NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

December 13, 2012

Group Chairman's Factual Report

AIR TRAFFIC CONTROL

ERA12FA409

A. ACCIDENT

Location:	Morgantown, West Virginia
Date:	June 22, 2012
Time:	1001 eastern daylight time[1]
	1401 Coordinated Universal Time[2]
Airplane:	N508GT, Raytheon-Beech King Air C90

[1] All times are eastern daylight time (EDT) based on a 24-hour clock, unless otherwise noted.
[2] UTC – Coordinated Universal Time – an international time standard using four digits of a 24-hour clock in hours and minutes based on the time in Greenwich, England.

B. AIR TRAFFIC CONTROL GROUP

Mr. Scott Dunham
National Transportation Safety Board
Washington, DC

Mr. Tony James
Federal Aviation Administration
Washington, DC

Mr. Curt Fischer
National Air Traffic Controllers Association
Boston, Massachusetts

C. SUMMARY

On Friday, June 22, at 1001 eastern daylight time, N508KA, a Raytheon-Beech King Air C90, incurred substantial damage after striking a commercial broadcast antenna located about 8 miles northeast of the Morgantown Municipal Airport, Morgantown, West Virginia. The commercial pilot and sole occupant was killed. The flight was operating under visual flight rules between Nemacolin, Pennsylvania and Morgantown under Title 14 Code of Federal Regulations Part 91. At the time of the accident, the pilot was receiving radar services from the Federal Aviation Administration approach control located near Clarksburg, West Virginia.

D. DETAILS OF THE INVESTIGATION

The air traffic control group convened on July 3, 2012, at Clarksburg Air Traffic Control Tower (ATCT) to obtain a facility briefing on the accident, review training materials and other local documentation, observe the radar position handling the aircraft, and interview the supervisor and controller involved in the accident and subsequent response. The group then completed interviews and departed the facility..

1.0 History of Flight

According to recorded radar data, N508GT departed from Nemacolin, an uncontrolled airport, about 0958. The pilot contacted Clarksburg approach at 0959:22 to obtain radar service. After controller acknowledgement of his call, at 0959:31 the pilot stated, "uh Clarksburg uh 508GT's 14 miles to the uh northeast landing Morgantown. After obtaining the aircraft's type from the pilot, at 0959:53 the controller issued transponder code 0130 and the pilot acknowledged. The aircraft's displayed transponder code changed from 1200 to 0130 at 1000:06. At 1000:19, the controller transmitted, "King Air 508GT you're radar contact niner miles east of Morgantown Airport, 3,100, maintain VFR, expect runway 18, advise when you have the weather." At 1000:28, the pilot responded, "uh roger we're getting it." The aircraft was approximately 3.8 nautical miles northeast of the antenna.

Between 1001:05 and 1001:32, the controller was engaged in a discussion with Mystic 42, a C-130 executing a practice approach to the Elkins airport. According to recorded radar data,

N508GT struck the antenna at 1001:22. At 1001:37, the controller made the first of several unsuccessful attempts to contact the pilot and transfer communications to Morgantown Tower. There was no further contact with the aircraft.

2.0 Radar Data

Radar data for this report was obtained from the Clarksburg (CKB) ASR-8 radar sensor located about 1.4 miles north of the North Central West Virginia Airport, Clarksburg, West Virginia, and 31 miles southwest of the antenna. N508GT was first detected by the radar on a 1200 transponder code at 0958:55, 3 miles southwest of the Nemacolin Airport. The transponder code changed to 0130 at 1000:06, and the aircraft continued straight ahead until colliding with the antenna at an indicated altitude of about 3,000 feet above sea level. The aircraft's ground speed was approximately 217 knots. Figure 1 shows an overview of the 1200 and 0130 codes associated with N508GT. Figure 2 shows only the 0130 codes. Figure 3 is an excerpt of the radar map for the area, showing the antenna site, and figure 4 is an excerpt from the Cincinnati sectional chart showing the departure and destination airports as well as the part of the flight when the aircraft was on transponder code 0130.

