



## NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety  
Washington, D.C. 20594

February 13, 2013

### Group Chairman's Factual Report

## AIR TRAFFIC CONTROL

ERA13LA042

#### A. AIRCRAFT ACCIDENT

**Location:** Sevierville, TN

**Date:** October 28, 2012

**Time:** 1434 Eastern Daylight Time (EDT) / 1834 Coordinated Universal  
Time (UTC)<sup>1</sup>

**Aircraft:** N4478F, Piper PA-32R-300

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<sup>1</sup>All times are expressed in Coordinated Universal Time (UTC) unless otherwise noted.

## **B. AIR TRAFFIC CONTROL GROUP**

**Chairman:** Mr. Daniel Bartlett  
National Transportation Safety Board (NTSB)  
Washington, D.C.

Mr. Ernesto Rodriguez  
Terminal Safety Services Group (AJI-151)  
Federal Aviation Administration  
Washington, D.C.

Mr. Chad Sneve  
National Air Traffic Controllers Association (NATCA)  
Air Safety Investigator (ASI)  
Atlanta, GA

## **C. SUMMARY**

On October 28, 2012, about 1434 eastern daylight time, a Piper PA-32R-300, N4478F, impacted a pole and trees after departure from Gatlinburg-Pigeon Forge Airport (GKT), Sevierville, Tennessee. The certificated private pilot and one passenger were not injured and three passengers received minor injuries. The airplane, forward of the empennage, was consumed by post-impact fire. The airplane was registered to Space Coast Aviation Sales LLC and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions were present at the departure airport; however, instrument meteorological conditions prevailed in the area and an instrument flight rules flight plan had been filed for the flight destined for the Space Coast Regional Airport (TIX), Titusville, Florida.

According to the pilot the flight was being provided radar vectors by an air traffic controller at a nearby approach control facility. He had received a terrain warning on his global position system (GPS) and queried the controller; however, he received no reply. Subsequently the GPS provided an obstacle warning and then a rooftop was observed in the clouds. He pitched up and banked the airplane, in order to clear the rooftop and the now visible trees. However, the underside of the airplane impacted several trees prior to the airplane coming to rest inverted in a tree about 15 feet above ground level. A post-impact fire began and the occupants exited the airplane.

Initial examination of the airplane by a Federal Aviation Administration inspector revealed that the airplane impacted a pole and some trees located on a mountain about 2,600 feet above mean sea level, prior to coming to rest. The airplane was consumed by post-impact fire, except for approximately 6 feet of the empennage.

## **D. DETAILS OF THE INVESTIGATION**

The air traffic control group convened at the air traffic control facility located at the McGhee Tyson Airport, Knoxville, Tennessee (TYS) on November 5, 2012. The TYS approach control facility provided ATC services to the Gatlinburg-Pigeon Forge Airport (GKT), Sevierville, Tennessee. The ATC group met with and was provided an in-brief by Mr. Mark Mustard, Acting Air Traffic Manager (ATM). Also present at the in-brief were Mr. Michael Dean, FAA Eastern Service Area (ESA) Quality Control Group (QCG); Mr. Jeff Coffey, TYS NATCA Representative; Mr. Randal Rogers, TYS Support Specialist; and Mr. Andy Johnson, Event Investigation Manager (EIM), FAA AJI-13.

According to the ATM, the TYS East sector radar controller on position at the time of the incident was a veteran controller who had been at TYS for 23 years. Prior to the October 2012 incident, the TYS East sector radar controller had 3 significant operational incidents within the previous 12 months. The incidents involved two losses of separation where two aircraft were vectored to converging courses in October 2011 and a loss of separation when an aircraft was vectored into the departure corridor of TYS with an aircraft departing in April of 2012. Additionally, an operational incident occurred in April of 2012 when the controller cleared an aircraft for takeoff from TYS. The aircraft lost electrical power on the departure roll and taxied off the runway. The pilot of the disabled aircraft called the FBO on a cell phone who connected the pilot to the tower to advise of the situation. The controller was not aware that the aircraft had not taken off and had cleared a subsequent aircraft for takeoff on the same runway. Corrective action for the tower event was a performance discussion with the front line manager (FLM). Corrective action for the two losses of separation was skill enhancement training directed by the Air Traffic Safety Action Program (ATSAP) Event Review Committee (ERC), which had been completed.

The TYS East sector radar controller was removed from the FAA on January 15, 2013.

