

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA23FA087

AIR TRAFFIC CONTROL

Group Chair's Factual Report

January 5, 2025

TABLE OF CONTENTS

A. ACCIDENT	3
B. AIR TRAFFIC CONTROL GROUP	3
C. SUMMARY	3
D. DETAILS OF THE INVESTIGATION	3
E. FACTUAL INFORMATION	5
1.0 HISTORY OF FLIGHT	5
2.0 FLIGHT TRACK SURVEILLANCE INFORMATION	7
2.1 Automatic Dependent Surveillance – Broadcast Data	7
3.0 METEOROLOGICAL INFORMATION	9
3.1 Surface Observations	9
3.2 Pilot Weather Reports	10
4.0 AIR TRAFFIC CONTROL PERSONNEL	11
4.1 Involved ATC Personnel	11
4.1.1 TIROE Sector Radar Controller	11
4.1.2 Operations Supervisor	12
4.1.3 Operations Manager	12
4.2 Non-Involved ATC Personnel	13
4.2.1 Air Traffic Manager	13
4.2.2 Quality Control Manager	13
4.2.3 Certified Professional Controller – Exemplar	13
4.2.4 Operations Supervisor – Exemplar	13
5.0 AIR TRAFFIC CONTROL PROCEDURES	14
5.1 FAA Order JO 7110.65Z, Air Traffic Control	14
F. LIST OF ATTACHMENTS	17

A. ACCIDENT

Location: Kellyton, Alabama
Date: December 13, 2022
Time: 1025 eastern standard time (CST)¹
1525 coordinated universal time (UTC)
Airplane: Mooney M20B, N74586

B. AIR TRAFFIC CONTROL GROUP

Group Chair	Brian Soper Operational Factors (AS-30 / ATC) National Transportation Safety Board Washington, DC
Group Member	Will Chamberlain ATC Subject Matter Expert Federal Aviation Administration Memphis, TN
Group Member	Karena Marinas Air Safety Investigator National Air Traffic Controllers Association Los Angeles, CA

C. SUMMARY

On December 13, 2022, at 0925 central standard time, a Mooney M20B, N74586, was substantially damaged when it was involved in an accident in Kellyton, Alabama. The pilot was fatally injured. The airplane was operated by the pilot as a positioning flight conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91.

D. DETAILS OF THE INVESTIGATION

On December 15, 2022, an air traffic control (ATC) work group was formed. Atlanta Air Route Traffic Control Center (ZTL ARTCC) was providing services to N74586 at the time of the accident. The group consisted of the NTSB group chair, an ATC subject matter expert (SME) from the FAA, and an air safety investigator (ASI) from the National Air Traffic Controllers Association (NATCA). On-site investigative work was scheduled for the week of December 19, 2022.

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

On December 18, 2022, the group arrived in the Atlanta area and conducted an organizational meeting at the hotel and reviewed the agenda for the week.

On December 19, 2022, the group met at ZTL ARTCC and was provided an in-brief by the Air Traffic Manager (ATM) and members of his staff. Also in attendance at the meeting were representatives from the FAA's Safety Intelligence and Response Group (SIRG), Eastern Service Area Quality Control Group (ESA QCG), and Office of Chief Counsel. The group was provided with an operational tour of control room with emphasis on the area that was providing services to the accident airplane, after which the group reviewed facility data and documentation and conducted interviews with a non-involved Certified Professional Controller (CPC) from Area 6, and the Operations Manager (OM) that was on duty at the time of the accident. Because the FAA declined to participate in recorded interviews per our normal investigative procedure, the Group Chair suspended the on-site field investigation under advisement of NTSB management. The Group Chair advised the FAA Event Investigation Manager (EIM) of the suspension and the group departed the facility. The Group Chair then held a brief organizational meeting back at the hotel before releasing the group and advised them that they would return to the facility when all parties were prepared to continue.

On January 4, 2023, the Group Chair sent notification to the FAA of intent to continue the on-site investigation at ZTL ARTCC. The notification reiterated the request to interview the six personnel that were originally scheduled for interviews in December and requested to conduct these interviews over the week of January 9-13, 2023. The ATC group members from the FAA and NATCA were notified, and both confirmed their participation and travel plans were made. The EIM scheduled the interviews as per our request.

