NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

June 6, 2013

Group Chairman's Factual Report

AIR TRAFFIC CONTROL

ERA13FA088

A. INCIDENT

Location: Parkton, North Carolina
Date: December 16, 2012
Time: 1532 eastern standard time[1] / 2032 universal coordinated time[2]
Airplane: N5714W, Piper PA-28-160 Cherokee

B. AIR TRAFFIC CONTROL GROUP

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C. SUMMARY

On December 16, 2012, about 1532 eastern standard time, a Piper PA-28-160, N5714W, registered to and operated by a private individual, crashed in a wooded area near Parkton, North Carolina. Instrument meteorological conditions prevailed at the time and an instrument flight rules (IFR) plan was filed for the 14 Code of Federal Regulations (CFR) Part 91 personal flight from Summerville Airport (DYB), Summerville, South Carolina, to Fayetteville Regional Airport/Grannis Field (FAY), Fayetteville, North Carolina. The airplane sustained substantial damage and the private pilot, the sole occupant, was fatally injured. The flight originated from DYB about 1400.

D. DETAILS OF THE INVESTIGATION

The air traffic control group convened at FAY airport traffic control tower (ATCT) on Monday, January 7, 2013. The group met with Mr. Jeffrey Boyett, FAY air traffic manager (ATM), for an in brief. Others present were Mr. Pete Gilmore, FAY support specialist, Catherine Gilmore, NATCA facility representative, Mr. Todd Luepker, event investigation manager, and Mr. Irving Washington, from the FAA's Eastern Service Area (ESA) quality control group. The group conducted a tour of the air traffic control tower and terminal radar approach control (TRACON), reviewed all data related to the incident, and reviewed the training folders for the controllers to be interviewed. The group conducted interviews with the local controller (LC), and the Radar East controller that was on duty at the time of the event.

[1] All times are expressed in eastern standard time (EST) 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.

On Tuesday, January 8, 2013, the group reconvened at the FAY ATCT and conducted interviews with the Radar East on-the-job training instructor (OJTI), the developmental controller working the Radar East position, and the front line manager (FLM). The group requested additional data in support of the investigation.

On Wednesday, January 9, 2013, the group reconvened at the FAY ATCT and met with Mr. Boyett for an out brief. Others present were Mr. Pete Gilmore, Ms. Catherine Gilmore, Mr. Luepker, and Mr. Washington. Joining via telecom were members from the Eastern Service Area and FAA headquarters.

E. FACTUAL INFORMATION

1.0 History of Flight

N5714W was a Piper PA-28-160 on a 14 Code of Federal Regulations (CFR) Part 91 personal flight from Summerville Airport (DYB), Summerville, South Carolina, to Fayetteville Regional Airport/Grannis Field (FAY), Fayetteville, North Carolina. The flight was being vectored for an instrument landing system (ILS) approach to runway 4 by the FAY Radar East controller. The pilot's first contact with the FAY Radar East controller occurred at 14:51:41 when the pilot reported level at 5,000 feet. The controller instructed the pilot to advise when he had received Automatic Terminal Information Service (ATIS) information Alpha, and told the pilot to expect the ILS to runway 4. The pilot responded he had information Alpha and acknowledged the ILS approach.

At 14:57:21, the Radar East controller asked the pilot if he could accept direct ZODGI, the initial approach fix (IAF) for the ILS to runway 4 (see fig. 1). The pilot responded that he could accept direct ZODGI. However, the controller issued the pilot a 055 degree heading to join the localizer, and instructed him to report established on the final approach course. The pilot did not respond, so the Radar East controller repeated the transmission. The pilot apologized and acknowledged the instructions.

At 14:59:40, the Radar East controller issued the pilot a weather advisory for a small area of moderate precipitation at the pilot's one o'clock position and 3 miles. The pilot acknowledged the weather advisory.

At 15:04:37, the Radar East controller instructed the pilot to descend to 2,300 feet and verified the pilot was established on the localizer. The pilot acknowledged the altitude assignment, but continued, "…couldn't tell you if we are quite established yet." The pilot asked if the 055 heading still looked good to intercept and the Radar East controller replied affirmative.

At 15:06:05, the Radar East controller told the pilot he was 10 miles from the final approach fix (FAF) and cleared the pilot for the ILS runway 4 approach. The pilot acknowledged the clearance and stated, "I think we are established now." The Radar East controller then told the pilot to contact FAY ATCT.

At 15:07:16, the pilot checked in with FAY ATCT and was cleared to land.

At 15:09:42, the Radar East controller contacted the local controller and told him N5714W appeared to be drifting right of course.

At 15:10:33, the local controller asked the pilot if he was receiving the localizer. At 15:10:38, the pilot responded, "…having a little bit of trouble right now and I seem to have lost some gyros but I think we are getting it."

At 15:11:27, the local controller instructed the pilot to "maintain 1,900 until you are receiving the glideslope." The pilot acknowledged.

At 15:12:15, the local control told the pilot he was crossing CINLO (see fig. 1) and the pilot acknowledged.

At 15:13:29, the local controller asked the pilot if he ever received the glideslope. The pilot responded, "I'm sorry sir yes sir ah, we are I realize we are above it now." The local controller responded, "…roger do you want to come back out for another approach?" At 15:13:39, the pilot responded, "I think we are doing ok if it looks ok to you." The local controller responded, "I can't really tell with your rate of descent if you want to start the descent and execute a localizer only approach you're cleared ILS correction localizer runway 4."

At 15:14:48, the local controller cancelled the approach clearance and instructed the pilot to "fly runway heading and climb and maintain 2,000 feet." The local controller then amended the clearance and instructed the pilot to, "…fly heading 090 and climb and maintain 2,000 feet."

At 15:15:44, the pilot contacted the Radar East controller and told him he was "heading 095 going to 090 right now." The Radar East controller radar identified the aircraft and instructed the pilot to climb to 2,300 feet. At 15:16:41, the Radar East controller instructed the pilot to fly heading 140 and the pilot acknowledged. At 15:17:18, the radar controller instructed the pilot to fly heading 220. The pilot did not acknowledge the instruction. The Radar East controller repeated the transmission and the pilot acknowledged.

At 15:17:50 the Radar East controller asked the pilot what heading he was flying. The pilot responded he was heading 310. The controller reminded the pilot he was told to fly heading 220. The Radar East controller asked the pilot if he was having any problems with his airplane. The pilot responded he had lost a gyro. The pilot added, "I think the best thing for me is to climb a little bit and go to my alternate of ah Columbus or some point south." The Radar East controller asked the pilot if he could navigate to the airport since he had no-gyro. The pilot responded he could. The Radar East controller asked the pilot what airport he wanted to go to, and the pilot responded, "Columbus would be fine sir."