During the in-brief, the ATM provided a video replay of the event that included both the accident aircraft and N3XD, an aircraft which departed GKT prior to the accident aircraft. N3XD departed GKT and turned south before reaching the minimum vectoring altitude<sup>2</sup> (MVA). The controller asked the pilot if he had good visual reference to the terrain. The pilot said he could see the ground but not see ahead of him, so the controller suggested a heading of 230 degrees for his climb but did not issue a safety alert. The ATM stated that aircraft which departed GKT were often in an area at or approaching an altitude that would not comply with the minimum vectoring altitude because of the filed flight course or because of controller initiated shortcuts. This often resulted in controllers having to scramble to provide terrain avoidance while avoiding issuing a radar vector below the MVA.

Following the in-brief, the group reviewed ATC data provided by TYS, toured the facility, and interviewed three controllers and a front line manager.

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<sup>2</sup> Minimum Vectoring Altitude (MVA) - The lowest mean sea level (MSL) altitude at which an Instrument Flight Rules (IFR) aircraft will be vectored by a radar controller, except as otherwise authorized for radar approaches, departures, and missed approaches. The altitude meets IFR obstacle clearance criteria.

## **E. FACTUAL INFORMATION**

### **1.0 History of Flight**

The pilot of N4478F filed an instrument flight rules (IFR) flight plan via the Direct User Access Terminal System (DUATS) at 1728 UTC on October 28, 2012. The flight plan estimated a true air speed of 145 knots and included a proposed departure time of 1815 UTC. The flight plan stated that the pilot planned to depart from GKT to TIX via the Volunteer VORTAC (VXV), direct to the DUBBS low altitude reporting point, direct to the NELLO low altitude reporting point, direct to the Craig VORTAC (CRG), then direct to the Ormond VORTAC (OMN). The estimated time en-route was 3 hours and 24 minutes. The flight plan listed 5 persons on board.

At 1819:04, the pilot of N4478F called TYS and requested his IFR clearance to TIX. TYS asked which runway N4478F would be departing from, and how long before the pilot was ready to depart. The pilot advised they would be departing from runway 28 in 10 minutes. TYS advised N4478F that this would be a “hold for release” clearance, cleared to the Titusville airport as filed, maintain five thousand feet, expect six thousand feet 10 minutes after departure, departure control frequency 118.0, squawk 2204. The pilot read back that he was to “hold for release to Titusville as filed; maintain five thousand, expect six thousand 10 minutes, frequency 118.0, squawk 2240.” TYS advised that the clearance read back was correct, reiterated hold for release and told the pilot to advise when N4478F was number one for departure. TYS advised N4478F that there was another aircraft departing GKT ahead of N4478F. N4478F acknowledged and asked for clarification of his assigned transponder code of 2240. TYS advised that the correct code was 2204.

At 1828:01, N4478F called TYS and advised they were number one for departure from GKT on runway 28. TYS advised N4478F that they were released for departure and to contact TYS on frequency 118.0 when airborne. TYS advised that the Knoxville altimeter was 29.90. N4478F acknowledged.

At 1830:28, N4478F reported to TYS that they were just off runway 28 at GKT climbing through 1,500 feet for 5,000 feet. TYS acknowledged.

At 1831:02, TYS asked N4478F to ident.<sup>3</sup> N4478F acknowledged.

At 1831:32, TYS directed N4478F to climb and maintain 6,000 feet. N4478F acknowledged.

At 1831:52, TYS asked N4478F if he wanted to go all the way to the Volunteer VORTAC, or if he wanted vectors for departure and then direct to the DUBBS intersection in about 15 miles. N4478F advised that “vectors will be fine.” TYS directed N4478F to fly heading 260 degrees and to maintain 6000 feet. N4478F acknowledged with “260 to 6000, seven eight fox.”

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<sup>3</sup> Ident. Air Traffic Control request for a pilot to push the button on the transponder to identify return on the controller’s scope.

At 1834:05, N4478F advised TYS that they were getting a terrain advisory and asked if they were in the clear. There were no further transmissions or responses from N4478F.

N4478F impacted trees and terrain and came to rest at 35 48 55N/83 39 13W. The certificated private pilot and one passenger were not injured and three passengers received minor injuries.

