NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

June 3, 2013

AIR TRAFFIC CONTROL GROUP FACTUAL REPORT

ERA13FA105

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A. AIRPLANE ACCIDENT

Location: Palm Coast, Florida
Date/Time: Friday, January 4, 2013, 1413 eastern standard time (EST)[1]
Friday, January 4, 2013, 1913 Coordinated Universal Time (UTC)[2]
Airplane: N375B, a Beech H35 Bonanza

B. AIR TRAFFIC CONTROL GROUP

Ms. Betty Koschig
National Transportation Safety Board
Washington, DC

Ms. Michelle Wrobleski
National Air Traffic Controllers Association
Green Bay, WI

Mr. Russell Walker
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C. SUMMARY

On January 4, 2013, at 1419 eastern standard time, N375B, a Beechcraft H35 Bonanza, , was destroyed when it struck a house during a forced landing in Palm Coast, Florida. N375B departed Saint Lucie County International Airport (FPR), Fort Pierce, Florida, and was destined for Knoxville Downtown Island Airport (DKX), Knoxville, Tennessee. The flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

After departing FPR, the pilot contacted Daytona Beach Approach Control and requested a climb to maintain visual flight rules (VFR) conditions. After leveling off above the clouds, the pilot reported a vibration in the propeller and engine. The approach controller advised the pilot that the closest airport was Flagler County Airport (XFL), Palm Coast, Florida, which was approximately eight miles to the north of the airplane's position. The approach controller advised the pilot that XFL was under instrument flight rules (IFR) conditions and an instrument approach would be necessary. All of the airports within the Daytona Beach radar area were IFR at that time.

The only published approaches available at XFL required area navigation (RNAV[3]) capability. When the approach controller advised the pilot of that, the pilot responded that he was unable to accept an RNAV-type approach. The approach controller then suggested radar vectors for an airport surveillance radar (ASR[4]) approach to runway 29 at XFL. The pilot accepted the ASR

[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.
[3] RNAV is a method of navigation that permits aircraft operation on any desired flight path within the coverage of ground or space based navigation aids or within the limits of the capability of self-contained aids, or a combination of these. It requires special navigation equipment aboard the aircraft that was not installed on N375B.
[4] Airport surveillance radar (ASR) approach− an instrument approach wherein the air traffic controller issues instructions, for pilot compliance, based on aircraft position in relation to the final approach course, and the distance from the end of the runway as displayed on the controller's radarscope.

approach. Several minutes later, the pilot reported that the engine oil pressure was zero with "cool cylinders." The approach controller continued to provide radar vectors and N375B was cleared to land. When the airplane was approximately two miles from runway 29, the pilot reported he was “coming in with smoke.” No further transmissions were received from the pilot. The accident site was located about 4,200 feet southeast of the runway. The pilot and two passengers were fatally injured. Visual meteorological conditions prevailed at the time of departure and a visual flight rules flight plan was filed for the flight.

D. DETAILS OF THE INVESTIGATION

On Tuesday, January 22, 2013, the ATC group convened at Daytona Beach Air Traffic Control facility (DAB), Daytona Beach, Florida. The group conducted an in brief with Mr. Bruce Blair, air traffic manager (ATM); Ms. Karen Reid, operations manager: Mr. Mark Beaton, National Air Traffic Controllers Association; Mr. Eric Mathis, Eastern Service Area quality control group; Mr. Mark Tomilich, FAA counsel; and Mr. Robert Owen and Mr. Larry Johnson, FAA event investigation managers.

The group conducted a tour of the facility, reviewed controller training records and other data related to the accident, and reviewed a radar replay of the event. On Wednesday, January 23, 2013, the group reconvened at DAB and conducted an interview with the North Arrival controller, Mateo Arrival controller, Coordinator Low controller, developmental controller, and the front line manager.

On Thursday, January 24, 2013, the group reconvened at DAB to draft field notes and to conduct an out brief. Attending the out brief were Mr. Blair, Ms. Reid, Mr. Tomilich, Mr. Owens, Mr. Mathis, Mr. Beaton, and Mr. Johnson.

1.0 History of Flight

At 1349:34, the pilot of N375B contacted DAB approach control and reported he was at 4,500 feet. Eight minutes later, the pilot requested a climb to 6,500 feet. The approach controller informed N375B that they had received a pilot report (PIREP) reporting that the cloud tops were at 7,000 feet. The controller advised the pilot to maintain at or above 7,000 feet, and remain in VFR conditions. The pilot complied and climbed to 7,500 feet.

At about 1407:01, N375B reported, “…we got a vibration in the prop, I need some help here.”

The approach controller informed the pilot that the closest airport was at his 12 to 1 o’clock position and five miles, and asked him if he was IFR capable and equipped. The pilot stated, “I’m IFR, we're just getting a little vibration. We've got an oil pressure problem; we're going to have to drop quickly here.” Figure 1 depicts the locations of Flagler County airport, Daytona Beach International airport and Ormond Beach Municipal airport (OMN), Ormond Beach, FL, relative to N375B’s position when the pilot reported the vibration.

