

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR22FA345

AIR TRAFFIC CONTROL

Group Chair's Factual Report

July 29, 2024

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A. ACCIDENT

Location: Seligman, Arizona
Date: September 13, 2022
Time: 1101 mountain standard time (MST)¹
1801 coordinated universal time (UTC)²
Airplane: N43605, Piper PA46-310P

B. AIR TRAFFIC CONTROL GROUP

Group Chair	Betty Koschig National Transportation Safety Board (NTSB) Washington, DC
Group Member	Chad Miller Federal Aviation Administration (FAA) Salt Lake City, UT
Group Member	Seth Myers National Air Traffic Controllers Association (NATCA) Boston, MA

C. SUMMARY

On September 13, 2022, about 1100 mountain standard time, a Piper PA46-310P airplane, N43605, was substantially damaged when it was involved in an accident near Seligman, Arizona. The student pilot and passenger were fatally injured. The airplane was operated by the student pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. A visual flight rules (VFR) flight plan was filed. The flight originated from the Double Eagle II Airport (AEG), Albuquerque, New Mexico with an intended destination to Henderson Executive Airport (HND), Las Vegas, Nevada. At the time of the accident, Air traffic control (ATC) services were provided by Los Angeles Air Route Traffic Control Center (ARTCC) (ZLA).

D. DETAILS OF THE INVESTIGATION

On September 13, 2022, the case was assigned to ATC investigator, and ATC data was requested from ZLA.

¹ All times are mountain standard time (MST) unless otherwise noted.

² UTC is an international time standard using four digits of a 24-hour clock in hours and minutes based on the time in Greenwich, England.

On September 14, 2022, after discussions with the investigator in charge (IIC), ATC Team Lead, and Operational Factors Chief, the IIC requested that an onsite investigation be conducted at ZLA.

On September 20, 2022, the ATC group and the NTSB IIC convened at the ZLA facility. The ATC group and the IIC attended a brief conducted by the event investigation manager (EIM). Also attending the brief were the ZLA air traffic manager (ATM), ZLA executive officer (XO), ZLA NATCA Facility Representative, ZLA NATCA local safety committee (LSC) representative, Western service area quality control group representatives, Event review team (ERT) representatives, EIM team, and FAA attorney from the Office of Special Council.

The ATC group and the IIC received a tour of the ZLA facility, which included detailed information about Area F, sector 8. Following the tour, the ATC group reviewed data associated with the accident. The group and the IIC conducted interviews with the on-the-job training instructor (OJTI) Radar controller for sector 8 (R8) in Area F, and the Operations Manager (OM).

On September 21, 2022, the ATC group and IIC reconvened at ZLA facility. The group reviewed data and conducted interviews with the trainee assigned to the R8 position in Area F. The IIC departed to conduct other investigative duties.

On September 22, 2022, the ATC group reconvened at the ZLA facility. The group interviewed the NATCA LSC representative and the Operations Supervisor (OS). The ATC group completed and approved field notes. The onsite phase of the ATC investigation was completed.

E. FACTUAL INFORMATION

1.0 History Of Flight

The history of flight was compiled using FAA source data provided in Attachments 1 through 5.

ATC services provided by AEG Airport, Albuquerque International Sunport Airport (ABQ), Albuquerque, New Mexico, and Albuquerque ARTCC (ZAB) on September 13, 2022 between 0759 and 1041 were routine and uneventful.

The following timeline summarizes pilot and controller communications, and other pertinent information while N43605 was operating in Los Angeles ARTCC (ZLA) airspace:

- 1041:54 The pilot of N43605 contacted the ZLA sector 8 Radar controller (R8) and reported they were at 17,700 feet³. The R8 controller requested the aircraft calling to say again. The pilot of N43605 responded, Malibu 43605.
- 1044:24 The R8 controller advised the pilot of N43605 that the Grand Canyon altimeter was 3019. The pilot readback the altimeter setting.
- 1055:47 The R8 controller advised the pilot of N43605 about an area of moderate to heavy precipitation, which was at their 12 o'clock, and ask them to advise. The pilot responded that they have been able to dodge the little buildups, but they were getting thicker.
- 1103:12 The R8 controller informed the pilot of N43605 that they saw the airplane had changed course, and asked the pilot if they needed any assistance with directions. The pilot did not respond.
- 1103:34 The R8 controller transmitted a radio check to the pilot of N43605. The pilot did not respond.
- The R8 controller attempted to contact the pilot three more times; the pilot did not respond.
- 1105:01 The R8 controller asked an uninvolved airplane pilot that was operating in that airspace if they could hear the pilot of N43605 trying to transmit anything. The pilot responded they did not, but they would listen for transmissions.
- 1107:12 The R8 controller transmitted a radio check to the pilot of N43605. The pilot did not respond.
- 1107:21 The R8 controller broadcasted on Guard⁴ frequency that if the pilot of N43605 could hear the transmission to contact Los Angeles Center. The pilot did not respond.

The R8 controller attempted to contact the pilot of N43605 an additional seven times between 1100 to 1112. The pilot did not respond to any transmissions.

³All altitudes are in feet above mean sea level (msl) unless otherwise noted.

⁴Very high frequency (VHF) 121.5 and ultra-high frequency (UHF) 243.0 are "guarded" frequencies reserved in the aircraft operations band exclusively for emergency communications and notifications. Generally, civil aircraft are VHF radio equipped, and military are UHF radio equipped.

Figure 1 illustrates N43605's flight route after departing Double Eagle II (AEG) Airport until the time of the accident. Figure 2 illustrates the final portion of N43605's flight route after checking in with the ZLA and until the time of the accident. These figures were produced from Automatic Dependent Surveillance – Broadcast (ADS-B data)⁵ overlaid onto satellite imagery in Google Earth.