On January 6, 2023, after further discussion between NTSB General Counsel and the Chief of Staff of the FAA's General Counsel, the FAA advised they would participate, however the FAA Chief Counsel would not be available to travel until January 11, 2023. The EIM was able to reschedule interviews for January 12-13, 2023. The ATC group members were notified of the change and were all able to coordinate release from their facilities and rescheduled travel arrangements to meet the adjusted dates.

On January 12, 2023, the group met at ZTL ARTCC and conducted a short organizational meeting and prepared for interviews. The group then conducted interviews with the TIROE sector radar (R09) controller that was providing services to the airplane at the time of the accident, an exemplar Operations Supervisor (OS) from area 7, and the OS that was providing general oversight in area 5 at the time of the accident. The group then returned to the hotel to work on field notes.

On January 13, 2023, the group met at ZTL ARTCC and performed a final review of data, then conducted interviews with the facility Quality Control Manager (QCM) and ATM. The group then met briefly with the ATM and FAA Chief Counsel and concluded the on-site portion of the ATC field investigation. The group returned to the hotel, completed field notes, and obtained concurrence.

E. FACTUAL INFORMATION

1.0 History of Flight

The following is a basic timeline constructed from certified audio and aircraft accident package provided by the FAA². Times are rounded to the nearest minute and altitudes are in feet above mean sea level (msl).

- 1011 N74586 first contacted R09 controller at 6,000 feet. The controller provided the Anniston altimeter setting. The pilot acknowledged.
- 1017 The pilot of N74586 declared mayday several times *[did not identify callsign]*.
- 1018 Upon querying who had declared the mayday, the pilot of N74586 confirmed they had made the call due to having a rough running engine and advised they needed to land. The R09 controller advised that the closest airport was Thomas C. Russell Field (ALX) about eight miles south of the airplane's location and provided a heading of 220°. The pilot acknowledged.
- 1019 The pilot reported that his engine was working again. After providing additional airport information, the R09 controller asked the pilot if he still wanted to land. The pilot confirmed he still desired to land at the nearest airport. The R09 controller provided additional information including distance to ALX. The pilot acknowledged.
[About this time, the TIROE radar assist (D09) controller coordinated the aircraft divert with approach control at Montgomery Airport Traffic Control Tower (MGM ATCT)]
- 1020 The R09 controller advised the pilot that his heading was good for ALX and that the airport was about nine miles away. The pilot was also advised that the weather at ALX *[which had been obtained from MGM ATCT by the D09 controller]* was ceiling 800 feet above ground level (agl) overcast, 10 miles visibility, altimeter of 30.14, and that the field elevation was 686 feet msl. The pilot acknowledged.

² The ATC audio provided by the FAA is included in Attachment 1: ATC Audio Recording and a copy of the aircraft accident package is included in Attachment 2: FAA Aircraft Accident Package.

- 1021 The R9 controller queried the pilot for his heading to which the pilot responded it was 220°. The controller then suggested that a 235° heading should set him up for runway 18. The pilot did not respond.
- 1022 The R9 controller advised the pilot that he appeared to be on a good base for runway 18 *[at this time surveillance data showed the airplane to be traveling westbound on an approximate 270° heading].*
- 1023 The R9 controller then instructed the pilot to fly heading 240° and advised that should line him up. The pilot responded saying "please stay with me I'm in IMC." The controller acknowledged and advised that the minimum IFR altitude (MIA)³ in the area was 2,900 feet *[the ATC data block indicated the airplane was at 3,400 feet]*. The pilot did not respond.
- The R9 controller then advised the airport identifier was ALX, and that he was about two minutes from being able to turn to a 180° heading that should line him up for runway 18.
- 1024 The pilot then asked the runway heading to which the controller advised he was on a good base heading and that he would turn him to a 180° in approximately 2.5 minutes, and then again advised the pilot that the MIA in the area was 2,900 feet *[the ATC data block indicated the airplane was at 2,600 feet]*. The pilot responded saying "I am engine out."
- [Surveillance data showed the airplane continued to descend on what appeared to be about a 240° heading and slowing.]*
- 1025 The R9 controller advised the pilot that he might lose contact with him in that area and that if he lost communications to contact Montgomery approach (MGM ATCT). The pilot did not respond.
- [The ATC data block then entered a CST⁴ status, and there were no further transmissions received from the accident pilot. The controller continued attempts to contact the aircraft, to include relayed communication through other aircraft with no response.]*

³ MIA - Minimum IFR Altitude - Minimum altitudes for IFR operations as prescribed in 14 *CFR* Part 91. These altitudes are published on aeronautical charts and prescribed in 14 *CFR* Part 95 for airways and routes, and in 14 *CFR* Part 97 for standard instrument approach procedures.

