

# NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division  
Washington, D.C. 20594

May 5, 2017

## Personal Electronic Devices

### Specialist's Factual Report By Sean Payne

#### 1. EVENT SUMMARY

Location: Arcanum, Ohio  
Date: September 14, 2016  
Aircraft: Piper PA-11  
Registration: N4910M  
Operator: Private  
NTSB Number: CEN16FA370

On September 14, 2016, about 0915 eastern daylight time, a Piper PA-11 airplane, N4910M, impacted terrain while maneuvering near Arcanum, Ohio. The student pilot and passenger were fatally injured and the airplane was substantially damaged. The airplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Day visual meteorological conditions existed at the time of the accident. The local flight departed without a flight plan from a private grass strip about 0800.

#### 2. DETAILS OF INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following devices:

|                            |                           |
|----------------------------|---------------------------|
| Device Manufacturer/Model: | <b>ZTE Prestige N9132</b> |
| Serial Number:             | <b>32585724085A</b>       |

|                            |                               |
|----------------------------|-------------------------------|
| Device Manufacturer/Model: | <b>Samsung Galaxy S6 Edge</b> |
| Serial Number:             | <b>Unknown</b>                |

##### 2.1.1. ZTE Prestige N9132 Device Description

Both the ZTE and Samsung Galaxy are Portable Electronic Devices (PEDs). These devices are typically consumer electronic devices capable of communications, data processing and/or utility. Examples range from handheld, lightweight electronic devices such as tablets, e-readers, and smartphones to small devices such as MP3 players and electronic toys.

### 2.1.2. ZTE Prestige N9132 Device Condition

Upon arrival at the Vehicle Recorder Laboratory, an examination revealed the unit had sustained minor impact damage. The rear cover was opened and the SIM card was removed. There was no microSD card present in the device's expandable memory slot. The unit was able to power only when connected to a DC power supply. The unit often rebooted during usage for undetermined reasons. Figure 1 shows the device with its rear cover and SIM card removed.



Figure 1. Photo of ZTE Prestige N9132

### 2.1.3. ZTE Prestige N9132 Data Description

The device was reviewed for still images and videos as well as electronic correspondence related to the accident flight. It could not be determined whether the device's optional removable microSD card was ever installed.

There were no videos or photos of the accident flight within the device's native image and video library. A review of the device's application revealed that two short videos taken on the accident flight were recorded using the Snapchat<sup>1</sup> application. The two short videos were approximately 10 seconds long. Both videos were posted to the Snapchat user's "my story"<sup>2</sup> feature. Both videos were taken by the rear seat passenger. A seatbelt buckle was visible in the rear passenger's lap area. One video showed the aircraft flying low over a grassy area. It could not be determined from the short video whether the grassy area was associated with an airstrip. The other short video showed the aircraft maneuvering at a slightly higher altitude over an open area. The videos were determined to be of little value to the investigation and did not capture the accident sequence.

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<sup>1</sup> A picture and video social sharing application.

<sup>2</sup> The Snapchat My Story feature allows the user to share videos and images for a period of 24 hours that are viewable only by the user's "friends" within the application.

A review of the device's text messaging<sup>3</sup> activity and emails did not reveal any conversation related to the accident flight.

In other conversations within one text messaging application, the user had referenced marijuana in the following manner in at least three separate conversations:

- Making arrangements with others to purchase marijuana
- Discussing the use of other's urine to pass a drug screening procedure
- Discussing arrangements to meet others to use marijuana

### **3.2.1. Samsung Galaxy S6 Edge Device Condition**

Upon arrival at the Vehicle Recorder Laboratory, an examination revealed the unit had sustained significant impact damage. The screen was destroyed and the unit's home button was missing. The unit was bent near the center section of the device. The rear of the device was compromised and portions of the device's functional components and battery were exposed. Figure 2 shows the front and back of the device.



