



NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety

LANDING GEAR EXAMINATION SUMMARY

December 11, 2020

A. ACCIDENT ERA21NA065

Location: Leesburg, Virginia
Date: December 6, 2020
Time: 1404 Eastern Standard Time (EST)
Operator: Private
Aircraft: Piper PA-46-600TP
Registration: N282ST

B. PARTICIPANTS:

Participant: Heidi Kemner
 National Transportation Safety Board
 Ashburn, Virginia

Participant: Damian Galbraith
 Piper Aircraft
 Vero Beach, Florida

C. SUMMARY

Airplane landed on runway 35 at JYO and veered off into the grass.

D. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

The airframe was examined at the local maintenance facility in Leesburg, Virginia. Impact damage was noted to the left wingtip just aft of the navigation light. Slight buckling of the upper wing skin was observed just inboard of the wingtip and forward of the main wing spar. A gear swing was

performed and no anomalies were noted. A gear free fall check was performed and the nose gear came down and locked. The main landing gear extended but rely on aerodynamic forces to lock.

Right Main Landing Gear



Figure 1. Right main landing gear.

The right main landing gear tire was blown. It exhibited 2 flat spots. One area at the 11 o'clock position on the tire and a large worn-down area at the 7 o'clock position that had worn through the tire tread. The preload bearings and brakes exhibited no anomalies when examined. The right main landing gear door was not damaged, but exhibited a small black mark/residue on it. The right main landing gear upper trunnion bushing had play in it.

Left Main Landing Gear

The left main landing gear tire had 2 flat spots on it, but the tread was not worn through. The tire pressure of the left main landing gear tire was 44.0 psi. The tire rotated without issue. The preload

bearings and brakes exhibited no anomalies when examined. The left main landing gear upper trunnion bushing had play in it.

Nose Landing Gear

The nose landing gear tire remained inflated and was canted to the left. It had a tire pressure of 33.3 psi. The right side tire wall markings ("Goodyear" etc.) were erased during the incident. All 3 nose gear rollers were intact and not damaged. There was no impact damage to the engine mount.

When the left rudder was pressed, the roller on the steering horn had a 0.015-inch gap, which was within manufacturer specifications. When the right rudder was pressed, the roller on the steering horn had a 0.01-inch gap, which was within manufacturer specifications. When the nose landing gear steering horn was in a neutral position, a 0.02-inch feeler gauge could be inserted between the rollers and the steering arm.

The rake angle of the nose landing gear was measured and was at 90.0°.

The trunnion mounted stops were damaged on both sides of the nose landing gear.



Figure 2. Left side view of impact mark on nose landing gear.

