

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR24FA052

ACCIDENT SITE AND FOLLOW-UP WRECKAGE EXAMINATION SUMMARY REPORT

Factual Report

September 17, 2023

Table of Contents

A. ACCIDENT	3
B. PARTICIPANTS.....	3
C. INITIAL ACCIDENT SITE EXAMINATION	3
D. DETAILS OF THE EXAMINATION.....	5
1.0 ACCIDENT SITE	5
2.0 FOLLOW-UP WRECKAGE EXAMINATION.....	9

A. ACCIDENT

Location: Taylor Airport (TYL), Taylor, Arizona
Date: 12/06/2023
Time: 0744 Local (Apple watch notification)
Airplane: REMOS Aircraft GMBH, Remos GX (N449RA)

B. PARTICIPANTS

NTSB-IIC Andrew Swick
 NTSB AS-WPR
 Phoenix, Arizona

FAA-IIC Brian Mehrtens
 FAA-FSDO
 Scottsdale, Arizona

C. INITIAL ACCIDENT SITE EXAMINATION

The airport manager took a photo of the inverted airplane about 20 minutes after the accident and the pilot has not been removed from the airplane cabin area. The photo shows a dark cabin area, and the damaged tail section shows frost on the upper surface of the horizontal stabilizers that are facing downward.



Figure 1-Accident site, photo taken minutes after the accident. (Courtesy of the Airport Manager)



Figure 2-Accident site, photo zoomed in to show frost covering the top side of the horizontal stabilizers. (Courtesy of the Airport Manager)

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The accident site was located on runway 21 at Taylor Airport (TYL), near Taylor, Arizona. The debris field was about 150 ft long and about 70 ft wide and on a magnetic heading of about 195 degrees. The first identified point of contact (FIPC) were white transfer marks located near the center of the runway, about 3,500 ft from the approach end. The runway was 7,001 ft long.



Figure 3-Google Earth view of the airport and accident site location.

The white transfer marks were spread along diagonally about 40 ft on the left side of the runway. In the middle of the white transfer marks were 3 propeller strike marks and a propeller hub mark in the runway surface. A propeller blade was found on the left side of the debris field near the left side of the white transfer marks. The propeller blade separated from the hub near the shank end and had missing material near the blade tip. The debris field continued for another 110 ft, which contained broken plexiglass and carbon fiber material. The left wing tip fairing was found on the

right side of the debris field about 30 ft from the FIPC. Red plexiglass shards were found near the fairing. The green plexiglass was found along the left side of the debris field. The outboard section of the right aileron was found about 60 ft into the debris field. The left entry door separated and was found on the right side of the debris field. The right entry door separated and was found off the left side of the runway. Both doors were found in the locked position and both locking pins were in the engaged position.



Figure 4-Accident site, first identified point of contact with the runway.

The main wreckage was found inverted with impact damage to the fuselage and wings. The main landing gear was undamaged, and the nose landing gear was bent downward with impact damage to its supporting structure. The empennage was damaged forward of the empennage and twisted to the right. The rudder had impact damage and was partially separated. The left outboard wing and side strut separated and was found near the empennage. The left aileron had impact damage and remained connected to its control rod. The left flap remained attached to the wing and appeared to be in the up position. The right wing remained mostly intact with impact damage to the aileron and wingtip fairing. The forward fuselage structure was cut by first responders to facilitate the removal of the pilot. During the recovery

efforts, the seats, forward fuselage, instrument panel, engine and nose landing gear separated freely from the main wreckage and had impact damage.

The right seat control stick boot area had a tight wad of tie down straps wedged between the control stick and the side of the boot. The control stick was found in the [aileron up, elevator up position] aft left position. The wad was removed and the control stick moved freely by hand. The control stick linkage located in the lower fuselage felt broken and loose when operated by hand.

Flight control continuity was not established during the onsite examination.

The engine and propeller remained partially attached with excessive impact damage.



Figure 5-Accident site, main wreckage.

Autogas was noted leaking from the airplane wreckage. No quantity of fuel was obtained during the onsite examination and wreckage recovery.

The airports security video system was non-operational at the time of the accident. There were no witnesses to the accident. There were no witnesses that spoke to the pilot prior to the accident.

The pilot's truck was locked and located at the airport's main building.