## 2.0 Radar Data

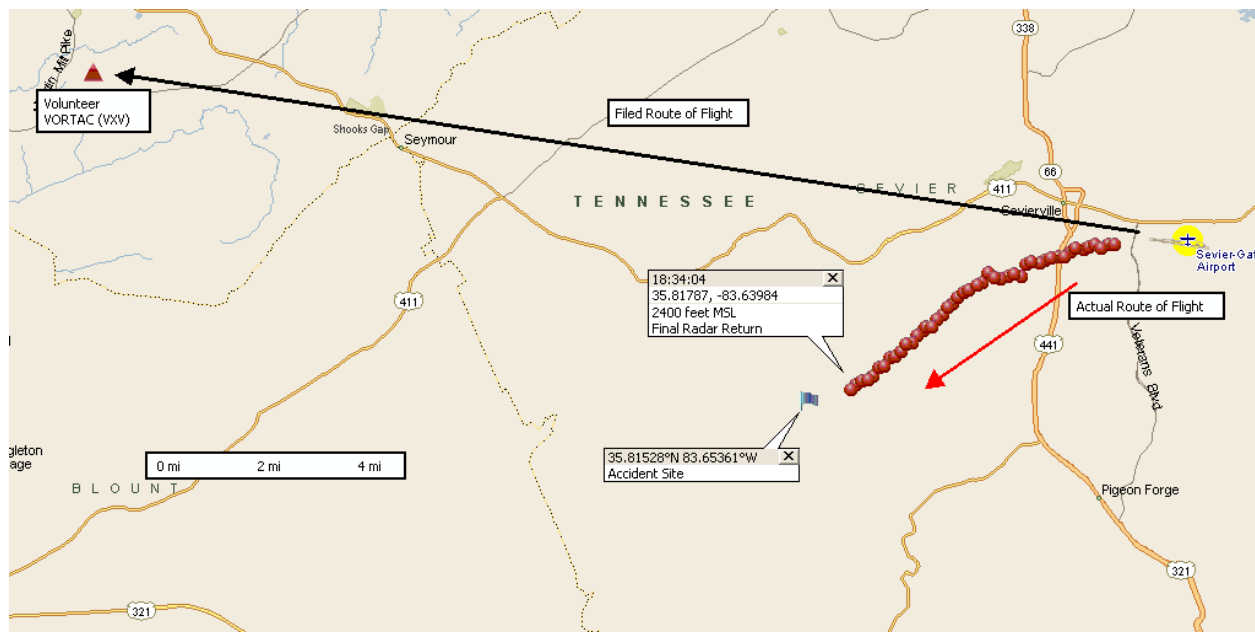


Figure 1: Radar flight track of N4478F indicated by red dots. Filed route of flight indicated by a black arrow. Actual route of flight indicated by a red arrow. Accident site indicated by a blue flag. The Volunteer VORTAC, indicated by a red triangle, is located 18 miles west of GKT. Radar source was the TYS Airport Surveillance Radar (ASR) located at 35 48 44N / 084 00 35W.

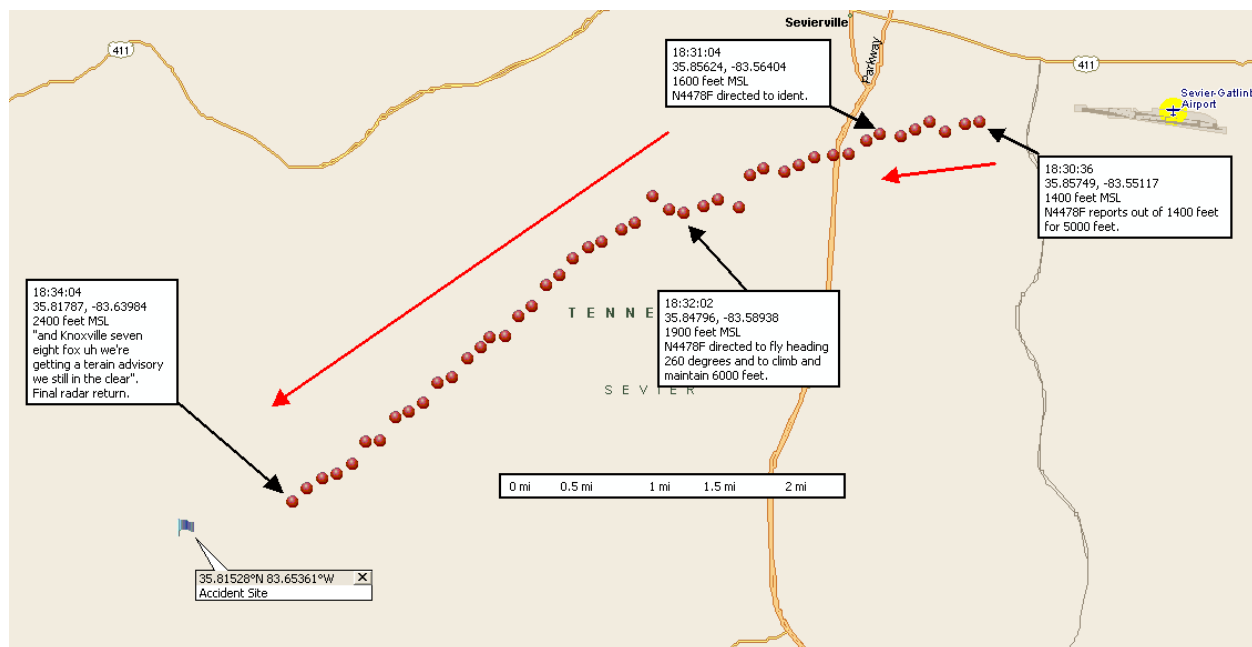


Figure 2: Radar flight track of N4478F indicated by red dots. Route of flight indicated by red arrows. Accident site indicated by a blue flag. Departure airport, GKT, indicated by an aircraft symbol highlighted in yellow.