At 15:18:36, the Radar East controller issued the pilot a new clearance direct to Columbus County airport and instructed him to climb and maintain 3,000 feet. The pilot did not acknowledge the clearance and the controller re-issued it. The pilot did not acknowledge the second clearance. At 15:19:09, the radar controller informed the pilot his altitude was erratic and asked the pilot if he was ok. At 15:19:20, the pilot responded "Ah no I am not up here right

now." The Radar East controller asked the pilot if he wanted to come back into FAY and the pilot responded "I think the best thing is ah" and did not finish the transmission. At 15:19:39, the Radar East controller asked the pilot if he could accept a turn southwest bound. The pilot responded he could fly to the southwest.

At 15:15:23, the Radar East controller asked the pilot, "can you do um gyro non-gyro standard turns?" The pilot responded that he thought he could and the controller issued a 10 second turn to the left. At 15:21:01, the Radar East controller advised the pilot he could expect the ILS. The pilot responded, "Uh if I am set up for ah (unintelligible) I'm in a good position with that now yes sir." At 15:21:10, the Radar East controller told the pilot he had not made a turn at all, and asked the pilot if he had done a no-gyro approach before.

At 15:21:52, the Radar East controller asked the pilot if he had received the localizer and glideslope on the first landing attempt; the pilot responded "affirmative." The Radar East controller advised the pilot, "we are going to try this ah one more time um for the ILS approach runway 4."

At 15:22:40, the Radar East controller asked the pilot, "…are you having the computer fly your airplane or are you flying the airplane?" The pilot responded he was hand flying the aircraft.

At 15:23:16, the Radar East controller asked the pilot if he had a compass on board the aircraft and the pilot responded he did. The Radar East controller then instructed the pilot to fly straight south.

At 15:26:10, the Radar East controller turned the aircraft due west heading 270.

At 15:29:40, the Radar East controller cleared the pilot for the ILS runway 4 approach, stating, "4 miles from final approach fix turn right heading northbound on the zero one zero maintain two thousand until established on the localizer clear ILS runway 4 approach do you copy?" The pilot responded, "Ok heading of 010 maintain 2000 cleared for the approach." The Radar East controller then instructed the pilot "one four whiskey verify let's make sure it says north."

At 15:30:23, the Radar East controller asked the pilot to, "…report when established on the localizer and picking up the glide slope." The pilot responded, "advise when on the localizer."

At 15:30:56, the Radar East controller asked the pilot if he was picking up the localizer. There was no response, and no further transmissions from the pilot.

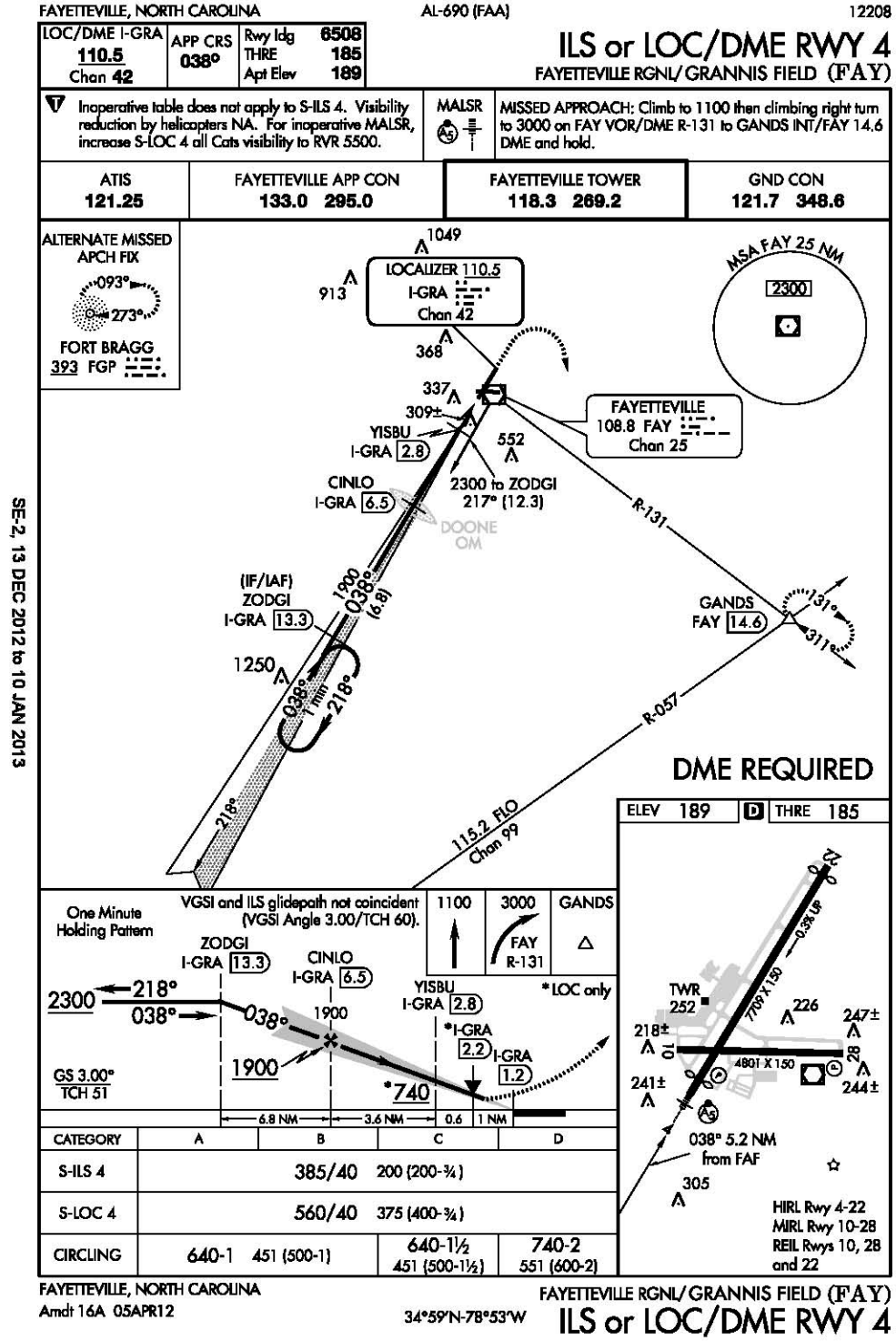

Figure 1 - FAY ILS Runway 4 Approach chart in effect on the date of the accident.

2.0 Radar Data

Radar data for this report was obtained from the Airport Surveillance Radar (ASR-9) located at Fayetteville, North Carolina.

