

To: Mr. Adam Gerhardt, NTSB

From: Mr. Oswaldo Rodriguez, OZ A&P, LLC

Re: Statement pertaining to repairs to nose landing gear for N745EP

Date: 20 OCT 2022

Dear Mr. Gerhardt,

Per your email of 10/19/22, you request a statement regarding repairs to the nose landing gear on N745EP, a Cessna 414 aircraft, repaired under my supervision and in my repair facility, OZ A&P, LLC. My responses are provided below for each of the questions you asked, shown in italics.

Why was a repair needed?

The owner requested a repair to the nose landing gear strut, as it had collapsed.

What components exactly were repaired?

The components repaired included the nose landing gear strut seal.

Was the nose landing gear removed from the aircraft?

No, the nose landing gear was not removed from the aircraft.

Describe the NLG maintenance procedure completed and what documentation was utilized.

The procedure completed was as follows:

1. Visually assessed the nose strut.
2. Ordered new strut seal kit, P/N TC400NS-1, from Aircraft Spruce.
3. Brought the airplane to the maintenance hangar.
4. Jacked up the aircraft IAW the jacking procedure in the Cessna 414 SM.
5. Loosened the nose landing gear strut valve to deflate the strut.
6. Removed the cotter pin on the center torque link bolt. Removed center torque link bolt and nut.
7. Removed nose landing gear tire assembly.
8. Removed lower lock ring on nose landing gear strut.
9. Removed upper locking, bearing, extended stop spacer, shim, and poly seal.
10. Removed lower piston barrel to get access to ring pack support. Figures 1 and 2 show the condition of seal as found.
11. Installed new packing, nose strut seals from kit P/N TC400NS-1, IAW Cessna 414 SM.
12. Installed poly seal, shim spacer, stop bearing, and lock ring.
13. Re-installed lower strut assembly (piston barrel), scrap ring, ring pack retainer, and lock ring.
14. Installed lock ring and torque links. Bolt was torqued within limits and installed a new cotter pin.
15. Serviced the strut with hydraulic fluid Mil-PRF 5606 within limits.
16. Serviced the nose strut with nitrogen within limits IAW Cessna 414 SM.
17. Installed nose wheel assembly. Torqued bolt within limits and installed a new cotter pin.
18. Removed aircraft from jacks and observed nose strut within 2.6" height.



Figure 1. N745EP nose strut seal as found



Figure 2. N745EP nose strut seal closeup as found

The procedures were completed utilizing the following documentation:

1. Cessna 414 Service Manual Landing Gear and Brake System, Change 7, "Troubleshooting the Landing Gear System", page 4-6A/4-6B.
2. Cessna 414 Service Manual Landing Gear and Brake System, Change 27, notes h., i., o., and p., on page 4-38B.
3. Cessna 414 Service Manual Landing Gear and Brake System, Change 27, Figure 4-15 "Nose Landing Gear (Sheet 1)", page 4-40.
4. Cessna 414 Service Manual, Change 28, page 2-54, Section: "Shock Strut Servicing (Airplanes - 0001 To A0001)".

How was the landing gear system re-rigged?

The landing gear system was not re-rigged.

What actions were performed post-accident? Components removed, repaired?

Post-accident, the following actions were performed:

1. Noted tach time at 2929.7
2. Jacked the aircraft nose to get access.
3. Removed nose landing gear right and left doors.
4. Loosened nose strut valve.

5. Disconnected nose landing gear rod actuator assembly from bell crank adjusting assembly.
6. Secured nose landing gear in down position.
7. Placed nose landing gear doors inside the airplane cabin.
8. Left the nose landing gear valve un-torqued.
9. Left the nose landing gear actuator rod assembly connected only to the link retraction assembly.

Components removed or repaired:

1. As noted above, landing gear doors were removed and placed inside the airplane cabin.
2. No components were repaired.

Any other pertinent information with regard to the investigation?

The log entry date for the nose landing gear maintenance shows 1 SEP 2022. However, the actual date for the log entry should be 6 SEP 2022. While the work order for this job, 2022-060 was opened on 1 SEP 2022, and parts for the job were ordered that day, including a Cessna 400 Series Nose Strut Seal (Aircraft Spruce order #15487631), the work was completed on 6 SEP 2022. The corrected log entry is shown below (Figure 3).

MFG: Cessna
Model: 414
S/N: 414-0498
Reg: N745EP
WO: 2022-060

OZ A&P, LLC
Cook County Airport

Date: ~~1-SEP-22~~ **6SEP, 22** **O.R.**
Tach: 2928.7

Repaired nose landing gear, installed new strut seal PN TC400NS-1. Work done IAW Cessna 414 SM.

Oswaldo Rodriguez A&P

Figure 3. Log entry date corrected to actual completion date, with correction noted by Oswaldo Rodriguez (OR).