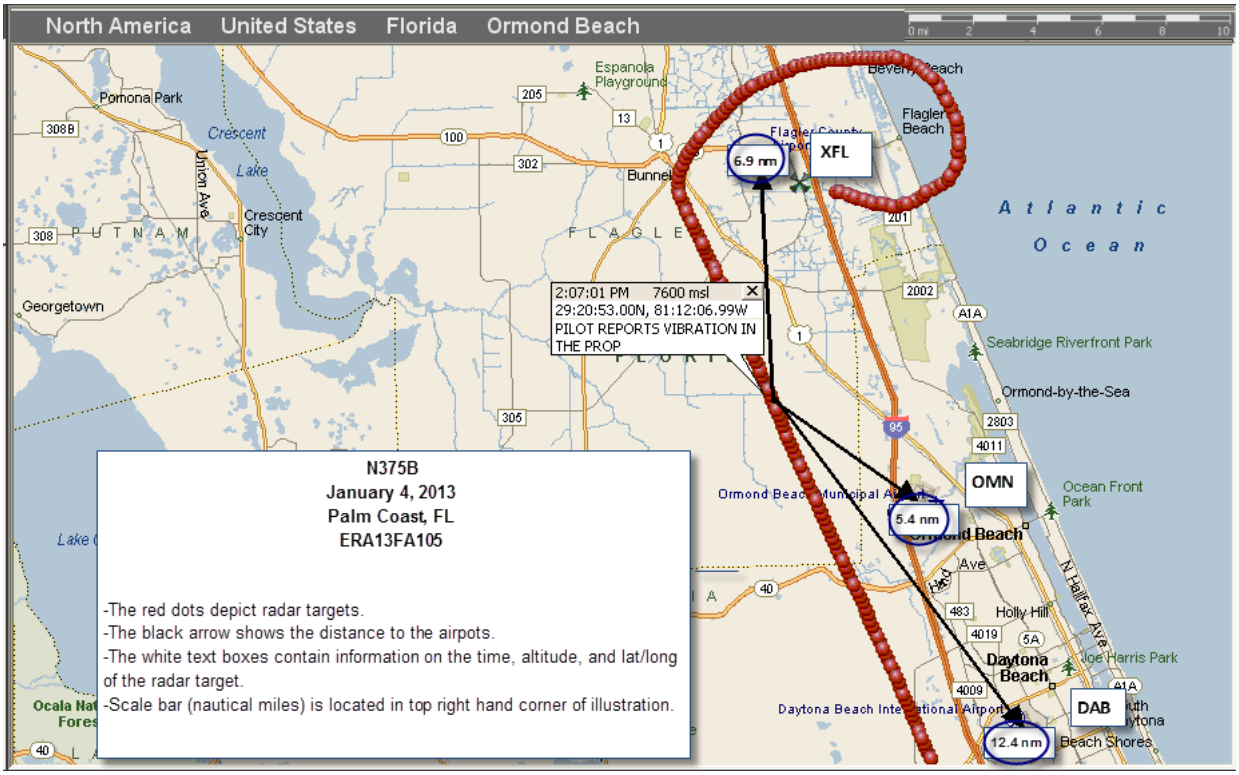

Figure 1. Location of the closest airports to N375B when the pilot reported a vibration.

According to the approach controller, Ormond Beach airport, which was located approximately 6 miles to the southeast of the airplane's position, was considered briefly, however, because runway 8/26 was closed for construction and there had been a strong tailwind for runway 17, that airport was not an option.

The approach controller cleared the flight to Flagler County airport, Palm Coast, Florida, instructed the pilot to descend and maintain 2000 feet, and asked him how many people and how much fuel he had onboard. The pilot responded that he three people and four hours of fuel.

The approach controller asked the pilot to clarify the nature of the problem and the pilot stated, "…we got a propeller or something going, I'm backing it up here to see."

At about 1408, the approach controller instructed N375B to continue his present heading, and informed him that he would get him as close as he could to the Flagler airport for a runway 29 approach. He advised the pilot that the weather ceiling at Flagler airport was 900 feet, and that an instrument approach was necessary. He asked the pilot to state his intentions on the type of approach he would like to make into the airport.

The pilot said that he would like a localizer approach.[5] The approach controller stated, "…the best we can do is an RNAV at that airport (XFL) or we can reverse course back to Daytona. The

[5] Localizer– The component of an Instrument Landing System (ILS) that provides course guidance to the runway.

only precision approach we have in our airspace is the ILS at Daytona." DAB was approximately 15 miles to the south of the N375B's position at this time.

The pilot responded that he did not need a precision approach, and asked if there was an airport with a localizer, or if there was an airport that was VFR. The approach controller told the pilot that all the airports were IFR with ceilings reported from 900 to 1,000 feet. The pilot replied that he would take the nearest airport and try to break out of the weather at 1,000 feet. He then informed the controller that he did not have RNAV capability.

The approach controller asked the pilot if he could accept a surveillance approach into Flagler airport. The pilot replied that he was "…lovely with that." The approach controller instructed the pilot to descend and maintain 2,000 feet, and transferred control of the aircraft to the North Arrival controller.