### 3.0 GKT Departure Procedure - Terminal Procedures Publication (TPP)

According to the Terminal Procedures Publication current at the time of the accident, the obstacle departure procedure for GKT runway 28 was to climb direct VXV VORTAC to 5000 before turning on course. The first segment of the departure route issued to N4478F was the same as the published obstacle departure procedure.

### 4.0 Weather Information

The 1753Z Aviation Routine Weather Report (METAR) observation for TYS, located 23 nautical miles west of the Gatlinburg airport, was wind 340 degrees at 9 knots, visibility 9 statute miles in light rain. Scattered clouds at 1200 feet above ground level (AGL), broken clouds at 1400 feet AGL, overcast clouds at 3000 feet AGL, temperature 9 degrees Celsius, dew point 7 degrees Celsius, altimeter 29.89 inches of mercury. The 1823Z special METAR weather observation for TYS was wind 350 degrees at 13 knots gusting to 19 knots, visibility 10 statute miles in light rain, scattered clouds at 1200 feet AGL, broken clouds at 2000 feet AGL, overcast clouds at 3000 feet AGL, temperature 9 degrees Celsius, dew point 7 degrees Celsius, altimeter 29.89 inches of mercury. The 1849Z special METAR for TYS was wind 350 degrees at 9 knots, visibility 10 statute miles, broken clouds at 1400 feet AGL, overcast clouds at 2500 feet AGL, temperature 9 degrees Celsius, dew point 7 degrees Celsius, altimeter 29.89 inches of mercury.

## **5.0 Personnel Interviews**

### **5.1 Steven Creasy - Certified Professional Controller (CPC)**

The ATC Group interviewed Mr. Creasy on November 6, 2012. Mr. Creasy was represented by Ms. Gretchen McMullen, NATCA Senior Labor Relations Attorney. In response to questions presented by the group, Mr. Creasy provided the following information:

Mr. Creasy was working the TYS Radar West position combined with the radar controller-in-charge (CIC) position during the accident.

Mr. Creasy began working for the FAA in January 1989 as a Co-op controller at Atlanta ARTCC. After attending the FAA Academy in Oklahoma City, Mr. Creasy reported to TYS in September of 1990 and had been at TYS since. Mr. Creasy's operating initials were SC.

Mr. Creasy was qualified and current on all positions at TYS, and was also qualified as CIC and as an on the job training instructor (OJTI). Mr. Creasy's supervisor was Mark Mustard. Mr. Creasy's Class II medical certificate was current with no waivers or restrictions. Mr. Creasy held no FAA airman certificates other than his control tower operator certificate.

Mr. Creasy's work schedule consisted of 2 evening shifts of 1300 to 1600 until 2100 to 2400, 2 0600 to 1000 until 1400 to 1800 shifts, one 2300 to 0700 shift all local time, followed by two days off. On October 28, the day of the accident, Mr. Creasy was working the second evening shift from 1300 to 2100 local time. Mr. Creasy stated that 25% of his working hours over the previous 6 months had been overtime, but that he had not worked overtime in the last 5 weeks. Mr. Creasy attributed the overtime requirement to a lot of controllers in training which resulted in staffing shortages.

When asked to describe the accident, Mr. Creasy stated that he was working the radar west/radar CIC position during the incident and was unaware of anything going on until after the fact. His only knowledge of the details of the accident had been as a result of subsequent review of the related ATC data.

Mr. Creasy stated that his duties as the radar CIC included equipment oversight, coordination with other facilities and controller on-the-spot corrections although he did not recall ever providing an on-the-spot correction as a CIC.

Mr. Creasy stated that the minimum vectoring altitudes were established based on underlying terrain, with a 2000 foot minimum terrain clearance in mountainous areas and 1000 feet minimum clearance above obstacles.

Mr. Creasy described the GKT DP for runway 28 as runway heading direct to VXV, climb and maintain 5000 feet, and the DP for runway 10 at GKT as a climbing left turn via the VXV 090 radial westbound to VXV climbing to 5000 feet. Mr. Creasy stated there were between 2 and 20 departures from GKT per day and 50% or less of those departures utilized the DP. Of the pilots that used the DP, pilots deviated from the GKT DP on a regular basis. Mr. Creasy stated that he

could usually tell within 3-5 miles of an aircraft departing GKT that the pilot had deviated from the DP and that most traffic from GKT was bound for Florida, so southerly deviations were the most common. Asking a pilot departing GKT if he had the terrain in sight and giving a suggested heading to avoid terrain was a common at TYS.

