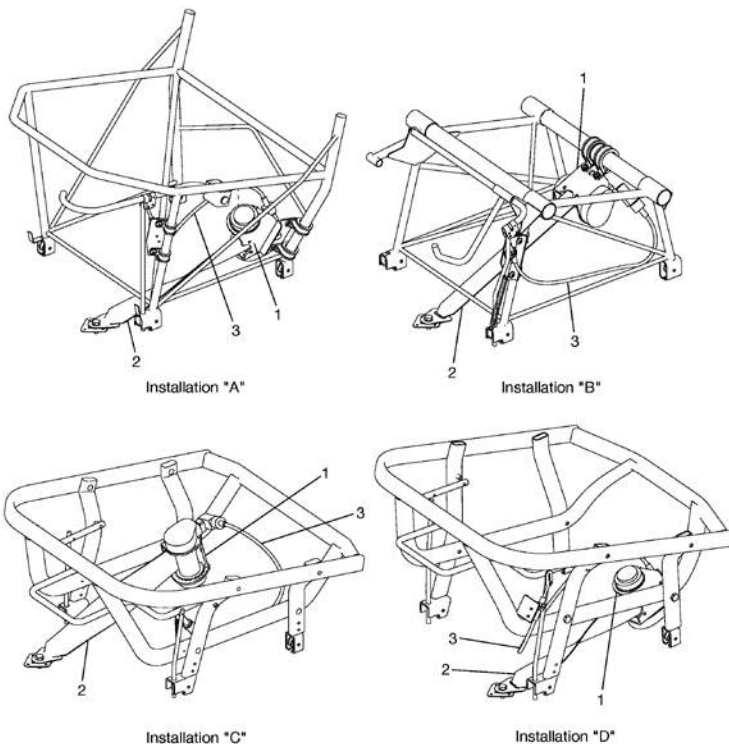
I am greatly in favor of buying the replacement seat rails from the company your mechanic has recommended. McFarlane Aviation is, in my opinion, a godsend to Cessna owners. This company is in Baldwin City, Kansas, and seems to add more and more FAA-approved replacement parts for Cessna singles every day.

In my opinion, the McFarlane replacement seat rails are far better than the rails from Cessna. They are thicker through the web section and they are less expensive.

The seat rails for your 172M are (from left to right) Part Nos. 0511243-5 (outboard) and -4 (inboard) on the pilot's side; and 0511243-4 (inboard) and -6 (outboard) on the copilot's side. McFarlane uses Cessna part numbers and adds MC as a prefix to denote a McFarlane-produced part, so 0511243-5 becomes a MC0511243-5.

The industry has overwhelmingly chosen the McFarlane seat rails over the Cessna rails, to the point where it's hard to find a vendor that sells the seat rails made by Cessna. All the big parts vendors such as Aircraft Spruce and Specialty sell McFarlane seat rails.

Today's price for a set of McFarlane seat rails for your 172M is \$972. McFarlane also sells templates (\$6 to \$8, depending on model) that I've used to duplicate the rivet pattern of the origi-



The Cessna inertia-reel-type stop can be installed in several different orientations. Cessna is providing the secondary seat stop parts free of charge until the end of 2023. Owners still need to pay for installation.

nal rails. The rivet spacing and placement vary from airplane to airplane, so using the template to transfer the rivet pattern to the new rail is critical.

The original rails were riveted in place when the floor assembly was being built up. Therefore, it can be very difficult to get the access needed to buck the backside of the new rivets. I've had to modify many a bucking bar to cover the nooks and crannies under the floor.

On Aug. 26, 2002, the FAA issued Revised Special Airworthiness Information Bulletin (SAIB) No. CE-90-03R2. This bulletin contained two important messages. First was the admonition that new seat rails are delivered with pilot holes only and that the installation is only airworthy if all the original fasteners are installed. That seems like a no-brainer, but I have seen rail installations that were approved for return-to-service without filling all the original holes with a fastener.