Flagler County had four published RNAV approaches to the airport; however, it did not have a published ASR approach. The controllers determined[6] that to best handle the emergency it was necessary to offer the pilot an unpublished ASR approach to runway 29 at XFL using RNAV approach minimums. This determination was based on the information obtained[7] from the pilot, and the need for the pilot to conduct an instrument approach into the airport due to the IFR weather conditions.

At about 1409, N375B checked in with the arrival controller and reported he was at 7,000 feet descending to 2,000 feet. The arrival controller instructed N375B to descend and maintain 3,000 feet, and to turn right heading 060 degrees. According to the arrival controller, he assigned N375B 3,000 feet because he wanted to ensure the airplane was high enough to remain clear of an antenna that was located northwest of XFL. The arrival controller decided to bring the airplane in on a tight downwind to keep him as close to the airport as possible while remaining clear of obstacles.

At about 1410, the arrival controller advised the pilot to expect an ASR approach to runway 29 at Flagler airport.

The coordination controller contacted Flagler tower to verify that their airfield was still IFR, and to inform them that N375B was an emergency inbound to their airport on approach to runway 29. The Flagler tower controller acknowledged the information and told him that N375B was cleared to land runway 29.

At1411:06, N375B reported, "…we got zero oil pressure, but we've got cool cylinder head temperature." The arrival controller acknowledged the pilot's transmission and instructed the

[6] FAA Order 7110.65, "Air Traffic Control," paragraph 10−1−1b, "Emergency Determinations," states: "Because of the infinite variety of possible emergency situations, specific procedures cannot be prescribed. However, when you believe an emergency exists or is imminent, select and pursue a course of action which appears to be most appropriate under the circumstances and which most nearly conforms to the instructions in this manual."

[7] FAA Order 7110.65, "Air Traffic Control," paragraph 10−1−2, "Obtaining Information." states: "Obtain enough information to handle the emergency intelligently. Base your decision as to what type of assistance is needed on information and requests received from the pilot because he/she is authorized by 14 CFR Part 91 to determine a course of action."

pilot to turn right heading 090 degrees and to descend and maintain 2,000 feet. Figure 2 shows the aircraft's position relative to the airport at that time.

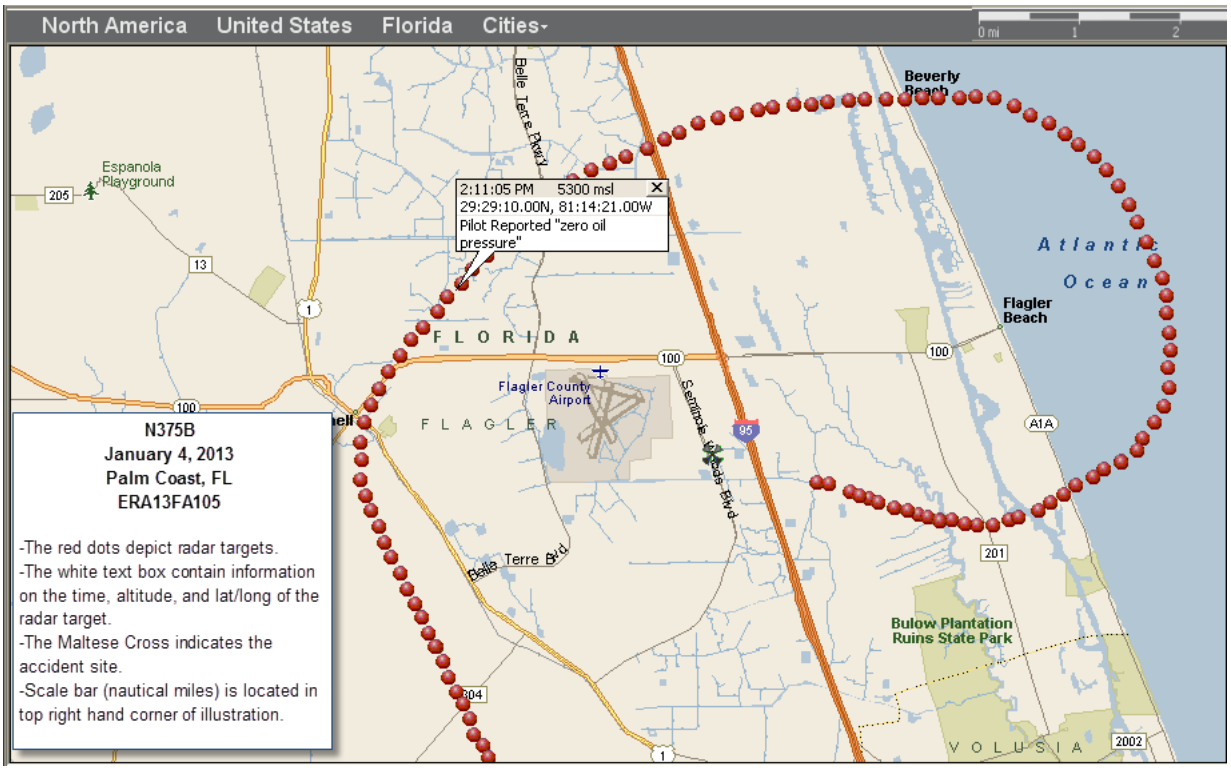

Figure 2. The position of the airplane when the pilot reported, "zero oil pressure."

