

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR24LA061

TAILWHEEL ASSEMBLY EXAM

January 4, 2023

A. ACCIDENT

Location: Prescott, AZ
Date: December 26, 2023
Airplane: Glasair SH2, N29TT

B. DETAILS OF THE EXAMINATION

1.0 Tailwheel Assembly

The airplane was equipped with a free-castering tailwheel, designed to be locked in the straight position during takeoff and landing (figure 1). It was controlled by a lever in the cabin that was connected via a cable to a spring-loaded locking arm in the tailwheel assembly. The locking arm, when activated, dropped down into a slot cut into the upper plate of the tailwheel forks. The plate was a steel segment of about 90° radius (referred to in the construction manual as a "half-moon") and welded to the tailwheel fork. The pilot reported that in accordance with the airplanes operating instructions, he locked the tailwheel straight during takeoff, and confirmed it was locked before landing.



Figure 1 - Tailwheel assembly in locked position - note cable ties used to secure release cable.

Post-accident examination via video conference with the pilot revealed that both the cabin control and locking arm were in the locked position, but the tailwheel was jammed about the 45 ° to the left, rather than straight (figure 2). Further examination revealed that the locking arm and associated plate slot were worn (figure 3, 4), and the locking spring had limited tension, such that with light force the tailwheel could be moved out of the straight position and jammed over-center as the locking arm dropped down against the outer edges of the locking plate (figure 2).



Figure 2 - Tailwheel about the 45 ° over center, with locking arm stuck past and against the pivot plate.

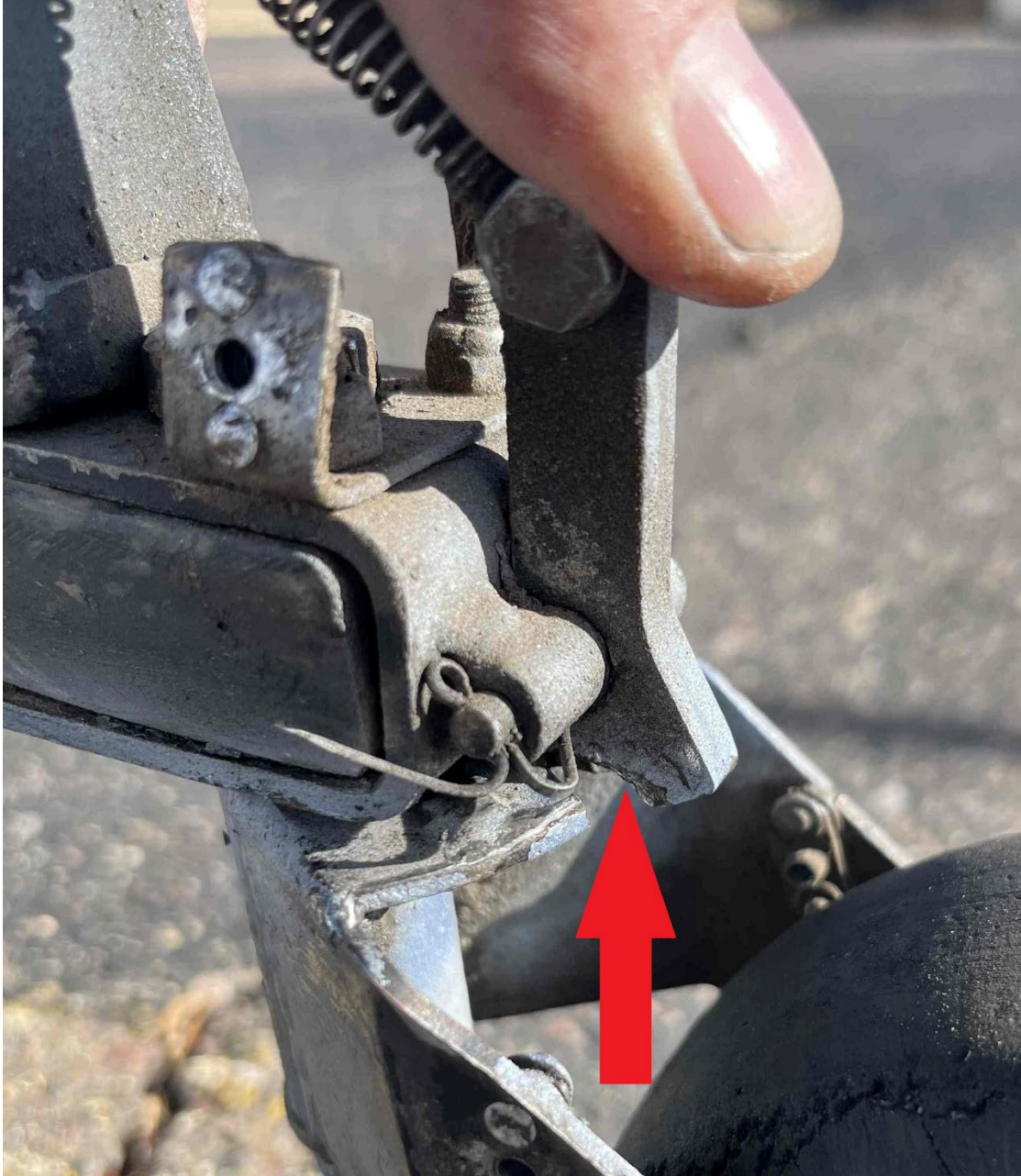


Figure 3 - Worn locking arm.