**Figure 2. Photo of Samsung Galaxy S6 Edge**

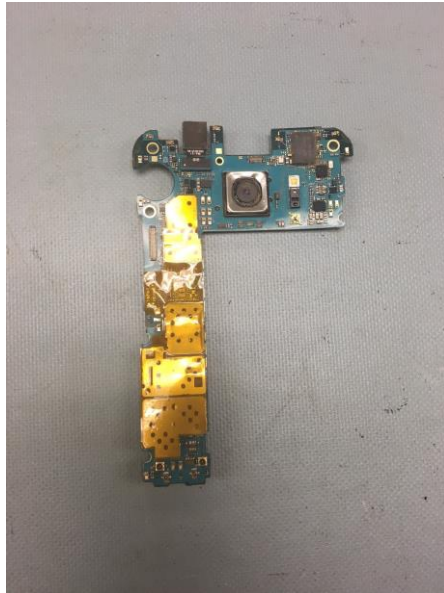
The device was opened and the unit's main board was exposed (figure 3). The main board was removed (figure 4). The main board was bent transversely in the center of the unit. The main board was further inspected for damage. Figures 5, 6 and 7 are stereoscopic images of 3 of the device's silicon chips. These 3 chips were found to be cracked through their silicon die, rendering the device non-functional and unable to be powered in a surrogate device.

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<sup>3</sup> In this circumstance, "text messaging" refers to both tradition SMS messaging as well as internet based text messaging sent across social applications.



**Figure 3. Photo of Samsung Galaxy S6 Edge after being opened.**



**Figure 4. Photo of Samsung Galaxy S6 Edge main board.**

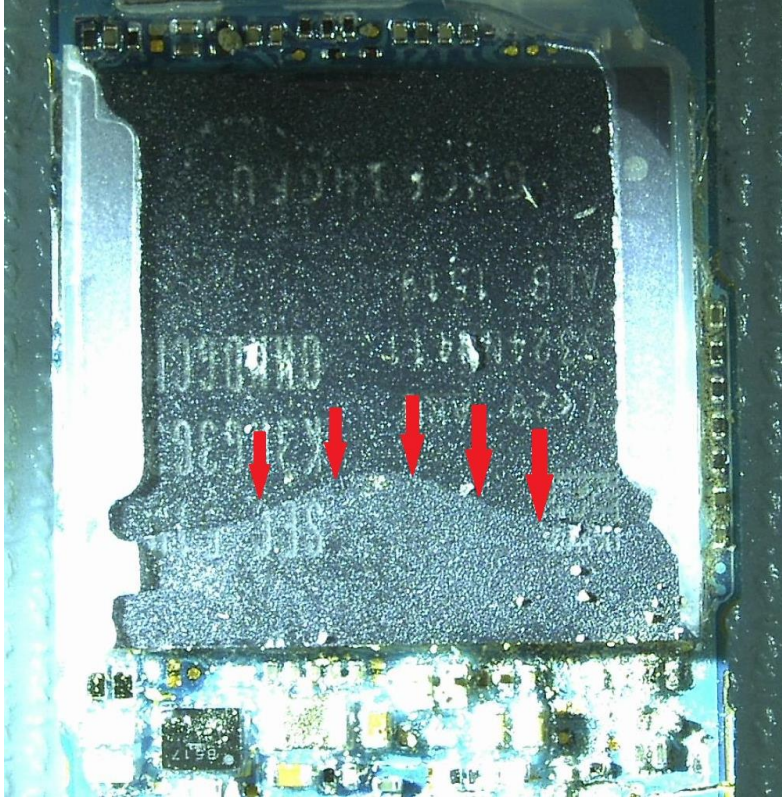


Figure 5. Photo of cracked Samsung Galaxy S6 Edge chip. Red arrows highlight affected area.