At 1411:47, the arrival controller informed the pilot that he would provide guidance along the RNAV runway 29 approach and that the straight in minimum descent altitude (MDA) was 560 feet.

The arrival controller instructed N375B to turn right heading 110 degrees and to descend and maintain 2,000 feet. He told the pilot that he would keep him within 5 miles of the airport. The pilot acknowledged and reported that he was leaving 4,300 feet descending to 2,000 feet.

At about 1413, the arrival controller provided a turn to base leg and informed the pilot he was six miles from the runway.

According to the FLM, he contacted Flagler County 911 to provide them with information on the location and information about the flight, in the event their services were required.

Flagler tower called the coordinator controller, informed him that their airport emergency vehicles were en route, and asked how far out the airplane was at that time. The coordinator controller told him that N375B was approximately twelve flying miles from Flagler airport.

At 1413:46, the arrival controller told the pilot "… you're about six miles east, northeast of the field, turn right 180 , you're on the base leg for about a four and one-half to five mile final."

The pilot acknowledged the turn and said "…we're starting to see some ground here."

At 1414:27, the arrival controller instructed N375B to descend to 1,600 feet and to turn right heading 200 degrees.

The coordinator controller called the Flagler tower controller to inquire about the weather conditions at the airport. The Flagler tower controller said that they had three or four miles visibility to the east, and that the ceiling reported by the last aircraft they had at their airport was about 600 feet. He also told coordinator controller that his AWOS[8] reported that the XFL ceiling was 900 feet.

At 1414:54, the arrival controller instructed N375B to turn right heading 260 degrees. Three seconds later the pilot acknowledged the turn and stated, "…we're beginning to see the water here."

At 1415:01, the arrival controller informed N375B that he was five miles southeast of Flagler airport. About thirty-five seconds later the arrival controller provided N375B turns to intercept the final approach course and informed the pilot that he was four miles straight in for runway 29. The pilot acknowledged the instructions.

At 1416:23, the arrival controller informed the pilot that he was three miles from the runway.

At about 1416, the arrival controller told N375B to advise when he had the airport in sight, and informed the pilot that he was cleared to land runway 29. The pilot did not respond. The arrival controller then informed the pilot that he was two and one-half miles from the runway, and again asked him to report the airport in sight. There was no response.

At 1417:15, the arrival controller asked N375B, "… you still with me?" The pilot did not respond. The airplane was approximately two miles from the runway.

At 1417:25, the arrival controller told N375B that he appeared to be below radar coverage. He instructed the pilot to contact Flagler Tower, and provided the pilot with missed approach instructions, "if you don't have the airport in sight, climb straight ahead to 2,000 [feet]."

At 1417:59, the pilot transmitted, "… do you read me?" The arrival controller immediately responded that he had him loud and clear and asked the pilot if he had the airport in sight at his 12 o'clock and a mile. The pilot did not respond.

At 1418:27, N375B transmitted "…we need help; we're coming in with smoke." The arrival controller informed the pilot that Flagler tower was waiting for him, and that he was cleared to land.

At 1418:55, the Flagler tower controller called the arrival controller and informed him that N375B did not make it. Figure 3 depicts the last radar target and the location of the accident site.

[8] Automated Weather Observation System (AWOS) is equipment used to detect and report wind direction, velocity, and altimeter data for weather observation purposes at those locations that are so equipped.

