



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region
April 2, 2016

ON SITE EXAM REPORT

WPR16FA091

This document contains 19 embedded photos.

A. ACCIDENT

Location: Fallbrook, CA

Date: April 2, 2016

Aircraft: Nokes Matthew Lancair IV P, Registration Number: N438Y, Serial #: LIV-298

NTSB IIC: Howard Plagens

B. EXAMINATION PARTICIPANTS:

Howard Plagens
Senior Air Safety Investigator
National Transportation Safety Board
Desert Hot Springs, CA 92240

Greg Nolting
PMI
Federal Aviation Administration
San Diego, CA

C. Overall Site



Photo 1 Airplane Data Plate

The airplane was white with blue accents on the top and bottom of the engine cowling, the belly of the airframe, the vertical stabilizer, and the rudder.



Photo 2 Airplane and Car Enmeshed on Side of Freeway

The first identified point of contact (FIPC) was a 12-foot long ground scar with blue paint transfer marks.

The California Highway Patrol utilized a GPS 900 RTK Rover to map the accident site, and a complete diagram in part of the public docket for this accident. The airplane slid for 272 feet, and got airborne for another 308 feet before contacting the car. The two vehicles then moved another 100 feet together as a merged unit.



Photo 3 Ground Scar - First Identified Point of Contact

About 10 feet after the ground scar was a series of 14 strike marks that were perpendicular to the debris path, and the distance between the marks increased by increasing increments. Between the fourth and fifth strike marks (about 11 feet), another ground scar with blue paint transfer marks started. This ground scar was continuous to the wreckage.

Ground Scar	Distance (feet)
1	
2	2.2
3	2.35
4	2.5
5	2.9
6	3.1
7	3.1
8	3.3
9	3.5
10	4.0
11	5.4
12	7.3
13	8.7
14	11.7



Photo 4 Strike Marks and Ground Scar

The pitot tube (located on the bottom of the left wing outboard of the fuel tank) separated, and was in the first third of the ground scarring. Its bottom was scraped.



Photo 5 Separated Pitot Tube

The nose of the airplane crossed the left rear portion of the trunk at an angle from the left to right, and intruded into the right back seat area of the parked car. The airplane pushed the car off the shoulder and into the adjacent dirt area. The airplane's three-blade propeller and engine remained enmeshed with the car, the fuselage was in the dirt area adjacent to the freeway, and the left wing and tail came to rest on the shoulder.



Photo 6 Plane and Car Enmeshed

D. DETAILS OF THE INVESTIGATION

1.0 Airframe Examination

The airplane had winglets on both wing tip fairings.

The outboard bottom of the left wing tip fairing was scraped with all white paint missing over the front third and last quarter of the chord. Additional midchord scrapes on the bottom were inboard near the attachment point on the wing. The pitot tube had been mounted between the fairing and the outboard edge of the fuel tank; a hole existed where it had been mounted. The bottom of the wing had scrape marks in several areas. The left flap was in the up position.



Photo 7 Bottom of Left Wing

The outboard portion of the right wing exhibited scrape marks. The right flap was down, and it exhibited scrape marks along the trailing edge.



Photo 8 Outboard Portion of Bottom of Right Wing



Photo 9 Inboard Portion of Bottom of Right Wing

The bottom of the empennage just forward of the rudder and the rudder both exhibited scrape marks with all blue paint missing. Investigators observed no damage on the rest of the empennage.



Photo 10 Empennage

First responders reported that one of their members was a pilot, and he observed the throttle and mixture in midrange positions; he pulled them out to the idle cutoff and low throttle positions. The propeller knob was in the full forward position. The landing gear and flap control handles were in the up position.

Investigators observed the master electrical switch and ignition switches in the off positions.

The alternator field and GPS circuit breakers were popped out.

The radio master and strobe light switches were ON.



Photo 11 Cockpit

Investigators moved the left control stick with corresponding movement of the ailerons and elevators from stop to stop. Movement of the rudder showed corresponding movement of the rudder pedals in the cockpit.

The airplane was oriented with the left wing low a few degrees, and the fuel caps were near the extreme outboard edge of each wing. The fuel filler on the left wing was labeled 75 gallons, and

the fuel filler on the right wing was labeled 52 gallons. In this left wing low position, investigators measured about 1 inch of fluid; they observed no fluid in the right wing. Moving the right wing to a low position still did not reveal evidence of fluid.

While preparing the airplane to move it to a safer location than the side of the freeway, a small amount of fluid was observed dripping from the right wing root. After moving the airplane to a safer location, the IIC was not able to drain any fluid from the gascolator. Prior to wing removal, investigators drained approximately 1 quart of a clear blue fluid that smelled like aviation gasoline from each wing sump. A water paste test did not change color indicating that there was no water contamination.