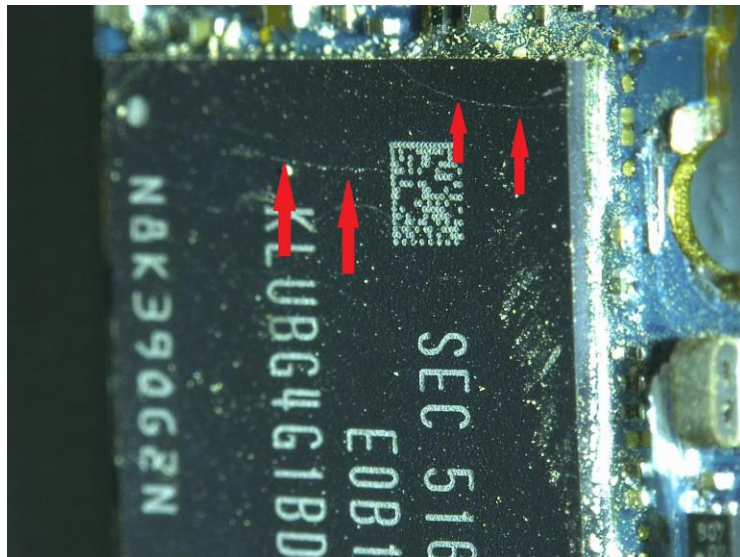


Figure 6. Photo of cracked Samsung Galaxy S6 Edge chip taken on a 45 degree angle. Red arrows highlight the affected area.

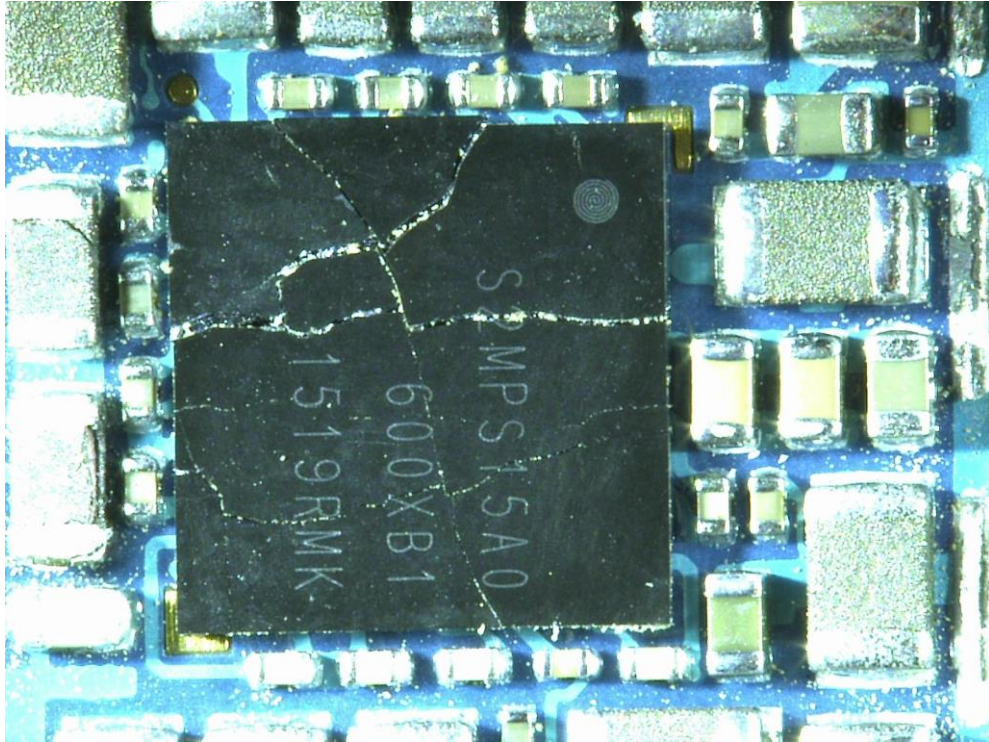


Figure 7. Photo of cracked Samsung Galaxy S6 Edge chip.

### 3.2.2. Samsung Galaxy S6 Edge Data Description

Due to significant damage to the device's internal components, the unit's main board could not be reinstalled in a surrogate device. No data were recovered from the device.