



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

February 4, 2018

Group Chairman's Factual Report

AIR TRAFFIC CONTROL

ERA17FA073

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A. ACCIDENT

Location: Sevierville, Tennessee
Date: December 26, 2016
Time: 1602 eastern standard time (EST)¹
2102 coordinated universal time (UTC)
Airplane: C182H, N1839X

B. AIR TRAFFIC CONTROL GROUP

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C. SUMMARY

On December 26, 2016, about 1602 eastern standard time, a Cessna 182H, N1839X, was destroyed when it collided with mountainous terrain during descent for landing into Gatlinburg-Pigeon Forge Airport (GKT), Sevierville, Tennessee. The private pilot and two passengers were fatally injured. Instrument meteorological conditions prevailed, and no flight plan was filed for the personal flight, which was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91. The airplane departed Keystone Airpark (42J), Keystone Heights, Florida, about 1300.

D. DETAILS OF THE INVESTIGATION

The air traffic control group was formed on December 27, 2016. The group consisted of the chairman from operational factors, a subject matter expert from the Federal Aviation Administration (FAA), an air safety investigator, and air safety investigator in training from the National Air Traffic Controllers Association (NATCA).

Through a request to the FAA compliance services group, the group requested Knoxville air traffic control tower and terminal radar approach control (TYS ATCT/TRACON) radar source data, voice recordings, copies of various administrative documents from the day of the accident, most recent internal and external compliance verifications and associated corrective action plans, standard operating procedures (SOP), daily facility logs, position logs, controller work schedules, controller training and qualification records, maintenance playback of the event (on-site), and other documentation pertaining to the accident.

¹ All times are in eastern standard time (EST) unless otherwise noted.

On January 10, 2017 the group arrived in Knoxville and met at the lodging facility where an organizational meeting was conducted in preparation for on-site activities.

On January 11, 2017, the group met at the TYS ATCT/TRACON facility and was provided an in brief by the air traffic manager (ATM) and members of his staff. Also present were members from the FAA's compliance services group (CSG), office of chief counsel, eastern service area quality control group (ESA QCG), and Atlanta ATCT (ATL ATCT) support manager. The group was provided an operational tour of the TRACON, followed by a STARS² maintenance replay. The group then conducted interviews with the front-line manager (FLM) that was on duty at the time of the accident, as well as the ATM. After reviewing additional data, the group concluded the on-site activities for the day.

On January 12, 2017, the group met at the TYS ATCT/TRACON facility, spent some time reviewing additional data provided by the FAA, followed by interviews with the radar west (RW) controller and radar west associate (RWA) controller that were on position at the time of the accident, as well as the contract training coordinator. After collection and review of additional data provided by the FAA, the group concluded on-site activities for the day.

On January 13, 2017, the group completed the field notes, obtained concurrence, and concluded the field phase of the ATC investigation. Summaries of all interviews conducted on-site are contained in Attachment 1.

E. FACTUAL INFORMATION

1.0 History of Flight

The following is a basic timeline obtained from certified audio provided by the FAA. All times are in EST and rounded to the nearest minute, and all altitudes are in feet above mean sea level (msl) unless otherwise noted. For more detailed information on this timeline, see the FAA Aircraft Accident Package (TYS-ATCT-0090) located in the public docket.

- 1314 The pilot of N1839X first checked in with approach control at Jacksonville (JAX) ATCT and requested VFR flight following to GKT. The Vitts sector controller provided the Gainesville altimeter setting of 30.34 and instructed the pilot to maintain VFR and squawk 3070. The pilot acknowledged. N1839X continued to fly north through the JAX satellite sector and north sector with routine services being provided before being handed off to Jacksonville Air Route Traffic Control Center (ZJX ARTCC).
- 1341 The pilot of N1839X first checked in with ZJX ARTCC, and the Waycross sector controller provided the Jacksonville altimeter setting of 30.38. The pilot acknowledged.
- 1420 The Waycross sector controller broadcast the availability of Atlanta ARTCC (ZTL) Center Weather Advisory (CWA) 101, which informed of existing areas of low visibility and patchy fog north of ZJX airspace. N1839X continued to fly north through the ZJX

² Standard Terminal Automation Replacement System – A system that receives radar data and flight plan information and presents the information to air traffic controllers on high resolution, 20" x 20" color displays allowing the controller to monitor, control, accept hand-off of air traffic, and assist with weather avoidance.

airspace with routine services being provided before being handed off to Atlanta TRACON (A80).

- 1429 The pilot of N1839X first checked in with A80, and the Macon sector controller provided the current altimeter of 30.36 and verified his altitude of 8,500 feet. N1839X continued to fly north through A80 airspace with routine services being provided before being handed off to ZTL.
- 1518 The pilot of N1839X first checked in with ZTL, and the Commerce sector controller provided the current Athens altimeter setting of 30.41. The pilot acknowledged. N1839X continued to fly north through ZTL airspace with routine services being provided before being handed off to TYS ATCT.
- 1554 The pilot of N1839X first checked in with the TYS ATCT, and the RW controller provided the TYS altimeter setting of 30.28. The pilot acknowledged the altimeter and requested to begin his descent. The RW controller instructed the pilot to maintain VFR and that altitude was at his discretion. The pilot acknowledged (no further transmissions were recorded from the accident pilot).
- 1602 The RW controller transmitted that radar contact was lost with N1839X, and that the last known position was 15 miles south-southeast of GKT airport. After receiving no response from the pilot, the RW controller then transmitted that radar services were terminated, squawk VFR, and frequency change was approved. Again, no response was received from the pilot.
- 1940 TYS ATCT received a phone call from Sevierville County Sheriff's department to advise they had received a call from an individual at GKT about an overdue aircraft [N1839X]. the caller stated they had received a text from one of the passengers at around 1600 that said they were about 15 minutes from the airport.
- 1954 TYC ATCT called ZTL to initiate an ALNOT for N1839X.