⁴ CST - Coast Track - Status of an aircraft that is no longer giving a primary radar return. This will generate a track message on the air traffic controller's radar display utilizing the acronym "CST" and will temporarily continue displaying the aircraft's predicted movement based on the last known heading and speed.

2.0 Flight Track Surveillance Information

2.1 Automatic Dependent Surveillance - Broadcast Data

Certified ADS-B⁵ data were provided by the FAA.⁶ These data were provided in .csv format, as well as .kml. The ADS-B data provided flight track surveillance information for the entire accident flight. These data provided the greatest flight track granularity and were used in producing figures 1-3 below.



Figure 1. Overview of the entire accident flight track of N74586 overlaid onto satellite imagery.

⁵ ADS-B – Automatic Dependent Surveillance-Broadcast - A surveillance system in which an aircraft or vehicle to be detected is fitted with cooperative equipment in the form of a data link transmitter. The aircraft or vehicle periodically broadcasts its GPS-derived position and other information such as velocity over the data link, which is received by a ground-based transmitter/receiver (transceiver) for processing and display at an air traffic control facility.

⁶ ADS-B Data is included in Attachment 3: ADS-B Data.

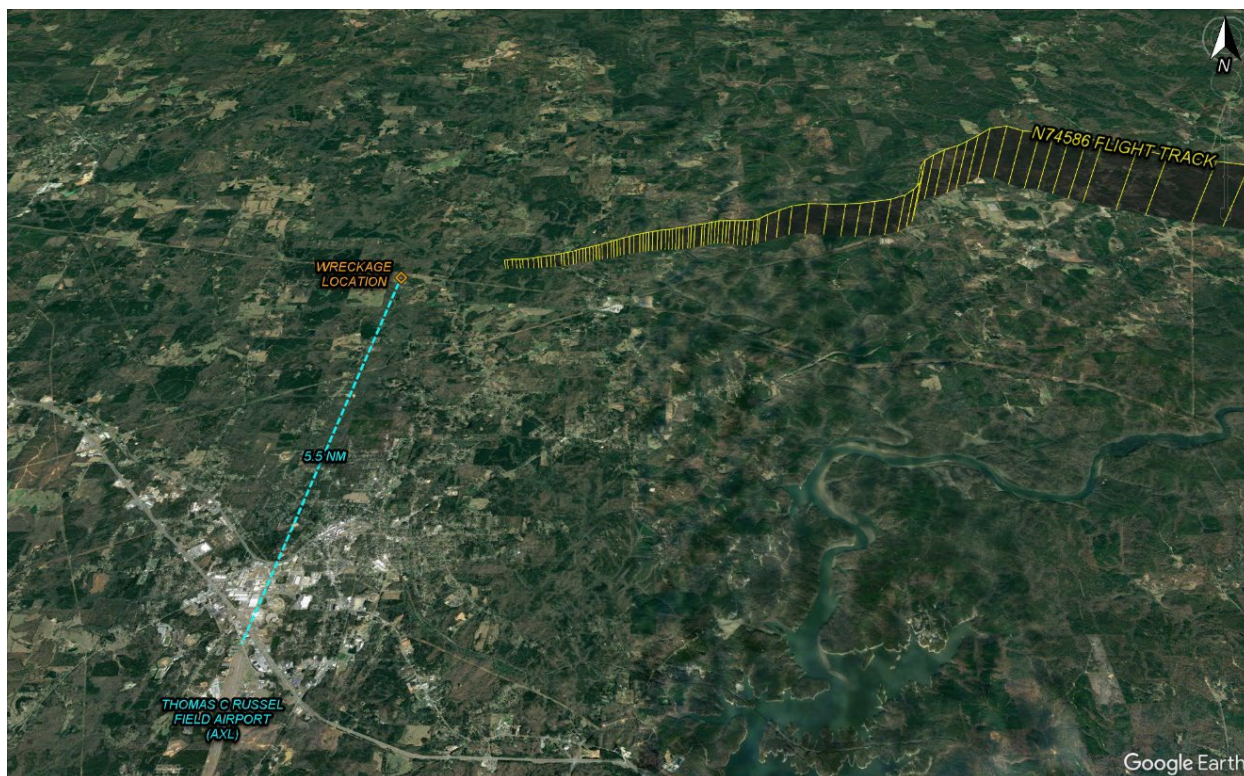


Figure 2. The final portion of the accident flight track of N74586 in profile view and overlaid onto satellite imagery.

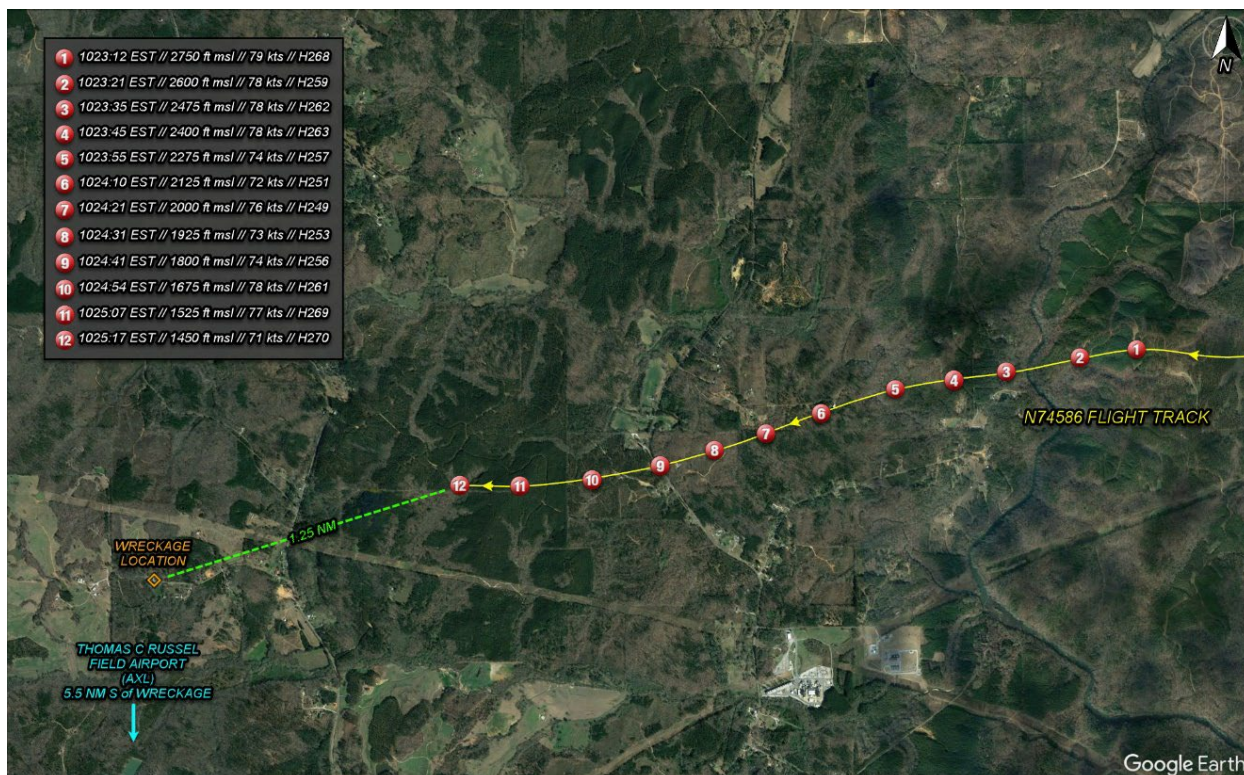


Figure 3. The final portion of the accident flight track of N74586 overlaid on satellite imagery with time, altitude, ground speed, and heading information included.