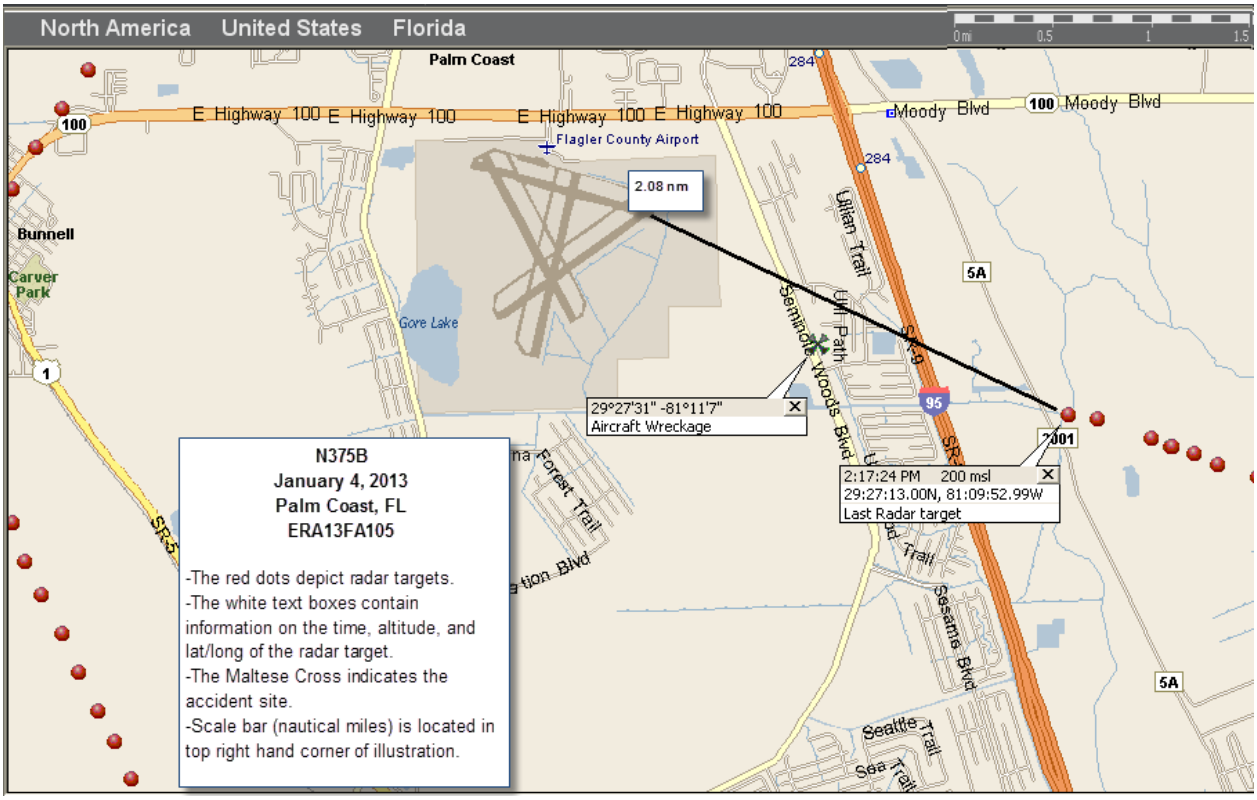

Figure 3. The location of the wreckage and the radar data indicating the last radar target observed.

According to the FLM, when the Flagler tower controller reported that the airplane was not going to make it, he informed the 911 operator that N375B was last seen by the tower at one mile east-southeast of the Flagler airport. The FLM then terminated the call with the 911 operator.

2.0 Radar Data

Radar data for this report was obtained from the DAB ASR-11 sensor located at Daytona Beach International Airport, Daytona Beach, Florida.

3.0 Weather Information

Reported weather at XFL airport at 1350 was wind 360 degrees at 7 knots, visibility 3 statute miles, ceiling 900 feet broken, 1,400 feet overcast , temperature 15 degrees Celsius, dew point 13 degrees Celsius, and altimeter 30.22.

Reported weather at OMN airport at 1350 was wind 350 degrees at 9 knots, visibility 4 statute miles, ceiling 600 feet overcast, temperature 15 degrees Celsius, dew point 13 degrees Celsius, and altimeter 30.23.

Reported weather at DAB airport at 1353 was wind 350 degrees at 7 knots, visibility 7 statute miles, ceiling 900 feet overcast, temperature 16 degrees Celsius, dew point 14 degrees Celsius, and altimeter 30.21.

4.0 Personnel Interviews

4.1 Mateo Arrival Radar Controller (AR-M)

Mr. Lance Palmer began working for the FAA in September 1998 as a direct hire from the Department of Defense while working at Grissom Air Reserve Base, Kokomo, Indiana. Before working at DAB, he worked at Chicago/Rockford International Airport, Rockford, IL, from 1998 to 2005. Mr. Palmer served in the United States Air Force (USAF) as an air traffic controller from January 1995 to 1998, stationed at Ellsworth Air Force Base (AFB), Rapid City, South Dakota, and Tinker AFB, Oklahoma City, Oklahoma. His medical certificate was current with no restrictions.

On Saturday, January 4, 2013, Mr. Palmer worked his regularly scheduled shift and had been assigned to work the Mateo and Lamma-High radar control positions combined. Mr. Palmer had been conducting on-the-job training with a developmental controller, Mr. Travis Hans, when N375B checked in on the frequency. Mr. Palmer described the level of traffic at the time as moderate. The weather had been instrument meteorological conditions (IMC) all day; and the focus of that training session was on soliciting and issuing pilot reports (PIREPS). Mr. Palmer recalled that N375B entered his airspace at an altitude that, if left unchanged, would have put the airplane in IMC. They had received PIREPS on the cloud layer tops; therefore, he issued N375B an altitude that would allow the airplane to climb above the clouds and remain VMC.

When N375B reported that he had a vibration in his engine, Mr. Palmer took over the position from the developmental. He had the pilot verify that he had reported an engine vibration and then notified the FLM of the issue. Mr. Palmer noted that it was his policy to discontinue training if an emergency occurred during a training session.

Mr. Palmer then told the pilot that Flagler County Airport (XFL) was the closest airport for him to land and then asked the pilot for the number of souls on board, fuel remaining, and his intentions. The pilot told him that he wanted to "…get down and land at the closest airport." Mr. Palmer asked the pilot if he was IFR equipped and qualified, and the pilot stated he was. Mr. Palmer issued an IFR clearance to XFL and told the pilot to expect an RNAV approach. The pilot responded that he was not RNAV equipped and asked if there were any VFR airports in the area. He gave the pilot the weather for XFL, and told him that OMN weather was not any better. He let the pilot know that the closest ILS approach was behind him at DAB. The pilot said he was too far away from DAB and wanted to land at XFL.

Mr. Palmer asked the FLM if he could conduct an ASR approach using RNAV approach minimums to XFL. He let the FLM know that this was an emergency and the pilot was not RNAV equipped and radar coverage was good in that area. The FLM told him "yes" and quickly came over to Mr. Palmer's radar position to offer assistance.