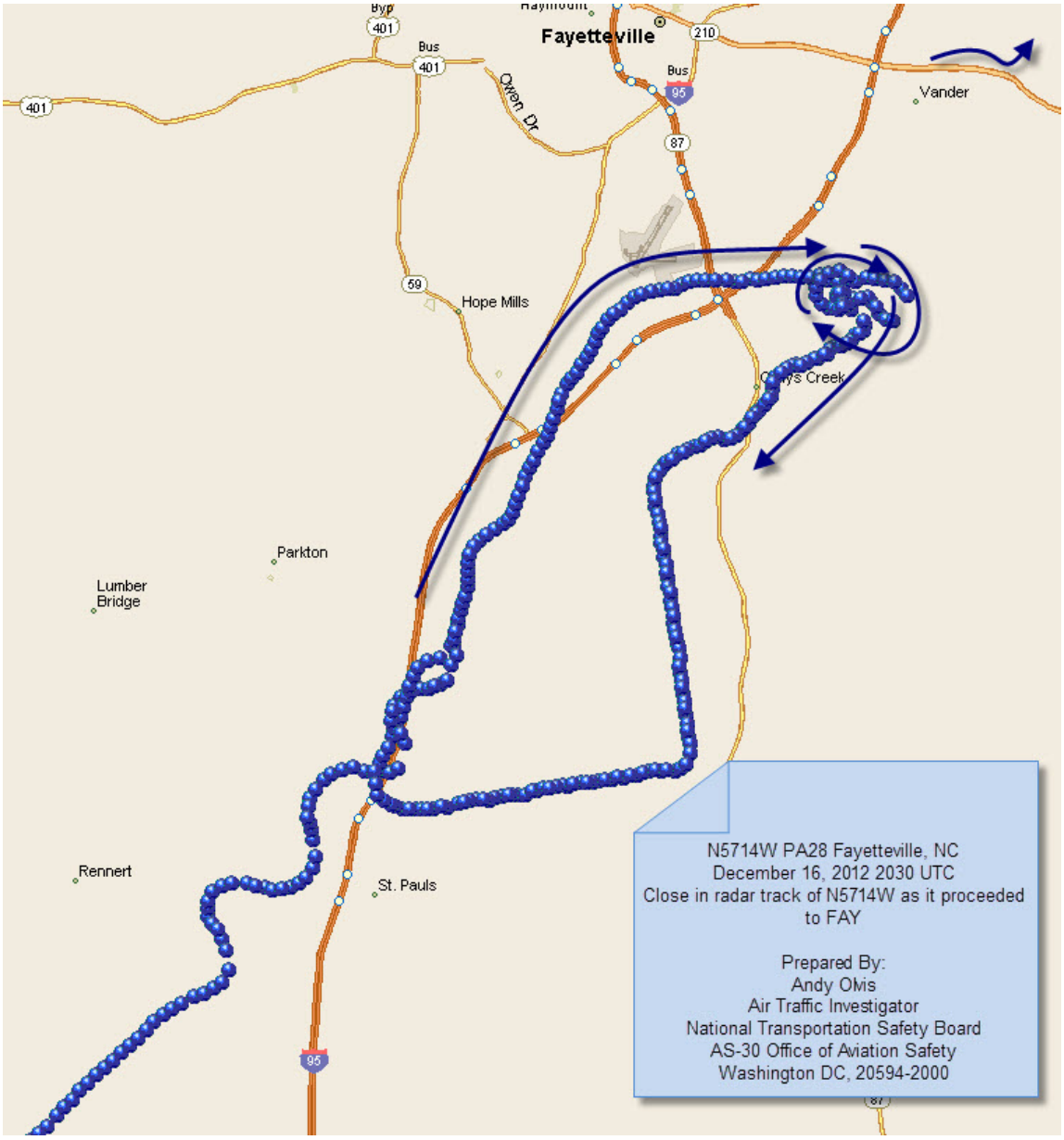

Figure 2 - Radar track as N5714W proceeded towards FAY

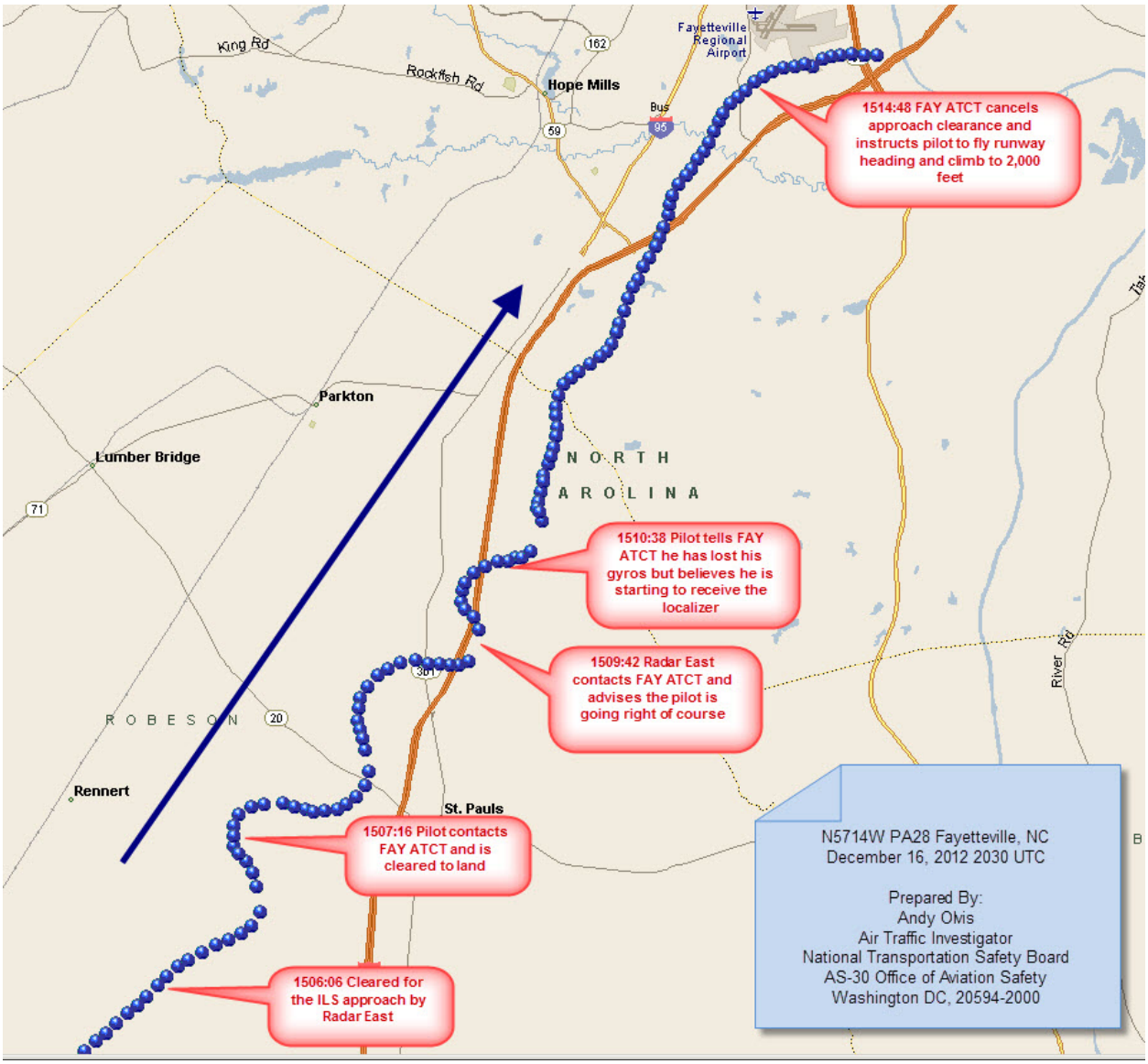

Figure 3 - Radar track of N5714W as it proceeded to FAY on the first ILS attempt.