3.0 Meteorological Information

The accident airplane was diverting ALX, Alexander City, Alabama, which was located about seven miles south of the accident site at an elevation of 686 feet. The airport had a non-federal Automated Weather Observing System (AWOS)⁷, whose reports were not augmented and issued observations every 20-minutes. A review of the National Weather Service (NWS) products indicated that no SIGMETs, convective SIGMETs, CWAs, or AIRMETs were current over the route of flight surrounding the time of the accident.⁸⁹¹⁰ The following conditions were being reported at the time of the accident.

3.1 Surface Observations

At 1035, ALX¹¹ reported wind from 110° at 8 knots, visibility of 10 statute miles, ceiling overcast at 1000 feet above ground level (agl), temperature 13° Celsius (C), dew point temperature 13° C, altimeter setting of 30.14 inches of mercury. Remarks: automated station with a precipitation discriminator, hourly temperature of 13.1° C, hourly dew point temperature of 12.8° C.

The longline¹² observations that were disseminated on weather circuits and general flight categories were as follows (observation closest to incident time is in bold for emphasis):

⁷ AWOS - Automated Weather Observing System is equipped with meteorological instruments to observe and report temperature, dewpoint, wind speed and direction, visibility, cloud coverage and ceiling up to 12,000 feet, and altimeter setting.

⁸ SIGMET - Significant Meteorological Information - A weather advisory issued concerning weather significant to the safety of all aircraft. SIGMET advisories cover severe and extreme turbulence, severe icing, and widespread dust or sandstorms that reduce visibility to less than 3 miles.

⁹ CWA - Center Weather Advisory - An aviation weather warning for conditions meeting or approaching national in-flight advisory (AIRMET, SIGMET or SIGMET for convection) criteria. The CWA is primarily used by air crews to anticipate and avoid adverse weather conditions in the en route and terminal environments.

¹⁰ AIRMET - Airmen's Meteorological Information - In-flight weather advisories issued only to amend the area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment, instrumentation, or pilot qualifications.

¹¹ The NWS uses the 4-digit International Civil Aviation Organization (ICAO) format for station identifiers (as seen in the body of some formatted weather observations). This report uses the 3-digit International Air Transport Association format for station identification, which does not use the geographic designating digit ("K" for stations in the continental U.S. and "P" for U.S. stations in Alaska and the Pacific region) as found in the ICAO format.

¹² "Longline" refers to the dissemination of weather observations with the intent that they are available in near-real time to national databases (effectively, the whole world) and accessible to the general global public from a large number of vendors. This does not include public accessibility to observations from a reporting station's Very High Frequency (VHF; line-of-site) or telephone broadcast, where applicable. Longline dissemination of weather observations is the primary vehicle through which the general global public has access to surface weather observations, particularly outside of the aviation community.

IFR METAR KALX 131435Z AUTO 11006KT 10SM OVC008 13/13 A3014
RMK AO2 T01260125=

IFR METAR KALX 131455Z AUTO 12005KT 10SM OVC008 13/13 A3014
RMK AO2 T01270126=

IFR METAR KALX 131515Z AUTO 11006KT 10SM OVC008 13/13 A3015
RMK AO2 T01290127=

**MVFR METAR KALX 131535Z AUTO 11008KT 10SM OVC010 13/13
A3014 RMK AO2 T01310128=**

3.2 Pilot Weather Reports

A search of Pilot Weather Reports (PIREPs)¹³ within 60 miles of the accident location between 0400 through 1100 and below 18,000 feet were as follows:

EKY UA /OV EKY180010/TM 1314/FL016/TP SR22/SK BKN016-TOP049
MGM UA /OV MGM/TM 1324/FL060/TP BE36/SK B008 T055
MGM UA /OV 2 W/TM 1401/FL008/TP CRJ2/SK OVC008/RM DURD
MGM UA /OV 1 E/TM 1404/FL008/TP H25B/SK OVC008/RM DURC
MGM UA /OV 7 E KMGM/TM 1405/FL045/TP H25B/SK 008 OVC 042/RM DURGC
BHM UA /OV BHM240003/TM 1410/FLDURD/TP B737/SK OVC014
BHM UA /OV BHM190030/TM 1424/FL047/TP P28A TOPS047/TB MOD BLO 050
BHM UA /OV BHM/TM 1434/FL060/TP BE36/SK TOPS060
ATL UA /OV 35 W CSG /TM 1500/FL090/TP BE35/SK TOPS09605/TA 5C
MGM UA /OV 15 NW MGM/TM 1503/FL060/TP C680/SK TOPS 050/RM DURGC
MGM UA /OV 3E MGM/TM 1505/FL050/TP CRJ2/SK OVC012T038/RM DURGC
BHM UA /OV PLR/TM 1633/FLDURD/TP M20P/SK BKN018
MGM UA /OV MGM/TM 1638/FL060/TP BE40/SK 007OVC030/RM DURGC
MGM UA /OV MGM /TM 1638 /FL060 /TP BE40 /SK OVC007-TOP030 /RM DURC
MGM UA /OV 1E /TM 1706/FLDURG/TP CL35/SK OVC014
MGM UA /OV 3W/TM 1729/FLDURD/TP E145/SK OVC015
BHM UA /OV BHM/TM 1731/FLDURD/TP B350/SK BKN015 OVC048

A review of the PIREPs indicated no urgent reports during the period. Most of the reports indicated broken to overcast cloud cover with tops between 1,400 to 6,000 feet, with one report of moderate turbulence below 5,000 feet.

¹³ PIREP - Pilot Weather Report - A report made by a pilot of meteorological phenomena encountered by an aircraft in flight.

4.0 Air Traffic Control Personnel

There were 10 certified professional controllers (CPCs) on shift from area 5 (the involved area) at the time of the accident, with four CPCs on position, four CPCs available, and two CPCs performing other duties. There was an operations supervisor (OS) providing general supervision in the area, and an operations manager (OM) providing oversight of the entire facility operation. The TIROE sector radar (R9) controller was providing services to the accident airplane at the time of the event initially without a radar assist or "D-Side" but was joined by a D-Side controller shortly after receipt of the mayday call.

The R9 controller, OS, and OM that were working at the time of the accident, as well as the ATM, QCM, and exemplar CPC and OS from area 7, were all interviewed. All interviews were recorded and subsequently transcribed except for the interviews conducted with the OM and exemplar OS who both declined to participate in recorded interviews. Though contrary to normal NTSB interview procedures, we conducted non-recorded interviews and documented them with interview summaries.¹⁴

4.1 Involved ATC Personnel

4.1.1 TIROE Sector Radar Controller

The R9 controller providing services to the airplane at the time of the accident was employed by the FAA in September 2006, and after completion of initial training at the FAA Academy began working at ZTL ARTCC in December 2006. He had certified on the R9 position in September 2009.

He was 40 years old, held a current second-class medical clearance at the time of the accident with no documented waivers or restrictions. He stated he had not taken medications of any kind on the day of the accident except for a daily prescribed maintenance medication documented in his medical record and was taken as prescribed. In the terms of excellent, good, fair, or poor; he described his health as fair. Neither post-accident drug nor alcohol testing were ordered or conducted. His working hours for the week leading up to and including the day of the accident were:

¹⁴Interview transcripts for those interviews that were recorded and interview summaries for those that were not recorded included in Attachment 4: Interview Transcripts and Summaries.

Day	Date	Shift	Hours	Overtime
Wednesday	Dec 7	Day	0630-1330	None
Thursday	Dec 8	Mid	2220-0630	00 hr + 10 min
Friday	Dec 9	Mid	2200-0630	00 hr + 10 min
Saturday	Dec 10	Off	None	None
Sunday	Dec 11	Off	None	None
Monday	Dec 12	Off	None	None
Tuesday	Dec 13	Day	0800-1245	None

4.1.2 Operations Supervisor

The OS providing general supervision in the involved area at the time of the accident was employed by the FAA in February 2011, and after completion of initial training at the FAA Academy worked at Jacksonville (ZJX) ARTCC until accepting an assignment to ZTL ARTCC in January 2022. He had certified OS in the involved area in March 2022.