Mr. Palmer set up N375B to fly west of and north of XFL for a right downwind. He explained that since the airplane was still at a high altitude, he felt a descent over land was a better option for a single engine airplane. He believed that Interstate 95, which was east of XFL, would be available to use on that route of flight, if it became necessary for the pilot to use as an alternate landing site. Mr. Palmer coordinate the emergency information with the North Arrival controller,

descended N375B to 2,000 feet, enabled minimum safe altitude warning (MSAW[9]) processing, and completed a hand off of N375B to the arrival controller.

Mr. Palmer was asked if OMN was considered as a potential landing site. He responded that OMN was considered briefly, however, there had been a strong tailwind for runway 19 and runway 8/26 was closed for construction. Therefore, OMN was not an option.

4.2 Developmental Mateo Arrival Radar (AR-M)

Mr. Travis Hans began working for the FAA in April 2010 at the FAA academy. He had been working at DAB since 2010. Before working for the FAA, Mr. Hans served in the USAF as an air traffic controller from 2003 to 2009, stationed at Minot AFB, Minot, North Dakota; Yokota Air Base, Fussa, Japan; and Kirkuk, Iraq. His medical certificate was current with no restrictions.

On Friday, January 4, 2013, Mr. Hans worked from 0700 to 1500 on the day of the accident. His normal shift for that day would have been 1000 to 1800; however, it was changed in order to align his shift with that of his primary trainer, Mr. Lance Palmer. Mr. Hans had been assigned to train on the Mateo Arrival Radar position that day. He recalled that N375B checked in with him from the south at 5,500 feet. The pilot had been talking with Orlando approach control before talking to him. About five to ten minutes after N375B reported in, the pilot requested a climb to 6,500 feet so he could maintain VFR. Mr. Palmer took the frequency and told N375B that the PIREPS they had received indicated the tops were at 7,000 feet. Mr. Palmer issued the pilot a climb to 7,500 feet.

N375B was about ten to fifteen miles south of XFL when the pilot reported that he had a problem. Mr. Palmer took over the frequency. Mr. Hans moved over to the side and watched. He recalled that Mr. Palmer asked N375B for fuel remaining, souls on board, pilot intentions, and advised the pilot that XFL was the closest airport. He heard the pilot say that he was unable to execute an RNAV approach and was requesting a localizer approach.

Mr. Palmer offered the pilot the closest ILS, which was located at DAB. The pilot said that DAB was too far away and asked to land at XFL. Mr. Palmer then informed the pilot they could bring him in on an ASR approach to XFL. Mr. Palmer handed off the airplane to the AR-N controller, and switched the pilot to AR-N's radio frequency. About one to two minutes later, Mr. Hans was back on the position and working Mateo sector again.

After resuming training, he tried to watch N375B as the aircraft proceeded into XFL. However, he was not able to do that because he was working his traffic. The last time he saw N375B's target, the aircraft was north of XFL and on final for runway 29. A few minutes after that, he heard someone say that N375B had crashed. He was soon relieved from position. Mr. Hans believed that the coordination between all the controllers during the event was excellent.

[9] Minimum safe altitude warning− a function of radar tracking software that aids the controller by alerting him/her when a tracked Mode C equipped aircraft is below or is predicted by the computer to go below a predetermined minimum safe altitude.

Mr. Palmer discussed the emergency with him during his post training debrief. Mr. Palmer told him that he kept the emergency airplane over land because Interstate 95 could be a possible alternative landing site.

4.3 Front Line Manager (FLM)

Mr. Michael Raulerson began working for the FAA in February 1991 at the FAA academy. Before he transferred to DAB in 1999, he worked at Fort Lauderdale Executive Airport, Fort Lauderdale, FL, from 1991 to 1995, and Gulfport-Biloxi International Airport, Gulfport, MS, from 1995 to 1999. Mr. Raulerson was qualified on all positions at DAB, and had been an FLM since January 2007. His medical certificate was current with no restrictions.

On Friday, January 4, 2013, Mr. Raulerson worked his regularly scheduled shift and had been assigned to the FLM position. Mr. Raulerson was at the supervisor's desk when the Mateo controller advised him that he was working an airplane that was reporting a vibration. He got up, walked over to the Mateo control position, and heard the Mateo controller ask the pilot (N375B) how many souls he had on board and how much fuel he had remaining. The pilot provided the controller with the information and then heard him hand off N375B to the low sector controller, AR-N.

Mr. Raulerson plugged his headset into the overhead console and coordinated the emergency information with the Flagler ATCT, informed them that N375B would be landing runway 29 at XFL. Mr. Raulerson got on the landline phone and called Volusia County 911 at about the time N375B was turned on the base leg. That operator transferred his call to the Flagler County 911 operator. The operator did that because XFL airport was in a different county than DAB. For the duration of N375B's flight, Mr. Raulerson remained on the telephone with the 911 operator. As N375B got closer to XFL, the tower controller reported (over the shout line) that he could see the airplane. Shortly after that call, the XFL called up again saying that the airplane was not going to make it.

