

02-14-2018
To: Mike Costallos
Re: N6UP

Mr. Costallos,

Following is what I found upon initial damage inspection of TT441 on 01-30-2018.

The crew explained that while flying in IMC and between two thunderstorms, they turned the radar on and a "pop" was heard behind the pilot's seat. Shortly afterwards the electrical system started failing. The pilot's encoding altimeter was "frozen" indication at 11,800 feet. They further explained that while attempting to land they had no landing gear control or indication. They performed emergency extension and "thought" the landing gear was down. There was no communication with the tower to confirm landing gear position, due to failed radios.

Upon arrival at EFD, I performed a lightning strike inspection of the aircraft with no defects noted. I removed the pilot's seat to access the junction box. Upon inspection of the junction box I found the right generator current limiter blown. All other junction box current limiters tested good. I connected the one remaining "good" battery to the aircraft and turned on the master. The left propeller started turning immediately. I turned off the master and isolated the #1 and #2 start control relays and the SRL computer, I turned the master back on and the propeller started turning. I reset the stop switch several times with no change. I disconnected the wires from the left starter and found uncommanded voltage to the left starter.

My theory is the left starter relay failed in the closed position upon engine start. The generator relay on the left side closed because the command voltage that would lock it out was not present. Therefore, the generator fail light extinguished. The right generator was carrying all the load and when the radar was turned on, the cumulative draw exceeded the capacity of the current limiter, which then failed. At this point the aircraft has battery power only. With the draw of the left starter as well as systems, the batteries did not last long. (Note these batteries were new replaced 12-04-2017). First the AC powered instruments failed followed by the DC instruments. This can be confirmed by the "frozen" altimeter.

I further theorize that the landing gear would not come down normally, nor would there be any indication due to complete power failure. The crew claims they performed emergency extension procedures by the book. Although subject to further inspection, the aircraft had a C&D inspection performed on 01-02-2018. The "C" check encompasses landing gear including operational tests. The emergency extension system on this aircraft tested good during this inspection.

Regards,

Rusty Bauman [REDACTED]
(President) East Texas Turbines Inc.