He was 34 years old, held a current second-class medical clearance at the time of the accident with no documented waivers or restrictions. He stated he had not taken medications of any kind on the day of the accident. In the terms of excellent, good, fair, or poor; he described his health as good. Neither post-accident drug nor alcohol testing were ordered or conducted. His working hours for the week leading up to and including the day of the accident were:

Day	Date	Shift	Hours	Overtime
Wednesday	Dec 7	Day	0435-1416	None
Thursday	Dec 8	Off	None	None
Friday	Dec 9	Off	None	None
Saturday	Dec 10	Eve	1500-2300	None
Sunday	Dec 11	Eve	1500-2300	None
Monday	Dec 12	Swing	1100-2000	01 hr + 00 min
Tuesday	Dec 13	Day	0630-1430	None

4.1.3 Operations Manager

The OM providing general oversight of the ZTL ARTCC at the time of the accident was employed by the FAA in October 2001 worked at several air traffic control facilities, including ZTL ARTCC earlier in his career, before ultimately returning to ZTL ARTCC in January 2021.

He was 45 years old and was not required to hold a medical clearance. In the terms of excellent, good, fair, or poor; he described his health as good. Neither post-accident drug nor alcohol testing were ordered or conducted. His working hours for the week leading up to and including the day of the accident were:

Day	Date	Shift	Hours	Overtime
Wednesday	Dec 7	Day	0600-1400	None
Thursday	Dec 8	Day	0600-1400	None
Friday	Dec 9	Off	None	None
Saturday	Dec 10	Off	None	None
Sunday	Dec 11	Eve	1400-2200	None
Monday	Dec 12	Day	0630-1430	None
Tuesday	Dec 13	Day	0630-1430	None

4.2 Non-Involved ATC Personnel

4.2.1 Air Traffic Manager

The ATM for ZTL ARTCC was 53 years old and had been employed by the FAA in 1998 after having served five years as an air traffic controller at various locations in the United States Air Force and one year as a Department of Defense (DoD) controller in Homestead, Florida. He spent most of his ATC career at ZTL ARTCC where he had been ATM for a little more than five years.

4.2.2 Quality Control Manager

The QCM for ZTL ARTCC was 55 years old and had been employed by the FAA in 1990. After completing initial training at the FAA academy, he initially reported to ZTL ARTCC where he worked for 17 years before transferring to ZNY ARTCC for several years, then to FAA Headquarters for a few years, then back to ZNY ARTCC for a short time before returning to ZTL ARTCC where he served as OM until being selected as the QCM in December 2022.

4.2.3 Certified Professional Controller - Exemplar

The CPC from area 6 was 38 years old and had been employed by the FAA in 2011. After completing initial training at the FAA academy, he initially worked at Memphis (ZME) ARTCC for about seven years until transferring to ZTL ARTCC in 2018. He was not working during the time of the accident and was interviewed as an exemplar CPC only.

4.2.4 Operations Supervisor - Exemplar

The OS from area 7 was 41 years old and had been employed by the FAA in 2007 after having served six years as an air traffic controller in the United States Air Force at Moody Air Force Base, Georgia and one year as a contract controller with Midwest ATC in Afghanistan. In the FAA, he first worked at Houston (ZHU) ARTCC from 2007-2014, then transferred to ZTL ARTCC and worked for three years before

returning to ZHU ARTCC in 2017. In 2020, he transferred back to ZTL ARTCC and had remained ever since.

5.0 Air Traffic Control Procedures

5.1 FAA Order JO 7110.65Z, Air Traffic Control

Chapter 1, Section 1, General, paragraph 1-1-1, Purpose of This Order, stated in part:

This order prescribes air traffic control procedures and phraseology for use by persons providing air traffic control services. Controllers are required to be familiar with the provisions of this order that pertain to their operational responsibilities and to exercise their best judgment if they encounter situations that are not covered by

Chapter 10, Section 1, General, paragraph 10-1-1, Emergency Determinations, stated in part:

- a. An emergency can be either a Distress or an Urgency condition as defined in the "Pilot/Controller Glossary."*
- b. A pilot who encounters a Distress condition should declare an emergency by beginning the initial communication with the word "Mayday," preferably repeated three times. For an Urgency condition, the word "Pan-Pan" should be used in the same manner.*

Chapter 10, Section 1, General, paragraph 10-1-2, Obtaining Information, stated in part:

- a. Use the information provided or solicit more information as necessary to assist the distressed aircraft. Provide assistance that is consistent with the requests of the pilot. If you believe an alternative course of action may prove more beneficial, transmit your recommendation(s) to the pilot.*

