

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, DC 20594

February 8, 2017

Onboard Image Recorder

Specialist's Factual Report
By Sean Payne

1. EVENT

Location:	Fallbrook, California
Date:	April 2, 2016
Aircraft:	Lancair IV-P, N438Y
Operator:	Private
NTSB Number:	WPR16FA091

2. SUMMARY

On April 2, 2016, about 0915 Pacific daylight time (PDT), an experimental amateur-built Nokes Matthew Lancair IV-P, N438Y, collided with a parked car on the shoulder of Interstate 15 near Fallbrook, California. The pilot/owner was operating the airplane under the provisions of Title 14 *Code of Federal Regulations* (CFR) Part 91. The private pilot and one passenger sustained serious injuries; one occupant of the car sustained fatal injuries, and the other three occupants sustained serious injuries. The airplane sustained substantial damage. The personal flight departed Gillespie Field (SEE), San Diego, California, about 0900; for French Valley Airport (F70), Murrieta/Temecula, CA. Visual meteorological conditions prevailed, and no flight plan had been filed.

3. DETAILS OF INVESTIGATION

On April 12, 2016, the National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following personal electronic device:

Recorder Manufacturer/Model:	Samsung Galaxy S4 Cell Phone
IMEI:	359086052179955
Files:	23 .JPG¹ files, 19.mp4² files

¹ .JPG – A compression standard for still images.

² .mp4 – A compression standard for digital video and audio.

3.1. Recorder Description

PEDs are a category of devices comprised primarily of portable computing devices and mobile phones. Portable computing devices are typically capable of internet access, email, messaging services, and can run user-installed applications to perform specific tasks. Depending on the model, mobile phones can perform many of the same tasks as portable computing devices, plus have voice call and text messaging capabilities. PED user and system data is typically stored on non-volatile memory³ and can be accessed through manufacturer-provided interfaces.

3.2. Video Files

After review, the device was found to contain 42 relevant media files that were taken on the morning of the accident and were associated with the accident flight. Of the 42 files, 23 were still image files of .JPG format and 19 were video files of .mp4 format. The media files were mostly recorded from the front right seat of the accident aircraft and show the aircraft on ground as well as the aircraft in flight. The impact with the automobile was not recorded.

3.3. Timing and Correlation

The times used in this report are expressed as local time of the accident (PDT).

Timing information contained in this report references each file's metadata time stamp. The Samsung Galaxy S4's internal timestamping mechanism was assumed to be correct. No other time correlation was conducted.

3.4. Summary of Recording Contents

In agreement with the Investigator-In-Charge, a video group did not convene and a summary report was prepared.

In some media files, the entire instrument panel was captured. In other media files, only portions of the instrument panel was captured. Only events pertinent to the accident investigation were summarized.

File naming of the Samsung Galaxy S4 recorded each file's name in a timestamp format. The timestamp format is defined as YYYYMMDD_HHMMSS in PDT.

3.4.1. Still Images:

File 20160402_090205.jpg showed the aircraft's instrument panel while in flight. The aircraft was in nearly level flight around 3,000 feet MSL. The airspeed indicator indicated around 175 knots. The aircraft was on a heading of about 315 degrees. The manifold pressure was shown as 26.8 psi, the rpm as 2480 rpm, the fuel pressure as 11 psi, the oil pressure as 55 psi, the fuel flow as 18.1

³ Non-volatile memory is semiconductor memory that does not require external power for data retention.

gallons per hour (gph) and the oil temperature as 178 degrees F. The cylinder head temperatures (CHT) were shown to be within the particular instrument's green limits. A clock timer showed a time of 19 minutes and 35 seconds.

A second image was captured approximately 1 second later. The file was named 20160402_090206.jpg. It showed essentially the same parameters, however, the clock timer now showed 19 minutes and 36 seconds and the fuel flow reading showed 17.7 gph.

File 20160402_090646.jpg showed an alternate view of the instrument panel. The aircraft was flying at 3,500 feet MSL. A GPS screen showed a "NEXT WPT" (next waypoint) as "F70" (French Valley Airport, Murrieta/Temecula, CA). The distance to the next waypoint was displayed at 27.4 nautical miles. The aircraft appeared to be on a direct route to the waypoint according to the GPS display. An annunciator display illuminated the following two annunciator lights in red: "L FUEL EMPTY" and "R FUEL EMPTY". The pilot's hand was seen in the frame. The pilot's right middle finger was touching a light switch on the aircraft's lighting system panel.