Photo 12 Blue Fluid Drained from Left Wing Root Quick Drain



Photo 13 Blue Fluid Drained from Right Wing Root Quick Drain



Photo 14 Blue Fluid Samples and Water Paste Test Strips

2.0 Engine Examination

Investigators observed no evidence of any fluids leaking, and no streaks along the airframe. They observed no evidence of catastrophic engine failure.



Photo 15 Top of Engine



Photo 16 Bottom of Engine

Investigators observed over 12 quarts of a clear black fluid registered on the oil dipstick.

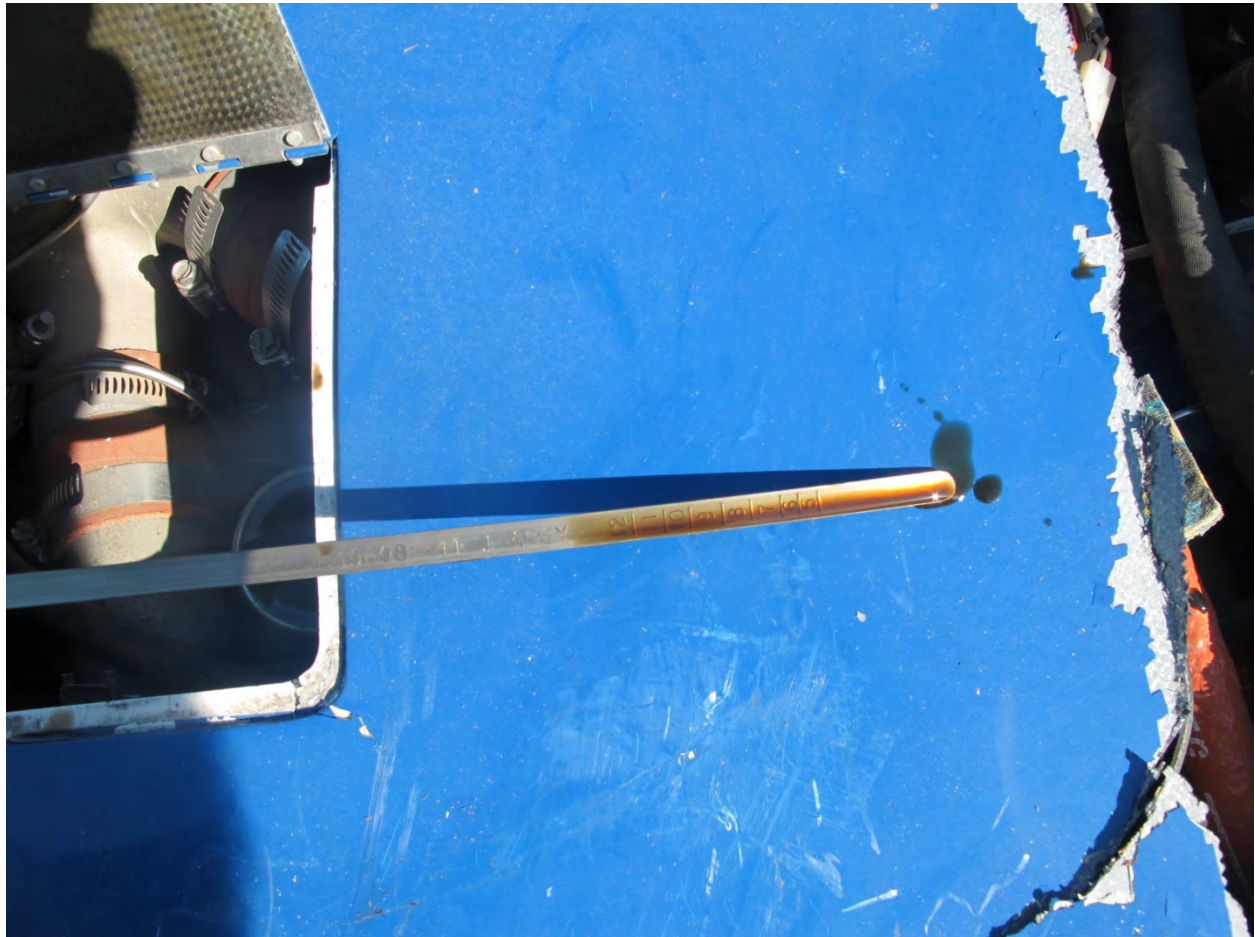


Photo 17 Oil Dipstick

3.0 Propeller Examination

All three propeller blades remained attached at the hub. The blade oriented vertically to the 12-o'clock position was labeled 1. The blade oriented to the 4-o'clock position was labeled 2. The blade oriented to the 8-o'clock position was labeled 3. Blade 3 could not be observed until the car and airplane had been separated. All three propeller blades were bent aft, and all three tips curled aft. They all rotated in the hub like the locks were broken.



Photo 18 Propeller

Investigators located a fuel receipt dated April 1, 2016, which indicated that the airplane had been fueled with 5.0 gallons of 100LL aviation fuel at Jet Air Services, Gillespie Field.

Photo 19 Fuel Receipt