The second message in the SAIB is the approval to use screws

Steve Ells has been an A&P/IA for 44 years. He is a commercial pilot with instrument and multi-engine ratings and loves utility and bush-style airplanes and operations. Ells was a tech rep and editor for Cessna Pilots Association and associate editor for AOPA Pilot. He owns Ells Aviation (EllsAviation.com) and lives in Templeton, California. Send questions and comments to editor@cessnaflyer.org.

in lieu of rivets to install the rails if the screws meet certain criteria and if the rails are spot-faced (to provide a flat surface) at each hole and the holes are reamed to fit the shank of the screws. This is the text:

It is permissible to substitute screws with ultimate tensile strength exceeding 50 ksi. Example of such screws are AN515, AN520, AN525, MS35206, MS35207, MS35214, MS35215, MS35218, MS35219, MS51957, or MS51958 with lock nuts provided the holes are ream fit and spot faced.

McFarlane also sells rivet kits and screw kits as well as the proper reamers and spot facing tool.

Since spot facing and hole reaming adds to labor costs, my preference is to use rivets in all the holes that are accessible for riveting and finish the job using screws. Riveting is quick and inexpensive. McFarlane's rivet kits cost just over \$25 while the screw kits are priced at slightly less than \$120. The spot face kit sells for slightly over \$80.

There are several Airworthiness Directives that focus on Cessna seats and seat rails. The original AD issued in 1987 was 87-20-03R2. It was superseded by 2011-10-09, which applies to all Cessna single-engine airplanes and the T303, 336 and 337 twin-engine Cessnas built prior to 1996. The 2011 AD says: *[Existing AD 87-20-03R2] currently requires repetitive inspections and replacement of parts, if necessary, of the seat rail and seat rail holes; seat pin engagement; seat rollers, washers, and axle bolts or bushings; wall thickness of roller housing and the tang; and lock pin springs.*

The new 2011-10-09 AD clarifies some of the inspections steps and adds illustrations.

McFarlane also sells a seat track wear gauge (McFarlane Part No. Gauge SR1) that makes wear inspections simple.

This is a very important AD, especially for early model, pre-1974 Cessna singles that only had a single locking pin to engage the hole in the seat rail. 1974 and later singles had two locking pins that engaged holes in the seat rails.

Wear in seat rails and seat rollers, roller housings and other parts has resulted in seats slipping during flight operations. If slippage occurs during takeoff roll, the seat will slide aft, rapidly taking the pilot and his grip on the control wheel with it. The result is an extreme pitch up at high power and low airspeed. This has resulted in more than one fatal crash.

Cessna issued Service Bulletin SEB89-2 titled "Pilot Seat Secondary Seat Stop Installation" back in 1989. It was superseded by SEB07-5 and has now been revised six times. *(A link to the most current version can be found in Resources. —Ed.)* The seat stop from Cessna consists of an inertia-reel-type strap reel that is attached to the seat base. The end of the strap is attached to a reinforced stud that is mounted in the floor. A release handle lets the reel rotate. When the handle is released, the reel locks, preventing the seat from sliding aft.

According to SEB07-5R6, the parts for the Cessna secondary seat stop system are free when the parts are ordered by a Cessna Service Center. Installation times vary from 2.5 to 4.9 hours. The free parts deadline has been extended to Dec. 31, 2023. To receive credit, the work must be completed by a Cessna Authorized Service Facility and a warranty claim submitted.

continued on Page 83...



Aero Technologies' secondary seat stop, the Saf-T-Stop, is sold in pairs and slides over the pilot and copilot seat rails. Tightening the ring bolt puts pressure on the top of the seat rail. The company also makes a cargo ring for Cessna seat rails (topmost image).



Loree Air offers the Aerostop seat lock secondary seat stop. This device slides over the Cessna seat rail and is secured using a lever, which applies a pressure pad on the top side of the seat rail.



McFarlane Aviation's replacement seat rails are thicker through the web section than the OEM rails, and are less expensive, too. They are a popular choice with Cessna owners.

