

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA23FA108

AIR TRAFFIC CONTROL

Group Chairman's Factual Report

May 8, 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	4
1.0 HISTORY OF FLIGHT	4
2.0 FLIGHT TRACK SURVEILLANCE INFORMATION	5
2.1 Automatic Dependent Surveillance - Broadcast.....	5
3.0 METEOROLOGICAL INFORMATION	8
3.1 Surface Observations	8
3.2 Pilot Weather Reports	9
4.0 AIR TRAFFIC CONTROL FACILITY	9
4.1 Quality Control	9
5.0 AIR TRAFFIC CONTROL PERSONNEL	10
5.1 Involved ATC Personnel.....	11
5.1.1 Linden Sector 5 Radar Controller - OJT Instructor.....	11
5.1.2 Linden Sector 5 Radar Controller - Developmental.....	11
5.1.3 Operations Supervisor	12
5.1.4 Operations Manager	12
5.2 Non-Involved ATC Personnel	13
5.2.1 Local Safety Council Representative	13
5.2.2 Quality Control Manager	13
5.2.3 Training Administrator	13
5.2.4 Air Traffic Manager - Acting	13
F. LIST OF ATTACHMENTS	14

A. ACCIDENT

Location: Dayton, Virginia
Date: January 11, 2023
Time: 1809 eastern standard time (EST)
2309 coordinated universal time (UTC)
Airplane: Piper PA-32R-301, N43156

B. AIR TRAFFIC CONTROL GROUP

Group Chairman	Brian Soper Operational Factors (AS-30 / ATC) National Transportation Safety Board Washington, DC
Group Member	Jason Alliston ATC Subject Matter Expert Federal Aviation Administration Columbus, GA
Group Member	Seth Myers Air Safety Investigator National Air Traffic Controllers Association Boston, MA
Group Member	Anthony Bunch Air Safety Investigator - Under Instruction (UI) National Air Traffic Controllers Association San Diego, CA

C. SUMMARY

On January 11, 2023, about 1809 eastern standard time (EST)¹, a Piper PA-32R-301 airplane, N43156, was destroyed when it was involved in an accident near Dayton, Virginia. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 business flight.

D. DETAILS OF THE INVESTIGATION

On January 17, 2023, the decision was made to form an air traffic control (ATC) workgroup in support of this investigation. Notification was made to the FAA in accordance with current protocol, advising our intent to conduct on-site investigative work at Washington Air Route Traffic Control Center (ZDC ARTCC), the facility that

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

was providing services to the airplane at the time of the accident. A list of personnel requested to be interviewed was provided and advised that all interviews would be recorded and provided for transcription. The ATC workgroup was formed and consisted of the NTSB group chair, a subject matter expert from the FAA, an air safety investigator (ASI), and ASI in training from NATCA. On-site investigative work was scheduled for the week of January 23, 2023.

On January 23, 2023, the group arrived in Leesburg, VA and conducted an organizational meeting at the hotel and reviewed the tentative agenda for the week.

On January 24, 2023, the group met at ZDC ARTCC and was provided an in-brief by the acting air traffic manager (ATM) and members of her 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 the Chief Counsel. The group was provided with an operational tour of the control room with emphasis on the area that was providing services to the accident airplane, after which the group reviewed data and controller background information and conducted interviews with the on the job training Instructor (OJTI) that was monitoring the Linden sector developmental (R5D) controller, and the operations supervisor (OS) that was providing supervisory oversight in Area 6 at the time of the accident.

On January 25, 2023, the group returned to ZDC ARTCC, reviewed data and conducted interviews with the operations manager (OM) that was providing general oversight of the control room at the time of the accident, as well as the quality control manager (QCM) and NATCA local safety council (LSC) co-lead.

On January 26, 2023, the group returned to ZDC ARTCC, reviewed final data, and ensured receipt of everything that had been requested. The group then conducted interviews with the developmental R5D controller that was providing services to N43156 at the time of the accident, the training administrator (TA), and ATM. The group then remained in the facility, completed field notes, obtained concurrence and concluded the on-site portion of the ATC field investigation.

