

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN24FA327

ON SITE WRECKAGE EXAMINATION

September 10, 2024

TABLE OF CONTENTS

A. ACCIDENT.....	3
B. PARTICIPANTS.....	3
C. DETAILS OF THE INVESTIGATION	4
1.0 ACCIDENT SITE	4
2.0 AIRFRAME EXAMINATION.....	4
3.0 ENGINE EXAMINATION	6
4.0 PROPELLER EXAMINATION	7

A. ACCIDENT

Location: Wayne, NE

Date: August 26, 2024

Time (lcl): 0931 CDT

Time (UTC): 1431 UTC

Airplane: Piper Cherokee PA-28-140

Registration: N9626K

B. PARTICIPANTS

NTSB IIC	Brad Miller National Transportation Safety Board
NTSB	Josh Lindberg National Transportation Safety Board
FAA	Brandon Bennett Federal Aviation Administration
Airframe	Jon Hirsch Piper Aircraft
Engine	Dave Harsanyi Lycoming

C. DETAILS OF THE INVESTIGATION

1.0 Accident Site

The accident site was located in a cornfield approximately 27 nautical miles northeast of the Norfolk airport at an elevation of 1,557 feet msl. The corn was 6-8 feet tall and the soil was soft from rain and irrigation the night prior. The airplane impacted in a 30-degree nose down attitude on an approximate magnetic heading of 320°. The initial point of impact consisted of cut cornstalks followed by a roughly 8 foot long by 12-18-inch-deep crater with fragments of the lower cockpit assembly in it. Imprints of the wing leading edges were visible in the dirt to the left and right of the crater. Fragments of the left wingtip were located to the left of the crater. Fragments of airplane components were present throughout the 98 feet leading up to the main wreckage. Main landing gear components separated from the airplane were located 20-30 feet beyond the main wreckage.

Examination of the accident site and wreckage revealed that all major structural components of the airplane were accounted for at the scene.

2.0 Airframe Examination

Fuselage

The firewall, instrument panel and cabin were mostly consumed by the post-impact fire. The firewall was upside down. The rudder pedal torque tubes remained attached to the firewall. The rudder cables remained attached to the rudder pedal torque tubes and were continuous to the rudder horn. The cabin structure supporting the tee-bar and control columns was consumed by fire. The stabilator cables remained attached to the tee-bar and were continuous to the stabilator balance tube in the tailcone. The aileron chain segment remained intact on the control column sprockets and the turnbuckle was intact. The aileron drive cables remained attached to the chain segment and were continuous to the bellcranks in the wings. The airframe structure supporting the flap selector handle was consumed and the flap handle was laying in the debris. The flap handle was in the second detent. The flap drive cable remained attached to the selector handle. The flap drive cable was separated at the turnbuckle consistent with thermal damage. The flap drive cable remained attached to the flap drive chain segment which also remained attached to the flap torque tube sprocket. The flap torque tube was separated from the airframe and bent about 90°.

The airframe structure surrounding the fuel selector valve was consumed and the valve assembly was found in the debris. The selector handle and the

internal components of the valve were consumed precluding the determination of the pre-impact position of the fuel selector valve.

Two gyros which were separated from their respective instruments were located in the debris field. One gyro remained in its housing and appeared undamaged. The housing was opened to facilitate examination of the gyro. The gyro exhibited an approximately 1" long area of burnishing consistent with contact with the housing while rotating. The second gyro was separated from its housing and exhibited thermal discoloration throughout.

Left Wing

The left wing was adjacent to the main wreckage and upside down. The aileron and flap remained attached by their hinges. The aileron bellcrank was displaced from its mount. The aileron drive and balance cables remained attached to their respective bellcrank arms. The aileron bellcrank stops were intact and unremarkable.

The lift detector was separated from its mount in the leading edge and only remained attached to the wing by the electrical wires. The pitot mast was separated from its mount and not located.