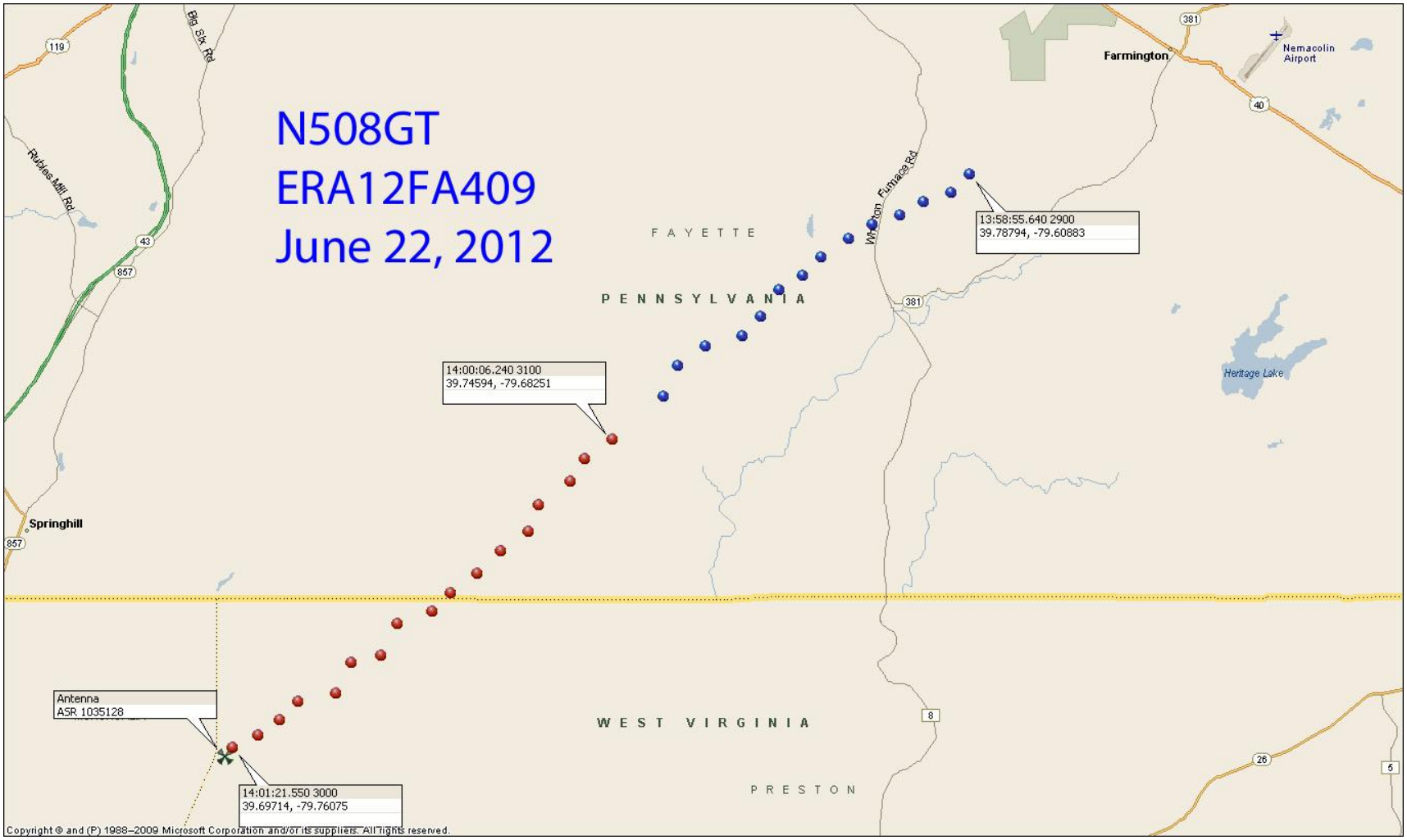

Figure 1. All 1200 (blue dots) and 0130 (red dots) transponder codes for N508GT between Nemacolin and the antenna. Tags contain universal coordinated time (local time + 4 hours), altitude, and decimal latitude/longitude.