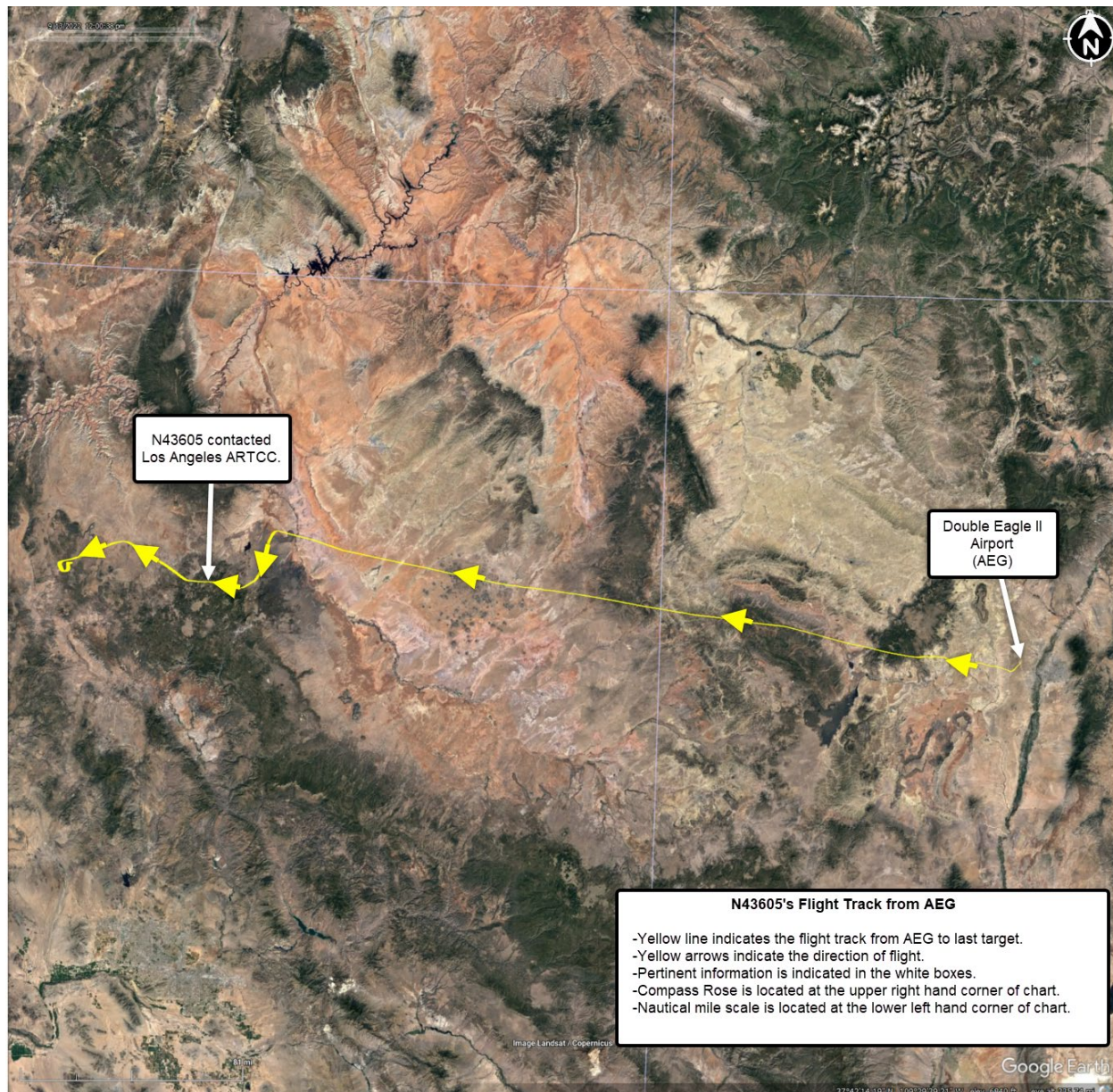


Figure 1. N43605's flight route after departing AEG airport and until the time of the accident.

⁵ 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.