An airplane flying over the airport reported the accident site over the Unicom frequency and the airport manager responded to the call. The airplane flying over was out of the Mogollon Airpark (AZ82), Overgaard, Arizona and was headed to Springerville, Arizona. The airplane did not have any intention of landing at TYL.

The airport manager reported that when he arrived onsite the pilot was in an inverted position in his seat, was still breathing and that the breathing was very labored. The airport manager called 911 to report the accident. About 5 minutes later local authorities responded to the accident site. Fire and rescue responded shortly after to extricate the pilot from the airplane.

Local authorities reported that the pilot's apple watch reported the accident to the their 911 services at 0744.

Small sections of the forward fuselage were cut to extract the pilot. One seatbelt was cut.

The airport manager stated that the pilot had driven to the airport a couple of weeks prior to the accident, asking about hangar space to rent. There was no hangar space available at the time. The airport manager saw the airplane parked at TYL for 2-3 days prior to the accident.

The airport's AWOS system recorded weather conditions at and prior to the accident time.

Taylor Airport AWOS Data:

Time Zulu	Wind Dir/Speed	Visibility	Sky Condition	Temp C°	Dew Point C°	Altimeter Reading
1400	230/3	10+	Clear	-4	-4	3039
1420	250/0	10+	Clear	-5	-5	3039
1440	220/4	10+	Clear	-4	-4	3039

Nearest METAR Data:

KSOW 061435Z AUTO 00000KT 10SM CLR M02/M05 A3038 RMK AO2

2.0 Follow-up Wreckage Examination

The wreckage was transported to Air Transport in Phoenix, Arizona, where an examination of the wreckage was conducted on December 8, 2023. The empennage was cut in multiple areas by the recovery crew to facilitate its transport. The rudder cables were cut during this process. The wreckage was displayed on the examination floor.



Figure 6-Wreckage examination, main wreckage layout.

The engine, firewall, nose landing gear, rudder pedals and linkage, and instrument panel remained intact. The engine had impact damage to the left cylinder bank. Multiple lines, tubes and cables had impact damage. The propeller assembly including one blade had impact damage and remained attached to a portion of the reduction gear shaft. The propeller and the reduction gear shaft separated from the engine. An NVM instrument was removed in an attempt to download. No accident flight data was recovered from the instrument. Engine control cables remained intact.



Figure 7-Wreckage examination, engine and firewall.

The rudder pedal and linkage remained intact and had impact damage. The linkage moved freely by hand. The rudder cables were complete to the rudder with recovery separations in the middle. The rudder separated from the vertical stabilizer and had impact damage to upper balance weight. The rudder cables remained intact and secure to the rudder. The right elevator tip had impact damage. The elevators moved freely by hand when the control rod was operated by hand. The elevator control rod was cut multiple times during recovery efforts. The elevator trim tab was found in the UP position. The horizontal and vertical stabilizers were undamaged.

The right wing and side strut remained attached to the fuselage. The top side of the leading edge of the wing had crush damage. The wing tip fairing separated and was found in the debris field. The aileron outboard 1/3 separated at the linkage and was found in the debris field.



Figure 8-Wreckage examination, airplane positioned upright.

The left wing was found in multiple sections. The outboard section of the wing separated near the wing strut attachment. The side strut remained attached to the damaged spar and separated near the fuselage attachment. The top side of the leading edge of the wing had crush damage. The aileron separated from its wing attachments and remained attached to the aileron control tube and linkage. The wing tip fairing separated and was found in the debris field.

The flaps remained attached to both wings and the flap torque tube and linkage remained intact. The flap actuator remained attached to the flap torque tube and separated from the cabin structure. The flap actuator shaft was measured at 4-5/8 inches or flaps UP position. (See Table 1) The flap torque tube and flaps moved normally by hand.

Flap Position	Actuator Length
Up	~4-5/8"
15°	~3-1/8"
30°	~1-5/16"
40°	~3/4"

Table 1- Flap Position and Flap Actuator Shaft Length (Exemplar Remos Airplane)

Flight control continuity was established from each aileron control rod to both cabin control sticks. The control sticks and aileron and elevator linkage moved freely by hand. The control stick linkage assembly separated from the fuselage. The elevator control rod moved freely by hand and the aft bellcrank moved normally.



Figure 9-Wreckage examination, left wing.

The fuel tank filler neck partially separated from the fuselage. The filler neck remained attached to the rubber elbow. The fuel tank was not found. Multiple carbon fiber fragments were found throughout the debris field.

Submitted by:

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