E. FACTUAL INFORMATION

1.0 History of Flight

The following is a basic timeline constructed from certified audio recordings, surveillance data, and the aircraft accident package provided by the FAA (see attachments 1, 2, and 3 respectively). Times are rounded to the nearest minute for brevity and altitudes are in feet above mean sea level (msl).

- 1741 The pilot of N43156 first checked in with Potomac Consolidated Terminal Radar Approach Control (PCT TRACON) and requested VFR flight following to Shelby County Airport (EET). The pilot reported climbing through 3,500 feet for 6,500 feet.
- 1742 The PCT controller radar identified N43156 and issued the Dulles International Airport (IAD) altimeter setting of 30.16.
- 1744 The PCT controller instructed the pilot of N43156 to reset their transponder and squawk 7075.
- 1745 The PCT controller instructed the pilot of N43156 to contact Washington Air Route Traffic Control Center (ZDC ARTCC).
- 1749 The pilot of N43156 checked in with the Linden sector 5 radar developmental (R5-DEV) controller at ZDC ARTCC level at 6,500 feet. The controller provided the Shenandoah altimeter setting of 30.13.
- 1802 The pilot of N43156 advised the R5-DEV controller that they would be descending to 5,500 feet for a few minutes. The controller acknowledged and instructed the pilot to maintain VFR. The pilot acknowledged.
- 1810 The R5-DEV controller attempted to inform the pilot of N43156 that radar contact had been lost and requested they reset their transponder. There was no response from the pilot. *[The accident airplane's data tag was displaying a "coast" (CST)² status at this time.]*

[Several subsequent attempts were made to contact the accident aircraft both on guard frequency and through other aircraft with no response by the pilot.]

2.0 Flight Track Surveillance Information

2.1 Automatic Dependent Surveillance - Broadcast

ADS-B³ data were provided by the FAA and used to produce figures 1-3 below. In figure 3, ground speeds are estimated calculations and were not part of the ADS-B data transmitted from the accident aircraft. Altitudes are the geometric altitude⁴ values from the ADS-B data.

² 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 controllers radar display utilizing the acronym "CST" and will temporarily continue displaying the aircraft's predicted movement based on the last known heading and speed.

³ 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.

⁴ Geometric altitude refers to the actual height of an object or aircraft above a reference surface,