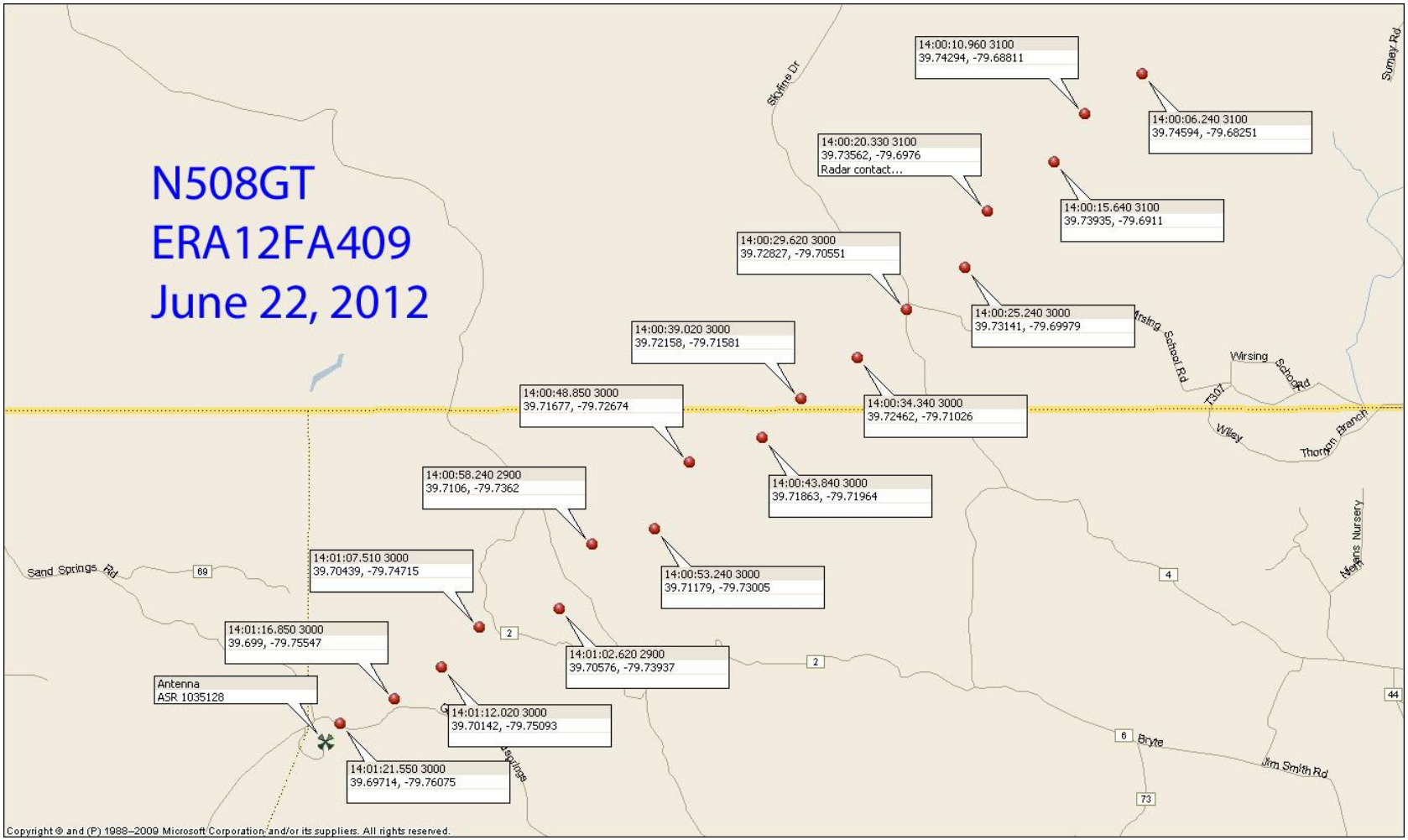

Figure 2. 0130 transponder codes for N508GT as it approached the antenna. Tags contain universal coordinated time (local time + 4 hours), altitude, and decimal latitude/longitude.