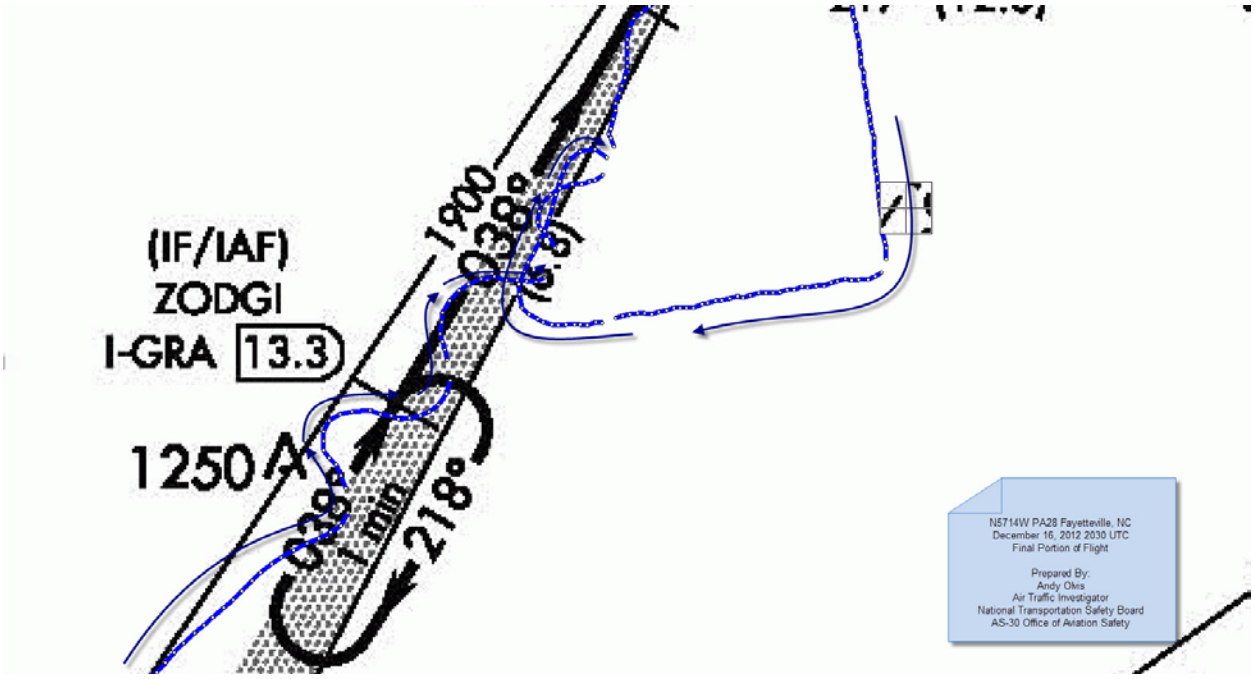

Figure 4 - Initial ILS approach attempt overlaid on an approach plate.

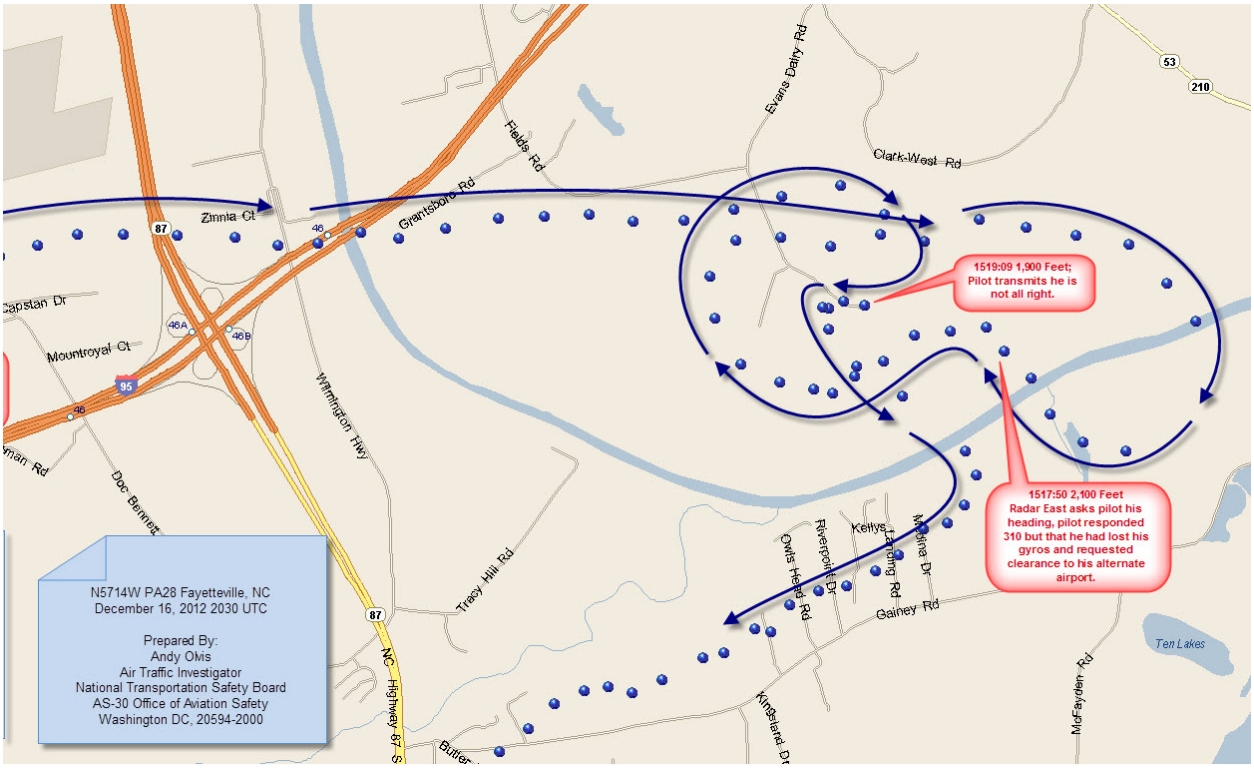

Figure 5 - Radar track of N5714W executing a missed approach after the first approach attempt to FAY.