3.4.2. Video Files:

File 20160402_084224.mp4 showed the pilot starting the aircraft. The annunciator panel displayed in red "L FUEL EMPTY". The annunciator panel also displayed a number of other annunciations, also displayed in red, typical of what may be seen during a start sequence (Fuel Pressure, Volts, Amperes, Oil Pressure, Oil Temperature).

File 20160402_084333.mp4 showed the aircraft running on the ground, the annunciator panel displayed in red "L FUEL EMPTY" and "Oil T" (Oil Temperature) in a red indication.

File 20160402_084538.mp4 showed the aircraft running on the ground, the annunciator panel displayed in red "L FUEL EMPTY" and one other unidentified red indication. The pilot was programming "F70" into the panel mounted GPS system.

File 20160402_084643.mp4 showed the aircraft running on the ground, the annunciator panel displayed in red "L FUEL EMPTY" and one other unidentified red indication. The pilot was programming radio frequencies into the radio stack.

File 20160402_084939.mp4 showed the aircraft running on the ground, the annunciator panel displayed in red "L FUEL EMPTY" and one other unidentified red indication which was now flashing. The pilot called ground control as he taxied and continued to enter frequency information into the radio stack.

File 20160402_085200.mp4 showed the aircraft running on the ground, the annunciator panel displayed in red "L FUEL EMPTY". The other red indication had now extinguished.

File 20160402_085527.mp4 showed the aircraft running on the ground, the annunciator panel displayed in red "L FUEL EMPTY". The pilot was talking to air traffic control and entering information into a panel mounted GPS.

File 20160402_085714.mp4 showed the aircraft on takeoff roll. The annunciator panel displayed in red "L FUEL EMPTY" and "R FUEL EMPTY". Later in the file, only "L FUEL EMPTY" was seen indicated in red. During the beginning of the takeoff roll, the clock timer showed 14 minutes and 49 seconds.

File 20160402_085850.mp4 showed the aircraft in flight. The RPM indicator read 2,720 rpm; fuel flow could not be read off the engine instrument display. Only the "L FUEL EMPTY" annunciator light was indicated on the annunciator panel. The aircraft appeared to be level at 1,500 feet MSL.

File 20160402_090034.mp4 showed the aircraft in flight around 2,300 MSL. Only the "L FUEL EMPTY" annunciator light was indicated on the annunciator panel.

File 20160402_090101.mp4 showed the aircraft in flight around 2,700 MSL. Only the "L FUEL EMPTY" annunciator light was indicated on the annunciator panel. The pilot appeared to be programming radio frequencies. RPMs were around 2,500.

File 20160402_090131.mp4 showed the aircraft in flight around 2,900 MSL and 170 knots indicated airspeed. Only the "L FUEL EMPTY" annunciator light was indicated on the annunciator panel. RPMs were around 2,450. The GPS showed the aircraft to be on a course to intercept a direct bearing to "F70" as programmed from the departure airport.

File 20160402_090213.mp4 showed the aircraft maneuvering through a mountainous area. The pilot pointed out a geographic feature. The pilot and passenger were heard talking, their exact words were not transcribed. Only the "L FUEL EMPTY" annunciator light was indicated on the annunciator panel.

File 20160402_090331.mp4 showed the aircraft in flight at 3,100 feet MSL. The pilot was programming frequencies into the radio stack. Both the "L FUEL EMPTY" and "R FUEL EMPTY" annunciator lights were illuminated. The RPM gauge indicated around 2,450 rpm.

File 20160402_090454.mp4 showed the aircraft in flight. Both the "L FUEL EMPTY" and "R FUEL EMPTY" annunciator lights were illuminated.

File 20160402_090659.mp4 showed the aircraft in flight. Both the “L FUEL EMPTY” and “R FUEL EMPTY” annunciator lights were illuminated. The altitude was around 3,450 feet MSL. The engine instrument display could not be clearly identified. Indicated airspeed was around 190 knots.

File 20160402_091032.mp4 showed the aircraft in flight. Around 3 seconds into the recording, the engine was heard making a surging noise. During the time of the noise, the pilot’s right hand was on the throttle. As the engine surged, the pilot moved his hand from the throttle as if to manipulate something on the instrument panel. No engine instruments were captured in the recording. The GPS showed that the aircraft was not on a direct track toward the programmed waypoint. At 8 seconds into the recording, the passenger appeared to put down the PED and no other useful visual information was captured. The recording ended 4 seconds later as the engine was heard surging.