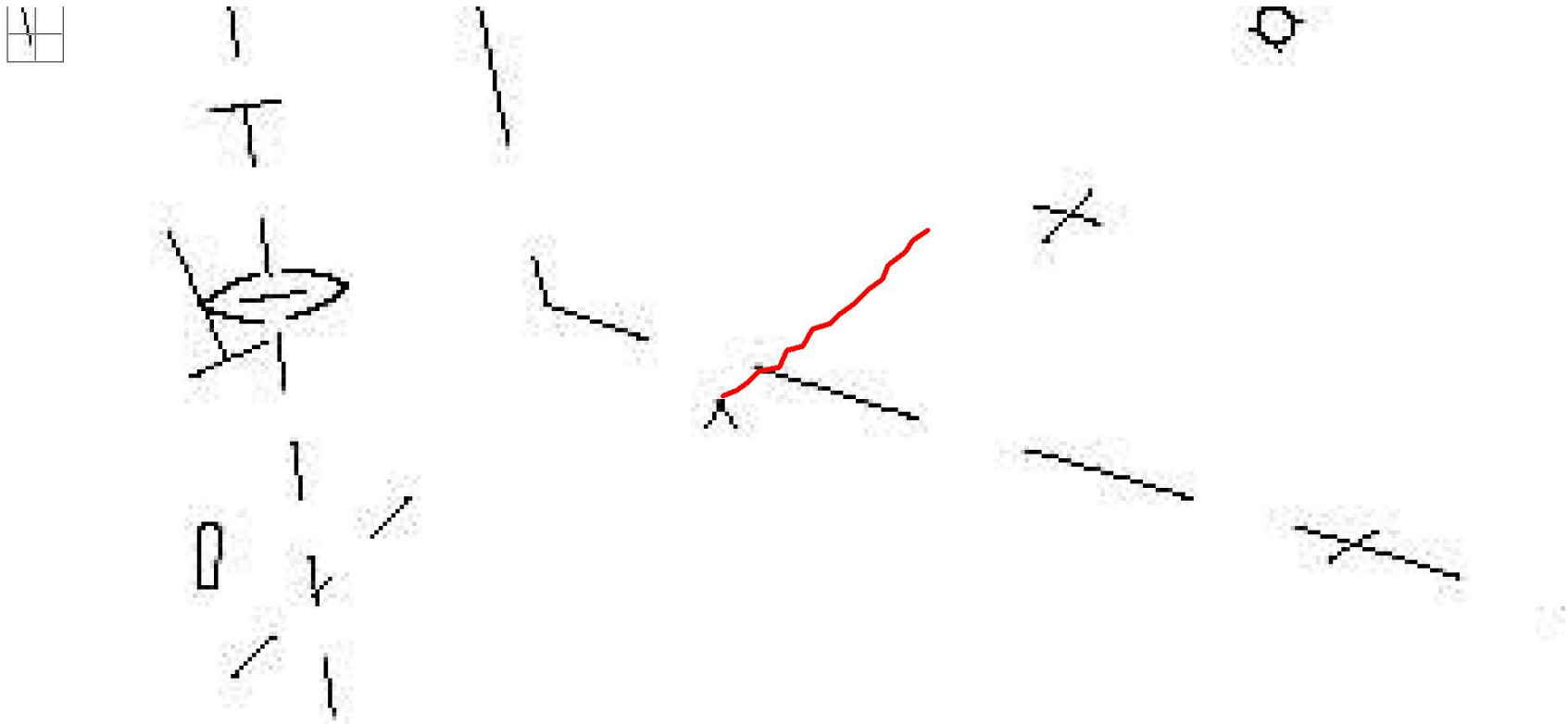

Figure 3 -- Printed radar display map excerpt showing antenna obstruction symbol and plotted radar target trail.