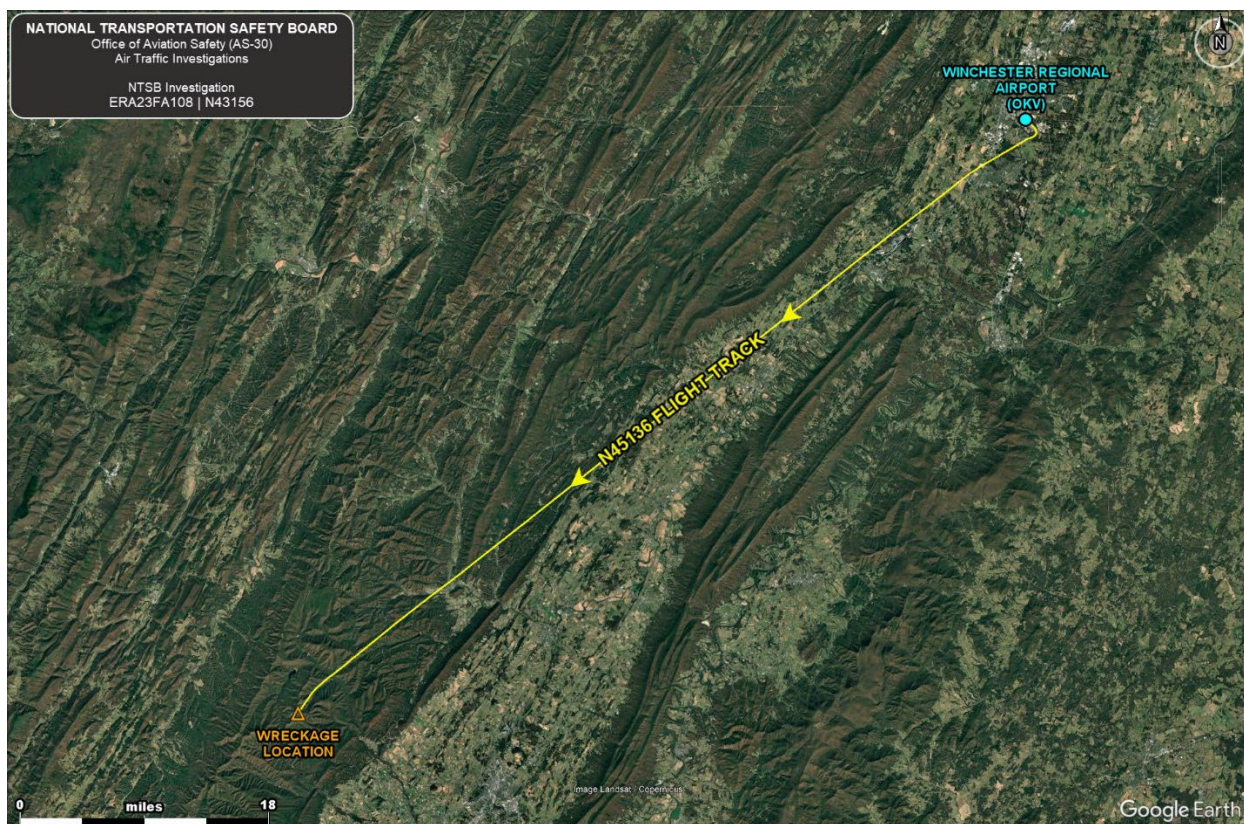


Figure 1. Overview of the entire incident flight track overlaid on satellite imagery.

typically mean sea level (msl). It's determined primarily from geometric sources like GPS or terrain measurements, rather than from atmospheric pressure readings as in barometric altitude. In essence, it's a direct measurement of vertical distance from a reference point.