QUESTIONS & ANSWERS
continued from Page 22...

A quicker-to-install and readily-available solution is to use aftermarket stops, called secondary seat stops. These are easy to install on seat rails and act as “prevents” to make sure that there’s a secondary system to keep the seat from sliding too far aft. One is by Aero Technologies Inc. It’s called the Saf-T-Stop (*Street price is around \$50 for a pair. —Ed.*). The other I know of is the Aerostop (*Current list price is \$189.95 on the Aerostop website. —Ed.*).

The Saf-T-Stop and the Aerostop slide over a seat rail. The Saf-T-Stop is then secured in position by screwing in a ring bolt which applies pressure to the top of the rail. The Aerostop is secured by a lever that applies and releases a pressure pad that bears on the top of the seat rail.

Pay attention to the seat rails and seat assemblies for wear. Replace worn parts and install one of the secondary seat stops or the Cessna system. You’ll be glad you did. **CF**

IMPORTANT: This article describes work that may need to be performed/supervised by a certificated aviation maintenance technician. Know your FAR/AIM and check with your mechanic before starting any work.

Resources

SEAT RAILS

McFarlane Aviation
mcfarlaneaviation.com

SECONDARY SEAT STOPS

Aero Technologies Inc. (Saf-T-Stop)
aerotechnologiesinc.com

Loree Air Inc. (Aerostop)
aerostop.net

BAR-STYLE SEAT STOP KIT
– CFA SUPPORTER

Wag-Aero
wagaero.com/airframe-parts/cabin-components/seat-rails-rollers-stops/seat-stops/cessna-seat-stop-kit-2.html

FURTHER READING

AD 2011-10-09, SAIB CE-90-03R2, SB 07-05R6
CessnaFlyer.org/forum under “Magazine Extras”

ATTENTION C182 LEGACY OWNERS!
THE BEST PERFORMANCE MODIFICATION VALUE FOR C182 LEGACY MODELS ON THE MARKET TODAY!

- Increased horsepower from 230 hp to 252 hp
- Increased climb up to 400 fpm
- Increased cruise up to 5-8 KTAS
- No additional fuel burn
- No engine or prop change required for Q-R Models

1 866 J JEWELL (866-553-9355)
662-252-6377
www.johnjewellaircraft.com
sales.info@johnjewellaircraft.com

Holly Springs-Marshall County Airport (M41)
Holly Springs, Mississippi USA

John Jewell AIRCRAFT, INC.
Serving the Aviation Industry Since 1966

PARTS AVIONICS ENGINES PROPS

DODSON INTERNATIONAL

#1 for Aircraft Parts Support Since 1984
Same-Day Worldwide Shipping
We Price Match!
Search our Parts for Free 24/7
DODSON.COM

OVER 5 MILLION IN-STOCK PARTS!

CALL US TODAY AT 785-878-8000

Alpha aviation, inc.
ALPHA AVIATION.com

LARGEST SELECTION READY TO SHIP

ADD 3-POINT DIAGONAL SHOULDER HARNESSES
2 FRONT SEAT POSITIONS
170 / 172 / 180 / 182 / 185
\$949
to
\$1169
FAA/PMA TSO-C114

REPLACE AGING SHOULDER & LAP BELTS
CESSNA 100 - 200 SERIES

Inertial Reel \$529
Fixed Strap \$409
Rear Lap Belt \$99
FAA/PMA TSO-C114 / e22g

AIRCRAFT JACKS
3 & 8 TON MODELS
Ships Ground
from \$309

1-800-653-5112

Standby Alternator STC
for Cessna 182T, T182T, 206H & T206H Aircraft

Provides continuous 20 amp 28 VDC output **\$3,750**

Freedom Aviation
is a Cessna single and multi-engine service center and parts distributor.

FREEDOM AVIATION

Contact **Jason K. Moorefield**
Email **vaavionics@aol.com**
Phone **434-237-8434**
Toll Free **800-543-6845**

www.flyfreedomaviation.com