Mr. Creasy said that his practice when observing a course deviation from the GKT DP was to ask the pilot if he could maintain visual reference to the terrain. If the pilot responded that he could not, he was then vectored to an area of lower terrain. Mr. Creasy stated that the best tool available to get a pilot's attention when the pilot was entering an area at an altitude below the MVA was to issue a low altitude warning or safety alert.

Mr. Creasy noted that communications with aircraft departing from GKT were often difficult with a lot of repeated transmissions. "Say again" transmissions to aircraft departing GKT were common.

Mr. Creasy stated that training at TYS was sufficient to address the departure procedure scenario of this accident.

Mr. Creasy stated that there were no issues between labor and management and that the only equipment issues he had was with radar nuisance alarms for low altitude alerts within 5 miles of the airport.

## **5.2 Alfred Stephens - Certified Professional Controller (CPC)**

The ATC Group interviewed Mr. Stephens on November 6, 2012. Mr. Stephens was represented by NATCA Senior Labor Relations Attorney, Ms. Gretchen McMullen. In response to questions presented by the group, Mr. Stephens provided the following information:

Mr. Stephens was not working any position related to the accident. Mr. Stephens began working for the FAA in February 1988 at the air traffic academy in Oklahoma City. Mr. Stephens had worked at Knoxville ATCT/TRACON (TYS) since June 1988. He was qualified and current on all operating positions within the facility, and was also qualified to act as a CIC and OJTI. Mr. Stephens's operating initials were SS. His supervisor was Mr. Mike Gersh. Mr. Stephens's medical certificate was current with a restriction to wear corrective lenses. Mr. Stephens held no FAA airman certificates other than his CTO.

Mr. Stephens's work schedule consisted of Friday and Saturday off, followed by a 2-2-1 schedule composed of two evening shifts, two day shifts and a midnight shift. Mr. Stephens rarely worked overtime.

Mr. Stephens said there were several satellite airports within the TYS airspace and five of them were depicted on the radar map. He also said that not all satellite airports have published departure procedures. Mr. Stephens stated that the GKT departure procedure was direct VXV off of runway 28 and a climbing left turn direct VXV off of runway 10, climbing to five thousand feet on both routes. Mr. Stephens believed that making the GKT DP part of the departure clearance would improve safety.

Mr. Stephens didn't feel it was appropriate and he had never issued a departure heading to a GKT departure. He did issue departure headings to aircraft departing the Knoxville Downtown airport to keep them away from other traffic. GKT departures routinely turned early to the south towards the mountainous terrain. Mr. Stephens stated that when an aircraft was observed turning towards the terrain he would ask them if they could maintain their own terrain and obstruction clearance. He didn't mind turning an aircraft or making a suggested heading whenever they were headed towards the mountains and sometimes he would direct an aircraft to fly direct VXX. Mr. Stephens said that he had issued and he had seen other controllers issue safety alerts to aircraft depending on the position and performance type of the aircraft. Mr. Stephens did feel that he received adequate training to work traffic in the mountainous area of TYS.

### **5.3 Geoffrey Wright - Front Line Manager**

The ATC Group interviewed Mr. Wright on November 6, 2012. Mr. Wright was represented by Mr. Brooke Lewis, Senior FAA Attorney AJC-400, via telephone. In response to questions presented by the group, Mr. Wright provided the following information:

Mr. Wright was assigned as the FLM at the time of the accident.

Mr. Wright began working for the FAA in 1989 at Hartford Tower (HFD). In 1994 he transferred to Nashville Tower/TRACON (BNA). In 2006 he transferred to TYS as a FLM where he has remained since. Mr. Wright's operating initials were GT.

Mr. Wright was qualified and current on all positions, with currency requirements being 8 hours per month and exposure to each position in the facility. Mr. Wright held no FAA airman certificates other than his CTO. Mr. Wright's supervisor was Tammy Easterday.

Mr. Wright's Class II medical was current with a waiver requiring eyeglasses when performing ATC duties. He was wearing glasses at the time of the accident.

Mr. Wright's work schedule consisted of a rotating shift of 1400 to 2200 or 1500 to 2300 local time Monday thru Thursday and 0800 to 1600 local time on Friday. Every other week his schedule changed to 0800 to 1600 local time on Monday and 0600 to 1400 or 0500 to 1300 local time Tuesday thru Friday. The day of the accident was a Sunday, and Mr. Wright had changed his days off to cover for another FLM that was on scheduled leave. Mr. Wright was originally scheduled to work from 1000 to 1800 local time, but the shift was changed to 0900 to 1700 local time because numerous military aircraft were relocating to TYS to avoid Hurricane Sandy.

