

**NATIONAL TRANSPORTATION SAFETY BOARD**  
Office of Aviation Safety  
Central Region

**UAS Aerial Imagery Field Notes**

4/24/2019

**A.    ACCIDENT            CNE19FA122**

Location:               Kingsland, Texas  
Date:                    April 21, 2019  
Time:                    1443  
Event:                   Rans S-7S impacted runway and burned

**B.    PERSONNEL**

UAS RPIC:              Josh Lindberg  
                              National Transportation Safety Board  
                              Central Region

**C.    ACCIDENT SUMMARY**

On April 21, 2019, at 1443 central daylight time, a Rans S-7S airplane, N25TX, impacted the ground after takeoff from Shirley Williams Airport (44TE), Kingsland, Texas. The pilot and pilot-rated-passenger were fatally injured and the airplane was destroyed by a postimpact fire. The airplane was registered to and operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the accident and no flight plan was filed. The local flight was departing at the time of the accident. A witness reported that the pilot had just completed touch-and-go landings at 44TE before he landed and the passenger boarded. He saw the airplane taxi back to the runway then shortly after heard it impact the ground. The airplane departed to the south on runway 16 and impacted the ground near the south end of the runway

**D.    DETAILS OF IMAGERY**

**1.0    Equipment and Procedures**

**Equipment**

Mapping of the wreckage area was conducted on April 21, 2019, using the NTSB DJI Phantom 4 Advanced small unmanned aircraft system (sUAS, commonly known as a drone). The drone is equipped with a dual GPS/GLONASS receiver which provides georeference information on all still photos. The drone is equipped with an FC6310 camera using the Sony Exmor 1” CMOS sensor, with a focal length of 8.8 mm. Still photo resolution is 20 megapixels in JPG format.

## **Procedures**

The accident site was on a non-towered airport in Class G airspace, private strip (44TE)

Runway 16 common due to prevailing south wind

Dimensions: 2600 x 100 ft Surface: Turf

Traffic Pattern: Left Obstacles: Trees and powerlines

The airport manager closed the airport to support the accident investigation. The flight was conducted under 14 CFR 107. The wreckage area was at the south end of runway 16 on the east side. The near obstruction were 30 ft trees on the east side about 25 ft from the east side of the wreckage. Wind was moderate 10-15 knots, and flight precautions were taken to account for the wind. The goal of the UAS imagery was to make a detailed map of the wreckage and terrain.

The sUAS was flown in 4 overlapping single grids over the south end of the runway to create an orthomosaic terrain map. Additional oblique stills were taken of the wreckage area and from above the runway looking north and south to aid in photogrammetry processing and documentation of the site. Total flight time was approximately 30 minutes.

## **Processing**

Initial processing included a 3D orthomosaic map.

### **2.0 Imagery products**

Approximately 200 high resolution photos were captured and stored by the IIC. Select images and snapshots from video are included below.



Figure 1 – Aerial from the north



Figure 2 – Aerial from the north



Figure 3 – Aerial runway view from south with notation. Wreckage on the lower right side



Figure 4 – Google Earth of wreckage with impact measurement

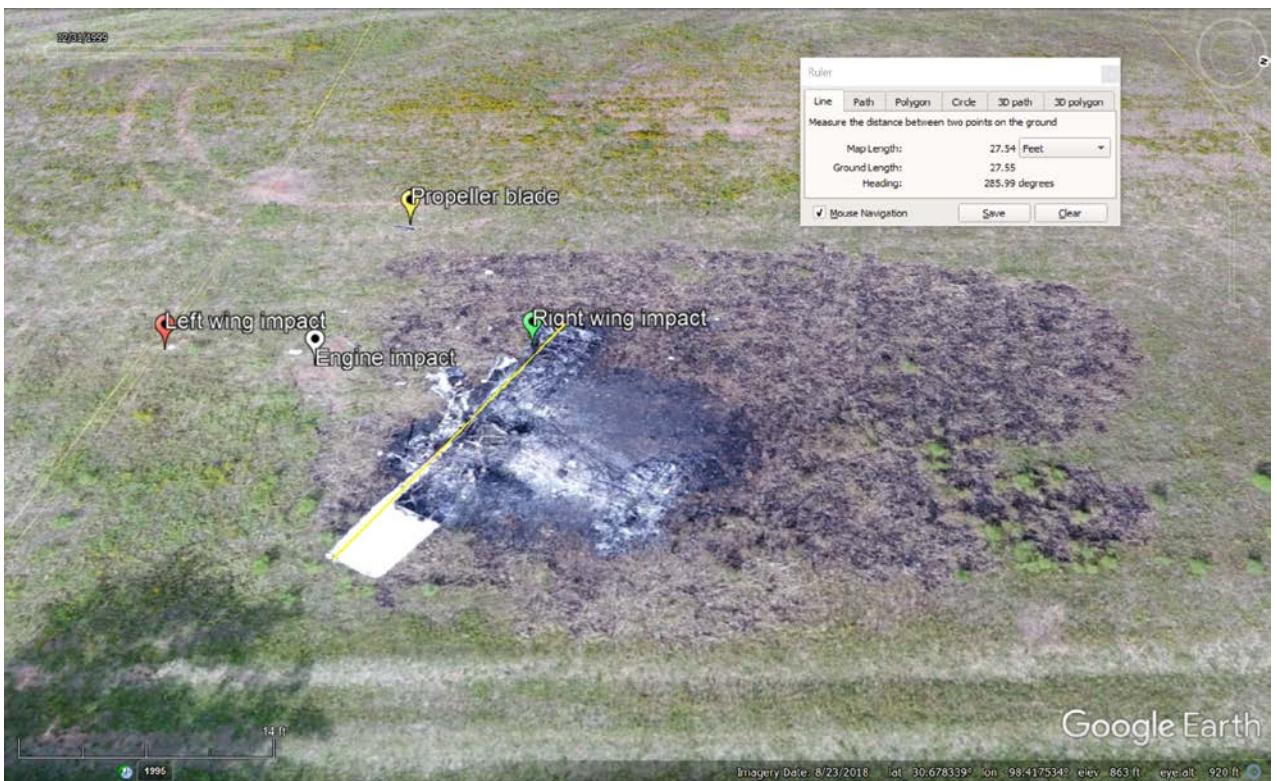


Figure 5 – Google Earth of wreckage with wing measurement