

**From:** "jeffrey E." <jeevacation@gmail.com>  
**To:** Larry Visoski <[REDACTED]>  
**Subject:** Re: Scan Jan 23, 2017, 10.31 AM  
**Date:** Sun, 29 Jan 2017 16:52:50 +0000

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Where is overboard

On Sun, Jan 29, 2017 at 12:35 PM Larry Visoski <[REDACTED]> wrote:

Pete idea of Flap and water separator below

Sent from my iPhone

Begin forwarded message:

**From:** Pete Rawson <[REDACTED]>  
**Date:** January 28, 2017 at 6:29:47 PM AST  
**To:** Larry Visoski <[REDACTED]>  
**Subject:** Re: Scan Jan 23, 2017, 10.31 AM

Hi Larry,

As per our phone conversation-

The flap selection should have caused the normal THUMP in the right side of the cockpit when selected if the shutoff valve opened. This is disabled by the asymmetry system.

Since you didn't get that, I suspect that the asymmetry system, ie switches are at fault.

There are 3 on each side mounted in a replaceable unit. Not a big ticket item.

If the THUMP was heard, I would suspect the pedestal switches.

You also selected 20 flaps and that proves out an asymmetrical shutdown since there was no response. There is no way to override that condition by the crew actions.

Emergency flap switch bypasses the pedestal and flap position switches, but won't open the shutoff valve if there is an asymmetry signal loss. No movement allowed.

You said that the flaps worked after doing the go around and cycling the handle positions. None of those actions would effect asymmetry trip, but high resistance in the switches could drop down and allow function. I don't see this being a weak actuator since there is no real force against the flap from zero to 10, mostly aft movement, and minimal air-load.

Since they did not originally respond, I suspect that the asymmetry switches are weak, ie high resistance, one was replaced in 2006, the other in 2015.

You can check the valve opening by turning the aux pump on and flipping the emer toggle while on the ramp. You should hear the thump.

As stated for the next flights-

Shutdown with flaps 10 or 20 after landing, so you can get out of there.

If you do not hear the THUMP when selecting flaps, try switching the emer flap switch on and see if you hear the THUMP. If not, confirms asymmetry issue.

As to the water separator description ;

The water separators are mounted downstream of the air cycle machines (ACM)

They are cone shaped, with the cold ACM output air entering the pointed side.

An ACM can produce temps below freezing at the output side.

The humid air is condensed onto the fabric (sock) to slow the flow, and condense the water.  
The cones have louvers to spin the air, and separate the water for collection.  
The water is then sent overboard through an asperator and over the heat exchangers to assist cooling them and increasing their efficiency.  
The cones have a relief valve built in.  
The point of the cone is spring loaded and designed to allow flow to go around it.  
There is a dedicated anti ice system for each side, similar to the pre-coolers. It maintains about 37 degrees. If the sock builds up ice the pressure will increase, and the relief valve will be forced to open. It would allow air to stop going through the sock which would then warm enough to accept air and the relief close again.  
That could cause the vibration issue.

The units were replaced, and the issue seems to have been resolved. The relief valve is part of the cone assembly.

Hope this helps-  
Regards  
Pete

Sent from my 3G network, Me, Myself and I on my I-Pad!

On Jan 27, 2017, at 5:49 PM, Larry Visoski <[REDACTED]> wrote:

Pressure IV

Created with [Scanner Pro](#)

<Scan Jan 23, 2017, 10.31 AM.pdf>

Sent from my iPhone

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