Mr. Wright was the only FLM assigned to the TRACON on October 28, 2012. Mr. Wright was in the front office doing some skill enhancement paperwork for one of the developmental controllers assigned to TYS when Mr. Joel Campbell, another developmental controller currently training in the tower, entered his office and advised Mr. Wright that he was needed in the radar control room immediately.

When he entered the radar control room, Mr. Creasy, the radar CIC, was working Radar West, and Mr. Robert Mader was working Radar East. Mr. Mader told Mr. Wright that he was no longer talking to an airplane and that it had disappeared. Mr. Wright asked Mr. Mader if he had climbed the aircraft. Mr. Mader responded that the aircraft had been assigned 6000 feet and that it kept turning south. Mr. Wright then asked Mr. Mader if he had turned the aircraft, and Mr. Mader responded that he had turned the aircraft to a 290 degree heading. Mr. Wright asked Mr. Mader for the aircraft's last known position, and Mr. Mader pointed to a location on the radar scope. Mr. Wright then went to the supervisor's desk and started making telephone calls. Mr. Wright's first call was to the Gatlinburg FBO to ask if the aircraft had returned to the airport. Gatlinburg FBO advised that they had not seen the aircraft. Mr. Wright asked if they could transmit on their FBO frequency to see if the aircraft would respond. Gatlinburg FBO advised Mr. Wright that the aircraft was not on their frequency. Mr. Wright stated that he was not familiar with the communication capabilities of the GKT FBO.

Mr. Wright then printed a copy of FAA form 8020-3, Accident/Incident Notification Record, and started with the number on the top which was the Sevierville 911 dispatcher. When the dispatcher answered the call, Mr. Wright identified himself and where he was calling from. The 911 dispatcher replied, "...you must be calling about the airplane crash." Mr. Wright responded that he was. The dispatcher told Mr. Wright that a homeowner had called reporting the accident. The homeowner told the dispatcher that there were 5 occupants on the airplane and that they were all in her house. The homeowner advised the dispatcher that she had some medical background, and gave her a partial address and phone number. Mr. Wright asked the dispatcher if police and medical personnel were at the scene, and the dispatcher responded that they were en-route. Mr. Wright then asked if she knew the extent of the injuries, if any, and the dispatcher advised that she thought that they were minor and that the aircraft was on fire.

After the telephone call to 911, Mr. Wright made more telephone calls following the checklist. While Mr. Wright was on the phone, another controller walked into the control room and Mr. Wright immediately asked him to relieve Mr. Mader from the Radar East position. Mr. Wright stated that Mr. Mader was relieved from the position before 1500 but did not know the exact time it occurred. Mr. Wright then called in the TYS Staff Specialist, Mr. Randy Rogers, and the TYS NATCA facility representative, Mr. Jeff Coffey, to assist him with the event. Mr. Wright did not remember at what time Mr. Rogers and Mr. Coffey arrived at the facility. Mr. Mader spent the rest of his shift with Mr. Coffey. Mr. Wright and Mr. Rogers spent the rest of the shift reviewing audio recordings and video replays of the accident. Mr. Wright noticed that after the accident Mr. Mader was not his usual jovial self and that he appeared sedate.

Mr. Wright stated that the pilot had called from the ambulance that was transporting him to the hospital. One of the medics had used his phone to contact the TRACON, but the call was not on a recorded line. The pilot identified himself to Mr. Wright, but due to background noise he could not understand the pilot's name. The pilot advised Mr. Wright that the occupants had all been able to exit the aircraft and that they were headed to the hospital in two ambulances. The pilot told Mr. Wright that he remembered being asked if he wanted to go direct Volunteer or if he preferred a radar vector, and he remembered requesting the radar vector. The pilot told Mr. Wright that he recalled the terrain warning and he got the general impression from the controller that he was not in the clear. The pilot told Mr. Wright that the next thing he saw was roof tops

and trees. Mr. Wright stated that the pilot sounded upset because he had to repeat himself due to the noise. Mr. Wright then told the pilot that they needed to end the conversation and that he needed to tend to his family.

Due to the variety of his shifts, Mr. Wright worked with most controllers assigned to TYS and did not think controllers took care of each other. Mr. Wright rated Mr. Mader below average and stated that Mr. Mader was not one of the best controllers at TYS. It was his opinion that Mr. Mader is not held in high regard by his peers, and that they did not think he was a good controller or good employee. Mr. Wright stated that Mr. Mader took a lot of spot leave, came to work late, left work early and always requested leave to donate blood. Mr. Wright stated that after other incidents Mr. Mader had received skill enhancement training recommended by the ATSAP ERC, and had also been the subject of performance discussions with Mr. Wright, but they had not worked. Mr. Wright stated that Mr. Mader does not prioritize his job as highly as he should and that he lacked professionalism and seemed to care more about other aspects of his life than his job. Mr. Wright stated that he did not think Mr. Mader should come back to TYS.

