

Aguilera Jason

From: SAM TABER [REDACTED]
Sent: Thursday, July 21, 2016 9:20 AM
To: Aguilera Jason
Subject: Re: Corsair brake master pics

Hi Jason ,

The answer to your first question is yes and no. Let me explain, We had received these master Cylinders from the Brake builder (not the Cyl manufacturer which is Grove Landing Gear Systems In CA). He used these clys as an "off the shelf" non modified unit to power his single floating disc wheel brakes.

When we had done the installation , about 2 weeks ago, the first taxi test resulted in the same o ring (same replenishing valve) failing on the Right master cyl. The Rt brake had a pedal failure after S turn taxiing and brake dragging for about 1500-2000 '.

We disassembled the RT master and found that the O ring had been cut .

At that point ,there was no burr of any sign of a defect which would explain the cut. At that point , we disassembled the Left cly to inspect it and all seal were intact. We then replaced all o rings on the piston of both brake cylinders with new to insure no seal damage was being missed by us.

Next taxi test resulted in a brake fluid boil (Mil -5606) of RT side. Side note: About this time a/c the owner , who was operating the airplane, told us that he recalled that the brake builder wanted to "speak with the installer before installing the brakes" . (no ppwk was included in the brake kit, but this brake assy had been installed on another F4U-7 Corsair which operated well, so we assumed we were getting a proven system).

The brake builder informed me that the original 5606 will not work in the brake due to high operating temps of the brake and he wanted us to use Royco 782 High Temp synthetic fluid Mil PRF-83282. (Nice to know after the fact ! ST)

The system was drained and flushed per instructions and filled with Royco 782. Last Thurs 7/14 I taxied the aircraft about 8000' with "S" turn braking, crosswind taxi , high sped taxi to full stop and all normal ground operations . No issues or hesitation with the brakes at all. Note: I also did a full pressure pedal push to simulate a full locked brake to pressure test system prior to taxi tests.

On 7/ 19 the owner taxied about 900' to run up area and then to runway for take off. He told that during final approach he had tested the brakes serval times (normal procedure for the original Corsair brake system) with no defects. Shortly after the tail wheel was on the runway upon normal landing , the plane gently left the side of runway (to the aircraft right side) during which time I saw full left rudder applied.

He described "loosing" the Left pedal pressure. The photos you have are of the Left master failure of that landing.

I will attach a photo which shows Both sheared o rings FYI.

Wow, long answer sorry:)

To my knowledge , there are 3 of these conversions in the field . Number one or two (not sure) is also her at my shop having been ferried in last fall. It will not leave the ground until I get the answers needed!!!!!!! The

3rd Corsair is a different model and uses other type of master cylinders. But he is to be included in info as a heads up. (F4U-1 and -4 use compression masters and F4U -5 and 7 use extension type.)

I had planned on calling the manufacturer later today to get a dialog started. I will pass on any info from them.

If you need more info let me know (I will try to keep it shorter:)

Have a good day,
Sam



On Jul 21, 2016, at 8:31 AM, Aguilera Jason wrote:

Sam,

Was the O-ring installed by the manufacturer? Maybe they have seen this before.

I know the warbird community is tight knit...have any of your fellow warbird mechanics dealt with this issue?

Jason Aguilera
Senior Air Safety Investigator
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From: [Ray.P.Yank](#) [REDACTED]
Sent: Thursday, July 21, 2016 8:50 AM
To: Aguilera Jason
Subject: FW: Corsair brake master pics

FYI

Ray Yank
Safety Inspector
FAA Flight Standards
MKE FSDO GL-13



From: SAM TABER [REDACTED]
Sent: Wednesday, July 20, 2016 4:53 PM
To: Yank, Ray P (FAA)
Subject: Corsair brake master pics

Hi Ray,

Here is a photo of the brake problem. I am pinching the Left master piston assy. The black o ring is sheared and the shaved off part is sitting on my thumb.

I cannot say why this o ring failed the way it did but it had to happen by the o ring coming out of the groove for some reason and then getting pinched (and cut) which would compromise the brake supply pressure by bypassing fluid (pedal going down).

If you need anything else, just ask

Sam Taber



<image001.jpg>

<image002.jpg>

<image003.jpg>

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