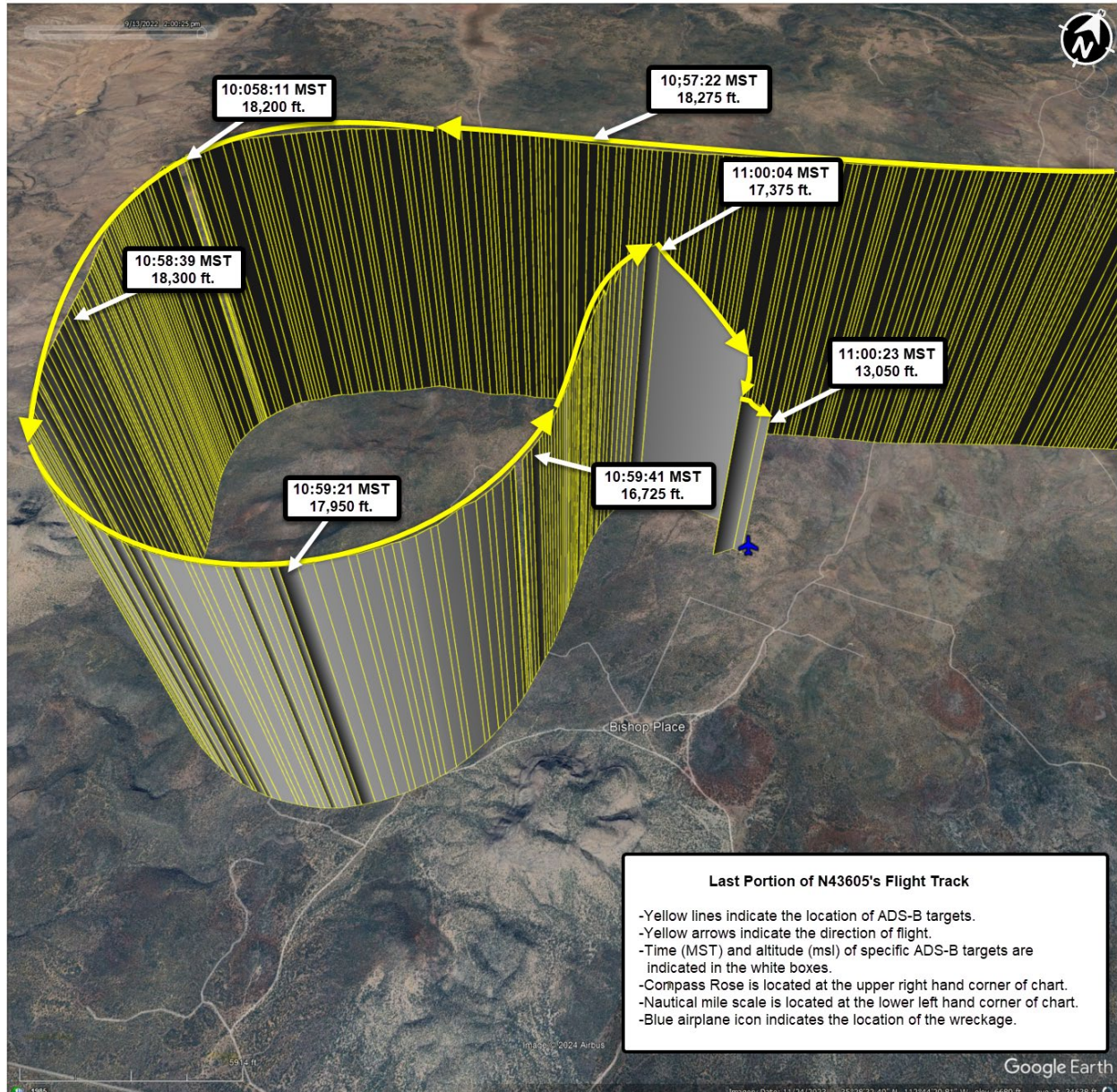


Figure 2. The final portion of N43605's flight route after checking in with the ZLA and until the time of the accident.

2.0 Automatic Dependent Surveillance - Broadcast

ADS-B data for N43605 was provided by the FAA . These data were provided in comma separated value (csv) format, as well as keyhole markup language (kml). The ADS-B data provided flight track surveillance information for the entire accident flight.

3.0 Meteorological Information

An Automated Weather Observing System (AWOS)⁶ was located at H. A. Clark Memorial Field Airport (KCMR) which was in Williams, Arizona, about 28 miles east-southeast of the accident location at an elevation of about 6,690 feet and had a magnetic variation of about 10°30' east. The observation closest in time to the accident time is shown below.

[1055] METAR⁷ KCMR 131755Z AUTO 20010G18KT 170V230 10SM CLR 20/10 A3019 RMK AO2=

Plain Language for METAR:

At 1055, the KCMR AWOS reported a wind from 200° at 10 knots with gusts to 18 knots, wind variable between 170° and 230°, visibility 10 statute miles or greater, sky clear, temperature of 20° Celsius (C) and dew point temperature of 10°C, altimeter setting of 30.19 inches of mercury; Remarks: automated station with a precipitation discriminator.

An Automated Surface Observing System (ASOS) was located at Grand Canyon National Park Airport (KGCN) which was in Grand Canyon, Arizona, about 39 miles northeast of the accident location at an elevation of about 6,600 feet and had a magnetic variation of about 10°30' east. The observation closest in time to the accident time is shown below.

[1054] METAR KGCN 131754Z 00000KT 10SM FEW048 BKN110 16/13 A3019 RMK AO2 LTG DSNT SW AND W RAB10E27 SLP148 P0001 60012 T01560128 10156 20122 51003=

Plain Language for METAR:

At 1054, the KGCN ASOS reported a calm wind, visibility of 10 statute miles or greater, few clouds at 4,800 feet above ground level (agl), ceiling broken at 11,000 feet agl, temperature of 16°C and dew point temperature of 13°C, altimeter setting of 30.19 inches of mercury; Remarks included: automated station with a precipitation discriminator, lightning more than 10 miles away to

⁶ 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.