Mr. Wright stated that when he started in the FAA controllers felt there were consequences to their actions. Now controllers use ATSAP as a “get out of jail free” card. The ATSAP program had created some obstacles and FLM’s cannot address performance issues without getting approval from the ERC. Mr. Wright felt that all of this had contributed to the issue with Mr. Mader.

Mr. Wright stated that issuing the DP out of Gatlinburg as part of the standard instrument departure clearance would help prevent this GKT departure situation from recurring. Safety alert and refresher training were also a good idea. Mr. Wright stated that that type of training has been done in the past, but after this accident the emphasis would be greater and more effective. Mr. Wright stated that Mr. Mader was the only controller at TYS that would have handled the situation the way it was handled.

Mr. Wright stated that most of the time both CIC’s and FLM’s were working an operational position while performing supervisory duties at TYS. Mr. Wright also stated that due to staffing, controllers were often required to perform duties as a controller-in-charge while performing control duties, and that the practice was more common in the tower than the radar room.

Mr. Wright stated that the normal staffing for a midnight shift was 2 CPC’s and that they worked both the tower and radar functions from the tower cab. During the midnight shift controllers were given a two hour recuperative break followed by additional time to get up to speed with the operation before relieving each other. Controllers were authorized one recuperative break per midnight shift assignment. Mr. Wright did not know what percentage of the time there was only one controller working the tower cab, saying that he had not done the math to figure that out. Mr. Wright did not have an opinion on this practice, since the decision had been made by others above his level that seemed to believe the program was necessary for controllers.

Mr. Wright stated that as far as he knew, the departure procedures for satellite airports were not contained in the information display system (IDS). Mr. Wright stated that the DP for Gatlinburg runway 28 departures was proceed to Volunteer VOR climbing to 5000 feet before proceeding

on course. Mr. Wright had seen deviations from this DP in the past, but since he was not at TYS 24 hours a day he did not know if that was a common practice.

After Mr. Wright reviewed the video replay of the accident and the previous departure off Gatlinburg, he stated that the controller should have issued a vector to a lower MVA as soon as the experimental aircraft pilot advised the controller that he was preceding direct to the Harris VOR (HRS). Due to the location of the aircraft he felt that a suggested heading was appropriate. Mr. Wright stated that a safety alert would have been more effective and that if he had seen this type of performance he would have discussed it with Mr. Mader and issued a performance record of conference. The last time Mr. Wright saw an aircraft deviating from the DP had been during VFR weather. Mr. Wright stated that safety alerts were rarely issued at TYS.

Mr. Wright stated that he did not feel that minimum safe altitude warning<sup>4</sup> (MSAW) alerts were a nuisance, but that they should review the MSAW logic algorithms just to make sure that settings were correct.

#### **5.4 Robert Mader - Certified Professional Controller (CPC)**

The ATC Group interviewed Mr. Mader on November 7, 2012. Mr. Mader was represented by Ms. Gretchen McMullen, NATCA Senior Labor Relations Attorney. In response to questions presented by the group, Mr. Mader provided the following information:

Mr. Mader was working the TYS Radar East position at the time of the accident.

Mr. Mader began working for the FAA in August 1989 when he attended the FAA academy. Mr. Mader reported to TYS in December 1989 and had been at TYS since then. He completed tower training in 1991 and radar training in 1993. The delay between his tower and radar rating was attributed to a large number of developmentals vying for radar training time. Mr. Mader was qualified and current on all positions within the facility and was qualified to perform CIC and OJTI duties. Mr. Mader's operating initials were MR. Mr. Mader considered his training at TYS to be adequate, with recurring training, to perform his duties at TYS.

Mr. Mader's Class 2 medical certificate was current with no waivers or restrictions. Mr. Mader held no FAA airman certificates other than his CTO. Mr. Mader's supervisor was Mark Mustard.

Mr. Mader's working hours were a 2-2-1 rotation with Wednesday and Thursday off. Mr. Mader had worked 8 overtime shifts since August and noted that overtime had increased since last spring. Mr. Mader attributed the increased overtime to staffing shortages, transfers and military reserve duty for other controllers. Mr. Mader stated that the overtime had been kind of hard and sometimes conflicted with personal issues.

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<sup>4</sup> Minimum Safe Altitude Warning (MSAW) – A function of the air traffic control computer system that aids the controller by warning when a tracked Mode C equipped aircraft is below or is predicted by the computer to go below a predetermined minimum safe altitude.