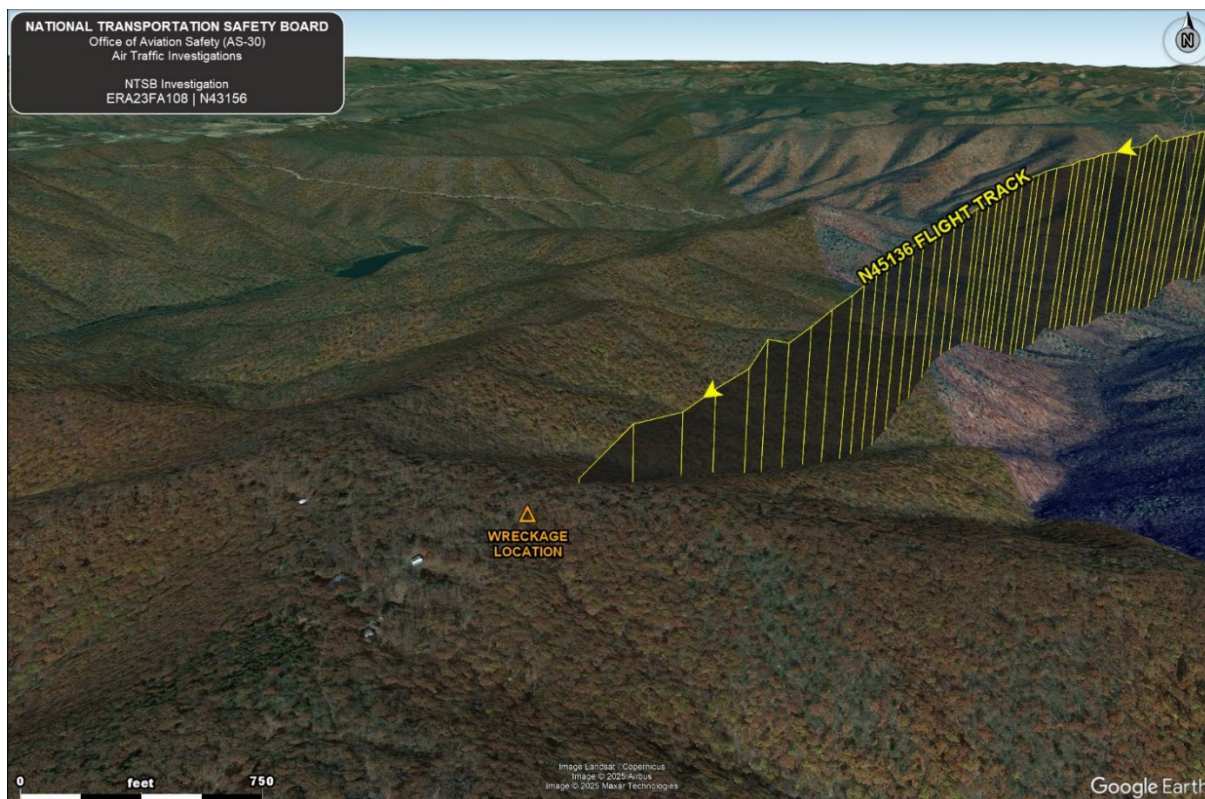


Figure 2. Final portion of the incident flight track in profile view.

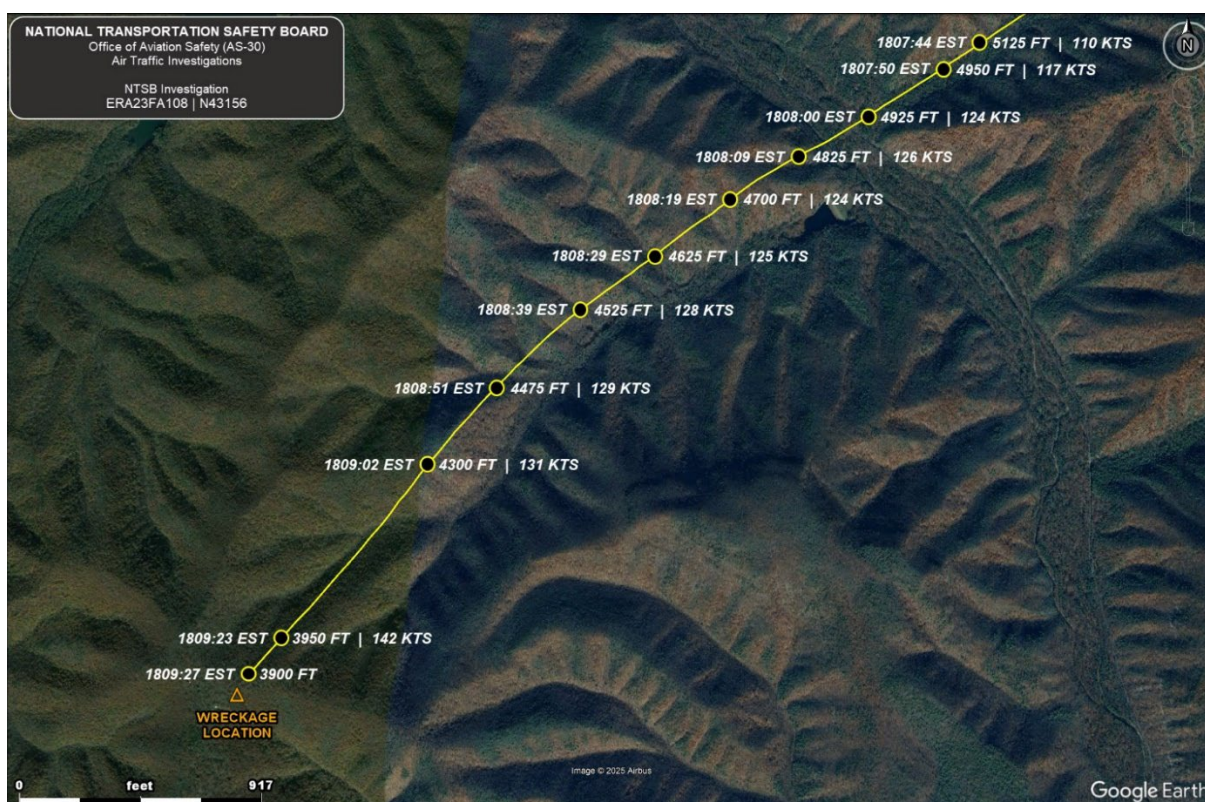


Figure 3. Final portion of the accident flight with time, altitude, ground speed, and heading information included.

