

# Angelo Precision Aircraft

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San Angelo, TX

July 6, 2021

National Transportation Safety Board, Central Region

Attn: Michael Folkerts

Reference Accident Number: CEN21LA256

Mr. Folkerts,

On this date, I inspected Piper PA-28-161, N2120J, SN 28-7916198 as requested. On initial examination a hole on top of the left wing was evident where the left strut assembly had broken loose from the upper spar cap. Found the skin wrinkled and torn around the service port for the left strut assembly. Three of the fasteners through the skin had their heads remaining, but the second from the outboard bolt's head had been broken off and missing. After removal of the strut and wheel assembly the three bolts could be viewed with the threads remaining and one bent slightly above the threads. The bolt with broken off head remained in the assembly until physically removed. The bolt head was broken flush with the top of the strut assembly. It should be noted at this point, the three remaining bolts through the top skin and spar to the strut assembly did not have any washers or nuts, the threads did not appear to be damaged. Looking into the upper strut assembly mount holes the holes all had some elongation to them with the outboard showing the most wear.

Examination of the lower strut assembly mount revealed that no bolts were present. Prior to removal of the strut assembly three nuts and 5 washers were located loose laying near the mounting holes between the strut and the spar. One nut was located loose in the wing laying inboard of the strut assembly. This locknut had portion of the fastener remaining within it and sheared/broken off along the flat side of the nut. The remainder of this bolt was not located. The other three nuts were loose and low profile locknuts. When examining the three low profile lock nuts no visual defects were found.

The four bolts were missing from the lower spar mounting holes and the spar/wing holes. With the evidence of the loose low-profile locknuts and washers it was not able to be determined if they had come from the lower or upper bolts. Located between the strut assembly and the spar, they could have been from either the top or lower bolts.

The bottom mounting holes on the strut assembly showed evidence of working of hardware by the dark coloration and elongated holes. Where the broken bolt and the fastener remains found in the locknut mentioned above with the shear/break at the flat edge of the lock washer, both have coloration of shiny metal. Based on the evidence found, if not all, most of the upper and lower strut mount bolts were loose and working for a long period of time. The strut attached to a "T" mount that is in front of the

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strut along the spar and goes vertical. Two bolts secure the strut to this mount. Both bolts are still tight and secure. The "T" mount was secured to the spar with 11 1/8" AN Rivets. All these rivets have been sheared from the spar.

When removing the left strut assembly from the left wing, all that attached it was the brake line for the left brake system. No other hardware was left to secure the strut to the wing.

[REDACTED]

[REDACTED]

[REDACTED]