Figure 6 - Radar track of N5714W being vectored back to FAY.

3.0 Weather Information

The FAY Regional Airport weather for December 16, 2012, was obtained from the KFAY Automatic Surface Observing System (ASOS).

[1953 UTC] KFAY 161953Z 22004KT 7SM OVC005 14/13 A2999 RMK A02 CIG 004V007 SLP151 TO1440133

KFAY weather at 1953 UTC, wind 220 degrees at 4 knots, visibility 7 statute miles, ceiling overcast 500 feet, temperature 14 degrees celsius (C), dew point 13 degrees C, altimeter setting of 29.99 inches of mercury.

For further information, see the Weather Group Chairman's *Weather Study* for this accident which is available in the docket.

4.0 Personnel Interviews

4.1 Terry Graybeal, Local Control (LC)

Mr. Terry Graybeal began working for the FAA in March 1999 at FAY ATCT. His previous air traffic control (ATC) experience was as a civilian air traffic controller working for the Department of Defense (DOD) from January 1998 to March 1999 at Homestead Air Reserve Base and Davison Army Airfield. Prior to the DOD, Mr. Graybeal had been an air traffic controller in the United States Air Force from March, 1990 to December, 1997, working at Selfridge Air National Guard Base (ANGB) and Pope Air Force Base. He had been at FAY ATCT since 1999 and was facility rated on all operating positions. Mr. Graybeal's medical certificate was current with no restrictions, and he held no other aeronautical licenses.

On Sunday, December 16, 2012, Mr. Graybeal worked his regular scheduled shift of 0730 to 1530 and was assigned to the Local Control position combined with all of the other operating positions in the control tower. He remembered the ceilings were overcast, solid at 500 feet, and visibility was good at 8 to 9 miles. Mr. Graybeal said the pilot of N5714W had checked in on the FAY control tower frequency and was observed on the Digital Bright Radar Indicator Tower Equipment (DBRITE) display[3]. He said that at some point while N5714W was on the ILS approach, he looked at the DBRITE and saw N5714W heading eastbound and straying off course. He waited to see if the pilot would correct back on course. While waiting, FAY approach control called and told Mr. Graybeal the aircraft was off course. Mr. Graybeal observed the aircraft stray further off course to the right, and then to the left. He issued the pilot a suggested heading of 020 degrees to intercept the localizer. The pilot intercepted the localizer and tracked it inbound; however, the aircraft was high and above the glide slope. Mr. Graybeal said the pilot of N5714W had advised him that he had lost some gyros, and that the pilot thought he was "good." Mr. Graybeal said that after the aircraft was inside the final approach fix and above the glideslope, he attempted to salvage the poor approach flown by the pilot. Mr. Graybeal wanted to give the pilot every opportunity to complete the approach, and wanted the pilot to worry less about the glideslope so he cleared him for a localizer approach. When N5714W was approximately 1 mile from the runway, Mr. Graybeal canceled the approach clearance and instructed the pilot to fly runway heading and to maintain 2,000 feet. He coordinated with the radar controller that the aircraft was assigned runway heading and then observed the aircraft in a right turn eastbound. Mr. Graybeal asked the pilot his heading, and the pilot responded 081 degrees. Mr. Graybeal then issued the pilot a heading of 090 degrees, and coordinated the new heading with the FAY radar controller. He advised the radar controller that the pilot of N5714W was having problems flying headings.

Mr. Graybeal did not continue watching N5714W after he switched the pilot to departure control. His shift was almost over, and he was supposed to leave at 1530. Shortly after switching the pilot to FAY departure control, he conducted a position relief briefing with an oncoming controller. He went downstairs to the radar room and was going to notify the supervisor of the pilot's difficulties flying the approach; however, the supervisor was already working the situation.

Mr. Graybeal did not remember hearing a minimum safe altitude warning (MSAW) alert during the attempted ILS approach. He believed the aural volume of the MSAW alarm was set at a consistent volume, and did not consider it set at a low volume level. Whenever he heard an aural MSAW alarm, he believed the controller needed to verify the validity of the alert. Mr. Graybeal could not think of any instances where he considered the MSAW alert as a nuisance alert.

Mr. Graybeal did not think the pilot sounded distressed or that he was in a stressful situation. He believed the pilot had the aircraft under control, and that when Mr. Graybeal issued the pilot the 020 heading to intercept the localizer, the pilot did not have a problem.

Mr. Graybeal did not know what the reported tops of the clouds where in the FAY area. He had not solicited or received any pilot reports (PIREPs) from any aircraft operating in the area. He said that air traffic controllers were required to get at least one PIREP per hour, and added that

[3] Digital Bright Radar Indicator Tower Equipment (DBRITE) is a digital display monitor used by air traffic controllers in control towers to assist in the identification of aircraft and to monitor their position.

he did not believe the pilot of N5714W was the best pilot to ask for a PIREP. Mr. Graybeal stated that the weather information was derived from the ASOS located on the airport, and was displayed in the control tower in text format. The ceiling that was reported on the date of the accident stopped at the overcast layer, and that it was the highest ceiling he remembered for the event.

Mr. Graybeal did not recall any refresher training in unusual situations or about no-gyro emergencies. He believed that when a pilot indicated to ATC that they had lost their gyros, it meant the aircraft could not maintain headings. He did not know if losing gyros would affect the pilot's ability to keep the wings level, or about turns and turn rates.

Mr. Graybeal normally selected the emergency checklists off of the Information Display System (IDS)[4] when working an emergency aircraft. Because neither Mr. Graybeal nor the pilot of N5714W had declared an emergency, Mr. Graybeal had not completed the emergency checklist.

4.2 Richard Perez, Radar East

Mr. Richard Perez began working for the FAA in July 2002 when he reported to the FAA Academy in Oklahoma City for non-radar school. Upon completion of non-radar school, Mr. Perez reported to New York Air Route Traffic Control Center (ZNY), where he remained until August 2003, when he transferred to Morristown, New Jersey. Mr. Perez remained in Morristown until July 2009, when he transferred to FAY. His previous ATC experience was with the United States Marine Corps from 1996 until 2000, stationed at New River, North Carolina. He was facility rated on all operating positions at FAY, and was designated a controller-in-charge (CIC) in the control tower but not in the radar room. Mr. Perez's medical certificate was current with no restrictions, and he held no other aeronautical licenses.

On Sunday, December 16, 2012, Mr. Perez worked his scheduled shift of 1300 to 2100, and was assigned to the Radar East position during the beginning of the accident sequence. He said it was his first position after taking the shift, and that he felt fresh. The TRACON was staffed with 3 controllers; the Radar East controller, a flight data controller, and a supervisor. Mr. Perez said the pilot sounded very comfortable and knowledgeable on frequency. There had only been one instance when he needed to get the pilot's attention, which had been when the pilot had not read back a correct heading.