3.0 Meteorological Information

The closest official weather reporting location to the accident site was from Bridgewater Air Park (KVBW), Bridgewater, Virginia, located about 13 miles southeast of the accident site at an elevation of 1,165 feet. The airport had a non-federal Automated Weather Observing System (AWOS)⁵, which was not augmented by any human observer and issued reports every 20-minutes. A review of the National Weather Service (NWS) products indicated that no SIGMETs, convective SIGMETs, or CWAs were current over the route of flight surrounding the time of the accident, however there were valid G-AIRMETs (see the Meteorology Factual Report in the public docket).⁶ The following conditions were being reported at the time of the accident. (For more detailed weather information see the Meteorology Factual Report in the public docket.)

3.1 Surface Observations

At 1755, VBW⁷ reported wind from 190° at 7 knots, visibility of 7 statute miles, ceiling broken at 3,800 feet above ground level (agl), temperature 4° Celsius (C), dew point temperature 1° C, altimeter setting of 30.11 inches of mercury. Remarks: automated station without a precipitation discriminator, 0.01 inches of precipitation since 1735, hourly temperature of 3.9° C, hourly dew point temperature of 0.5° C.

The longline⁸ observations that were disseminated on weather circuits and general flight categories were as follows (observation closest to incident time is in bold for emphasis):

⁵ 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.

⁶ 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.

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

⁷ 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.

⁸ "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

VFR METAR KVBW 112155Z AUTO 17004KT 10SM OVC110 06/M01 A3009 RMK AO1 T00571014

VFR METAR KVBW 112215Z AUTO 17005KT 10SM SCT050 BKN 075 OVC100 06/M01 A3009 RMK AO1 T00581014

VFR METAR KVBW 112235Z AUTO 18008KT 10SM BKN036 BKN043 OVC055 05/00 A3009 RMK AO1 T00511003

VFR METAR KVBW 112255Z AUTO 19007KT 7SM BKN038 OVC050 04/01 A3011 RMK AO1 P0001 T00390005

3.2 Pilot Weather Reports

A search of Pilot Weather Reports (PIREPs) within 60 miles of the accident location from 1500 through 2100 below 18,000 feet were as follows:

CKB UA /OV EKN/TM 2118/FL070/TP DA42/WX -RA/TA 0/TB LGT CHOP
CHO UA /OV 10 SW CHO/TM 2149/FL160/TP AC95/TA MINUS 8/IC LIGHT RIME
SHD UA /OV SHD224013/TM 2222/FL060/TP SR22/TA -2/IC LIGHT RIME
CHO UA /OV 20 NM NE CHO/TM 2226/FL090/TP PA24/TB MODERATE
FCI UA /OV GVE230010/TM 2236/FL140/TP PC12/TA M6/IC LGT CLR
EKN UA /OV ESL090021/TM 2249/FL160/TP PC12/TA M16/IC LGT RIME
MRB UA /OV ESL360010/TM 2309/FL110/TP BE60/TA M04/IC LGT RIME

A review of the PIREPs indicated no urgent reports during the period. Most of the reports indicated light icing between 6,000 to 16,000 feet, and one report of moderate turbulence below 10,000 feet. Of particular relativity (and bolded for emphasis above) was the Shenandoah Valley (SHD) PIREP for light rime icing at 6,000 feet reported at 1740.

4.0 Air Traffic Control Facility

4.1 Quality Control

ZDC ARTCC had multiple outstanding mitigations from their most recent Internal Compliance Verification (ICV) and External Compliance Verification (ECV) reviews that were completed in 2022. All documented mitigations for PIREPs and weather dissemination had been continually renewed. Despite multiple briefings to the workforce, interviews reflected that these concepts had not gained traction with individual controllers, which directly influenced the quality of training accomplished on the operational floor.

