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**From:** jeffrey E. <jeevacation@gmail.com>  
**Sent:** Sunday, April 10, 2016 11:50 AM  
**To:** Larry Visoski  
**Subject:** Re: GIV update

any issues with turning on wing heat at altitude?

On Sun, Apr 10, =016 at 7:17 AM, Larry Visoski [REDACTED] <mailto:[REDACTED]> wrote:

Jeffrey  
Message fr=m Pete, below:

Dave and I are at airport no= in case you decide to depart earlier than 10am,, Plane is fuele= and ready,.

From Pete:

Hello Jeffrey,

Larry knows that I am long winded with my responses,<=span>

Here is my brief-

Feel free to read all at =our leisure-

They are mostly my thoughts=so far-

I suspect that the right precooler (fan air) modulating valve is bad=

They are both original.

From the last vid=o and Photo's;

The readings show that the left side is being given = voltage to the Torque motor sending a pressure to command the valve =o be partially closed.

Zero volts, zero =ressure is for full open, ie: cold air into the precooler and lowering the=temperature into the supply system.

The =signals show a steady state condition; 3 Volts, 3 PSI.

The valve has been sent signals, and has responded correctl=, and therefore is in the proper position to maintain 400 degrees in the s=pply system.

This is being monitored, an= controlled by the controller, and the sensor inputs.

There is no signal from the valve, the temperature monitori=g circuit controls the changes required.

The right side shows that it is b=ing commanded to close due to the high voltage, and pressures.

<= style="margin-top:0px;margin-bottom:0px">( 9 volts, 9 PSI)

=t seems that the signals are not being followed, or that the valve cannot =espond to them.

Since the control system=does not see the temperature change from the sensors, it continues to incr=ase the pressure to the valve.

Brief complete-

As for the full version-=/p>

This was done as a draft, please excuse any dup=ication for items noted in the brief, these were my original thoughts.

I agr=e with all that you stated-

The guidelin=s are for what the electrical system does.

We have found a bad controller- the sweeping voltage and pressures, and =eplaced it-

There was also a bad sensor =hat was replaced-

=span style="background-color:rgba(255,255,255,0)">We have swapped the pr=ssure regulator/torque motors.

Latest sw=p was the Anticipators.

There seem to be=multiple issues, and we are narrowing them down.

I believe that the electrical and control systems are now operatin= normally.

Now on to the air side of it.=/span>

F=om the last video, and photo's-

I be=ieve that the left side is operating properly.

The Temp is being controlled by sending a regulated pressure to the =alve, and it responding.

The pressure su=plied is closing the valve, and maintaining the 400 Degrees requested.

No voltage equals no pressure, Valve open, l=owering the Temperature.

<= style="margin-top:0px;margin-bottom:0px">The right side shows giving a close signal to the pr=cooler (fan air) valve.

High Voltage, an= pressure supplied to the Valve on that side to close, and increase the te=perature.

That side doesn't seem to =espond.

The valve has a 4 inch input/out=ut side.

The control line is about 1/4 i=ch.

That is one of the lines that we fou=d collapsed, and started us on this direction.

Is it possible that the suppl= air is not being able to overcome the pressure at the valve?

The pressure read at the panel is a control pressure,=also known as "Muscle air".

Ma=be the input air at the 4 inch diameter inlet, can overcome the control ai=.

I again suspect an issue with the LP v=lve-

There is no valve position, or feedback signal from the valve-=/p>

The electrical signal is showing to close the valve,

The pressure is also showing to close the valve.

One way to check is to select Wing heat on-

The system causes the applicable side to remove the signal, and allow the valves to go full open.

Wing heat is not normally used at altitude-

When the aircraft is in below 0 degrees temps, there is no reason, since any precip won't stick.

Ask Larry if there any issues with selecting the wing heat on at altitude-

I don't believe that there are any limits to the altitude, but the fuel burn will be increased.

Just a quick check-</=>

The ground=checks for the precooler system are limited,

Engines running, there should be no air flowing from the lower pylon heat exchanger at idle-

Increase power, and there should be airflow noticed.

My training manual shows that the valve should start to open at about 74% HP on the ground,

Wing heat on, there should be airflow.

Regards,  
Pete

Sent=from my iPhone

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=AO please note

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