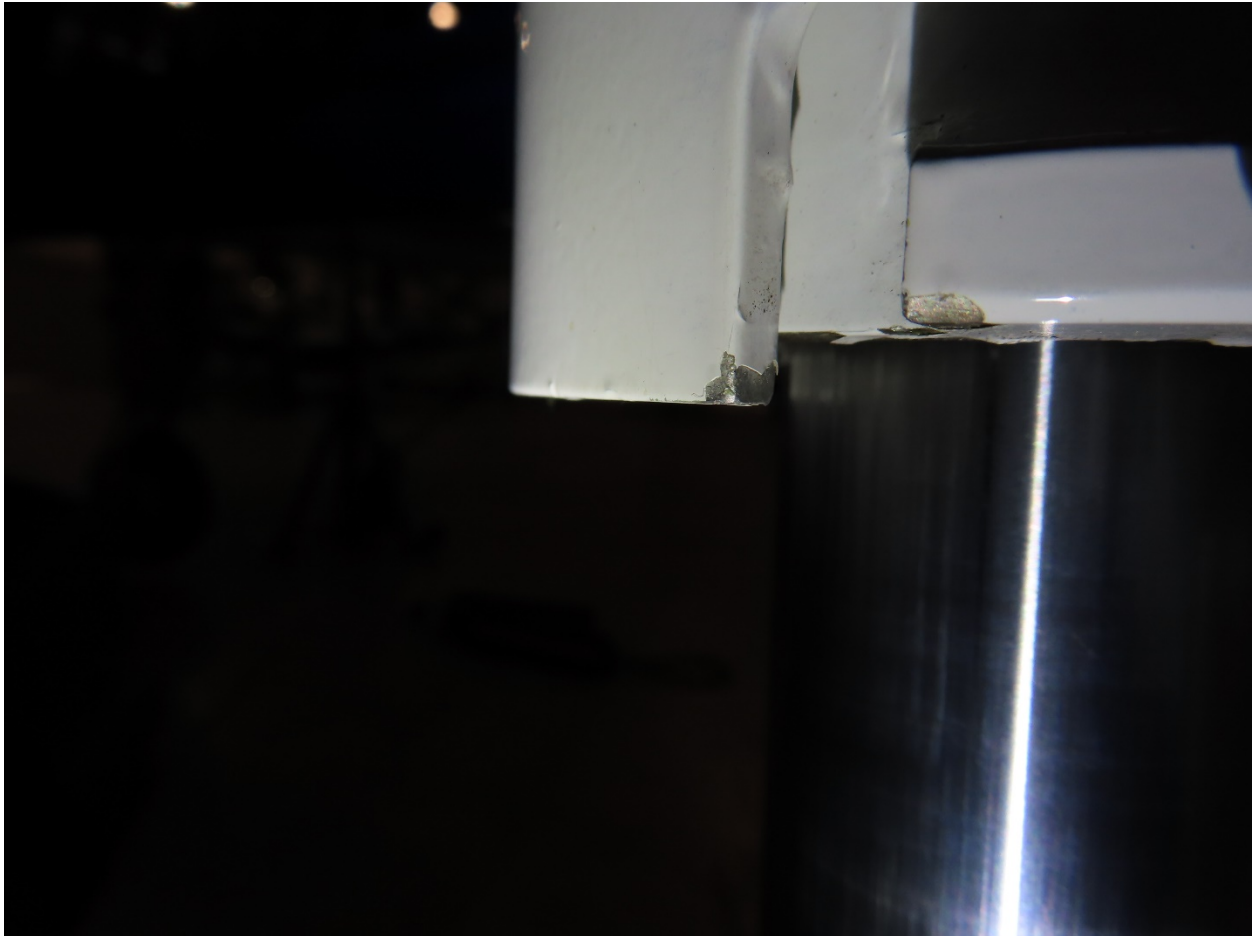


Figure 3. Right side view of trunnion stop on nose landing gear.

All bolts securing the steering horn to the nose landing gear remained attached. They were removed to disassemble the nose steering horn assembly and ship it to the NTSB materials laboratory.

2.0 Runway Examination

When the airplane departed the runway, the skid marks and tire marks in the dirt measured 4 ft from the nose landing gear to the right main landing gear and 8.8 ft from the left main landing gear to the nose main landing gear.

When the airplane was parallel with the runway sign, the tire marks in the grass measured 9 ft from the left main landing gear to the nose landing gear and 4.5 ft from the right main landing gear to the nose landing gear.

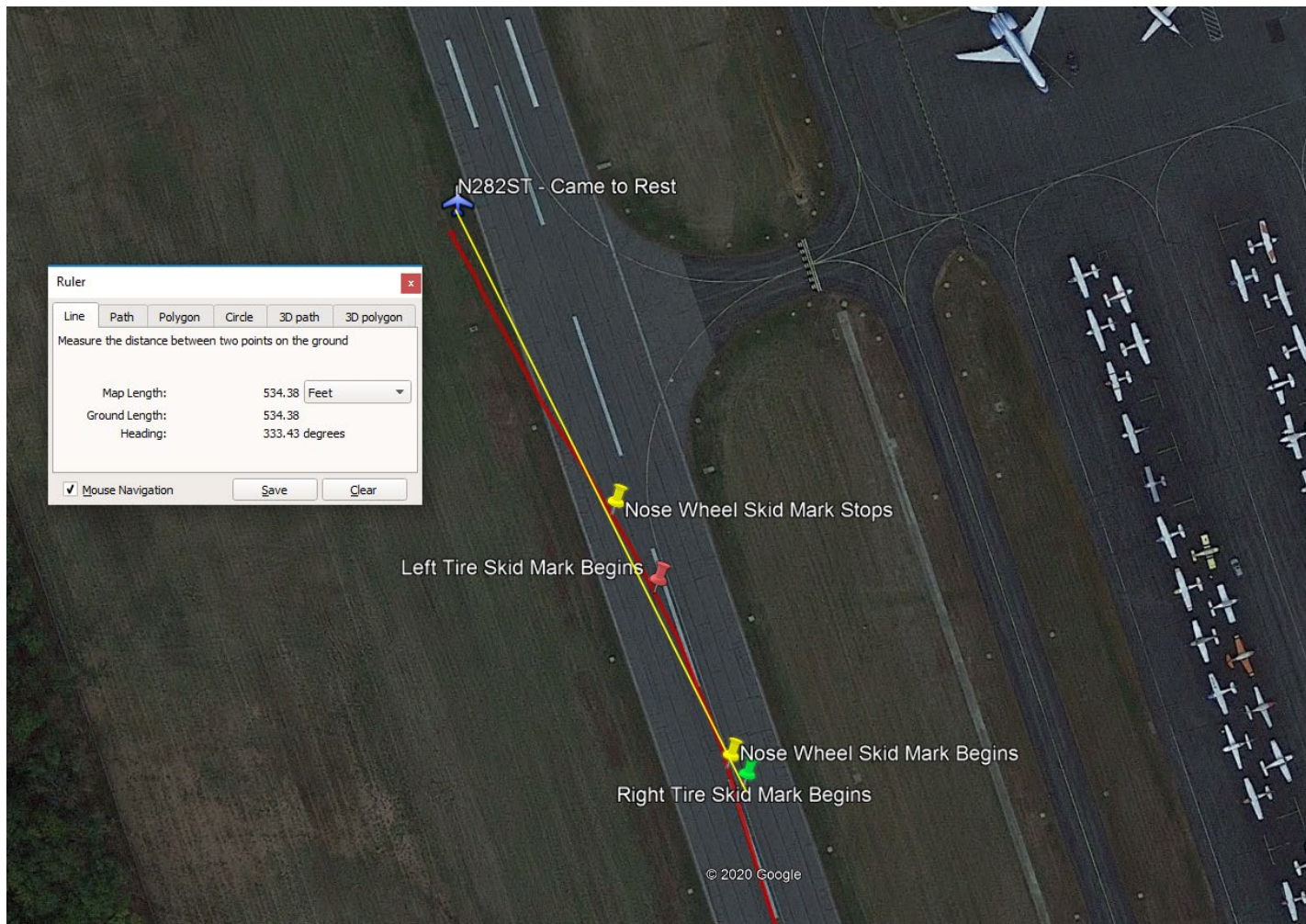


Figure 4. Google Earth view of skid mark locations and incident flight ground track.