Mr. Raulerson told the 911 operator that N375B was not going to make it to the airport and informed the operator that the airplane was last seen at one mile east-southeast of the Flagler airport. Mr. Raulerson then terminated the call with the 911 operator.

While Mr. Raulerson was on the phone with the 911 operator, he told another controller to go get Karen Reid, the operations manager. By the time that Ms. Reid arrived in the radar room, the accident had already occurred.

Mr. Raulerson had the Arrival North and Mateo controllers relieved immediately, and then got the other controllers relieved from their positions. The operations manager began taking care of the phone calls required when an accident occurred, and he then had a supervisor relieve him. All of the controllers were relieved within 10 minutes after the accident.

The idea to conduct a surveillance approach to XFL came up after the Mateo controller told the pilot that all the airports were IFR, asked him if he was IFR capable, and the pilot said that he wanted to land at XFL. Mr. Raulerson pulled up the information display system at that time, and displayed the XFL RNAV runway 29 approach plate. He said, "All the controllers in the room

worked together, they knew they had to get him down…," and after they decided to provide a surveillance approach he told the controllers to "…make sure they explain to the pilot that we do not have an ASR approach into XFL." The Mateo controller relayed that information to the pilot, and the pilot agreed to conduct an ASR approach into XFL.

Mr. Raulerson explained that N375B was not put on a left downwind for runway 29 at XFL because they would had had to turn the airplane too sharply to the right, and with the speed and altitude of the airplane at that time, it was not a good idea. There was no discussion on sending the airplane anywhere else. XFL was the closest airport.

Mr. Raulerson said that N375B was about two miles north of XFL, at 4500 feet and with a speed of approximately 190 knots, when the pilot reported that he "…lost oil pressure but the heads were cool." He told the AR-N controller to turn the airplane in tight, and told the AR-N controller when to turn N375B on a base leg. Mr. Raulerson noted that best path for them to ensure the airplane would remain clear of obstacles was the final approach corridor. That flight path would provide the pilot with some ground references as well. Mr. Raulerson said his main goal was to get N375B below the clouds so he would be able to make his own decisions.

Mr. Raulerson explained that during this emergency, "…there was a lot of working together to get the airplane on the ground." Mr. Raulerson said he did not know of anything else that they could have done better.

4.4 North Radar Arrival Controller (AR-N)

Mr. Mark Hill began working for the FAA in October 1986 at the FAA academy. Before transferring to DAB, he worked at Waco Regional airport, Waco, TX, from March 1987 to October 1988, and Tulsa International Airport, Tulsa, Oklahoma, from October 1988 to October 1999. Before working for the FAA, Mr. Hill served in the United States Marine Corps from 1978 to 1986. For four of those years he worked as an air traffic controller. He was stationed at Marine Corps Air Station (MCAS) Yuma, Arizona; MCAS Camp Pendleton-Munn Field, Camp Pendleton, CA; and Coast Terminal Radar Approach Control, located on MCAS El Toro, El Toro, CA. Mr. Hill was certified on all positions at DAB. His medical certificate was current with no restrictions.

On Friday, January 4, 2013, Mr. Hill worked his regularly scheduled shift and had been assigned to the North Arrival position. Mr. Hill recalled that he was not busy at the time; he had one airplane conducting practice approaches. As he worked that airplane, he heard the Mateo controller tell the supervisor that he had an emergency; "…a Bonanza with a vibration, and that needed to land immediately at the closest airport." Mr. Hill heard the Mateo controller declare the emergency, go through the standard emergency questions, and provide the pilot the weather conditions. He then saw the supervisor walk over to the Mateo position.

He recalled that the Mateo controller gave the pilot the closest airport option, which was XFL. The Mateo controller was too busy to work the emergency, so he handed N375B off to Mr. Hill at North Arrival. N375B checked in with him when the airplane was approximately five miles south of XFL. N375B was on a northwest heading, descending out of 7,000 feet.

Mr. Hill heard the Mateo controller instruct the pilot to descend to 2,000 feet, but as soon as he had control of the airplane, he stopped N375B's descent at 3,000 feet. He did this because he wanted to ensure the airplane was high enough to remain clear of an antenna that was located northwest of XFL.

Mr. Hill's plan was to give the pilot gradual turns to the north of XFL for runway 29. He told the pilot the ASR approach would be over the RNAV runway 29 final approach course, advised him that the minimum descent altitude was 560 feet, and told the pilot that he would keep the aircraft within 5 miles of XFL.

When the pilot reported he had "…lost all oil pressure and the cylinders were cool," the pilot's demeanor was "…cool, calm, and collected." However, Mr. Hill said that he felt an increased sense of urgency: he did not want to descend the airplane too fast or too slowly, nor turn him too quickly. He wanted to keep the airplane in close to the airport, but not too close on the downwind because of obstacles. Mr. Hill knew that once the pilot was on final approach, the aircraft would be clear of obstacles. Mr. Hill provided instructions to N375B, and listened for pilot to give him feedback if he needed to do something else. The pilot never asked to be turned in closer toward the airport at any time.