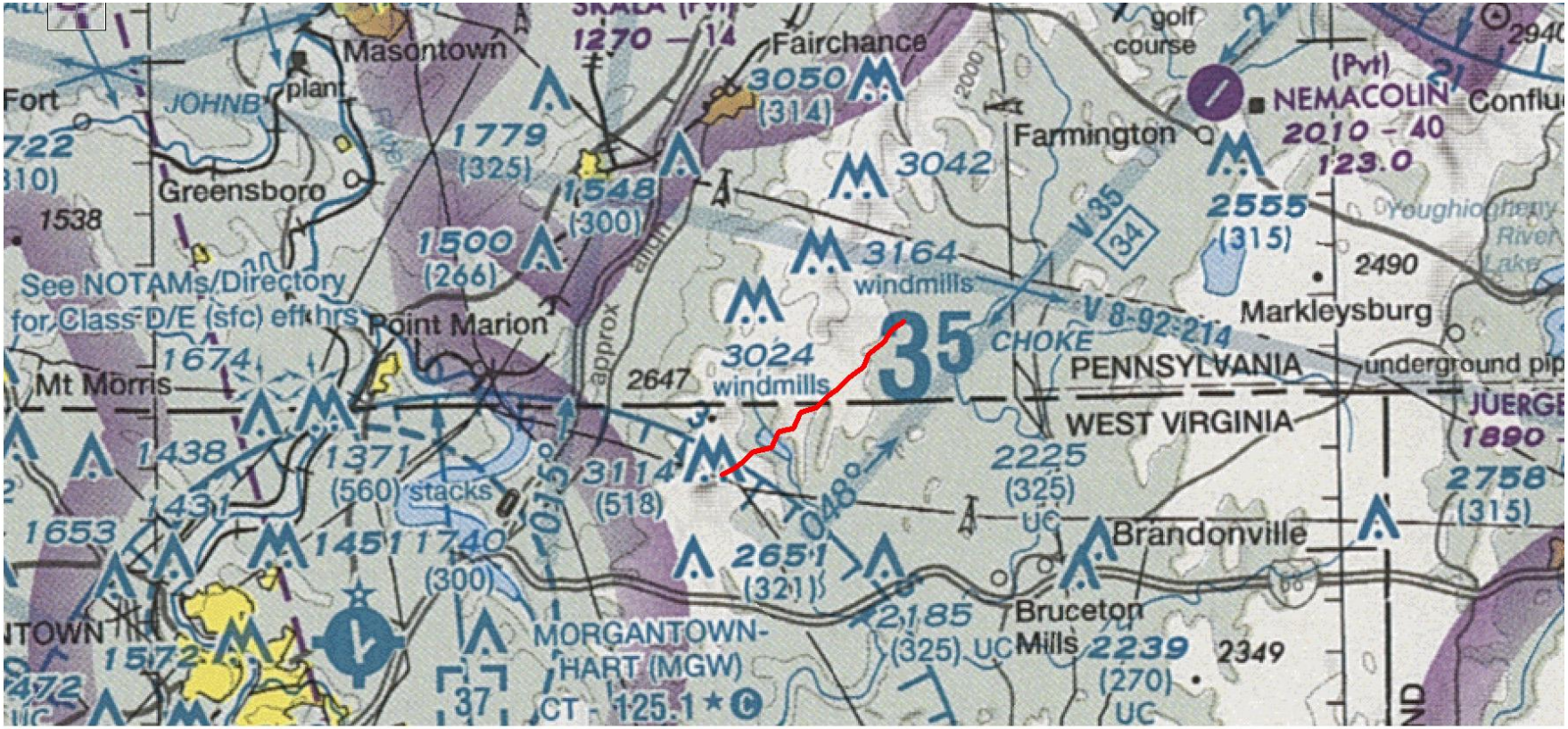

Figure 4 – Aircraft track shown on a Cincinnati sectional chart, with departure and destination airports. Red line indicates 0130 codes.

3.0 Weather Information

The closest weather observing station to the accident site was at Morgantown, West Virginia. The 1353Z (0953 local time) METAR observation was:

KMGW 221353Z 22005KT 9SM FEW017 24/20 A2995 RMK AO2 SLP131 P0001 T02440200

According to information provided in a telephone conversation on June 27 by John Gerlach, the Morgantown ATCT manager, and Gilbert Llewellyn, the tower controller on duty at the time of the accident, the controller's recollection was that the mountains east of the airport were not obscured by clouds at the time of the accident. The antennas were visible, and the windmills located further east were also visible. The controller noted that when he was notified of the inbound King Air flight by Clarksburg Approach, he would have said something to them if he had thought that the aircraft would be unable to remain in VFR conditions during its arrival from the east. Mr. Gerlach came to the tower cab shortly after the accident and his observations agreed with those of the local controller. Both Mr. Gerlach and Mr. Llewellyn reported scanning the area of the reported crash with and without binoculars and noting no unusual conditions.

4.0 Personnel Interviews

4.1 Emily Ensworth CKB TRACON Flight Data

Ms. Ensworth began working for the FAA on November 16, 2011, at the FAA Academy, and reported to Clarksburg ATCT in November 2011. She was certified on all tower positions except for controller-in-charge, and certified on the flight data position in the TRACON. Ms. Ensworth was a graduate of the Beaver College controller training program, and was issued a control tower operator certificate by that program.