⁷ METAR - Aviation Routine Weather Report - The METAR has been adopted by the United States to provide surface observations of current weather conditions in support of aviation for the terminal. It is issued at fixed times hourly

the southwest and west, rain began at 1010 and ended at 1027, sea level pressure of 1014.8 hPa, 0.01 inches of liquid equivalent precipitation since 0954, 0.12 inches of liquid equivalent precipitation fell over past six hours, temperature of 15.6°C and dewpoint temperature of 12.8°C, six hour maximum temperature of 15.6°C, six hour minimum temperature of 12.2°C, a pressure increase of 0.3 hPa over past three hours.

4.0 ZLA Air Traffic Control Facility⁸

Los Angeles Center (ZLA) was located in the northern portion of Los Angeles County, in the city of Palmdale, located 65 miles north of Los Angeles. In addition to numerous major and regional airports that they serve, they also overlay the TRACON/Approach Controls at Long Beach, Los Angeles, Burbank, Ontario, Palm Springs, San Diego, Santa Ana, Santa Barbara, Bakersfield, Joshua, and Las Vegas. Adjacent En Route Centers include Oakland, Salt Lake, Albuquerque, Denver, and Mazatlán.

ZLA was responsible for approximately 177,000 square miles of airspace bounded by 4 U.S. Air Route Traffic Control Centers; 1 International Area Control Center; 1 International Approach Control; 1 Military Air Traffic Control Facility, and 70,800 square miles of Special Use Airspace (SUA).

ZLA Area F handled traffic into the Grand Canyon, Las Vegas departures and arrivals to airports in the Southwest US, Las Vegas and Los Angeles basin departures and arrivals to and from the east and northeast, and Approach Control service for the Grand Canyon, Kingman, and St. George airports. Area F coordinated with Salt Lake, Denver, and Albuquerque centers.

Figure 3 is a facility layout chart that illustrates the locations of the Areas, and the Sectors in those areas. Area F is highlighted in yellow, and Sector 8 of that Area is highlighted in purple.

⁸ Information retrieved from FAA Website:

https://www.faa.gov/sites/faa.gov/files/about/office_org/headquarters_offices/ato/ZLA-ARTCC.pdf