The main landing gear trunnion was broken from its mounts and displaced aft. The landing gear wheel and tire assembly were separated and located in the debris field.

The fuel filler cap was intact in the fuel filler neck opening. No fuel was observed in the wing.

Right Wing

The right wing was adjacent to the main wreckage on the same side as the left wing and partially on top of the left wing. The aileron remained partially attached by the outboard hinge. The flap remained attached by its hinges. The aileron and balance cables remained attached to the bellcrank and the bellcrank stops were intact unremarkable.

The wheel and tire assembly were impact separated and located in the debris field.

The fuel filler cap was intact in the fuel filler neck opening.

Empennage

The empennage was facing opposite the direction of travel and rotated on to the left side. The vertical stabilizer remained attached to the aft portion of the tailcone and the rudder remained attached by its hinges. The rudder horn stops were intact and unremarkable.

The stabilator remained attached to the tailcone bulkhead by its hinges. The balance tube and counterweight remained attached to the stabilator and the stabilator stops were unremarkable.

The stabilator trim jackscrew was extended about the drum with about 9 threads exposed which corresponds to a partial aircraft nose up trim setting.

Non-Volatile Memory (NVM)

A Honeywell AV8OR Ace was located in the debris field. The device exhibited impact damage and an SD card was visible in the SD card slot. The SD card was retained by the NTSB for possible data download.

3.0 Engine Examination

The engine was attached to its respective engine mount which remained attached to the aircraft firewall. The engine sustained thermal damage primarily to the rear and top side of the engine and associated rear mounted accessories. The engine was upside down. The starter and the alternator were found along the debris path and were impact fractured from the aircraft wreckage. The alternator case was fractured exposing the copper windings and would not rotate. The starter housing was packed with dirt around the Bendix drive. Once the dirt was removed, rotational scoring was noted to the housing consistent with contact with the rotating starter ring gear during the accident sequence.

The left and right magnetos sustained varying degrees of thermal damage to the body and internal components, neither unit would rotate or produce spark. Both magnetos were securely installed on the rear of the engine. No further testing was conducted on either magneto. The respective ignition harnesses for each magneto was found separated and cut from the rear of the magneto due to the impact sequence damage. No further ignition harness testing was performed during the examination.

All top sparkplugs were tightly installed to each cylinder and removed. The rear mounted vacuum pump was found tightly installed to the accessory case and removed. The vacuum pump drive port was used to attempt engine

rotation using a drive tool, limited rotation was achieved upon first try. Both magnetos were removed from the accessory section and then rotation was achieved. Thumb compression was achieved on all cylinders during engine rotation.

The vacuum pump did not sustain thermal damage. The pump was disassembled and the rotor and vanes were found undamaged and intact. The nylon drive coupler was found burned between the pump and drive port.

The engine driven fuel pump remnants were located in close proximity to the accessory case, but had succumbed to thermal damage and could not be tested. The fuel pump actuation arm was still bolted to the accessory case, once removed the fuel pump plunger was noted to be installed correctly in the engine.

The carburetor was found impact fractured from the oil sump along the carburetor attach flange. The fracture dislodged the throttle plate and throttle linkage from the unit. The fuel inlet hose was torn from the unit and no fuel inlet screen was located due to the open port. The float bowl remained attached and was removed for examination. No debris or fuel was noted within the bowl and the blue plastic type floats were undamaged. The floats moved freely and the needle and seat were found undamaged upon removal.

4.0 Propeller Examination

The Sensenich fixed pitch aluminum propeller was separated from the crankshaft propeller flange and was located in the debris field adjacent to the engine. The blades were labeled "A" and "B" for identification purposes. Blade A was bent, twisted, and fractured about 2/3 span. The outer portion of the blade was not located. Blade B was twisted and exhibited some thermal discoloration near the tip.

Submitted by:

Bradley T. Miller
Aviation Accident Investigator