Mr. Hill said he gave the pilot "gentle" turns before turning him on a dogleg to final. When the airplane was on base leg, he descended him to 1600 feet. When N375B was on a base leg the pilot reported he could see the water. Mr. Hill then turned N375B to intercept the final at four miles, and continued his descent to the MDA, which was 560 feet.

There was a strong north wind that day, which caused N375B to drift off the final approach. Mr. Hill told the pilot to continue the turn to 310 degrees to correct for the wind. At that point, he noticed that the pilot had begun to respond to his descent instructions. He issued N375B a heading of 320 degrees, but the pilot did not respond to the instruction. The Coordinator controller went over to the radarscope next to his and brought up the single sensor radar site so they could use that to ensure that the airplane was lined up on final. He continued to issue the pilot position reports and cleared N375B to land at XFL. He saw that the low altitude alert had activated, but at that time, he was more concerned with reestablishing communications with the pilot.

When N375B was approximately at one and one-half mile on final approach, the pilot reported "…he needed help and was coming in with smoke." Mr. Hill heard the XFL tower controller tell the coordinator controller that they "…had him in sight." Shortly after that, the XFL tower controller called again and reported that the airplane "…did not make it…." He thought he heard the tower controller say the airplane hit a tree about one mile short of the runway.

Mr. Hill believed that the pilot would make it into the airport, because he had a high altitude and was on the approach.

The only airport that N375B could land at was XFL; OMN had a north/northwest wind at about 25 knots, which would have created a tailwind for aircraft landing from the north.

When the pilot said he did not have RNAV, all of the controllers in the room agreed that all they could do was to offer him an ASR approach. The Mateo controller asked the pilot if he could do a surveillance approach, and the pilot said he would take it.

N375B was set up for a right downwind vice a left downwind because a left downwind would have required the pilot to make harder turns to final. When an airplane has an engine problem, the best decision is to provide a route, which does require the pilot to make hard turns.

Mr. Hill noted they had about two or three emergencies a day because of all the flight schools in the area. The controllers were thoroughly trained in handling emergencies.

4.5 Coordinator Controller (CI0)

Mr. Joseph Gambino began working for the FAA on July 25, 1990, at the FAA academy. He had been working at DAB since April 1996. Prior to DAB, Mr. Gambino worked at Phoenix-Deer Valley Airport, Phoenix, Arizona, from 1990 to 1995, and Melbourne International Airport, Melbourne, FL, from 1995 to 1996. His medical certificate was current with a restriction to have eyeglasses in his possession. He stated that he was in compliance with the restriction at the time of the accident.

On Friday, January 4, 2013, Mr. Gambino worked his regularly scheduled shift. He was assigned to the Coordinator position. Mr. Gambino recalled that he was in the break room when the FLM came in and looked around. He noticed the FLM looked busy and stressed, and then the FLM told Mr. Gambino that he needed him to go to the radar room to plug in and track an airplane. When Mr. Gambino came in the room and looked at the radarscope, N375B was 8 miles southwest of XFL, descending through 5,400 or 5,500 feet. The Mateo controller asked the pilot if he wanted to do a surveillance approach. The pilot responded that he did, and that he needed to get down.

Mr. Gambino said it crossed his mind that they could use runway 24 at XFL, but decided against making that suggestion because the airplane was high and had been maintaining 170 to 180 knots. He would have made that that suggestion if he had thought it was a viable option that could have helped. He noted that throughout the entire flight, the FLM was asking the team for input.

Mr. Gambino coordinated with XFL tower about the emergency, and then used the latitude and longitude functionality on the Standard Terminal Automation Replacement System (STARS) to track N375B in case the airplane went down. The FLM continued to walk back and forth between the overhead console and the phones. Each time the FLM would walk over to his position, Mr. Gambino would give him an update on the airplane's status. The FLM asked him to open up another radarscope to use for displaying a single sensor radar site. All of the controllers believed that the single sensor provided better tracking and did not believe FUSION[10] tracked accurately. FUSION had been recently installed and the controllers had not established a level of comfort with the accuracy of fused tracking. Having that extra radarscope set up using a single

[10] FUSION is the combination of all available surveillance sources (airport surveillance radar [ASR], air route surveillance radar [ARSR], automatic dependent surveillance – broadcast [ADSB], etc.) into the display of a single tracked target for air traffic control separation services.

sensor, which they were accustomed to using, allowed them to compare the radar targets and afforded them that comfort.

Mr. Gambino heard the pilot say that he had lost oil pressure but that his heads were still cool, and then heard the arrival controller tell the pilot that he would keep the airplane within five miles of the airport. Mr. Gambino compared what he saw on his radarscope, using the single sensor, to the arrival controller radarscope, which was in FUSION. He advised the arrival controller that N375B was on the final approach course even though the arrival controller's radarscope, which was in FUSION, appeared to show the airplane south of the final approach course.

After the XFL tower controller reported that the airplane did not make it, Mr. Gambino had no further communications with the XFL controller. He relieved the arrival controller and worked that position for another six or seven minutes before he was also relieved. Mr. Gambino said that the FLM had everyone relieved from their position, so they could "de-stress."

Mr. Gambino stated there was not anything he would have done differently during that time. He noted that that the controllers worked as a team and the FLM did an outstanding job and trusted his controllers to do their jobs.

Submitted by:

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