Chapter 10, Section 2, Emergency Assistance, paragraph 10-2-1, Information Requirements, stated in part:

- a. Start assistance as soon as enough information has been obtained upon which to act. Information requirements will vary, depending on the existing situation. Minimum required information for inflight emergencies is:
 - 1. Aircraft identification and type.*
 - 2. Nature of the emergency.*
 - 3. Pilot's desires.**
- b. After initiating action, obtain the following items or any other pertinent information from the pilot or aircraft operator, as necessary:*

1. Aircraft altitude.
2. Fuel remaining in time.
3. Pilot reported weather.
4. Pilot capability for IFR flight.
5. Time and place of last known position.
6. Heading since last known position.
7. Airspeed.
8. Navigation equipment capability.
9. NAVAID signals received.
10. Visible landmarks.
11. Aircraft color.
12. Number of people on board.
13. Point of departure and destination.
14. Emergency equipment on board.

Chapter 10, Section 2, Emergency Assistance, paragraph 10-2-5, Emergency Situations, stated in part:

Consider that an aircraft emergency exists and inform the RCC or ARTCC if:

a. An emergency is declared by any of the following:

1. The pilot.
2. Facility personnel.
3. Officials responsible for the operation of the aircraft.
4. A system-generated transmission from an aircraft.

b. There is unexpected loss of radar contact and radio communications with any IFR or VFR aircraft.

Chapter 10, Section 2, Emergency Assistance, paragraph 10-2-16, Guidance to Emergency Airport, stated in part:

a. When necessary, use any of the following for guidance to the airport:

1. Radar.
2. Following another aircraft.
3. NAVAIDs.
4. Pilotage by landmarks.
5. Compass headings.

b. Consideration to the provisions of paragraph 10-2-15, Emergency Airport Recommendation, must be used in conjunction with the information derived from any automated emergency airport information source.

Chapter 10, Section 3, Overdue Aircraft, paragraph 10-3-3, Information to be Forwarded to RCC, stated in part:

EN ROUTE

When an aircraft is considered to be in emergency status or an IFR aircraft is overdue, the ARTCC must alert the RCC and forward the following information, as available:

- a. Facility and person calling.*
- b. Flight plan, including color of aircraft, if known.*
- c. Time of last transmission received, by whom, and frequency used.*
- d. Last position report and how determined.*
- e. Aircraft beacon code.*
- f. Action taken by reporting facility and proposed action.*
- g. Number of persons on board.*
- h. Fuel status.*
- i. Facility working aircraft and frequency.*
- j. Last known position, how determined, time, estimated present position, and maximum range of flight of the aircraft based on remaining fuel and airspeed.*
- k. Position of other aircraft near aircraft's route of flight, when requested.*
- l. Whether or not an ELT signal has been heard or reported in the vicinity of the last known position.*
- m. Other pertinent information.*

Chapter 10, Section 3, Overdue Aircraft, paragraph 10-3-4, ALNOT, stated in part:

EN ROUTE

- a. In addition to routing to the regional office operations center for the area in which the facility is located, issue an ALNOT to all centers and Area B circuits, generally 50 miles on either side of the route of flight from the last reported position to destination. Include the original or amended flight plan, as appropriate, and the last known position of the aircraft. At the recommendation of the RCC or at your discretion, the ALNOT may be issued to cover the maximum range of the aircraft.*
- b. Upon receipt of an INREQ or ALNOT, check the position records to determine whether the aircraft has contacted your facility. Notify the originator of the results or status of this check within one hour of the time the alert was received. Retain the alert in an active status, and immediately notify the originator of subsequent contact, until cancellation is received.*

c. Include pertinent information in the ALNOT that will aid the RCC and SAR Teams in conducting the SAR mission. When known, include:

- 1. Last known position.*
- 2. Time.*
- 3. Aircraft beacon code.*

d. When information is obtained not previously contained in the ALNOT, issue an amended ALNOT to update information that will assist the SAR providers.

F. LIST OF ATTACHMENTS

Attachment 1: FAA ATC Audio Recording

Attachment 2: FAA Aircraft Accident Package

Attachment 3: FAA ADS-B Data

Attachment 4: Interview Summaries and Transcripts

Submitted by:

Brian Soper

Lead Air Traffic Control Investigator