Ms. Ensworth first became aware of N508GT when the pilot called the Approach-East (AP-E) radar position for VFR advisories to Morgantown. The AP-E controller entered the aircraft's flight data and issued a transponder code. Ms. Ensworth referred to the AP-W radar scope for the information on N508GT, called Morgantown tower to advise them of the inbound flight, and gave them the aircraft's position, type, and callsign. She did not see anything unusual on the display. She then advised the AP-E controller that the coordination had been completed.

Shortly afterward, the AP-E controller tried to instruct the pilot to contact the tower, but received no response. He continued to try to contact the pilot, both directly and through other aircraft. The AP-E controller notified the FLM, who also became engaged in trying to locate the aircraft. Ms. Ensworth was relieved from the flight data position a few minutes after the accident, and had no further involvement.

Ms. Ensworth recently completed radar training in Oklahoma City and has completed classroom training on radar control at CKB, including study of approach plates, airports, fix locations, navigational aid locations, and the emergency obstruction video map (EOVM). She did not recall any specific study of the minimum vectoring altitude chart; trainees are provided with a completed copy of the chart. She was not anticipating any further testing on charts during her

training. She did not recall any specific directed training on sectional charts or topography, but she did review the sectional for the area on her own as part of her tower training. She was aware that the MVA in the area of the accident was 4200 feet, indicating that the tops of the obstructions were at about 3200 feet, but she had not received specific training on how specific MVAs are determined.

Asked about Mr. Pisanti's reaction after the loss of the aircraft, she said that he stayed calm and continued working his traffic before they actually knew the aircraft had crashed. He told the FLM that he'd lost contact with the aircraft, and then the FLM received a call from outside the facility advising that there had been a crash. About 4 minutes after the call was received, Ms. Ensworth was relieved from the flight data position, completed a relief briefing, and left the radar room. She had no further involvement in the accident sequence.

4.2 Thomas Kisling — CKB Front Line Manager

Mr. Kisling began working for the FAA at New York Center in 1991, and transferred to CKB in 1995. He became a supervisor in 2006.

Mr. Kisling supervises trainee controllers while they are working in the operations room, but does not participate in their classroom training. On the day of the accident, he was assigned as the FLM in charge of the tower and TRACON. He first became aware of the accident aircraft when he heard the pilot check in with the AP-E radar position and get a transponder code. Soon afterward, Mr. Pisanti told him that he'd lost contact with the aircraft. Mr. Kisling began assisting Mr. Pisanti in trying to locate it. They saw a primary target that could have been the aircraft and thought maybe it had suffered an electrical failure. They made repeated attempts to contact the pilot without success, and also attempted to relay communications through other aircraft. They were expecting that the plane would show up at the airport and the tower would report the aircraft in sight. Mr. Kisling said that if the aircraft had not been located soon, he would have contacted the center to initiate search and rescue. However, MGW tower called (about 5 to 9 minutes after the loss of contact) to relay a report that there had been a crash.

Mr. Kisling said that after the loss of contact, Mr. Pisanti had reported, "he just stopped talking to me." After they realized that the aircraft was down, Mr. Kisling began receiving multiple phone calls and started following the checklist in the emergency binder. He was assembling the information necessary to advise the regional operations center about the accident. Asked why he did not get the radar controller off the control position, Mr. Kisling replied that he had been extremely busy with all the phone calls, which he described as "overwhelming." In hindsight, getting the radar controller off the position would have been good, but Mr. Kisling was the only management person available to handle all the calls and other tasks because the air traffic manager and the other supervisor were off that day.

Mr. Kisling stated that during April, May, and June facility personnel received refresher training about safety alerts, aural alarms, and the minimum safe altitude warning system. The training was provided during April, May, and June. Mr. Kisling stated that he has not had any previous performance discussions with Mr. Pisanti about issues related to terrain and obstruction avoidance.

Supervisors at CKB conduct performance management through daily monitoring of controller operations, as well as interaction with other management personnel. Supervisors currently conduct operational skills assessments on 2 to 4 positions a month, which are basically "over-the-shoulder" reviews. Supervisors also review audio recordings of controllers. Performance management is intended to be an ongoing process.