When asked to describe the accident, Mr. Mader stated that he was working the Radar East position when N4478F departed GKT. Mr. Mader directed the pilot of N4478F to ident, radar identified him and reiterated his assigned altitude. Mr. Mader observed an MSAW alert on N4478F and again reiterated his assigned altitude. Mr. Mader noted that the pilot was climbing slowly and tracking about 240 to 250 degrees. Mr. Mader asked the pilot if he wanted radar vectors. The pilot said he did, so Mr. Mader issued a vector heading of 260 degrees. Mr. Mader then issued instructions to another aircraft and pulled some strips from the Flight Data (FD) position, as the FD position was not staffed. When he returned to the scope, N4478F was asking about a terrain warning. Mr. Mader did not consider himself so busy that he could not simultaneously pull strips from the FD position and work aircraft. Mr. Mader had issued N4478F a heading and altitude and considered the situation well in hand. After N4478F asked about the terrain warning, Mr. Mader brought up the minimum en-route IFR altitude<sup>5</sup> (MEA) map, which was radar map #3, showing obstructions. He had to wait for the map to display before providing a response to N4478F. By the time Mr. Mader observed the MEA map and developed a response to the pilot, N4478F did not respond. Mr. Mader advised the Radar West controller and another controller in the radar room that they needed to get the FLM and ask him to come to the radar room. Meanwhile Mr. Mader asked airborne aircraft to check and see if they were receiving an ELT. The airborne aircraft reported hearing an ELT. Mr. Mader remained on the position for approximately 25 additional minutes before being relieved. As Mr. Mader was being relieved, the FLM received a phone call from the pilot advising that all the passengers had exited the aircraft.

Mr. Mader requested and was granted Office of Workers' Compensation Programs<sup>6</sup> (OWCP) leave based on advice from the NATCA representative and his co-workers.

Mr. Mader stated that he had allowed a previous GKT departure, N3XD, to traverse the airspace south of GKT below the MVA because he knew the aircraft was clear of obstructions but acknowledged that he should have issued a safety alert to the aircraft when he entered the airspace at an altitude below the MVA even if the aircraft only clipped the MVA airspace. Mr. Mader utilized radar video map #5, the MVA map, when he needed to know exactly where the MVA boundaries were, but felt confident that he was familiar enough with the airspace to know where the MVAs were generally located.

After a review of the radar playback, Mr. Mader acknowledged that he had not radar identified N4478F and issued a radar vector without radar identification. Mr. Mader stated that in hindsight, he should have been more proactive with N4478F, issued a safety alert and issued a suggested heading to get N4478F above the MVA. Mr. Mader stated that he was required to mark his strips with radar contact, radar handoff, and radar contact lost but did not do so with the N3XD and N4478F flight progress strips. Mr. Mader stated that he did not issue "radar contact lost" because N4478F was not answering his radio queries and that issuing "radar contact lost" was the least of his worries at the time.

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<sup>5</sup> Minimum En Route IFR Altitude (MEA) - The lowest published altitude between radio fixes which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes.

<sup>6</sup> Office of Workers' Compensation Programs (OWCP) provides compensation benefits to civilian employees of the United States for disability due to personal injury sustained while in the performance of duty or to employment-related disease. These benefits include payment of medical expenses and compensation for wage loss.

Mr. Mader stated that he had a “pretty good” relationship with facility management and with his peers. Mr. Mader stated that he had recently had some remedial skill enhancement training and that it had been sufficient to address the causal issues.

Mr. Mader stated that on the day of the accident, he had been bothered by skin irritation on the back of his legs that occasionally felt similar to bee stings, but that it had since been addressed. He stated that it was not a major issue but could have been a factor affecting his performance. Mr. Mader stated that he did not request leave because of critical staffing, but stated that if the skin irritation had become a major issue, he would have requested to be relieved.

Mr. Mader stated that he loved his job at TYS.

When asked to address the issues of safety alerts and the GKT departure procedure, Mr. Mader stated that safety alerts were rarely issued at TYS and he had never heard a safety alert issued in relation to a departure from GKT. The departure procedure deviations were worse when aircraft were departing runway 10 at GKT, because the MVA of 7000 feet is so close to the departure end of the runway. Mr. Mader had issued safety alerts before but could not recall a specific situation. Mr. Mader stated that DP deviations were common for aircraft departing GKT and recalled observing a deviation as recently as last week. Mr. Mader stated that less than half the departures from GKT utilize the DP.

Mr. Mader had never observed a heading assigned to an aircraft departing GKT before takeoff. He did not know why, but he just did it the way that he had been trained to do so.

Dan Bartlett  
Transportation Safety Specialist  
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