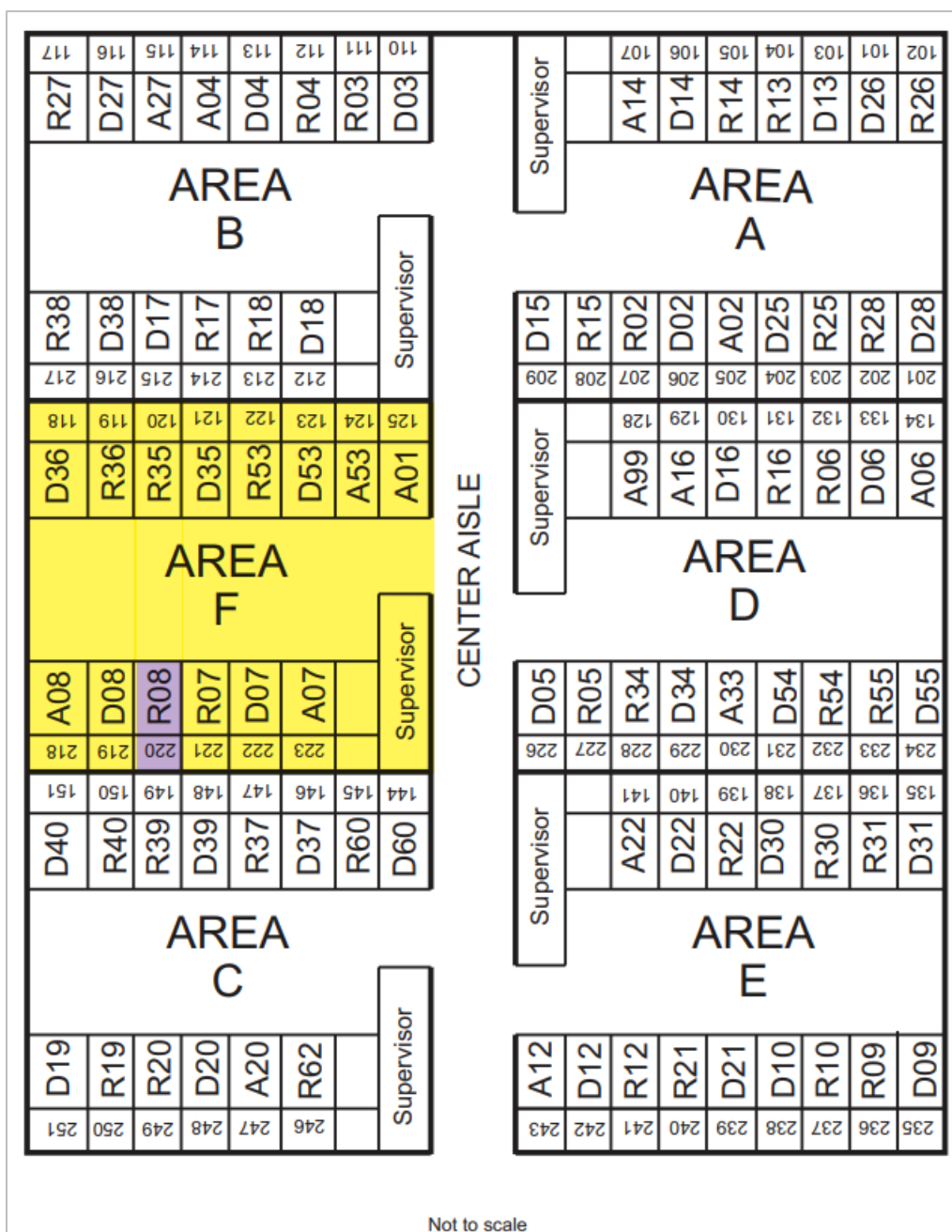


Figure 3. Facility layout chart that illustrates the locations of Area F, which is highlighted in yellow, and Sector 8, which is highlighted in purple.

Area F, Sector 08 was primarily an arrival/departure sector serving Las Vegas McCarran Airport and Nellis Air Force Base. Sector 08 also provided approach control services for Grand Canyon National Park (GCN), Grand Canyon/Valle (40G) and Kingman Airport (IGM). Sector 08 was responsible for finalizing the sequence for Las Vegas arrivals through the Southeast Arrival gate.

5.0 Air Traffic Control Personnel Interviewed

5.1 Operations Manager (OM)

The OM's air traffic control career began at the FAA in August 2005 when he attended initial training at the FAA Academy in Oklahoma City, Oklahoma. After successful completion of initial air traffic control training, he worked in Oakland Air Route Traffic Control Center from 2005 to 2015, Santa Barbara Approach Control from 2015 to 2020, and ZLA ARTCC from 2020 to present. He had been qualified on sector 26 in Area A, as well as the Area A supervisor position, and was currently certified as OM.

5.2 Area F, Sector 8 (R8) On-The-Job Training Instructor (OJTI)

The R8 OJTI's air traffic control career began at the FAA in January 2017 when she attended initial air traffic control training at the FAA Academy in Oklahoma City, Oklahoma. After successful completion of initial training, she worked at ZLA from 2017 to present. She was qualified and current on all positions in Area F and was certified as a controller in charge (CIC) and an OJTI.

5.3 Area F, Sector 8 (R8) Controller in Training

The R8 trainee's air traffic control career began at the FAA on July 11, 2019, when she attended initial air traffic control training at the FAA Academy in Oklahoma City, Oklahoma. After successful completion of initial training, she worked at ZLA from 2019 to present. She was qualified on the D sides in Area F and was training on the R8 position.