Mr. Kisling stated that most controllers at the facility keep the MVA radar map up on their displays while they are working. Only one controller does not do so, but Mr. Kisling described him as very safe and very good, possibly the best controller at CKB. Mr. Kisling stated that controller classroom training does include map study, and familiarity issues are addressed as necessary. He recently encountered a trainee in the tower who needed remedial training on geographical awareness. The issue was resolved by meetings with the controllers training team and further instruction.

Asked how Mr. Pisanti was doing after the accident, Mr. Kisling stated that he seemed OK, but with all the phone calls he had not been paying a lot of attention. There were no distractions in the control room before the accident. There were only three people present, and it was very quiet. Mr. Pisanti was a very conscientious controller, and was paying attention to his display. The flight data controller was a very good trainee, and was very quiet.

Asked to comment about what a controller who instructs a pilot to "maintain VFR" intends, Mr. Kisling stated that the instruction is only required when handling aircraft conducting VFR practice approaches. He can only speculate on why controllers use the term in other situations, saying that he was not sure why they would do that because, "…it seemed a little redundant." His speculation was that controllers who issued the instruction were trying to encourage pilots to remain vigilant for traffic and obstructions or other hazards.

4.3 Anthony Pisanti CKB Radar Controller

Mr. Pisanti began working for the FAA in September 1988 at Pittsburgh tower and TRACON. He transferred to Clarksburg in April 1989 as a radar controller, and has remained at the facility since then.

He first became aware of the accident aircraft when the pilot called as a VFR pop-up 13 miles east of Morgantown. Mr. Pisanti radar identified the aircraft approximately 9 miles east of Morgantown at 3100 feet, instructed the pilot to maintain VFR, and asked if he had the weather information for the airport. The pilot replied that he was "getting it." Mr. Pisanti stated that he then worked some other aircraft, came back to the accident aircraft, and noticed that it was gone. He stated, "it all happened really fast."

Asked to describe his thought process when radar identifying aircraft, Mr. Pisanti stated that he needed to establish the aircraft's location, destination, and altitude. When the accident aircraft called, Mr. Pisanti was unaware of any weather conditions or other problems that could affect the flights the ability to avoid the antenna. There were no reports of wind shear, clouds, haze, or other conditions. His impression when he radar identified the accident aircraft was that it would

be passing north of the antenna. The aircraft was approximately 1.5 to 2 miles from the antenna at the time. The MVA in the area is 4200 feet, and the aircraft was at 3100 feet. Mr. Pisanti stated that VFR aircraft often operate below the minimum vectoring altitude, especially the area north of Morgantown. Seeing VFR aircraft at 3000 to 3500 feet is normal there. Much of the traffic consists of slow climbing aircraft that departed from one of the small VFR airports in the area such as Nemacolin.

Asked about safety alerts, Mr. Pisanti stated that a safety alert is required when, in his judgment, an aircraft is hazardously close to either another aircraft or terrain or obstacles. In this situation, Mr. Pisanti stated that he did not believe that the antenna, "…would be a factor." His evaluation was that the aircraft track appeared to be heading north of the antenna, but he only looked at it for 10 to 15 seconds. He had no concerns, it was just a routine pickup like hundreds of times aircraft enter base at Morgantown from that area. When the track started, it moved straight ahead just like a normal track and was not jumping around. After establishing the track, he then redirected his attention to other aircraft in the southern part of Clarksburg's airspace.

Asked if he had ever issued a safety alert to a VFR aircraft because of terrain issues, Mr. Pisanti stated, "not that I recall." He then added that if he was aware an aircraft was tracking toward hazardous terrain, he would certainly issue an alert.

Asked about the use of the phrase, "maintain VFR", Mr. Pisanti said that his expectation would be that the pilot would see and avoid other aircraft and obstructions. He again noted that he was unaware of any conditions that would have prevented this pilot from seeing the antenna ahead.

Mr. Pisanti said that at the time of the accident, he was using radar maps 1 and 2, which depict airspace boundaries and minimum vectoring altitude area boundaries. That map selection was his normal practice.

5.0 FAA Post-Accident Actions

Following the accident, the Air Traffic Manager reviewed the sequence of events and identified deficiencies in provision of weather information and compliance with procedures for issuance of safety alerts. The facility’s mitigation plan has been included in the docket for this accident.