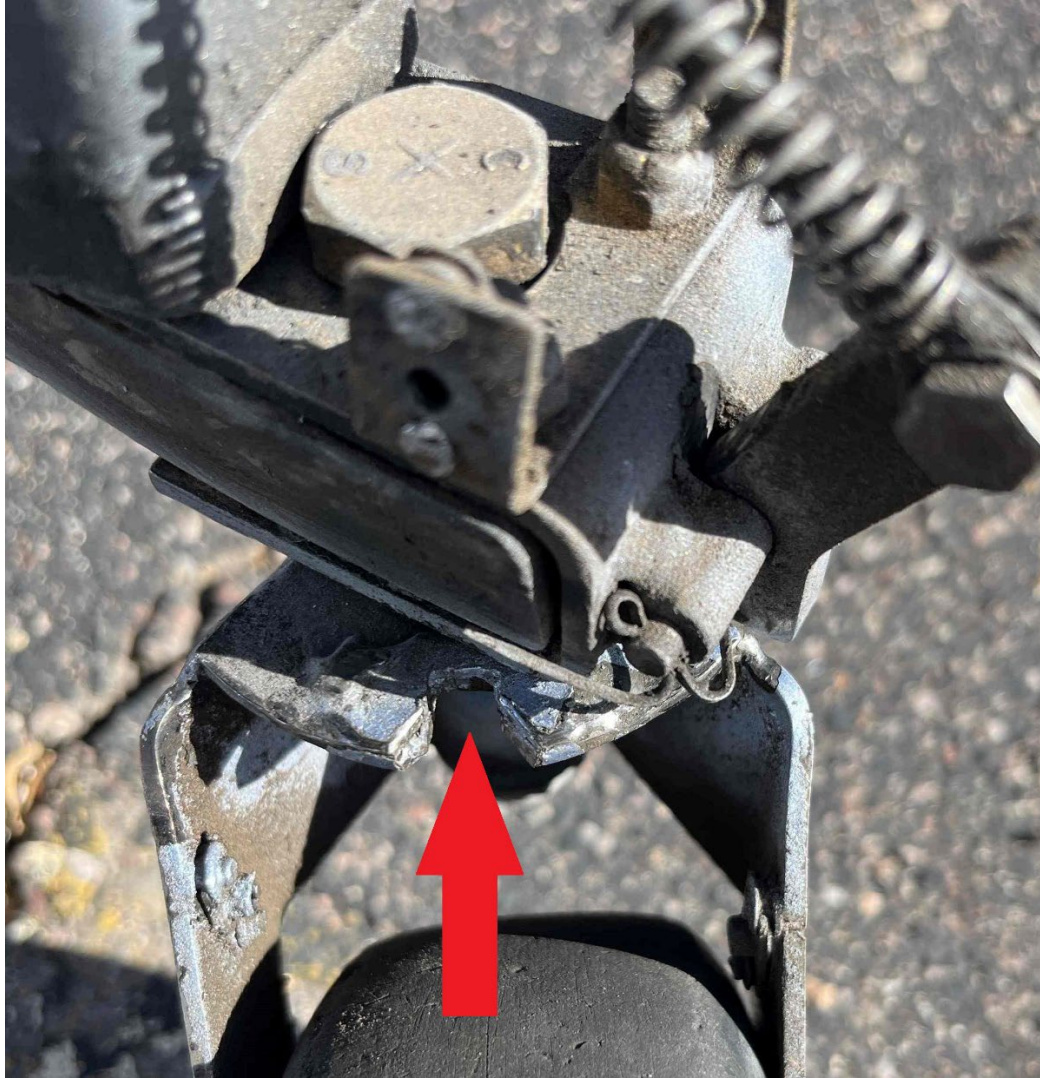


Figure 4 - Worn pivot plate locking slot.

The construction plans specified that the control cable should be routed directly from the locking arm to a phenolic guide in the vertical fin shear web (attachment 1). However, the cable was routed from the locking arm down to a set of four cable ties mounted to the tailwheel strut. (figure 1)

All photos courtesy of the pilot, unless otherwise noted.



Figure 5 - Airplane at the accident site, with damage to fuselage. Photo courtesy of KPRC Airport Operations.

Submitted by:

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