After switching the aircraft to the control tower, Mr. Perez observed N5714W "snaking" or making "S" turns while on final. He observed the aircraft 1/2 to 1 mile right of course. Mr. Perez notified the control tower that the aircraft was not on the approach course, and that he was not sure if the pilot had lost the localizer. By the time the aircraft reached the FAF, the aircraft still appeared to be right of course. Mr. Perez contacted the local controller, who advised Mr. Perez that he was in communication with the pilot. Since the local controller was busy with the pilot, Mr. Perez terminated the phone call.

Mr. Perez said the weather was bad and that he remembered getting multiple PIREPs from different aircraft throughout the shift. He said the bases of the clouds were approximately 700

[4] The Information Display Systems (IDS) provides a single source outlet for air traffic controllers to manage large amounts of information regarding the airport, airspace, weather, or other data pertinent to the operation.

feet, and that he did not remember what the tops were. When obtaining PIREPs, Mr. Perez asked how many layers existed, and what the tops were. He normally would write the weather down on flight progress strips. However, he could not remember if he had done that in this accident.

Mr. Perez did not have any indication there were mechanical issues with the aircraft or issues with the pilot. The first report of a lost gyro had been with the FAY local controller. He said that when a pilot reported they had lost their gyro, it meant that it would be very difficult to fly the assigned heading issued by the controller. Mr. Perez stated the FAY air traffic controllers were trained to use the emergency checklist in the radar room. He believed it was located on the IDS, but believed it was for post-accident events.

Mr. Perez had not notified the air traffic control supervisor about the pilot of N5714W having difficulty holding a heading or flying the localizer. He said the air traffic control facility was getting ready to train, and that he told the oncoming trainee "off-line" about the pilot's difficulty holding a heading. He had completed the required two-minute overlap after providing a position relief brief to the oncoming controllers, and left the radar room to go on break. After hearing about the accident, Mr. Perez ran to the control tower to assist the local controller with providing search and rescue efforts.

Mr. Perez could not remember if there had been an MSAW alert generated by the accident aircraft on the first approach attempt. He said the only nuisance alert was the alarm associated with the RVR. The MSAW alert in the TRACON was loud and could definitely be heard. Mr. Perez said the volume was adjustable by the supervisor; however, the minimum volume setting was still very loud. He said the DBRITE in the control tower has an MSAW setting that even at its lowest setting could still be heard by the controllers.

The FAY air traffic control facility saw a lot of unusual flight maneuvers as a result of the military traffic in the area. Mr. Perez said there were steep descents and other unusual situations practiced by pilots. He believed air traffic controllers conducted emergency training quite often, but that a reported loss of a gyro was not covered. He said his experience with the loss of a gyro was from his military experience. Mr. Perez could not recall if the facility trained unusual weather situations. He said the training Computer Based Instruction (CBI) courses were good, and that he liked them. He acknowledged that it was sometimes hard to stay awake while completing them.

4.3 Bashan Lawrence, Radar East OJTI

Mr. Bashan Lawrence began with the FAA in April 2007 when he reported to Chicago TRACON (C90). He remained at Chicago TRACON until August 2008 when he transferred to Baton Rouge ATCT. In September 2010, Mr. Lawrence transferred to FAY where he has remained. His previous air traffic control experience was in the United States Air Force from December 1998 to December 2004, working at Moody Air Force Base, Valdosta, Georgia. Mr. Lawrence was facility rated on all operating positions, and was designated a CIC in the control tower and in radar. Mr. Lawrence's medical certificate was current with no restrictions, and he held no other aeronautical licenses.

Mr. Lawrence could not remember the shift he was working on the date of the accident. He and his trainee had obtained a position relief briefing from Mr. Perez prior to assuming the Radar East position. Mr. Perez had advised Mr. Lawrence of an area of weather around Chesterfield, but did not have any PIREPs for FAY. Shortly after the brief, the control tower called Mr. Lawrence and advised that N5714W was "on the go," assigned runway heading climbing to 2,000 feet. A short time later, the local controller called Mr. Lawrence back and coordinated the aircraft was now heading 090 and climbing to 2,000 feet. Mr. Lawrence and the trainee radar identified the aircraft, and assigned the pilot a 140 heading. The trainee then turned the aircraft to a 220 degree heading, climbing to 2,000 feet. Mr. Lawrence saw the aircraft heading westbound, so he asked the pilot his current heading. The pilot replied he was heading 270 degrees, and Mr. Lawrence advised the pilot that his assigned heading was 220 degrees. Because of the heading confusion, Mr. Lawrence asked the pilot if everything was okay. The pilot replied that he had lost his gyros, so Mr. Lawrence asked if the pilot could accept no-gyro vectors. The pilot asked if he could go to his alternate airport, Columbus County. Mr. Lawrence asked the pilot if he could navigate to Columbus County with the loss of his gyro equipment. The pilot replied yes, so the trainee issued a clearance direct Columbus County airport at 3,000 feet. Mr. Lawrence was not going to question the pilot's request to divert to Columbus County. Mr. Lawrence said the pilot never responded to the initial clearance provided by the trainee, so the trainee repeated the clearance instructions.

Mr. Lawrence observed the aircraft flying northwest bound with the altitude fluctuating. He asked the pilot of N5714W if everything was okay, and asked if he would like to land at FAY. Mr. Lawrence recalled the pilot responded "yes." Mr. Lawrence believed the radar coverage near the Columbus County airport was not good, and that he didn't trust the pilot to be able to navigate to the airport since he had been having trouble holding a heading and altitude. Mr. Lawrence advised the pilot that he had begun to turn westbound again, and then asked the pilot if he could accept no-gyro vectors. The pilot said he could, and Mr. Lawrence issued a left turn for approximately 10 seconds. Mr. Lawrence did not observe the pilot make a turn, so he asked the pilot if he had a compass on board the aircraft. The pilot had replied "yes," so he turned the pilot southbound to heading of 180 using the compass. Mr. Lawrence then asked the pilot if he was hand flying the aircraft or if the computer was flying the aircraft. The pilot responded he was flying the aircraft. It did not make any sense to Mr. Lawrence that the aircraft would have so many issues. The pilot seemed stable heading southbound and level at 3,000 feet. Mr. Lawrence had been very frustrated in the beginning of the accident sequence because he did not believe the pilot was paying attention to control instructions he was providing.