Additionally, ZDC ARTCC suffers from significant "stove piping" regarding program management. The LSC, quality control (QC) office, training office, and OMs

aviation community.

(collectively) remained very narrowly in their own areas of expertise and did not readily share information between offices. Even the LSC and QC offices appeared to be operating on parallel courses, and the (significant) resources devoted to the LSC were not being utilized to their full potential. There was no record of regularly scheduled meetings occurring across management offices.

According to interviews, the training department was focused only on checking the specific boxes outlined as outlined in the national training order (FAA Order JO 3120.4). No attention was given to the quality or content of the written notes on the forms, which resulted in a lack of clarity in trainee progress.

The Quality Control Office was aware of their responsibilities and the QCM had only been in the position for a short time and was still acclimating. There was no guidance provided to the OM/OS ranks to direct operational skill assessments (OSAs) toward known emphasis items, specifically to increase direct monitor OSAs on weather days.

There was a minimal focus on individual performance management (IPM) in the facility below the ATM level. Additionally, according to interviews, there was a feeling that IPM was a passive tool and appeared to predominately be a result of inadequate staffing at management positions. There was evidence that performance record of conference (PRoC) documentation had increased in recent years but was not used effectively as a tool to effect change or improve performance. There were no coordinated efforts to focus the OSs on specific emphasis items with respect to IPM to ensure traction of mitigations.

The ATM had a solid knowledge of the facility and understood what was needed to move the facility in the right direction. However, she was operating at a disadvantage with inadequate supervisory numbers and continued to be challenged due to multiple changes in senior management over the past six months.

5.0 Air Traffic Control Personnel

There were 13 certified professional controllers (CPCs) on shift and available from Area 6 (the area involved) at the time of the accident, with six CPCs on position, five CPCs available, and two CPCs performing other duties. There were two OSs on duty with one providing general supervision in the area, and an OM providing oversight of the control facility. Training was in progress at the R5 position. The R5 DEV controller was providing services to N43156 at the time of the accident and was being monitored by the R5 OJTI controller.

The R5 DEV and OJTI controllers, OS, and OM that were working at the time of the accident, as well as the ATM, QCM, TM, and LSC representative, were all interviewed. All interviews were recorded and subsequently transcribed.⁹

5.1 Involved ATC Personnel

5.1.1 Linden Sector 5 Radar Controller - OJT Instructor

The R5-OJTI controller was instructing the R5-DEV controller who was providing services to the airplane at the time of the accident at the Linden sector, which was combined with the Casanova sector at the time. He served as an air traffic controller in the United States Navy from 1995-2001 and in the Department of Defense (DoD) from 2001-2003 until he was employed by the FAA and began working at ZDC ARTCC. He had certified on the R5 position in February 2012.

He was 48 years old and 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 terms of excellent, good, fair, or poor; he described his health as excellent. He stated that post-accident toxicology drug testing was performed after the accident, but not until approximately two days later. Alcohol testing was not performed. His working hours for the week leading up to and including the day of the accident were:

Day	Date	Shift	Hours	Overtime
Thursday	Jan 5	Day	0630-1630	None
Friday	Jan 6	Day	0600-1600	None
Saturday	Jan 7	Off	None	None
Sunday	Jan 8	Off	None	None
Monday	Jan 9	Off	None	None
Tuesday	Jan 10	Eve	1359-2359	None
Wednesday	Jan 11	Swing	1130-2130	None

5.1.2 Linden Sector 5 Radar Controller - Developmental

The R5-DEV controller was providing services to the airplane at the time of the accident under the instruction of an OJTI. She was working the Linden and Casanova sectors combined at the time. She was employed by the FAA in 2018 and after completion of initial training at the FAA Academy was assigned to ZDC ARTCC in May 2019. She had been training on the R5 position since August 2022.

