NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

July 3, 2019

ACCIDENT SITE EXAMINATION SUMMARY

WPR19FA183

This document contains 6 embedded images.

A. ACCIDENT

Location:	Ephraim, UT
Date:	July 1, 2019
Aircraft:	Schempp Hirth Arcus M glider Robinson, N215MM
NTSB Investigator-in-Charge:	Maja Smith

B. SUMMARY

Examination of the accident site was conducted on July 2, 2019. All major structural components of the airplane were located at the accident site. The wreckage was recovered to a secure location for further examination.

C. DETAILS OF THE INVESTIGATION

1.0 1.0 Glider

The Schempp-Hirth Arcus M is a high-performance, powered, two-seat, T-tail glider designed primarily for cross country flying and advanced training. The glider is constructed primarily of carbon fiber, Kevlar fiber, and glass fiber reinforced composite materials with a tubular steel fuselage center section truss. The glider is 28 feet, 8 inches long, has a tail height of 5 feet, 3 inches, and a wingspan of 65 feet, 7 inches. The glider is equipped with fixed nose skid, fixed tail landing gear, a retractable main landing gear, and a retractable Solo 2625-02i engine. Full-span ailerons are installed along the wing trailing edges that also serve as flaps. The flaps and ailerons are controlled separately in the cockpit. The glider empty weight is 948 pounds, and the maximum gross weight is 1,764 pounds. The glider has a maximum speed of 151 knots and a maneuvering speed of 97 knots.

2.0 Accident Site and Wreckage Examination

Figure 1. Accident site location

Figure 2. Accident site with the wreckage

The wreckage debris was located within mountainous terrain about 4.25 miles northeast of Ephraim, at the elevation of 7,628 ft. The wreckage was contained within 50 ft² area. The right wing separated from the glider upon impact with a tree during the accident sequence and was located about 20 ft east from the main wreckage. The main wreckage included the left wing, cockpit, fuselage, empennage, and engine. The forward fuselage and cockpit area was extensively crushed, deformed and fractured.

Figure 3. Main wreckage

Figure 4. Right wing in the tree

Inboard and the majority of the outboard portion of the right wing were wrapped around the tree which appeared to be the first point of impact. The other outboard portion remained with the main wreckage. The right inboard section remained attached to the right outboard section; the right-wing tip separated from the wing. Inboard and outboard ailerons remained attached to the wing.

Figure 5. Left wing

The left inboard wing remained attached to the fuselage. Fractures and deformations along the wingspan were results of the impact. The outboard portion of the left wing was fractured bent backwards. Inboard and outboard ailerons remained attached to the wing. The steel fuselage truss was deformed and fractured in multiple places consistent with the fuselage damage. The fuselage shell fractured half-way, but all the cables remained attached.

Figure 6. Empennage

The empennage was fractured from the fuselage just forward of the vertical stabilizer but remained attached by the control rods and cables. The vertical stabilizer was rotated 180° so that its leading edge was resting on the ground. The horizontal stabilizer remained

attached to the top of the vertical stabilizer and was engaged with the forward and aft mount points. The elevator hinges on the horizontal stabilizer were all intact and undamaged. The rudder remained intact. The aileron controls were fractured and deformed in multiple places between the forward control stick and the tunnels, consistent with the extensive forward fuselage damage. All of the fractures in the flight control components had a dull, grainy appearance and deformation consistent with overstress separation.