Mr. Lawrence advised the pilot to expect vectors for an ILS runway 4 approach into FAY airport. He asked the pilot if he had received the localizer and the glide slope on the first approach. The pilot advised he had received the localizer and glideslope. Mr. Lawrence turned the pilot westbound, heading 270 degrees, and reiterated to the pilot to fly west on the compass. He then told the pilot to fly heading of 010 degrees and cleared the pilot for the ILS runway 4 approach. Mr. Lawrence wanted to make sure the aircraft was northbound, so he ensured the pilot was looking at north on the aircraft compass. He asked the pilot if he was established on the localizer; however, the reply transmission by the pilot was not clear. He instructed the pilot to start a descent and to maintain 2,000 feet until established on the localizer. Mr. Lawrence asked the pilot to verify if he was established on the localizer, and the pilot responded, "affirmative."

Mr. Lawrence observed the aircraft track down the localizer towards the airport, and then make a hard right turn. He asked the pilot if he was still established on the localizer and repeated the instruction to maintain 3,000 feet; however, there were no further transmissions from the pilot. Mr. Lawrence had put an inbound regional jet into holding and asked the pilot if he could hear an emergency locator transmitter (ELT)[5]. The regional jet pilot responded he was not receiving the ELT. Mr. Lawrence also asked the pilot of an inbound aircraft over Lumberton if they were receiving the ELT, and the pilot responded they were not.

Mr. Lawrence said that the radar room was staffed with the front line manager, the trainee, the flight data controller, and himself. He said other people began working the rescue coordination of the aircraft while he continued to attempt contact with the aircraft on the radio. Mr. Lawrence believed the flight had been an emergency in the last stages of the flight, just before the final radar targets. His supervisor had been quietly monitoring the situation from an adjacent radar display, and after the simultaneous loss of radar and radio contact began working the accident checklist located on the IDS. He clarified that it was not the minimum emergency information checklist, but the accident notification checklist. Mr. Lawrence believed that when a pilot reported a loss of gyros it implied the pilot was having difficulty maintaining direction of flight. He added he did not think the pilot was sure where he would be flying to. Mr. Lawrence had heard of vertigo, but did not consider vertigo in this situation. He believed that since the unusual flight conditions were not continuous that it was not associated with vertigo.

Mr. Lawrence said the weather was "IFR," and believed it was IFR everywhere in his area of responsibility. He did not know what the weather was at Columbus County airport, but believed he could obtain the ASOS frequency from the IDS in order to obtain the weather. Mr. Lawrence did not know what the cloud tops were in the area, and had not obtained a PIREP from the accident pilot. Mr. Lawrence believed he did not have a full picture of the weather in the area.

Mr. Lawrence stated there was a requirement for 2 minute overlap after completing a position relief with an off going or oncoming controller. He did not remember if a 2 minute overlap had been completed when he assumed the Radar East position, but believed it was. He did not remember the off going controller briefing him that N5714W had executed a missed approach on the previous landing attempt.

Mr. Lawrence had been an OJTI for two or three months, and Mr. Philpot was the first developmental controller he had been assigned. He had been training him the entire time Mr. Philpot had been training on Radar East. This was the first time the trainee had experienced a pilot with this type of situation, so he assumed the position to work the issue.

Mr. Lawrence could not remember doing any recurrent training on emergency situations. He said that he had completed training previously through a briefing or CBI module. He believed it would be beneficial to have a better idea about aircraft equipment and capabilities, and what it meant for pilots to lose certain equipment in the cockpit. He also believed it was important to have a better relationship with the pilots.

[5] An emergency locator transmitter (ELT) is an electronic, battery operated transmitter that operates on one of three frequencies; 121.5 MHz, 243.0 MHz, and the newer 406 MHz. The ELT was developed as a means of locating downed aircraft.

4.4 Ross Philpot, Radar East Developmental

Mr. Ross Philpot began with the FAA in December 2010 when he reported to the FAA Academy in Oklahoma City, Oklahoma, for training. Upon completion of the FAA academy training in February 2011, he was assigned to FAY air traffic control tower. His previous air traffic control experience was in the United States Air Force as an air traffic controller working at RAF Lakenheath, England, from January 2003 to January 2009. From December 2009 until December 2010, Mr. Philpot worked for the ITT Corporation as a contract air traffic controller in Afghanistan. Mr. Philpot was rated on all operating positions in the FAY control tower, and the FAY flight data position in the TRACON. He was designated a CIC in the control tower, however, stopped working the mid-watches as a CIC as a result of a policy change by the new ATM. Mr. Philpot's medical certificate was current with no restrictions, and he held no other aeronautical licenses.

Mr. Philpot was working his assigned scheduled shift from 1500 to 2300 on the date of the accident. He was getting ready to work the first position of the day as the developmental controller at the Radar East position. He normally walked into the radar room 3 to 4 minutes prior to assuming the watch in order to observe the flow of traffic. He remembered watching Mr. Perez working the Radar East position, and briefly discussed the traffic with him. Mr. Philpot observed N5714W going through the final on the initial landing attempt; however, by the time he had received the position relief briefing, the pilot had been switched to the control tower.

Shortly after assuming the position, local control called down and advised Mr. Philpot that the aircraft was on a missed approach and had been assigned runway heading climbing to 2,000 feet. A short time later local control called Mr. Philpot back and advised the aircraft had been assigned a heading of 090 degrees and climbing 2,000 feet.

When the pilot of N5714W contacted departure, Mr. Philpot said he turned the pilot to the crosswind leg of the pattern, heading 140 degrees, and told the pilot to climb to 2,300 feet. A short time later Mr. Philpot told the pilot to fly heading 220 degrees, but it appeared that the pilot turned to the North. Mr. Philpot did not notice the pilot flying any circles, but he did see the aircraft make turns to the right with varying altitude. He believed the pilot was having trouble maintaining headings and was continuously turning left and right. Mr. Philpot said the OJTI took over control of the position, and discussed conducting another ILS approach with the pilot. The pilot responded he wanted to go to his alternate airport at Columbus County airport. Mr. Philpot re-assumed the position, and issued a clearance direct to Columbus County airport at 3,000 feet. The instructor then took control of the position since the pilot was having difficulty flying headings and maintaining altitude.

Mr. Philpot was paying very close attention to the OJTI working the position because he had never done a no-gyro vector before. He said the pilot of N5714W had not reported any mechanical issues while he had been working the position; however, he did hear the pilot report the loss of a gyro to the OJTI.

Mr. Philpot remembered the weather was low ceilings at 200 feet and IFR. He had not reviewed the forecast or current weather before assuming the position. Mr. Philpot felt that knowing the

tops of the clouds was important, but did not know the tops of the clouds in the area. He had not heard or received any PIREPs before assuming the Radar East position.

Mr. Philpot did not know the weather at the Columbus County airport when the pilot requested a change to his destination. He could have obtained the weather information from Myrtle Beach approach control, but had not done so. Mr. Philpot said the pilot had requested to go to Columbus County, so the pilot would know the weather better than Mr. Philpot would.