2.0 Radar Information

Radar data for this accident was provided by the FAA, and the source radar for data used in development of the figures in Attachment 2 was the Knoxville (TYS) ASR-9, located in Knoxville, Tennessee about 28 nautical miles west-northwest of the accident site, at an elevation of 1,035 feet msl, and had a magnetic variation of 4° west.

Figure 1 is a plot of the final portion of the accident flight track overlaid onto a standard geographical road map. Other key features illustrated in this figure for better understanding are the destination airport of GKT, accident site, and prominent mountain peaks on either side of the flight track near the accident. Mt. LeConte was located about 1 mile east-northeast of the accident site and had a peak of 6,593 feet, and Clingmans Dome was located about 5 miles southeast of the accident site and had a peak of 6,643 feet.

Figure 2 is a plot of the final portion of the accident flight track overlaid onto satellite imagery from a view directly overhead. In addition to the final portion of the flight track, a line illustrating the projected heading to GKT has been provided.

Figure 3 and 4 are plots of the final portion of the accident flight track overlaid onto satellite imagery with enhanced terrain depicted. These figures illustrate the mountainous terrain in the area, and approximate location of the accident.

3.0 Weather Information

GKT was the closest weather station to the accident site, located two miles southeast of Sevierville, Tennessee. GKT had an Automated Weather Observing System (AWOS)³ whose reports were not supplemented. GKT was located 13 miles north-northwest of the accident site. The following observations were taken and disseminated during the times surrounding the accident:

[1535 EST] METAR KGKT 262035Z AUTO 00000KT 10SM BKN050 OVC060 18/13
A3031 RMK=

[1555 EST] METAR KGKT 262055Z AUTO 00000KT 10SM 19/13 A3031 RMK=

[1602 EST] TIME OF ACCIDENT

[1615 EST] METAR KGKT 262115Z AUTO 00000KT 10SM FEW046 18/13 A3030 RMK=

KGKT weather at 1535 EST, automated, wind calm, 10 miles visibility, broken ceiling at 5,000 feet above ground level (agl), overcast skies at 6,000 feet agl, temperature of 18° Celsius (C), dew point temperature of 13° C, and an altimeter setting of 30.31 inches of mercury.

KGKT weather at 1555 EST, automated, wind calm, 10 miles visibility, cloud group missing, temperature of 19° C, dew point temperature of 13° C, and an altimeter setting of 30.31 inches of mercury.

KGKT weather at 1615 EST, automated, wind calm, 10 miles visibility, few clouds at 4,600 feet agl, temperature of 18° C, dew point temperature of 13° C, and an altimeter setting of 30.30 inches of mercury.

AIRMET Sierra that forecasted mountain obscuration conditions due to clouds, precipitation, and mist was current for the area of the accident site at the time of the accident.

Cloud ceilings around the time of the accident would have required the solicitation of PIREPs⁴ by air traffic control. For more detailed weather information, please see the Weather Study Report.

³ AWOS – Automated Weather Observation Station - A computerized system that automatically measures one or more weather parameters, analyzes the data, prepares a weather observation that consists of the parameter(s) measured, provides dissemination of the observations and broadcasts the observation to the pilot near the airport.

⁴ Pilot Weather Report – A report made by a pilot of meteorological phenomena encountered by an aircraft in flight.

4.0 FAA Air Traffic Procedures

The following are excerpts from FAA Order JO 7110.65, Air Traffic Control, that apply to various services provided during this event. The complete document is available to the public at the FAA's website <https://www.faa.gov/>.

10-2-5. EMERGENCY SITUATIONS

Consider that an aircraft emergency exists and inform the RCC or ARTCC when any of the following exist:

NOTE—USAF facilities are only required to notify the ARTCC.

- a. An emergency is declared by either:
 - 1. The pilot.
 - 2. Facility personnel.
 - 3. Officials responsible for the operation of the aircraft.
- b. There is unexpected loss of radar contact and radio communications with any IFR or VFR aircraft.

Consider an aircraft to be in an emergency status and initiate ALNOT procedures in this section immediately when there is an abnormal simultaneous loss of radar and communications with an IFR aircraft or VFR/SVFR aircraft receiving flight following services. This situation may be applicable to an aircraft operating in a non-radar environment and an unexpected/abnormal loss of communications occurs.

2-6-3. PIREP INFORMATION

Significant PIREP information includes reports of strong frontal activity, squall lines, thunderstorms, light to severe icing, wind shear and turbulence (including clear air turbulence) of moderate or greater intensity, volcanic eruptions and volcanic ash clouds, detection of sulfur gases (SO₂ or H₂S) in the cabin, and other conditions pertinent to flight safety.

- a. Solicit PIREPs when requested or when one of the following conditions exists or is forecast for your area of jurisdiction:
 - 1. Ceilings at or below 5,000 feet. These PIREPs must include cloud base/top reports when feasible.

TERMINAL. Ensure that at least one descent/climb out PIREP, including cloud base/s, top/s, and other related phenomena, is obtained each hour.

F. LIST OF ATTACHMENTS

Attachment 1: Interview Summaries

Attachment 2: Radar Plots / Figures

Submitted by:

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