She was 34 years old and held a second-class medical clearance certificate with restrictions/waivers that she stated were documented in her medical record. She

⁹ Interview transcripts are included in Attachment 4: Interview Transcripts.

was required to wear corrective lenses while performing ATC duties and stated that she was wearing her contact lenses at the time of the accident. She had taken her prescription medication on the day of the accident as prescribed. Her working hours for the week leading up to and including the accident were:

Day	Date	Shift	Hours	Overtime
Thursday	Jan 5	Day	0635-1435	None
Friday	Jan 6	Day	0630-1430	None
Saturday	Jan 7	Off	None	None
Sunday	Jan 8	Off	None	None
Monday	Jan 9	Eve	1430-2230	None
Tuesday	Jan 10	Eve	1330-2130	None
Wednesday	Jan 11	Eve	1320-2120	None

5.1.3 Operations Supervisor

The OS was providing general supervision in Area 5 at the time of the accident. He served as an air traffic controller in the United States Navy from 1994-2001 and was employed by the FAA in 2003 and worked as a CPC at Jacksonville (ZJX) ARTCC until 2016, when he was selected for an OS position at ZDC ARTCC. He had certified on the R5 position in February 2012.

He was 48 years old and 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 terms of excellent, good, fair, or poor; he described his health as excellent. He stated that neither post-accident drug nor alcohol testing was conducted for him after the accident. His working hours for the week leading up to and including the day of the accident were:

Day	Date	Shift	Hours	Overtime
Thursday	Jan 5	Off	None	None
Friday	Jan 6	Eve	1430-2245	0 hr + 15 min
Saturday	Jan 7	Off	None	None
Sunday	Jan 8	Eve	1415-2245	0 hr + 30 min
Monday	Jan 9	Off	None	None
Tuesday	Jan 10	Eve	1415-2230	0 hr + 15 min
Wednesday	Jan 11	Eve	1415-2300	0 hr + 45 min

5.1.4 Operations Manager

The OM was providing general oversight of the control room at the time of the accident. HE was employed by the FAA in 2010 and after completion of initial training at the FAA Academy he reported to ZDC ARTCC later the same year. He had been designated OM in October 2021.

He was 39 years old and was not required to hold a second-class medical clearance as OM. In terms of excellent, good, fair, or poor; he described his health as fair. He stated that neither post-accident drug nor alcohol testing was conducted for him after the accident. We were unable to obtain his full week schedule, but he stated that he had worked a normal 40-hour week as scheduled with no overtime and was on his regularly scheduled shift at the time of the accident.

5.2 Non-Involved ATC Personnel

5.2.1 Local Safety Council Representative

The LSC bargaining unit co-lead was a CPC from Area 4 and was detailed for three days per week (Tuesday-Thursday) to the office to work with the LSC management co-lead on LSC duties. He was hired by the FAA in March 2016 and after completion of initial training accepted a position at ZDC ARTCC where he has worked ever since. He participated in the Covered Event Review (CER) conducted as a result of this event.

5.2.2 Quality Control Manager

The QCM was 49 years old and had only been in position for five months and was previously an OM. He served as an air traffic controller in the United States Marine Corps from 1992-1998. He was then hired as an air traffic controller for the DoD at Marine Corps Air Station (MCAS) Miramar and worked for 3 months before being hired by the FAA in April 1998.

5.2.3 Training Administrator

The TA was 57 years old and had been in position since March 2020 when she returned to ZDC ARTCC after a detail to FAA Headquarters for Trajectory Based Flight Management (TBFM). She was hired by the FAA in 1986 and had worked previously at ZDC ARTCC as a CPC, OS, Supervisory Traffic Management Coordinator (STMC) and OM. She last worked at ZDC ARTCC in 2010.

5.2.4 Air Traffic Manager - Acting

The acting ATM was 50 years old and had been in position since August 2022. Prior to that she served as QCM for several years before accepting the acting ATM position. She was hired by the FAA in 1998 and had worked in a number of positions before working at ZDC ARTCC. She was on leave and not in the country at the time the accident occurred and was not involved in the initial handling of this event.

F. LIST OF ATTACHMENTS

Attachment 1: ATC Audio Recordings
Attachment 2: ADS-B Data
Attachment 3: FAA Aircraft Accident Package
Attachment 4: Interview Transcripts
Attachment 5: Facility Logs and Records
Attachment 6: Facility Administration

Submitted by:

Brian Soper
Lead Air Traffic Control Investigator