According to Mr. Philpot, it looked like the pilot of N5714W had gone around on the first approach attempt because the aircraft was not established on the final approach course, and the aircraft's altitude was high. He did not know why the pilot was so far right of course early in the procedure. Mr. Philpot had not asked the control tower why the aircraft had gone around. He did not remember the MSAW going off during the first approach attempt.

Mr. Philpot did not know if the pilot was experiencing an emergency. He believed the pilot had control of the aircraft, and that the pilot seemed confident. Mr. Philpot said he was familiar with the emergency minimum information checklist on the IDS, and could locate it when needed. Mr. Philpot said that training about unusual emergency situations was mostly done with monthly recurring training via the CBI, MBI, and verbal briefs. He was not familiar with vertigo, but believed it had something to do with maintaining balance or having vision issues.

Mr. Philpot was not familiar with the gyros of an aircraft, and was not familiar with what would happen if a pilot were to lose that system. In hindsight, the pilot stating that he was not okay was an indication the pilot was in distress. When a pilot declared an emergency, Mr. Philpot said he would provide priority handling and begin obtaining the minimum information required to handle the emergency. Mr. Philpot believed the aircraft should have continued to Columbus County airport; however, the instructor was handling the aircraft.

4.5 Norman Carter III, Front Line Manager (FLM)

Mr. Norman Carter III began working with the FAA in July 1991 when he reported to the FAA Academy in Oklahoma City, Oklahoma for training. Upon completion of his FAA Academy training in November 1991, he reported to FAY ATCT where he has remained. His previous ATC experience was in the United States Navy as an air traffic controller working at Naval Air Station Bermuda from 1985 to 1990. Mr. Carter was rated on all operating positions in the facility. In January 2011, Mr. Carter became an FLM. Mr. Carter's medical certificate was current with restrictions for eyeglasses, and he held no other aeronautical licenses.

Mr. Carter worked his normal shift of 1400 to 2200 on the date of the accident. He arrived at the facility at approximately 1230 to complete paperwork and took responsibility for the shift at 1430. The weather was "IFR with very slow traffic and the occasional spurt"; he characterized the overall traffic as slow. Mr. Carter remembered making position assignments for training, with Mr. Lawrence and Mr. Philpot taking the Radar East position from Mr. Perez. Mr. Carter was not aware of the previous attempted landing by N5714W, and did not hear the MSAW activate when the pilot attempted the first approach. A short time after Mr. Lawrence and Mr. Philpot assumed the position; Mr. Carter became aware of the situation involving N5714W and began to actively monitor the situation. He recognized that Mr. Lawrence and Mr. Philpot were having problems with N5714W maintaining a heading or altitude. Mr. Carter said he started to

listen to the frequency when Mr. Lawrence terminated training and took control of the Radar East position. He remembered N5714W was southeast of FAY.

Mr. Carter believed the pilot was not in distress and seemed pretty calm and in control, although he thought he heard the pilot state that he was not okay and interpreted it as equipment problems. Mr. Carter heard the pilot tell Mr. Lawrence that the pilot was having gyro problems. In response Mr. Lawrence was going to provide no-gyro vectors. He said Mr. Lawrence stopped issuing no-gyro vectors because the pilot could not fly the heading that was assigned. Mr. Carter believed the pilot accepted the suggestion by Mr. Lawrence to attempt another approach to FAY, with the pilot saying “I think it would be best." At this point, Mr. Carter considered the pilot to be experiencing an emergency situation, and believed Mr. Lawrence had told him he was going to declare an emergency for the pilot. Mr. Carter felt that Mr. Lawrence was assisting the pilot and did not want to distract Mr. Lawrence by offering guidance. Mr. Carter believed the 100 degree turn to final issued to the pilot by Mr. Lawrence was not optimal. He did not remember speaking with Mr. Lawrence during the event, and had not provided any advice or suggestions to Mr. Lawrence for handling the situation. He thought that Mr. Lawrence handled the situation sufficiently. When Mr. Carter was asked why it was necessary for the pilot to attempt the second ILS approach while in IMC conditions, Mr. Carter said they were just "trying to get the aircraft on the ground I guess.”

After there had been a simultaneous loss of radar and radio contact, Mr. Carter put the cursor of the “A” radar scope on the last known position of the aircraft and coordinated 911 efforts relative to a position from interstate 95. Mr. Carter believed, after coordinating with FAA Tech Ops, that it would be possible to generate a replay from the radar in order to identify the last known position of the aircraft. Mr. Carter did complete the accident incident notification checklist.

Mr. Carter said he thought there were two controllers in the FAY control tower when the accident occurred. After determining that there had been an accident, he sent Mr. Perez up to assist the local controller with the search and rescue efforts. Mr. Carter said that the first thing they did after simultaneously losing radar and radio contact was to contact 911.

Mr. Carter believed that when handling an emergency, controllers should get the minimum information necessary to include call sign, nature of emergency etc. He said the situation involving N5714W was more about working the airplane, and that the pilot wanted to land. Mr. Carter said there was an emergency check list on the IDS; however, he did not recall completing it. He said he was not aware of the fuel or flight conditions of the accident aircraft.

Mr. Carter described the weather as 500 feet overcast with visibility less than one mile. He did not know what the tops were and had not heard PIREPs from any departures or arrivals; he was aware of PIREPs for west of the FAY area. Mr. Carter was not familiar with the Columbus County weather, but could have looked up the ASOS telephone number and called for a weather update if it was needed. When receiving a PIREP, FAY air traffic controllers would write the PIREP on a flight progress strip and provide the data to the flight data controller. The flight data controller would pass any significant PIREPs to flight service when required and update the PIREP time on the IDS. Mr. Carter did not remember if the hourly requirements for obtaining a PIREP had been met.

Mr. Carter had never had an opportunity to work an aircraft having navigational difficulties in instrument meteorological conditions (IMC) before. He was sure that air traffic controllers had received training on unusual or emergency situations before, and that the training requirement came out regularly although he could not provide specifics. He was not familiar with vertigo or disorientation, and stated that when a pilot advised they had lost a gyro; neither vertigo nor disorientation had come to Mr. Carter's mind. Mr. Carter added that a loss of gyro meant that the pilot could not turn or maintain headings. He said the facility had conducted team briefings on emergency situations and losses of equipment, but not consistently.

Mr. Carter felt that training on aircraft instrumentation and losses of instrumentation would be beneficial to air traffic controllers handling this type of situation in the future. Additionally, there had been no air traffic controllers involved in the flight deck familiarization program since he had become an FLM. He said most people were concerned with the paperwork issue, and believed restrictions placed on the program convinced air traffic controllers not to take advantage of it. Mr. Carter believed the facility staffing was tight, but said that the ATM supported the flight deck familiarization program.

Submitted by:

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Charles Olvis
Air Safety Investigator
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