5.4 Local Safety Council (LSC) Representative

The LSC representative's air traffic control career began at the FAA in 2011, when she attended initial air traffic control training at the FAA Academy in Oklahoma City, Oklahoma. After successful completion of initial training, she worked at ZLA from 2011 until present. She was qualified on all positions in Area C to include CIC and OJTI. Her collateral duties at ZLA include Facility Safety Rep, Local Safety Council Lead (LSC), NATCA Event Review Committee (ERC) Lead, NATCA QC point of contact for External Compliance Verification (ECV) and Internal Compliance Verification (ICV), and NATCA point of contact for refresher training. She had been a member of the LSC since 2016, and Facility Safety Representative since 2018.

5.5 Operations Supervisor (OS)

The OS's air traffic control career began at the FAA in September 2008, when he attended initial air traffic control training at the FAA Academy in Oklahoma City, Oklahoma. After successful completion of initial training, he worked at Los Angeles Airport Traffic Control Tower (LAX) , Burbank Air Traffic Control Tower (BUR), and then ZLA. While at ZLA, he worked as a certified professional controller (CPC) for seven years, before working as an OS from August 2021 until present.

Prior to joining the FAA, he served in the United States Air Force. After completing basic training, and air traffic control basics at Keesler Air Force Base he was stationed at Kadena Air force base, and Barksdale Air Force base.

He was certified in Area F on all positions, and at the Operational Supervisors position for Area F. He maintained a current medical certificate with no restrictions.

6.0 Air Traffic Control Procedures

6.1 Basic Radar Services to VFR Aircraft

FAA order 7110.65Z, *Air Traffic Control*, paragraph 7-6-1, "Application", described basic radar services that air traffic controllers provided to a VFR aircraft. The paragraph stated in part:

- a. Basic radar services for VFR aircraft must include:
 - 1. Safety alerts.
 - 2. Traffic advisories.
 - 3. Limited radar vectoring when requested by the pilot.
 - 4. Sequencing at locations where procedures have been established for this purpose and/or when covered by a LOA [Letter of Agreement].

6.2 Issuing Weather and Chaff Areas

FAA order 7110.65Z, *Air Traffic Control*, paragraph 2-6-4, "Issuing Weather and Chaff Areas", described air traffic controller's requirements for issuing observed/reported weather areas to pilots. The paragraph stated in part:

- a. Controllers must issue pertinent information on observed/reported weather and chaff areas to potentially affected aircraft. Define the area of coverage in terms of:
 - 1. Azimuth (by referring to the 12-hour clock) and distance from the aircraft and/or
 - 2. The general width of the area and the area of coverage in terms of fixes or

distance and direction from fixes.

NOTE–

Weather significant to the safety of aircraft includes conditions such as funnel cloud activity, lines of thunderstorms, embedded thunderstorms, large hail, wind shear, microbursts, moderate to extreme turbulence (including CAT), and light to severe icing.

- c. Use the term “precipitation” when describing radar–derived weather. Issue the precipitation intensity from the lowest descriptor (LIGHT) to the highest descriptor (EXTREME) when that information is available. Do not use the word “turbulence” in describing radar–derived weather.

- 1. LIGHT.
- 2. MODERATE.
- 3. HEAVY.
- 4. EXTREME.

NOTE–

Weather and Radar Processor (WARP) does not display light intensity.

- f. EN ROUTE. When issuing Air Route Surveillance Radar (ARSR) precipitation intensity use the following:
 - 1. Describe the lowest displayable precipitation intensity as MODERATE.
 - 2. Describe the highest displayable precipitation intensity as HEAVY to EXTREME.

PHRASEOLOGY–

AREA OF (Intensity) PRECIPITATION BETWEEN (number) O’CLOCK and (number) O’CLOCK, (number) MILES, MOVING (direction) AT (number) KNOTS, TOPS (altitude). If applicable, AREA IS (number) MILES IN DIAMETER.

- g. Controllers must ensure that the highest available level of precipitation intensity within their area of jurisdiction is displayed unless operational/ equipment limitations exist.
- h. When requested by the pilot, provide radar navigational guidance and/or approve deviations around weather or chaff areas. In areas of significant weather, plan ahead and be prepared to suggest, upon pilot request, the use of alternative routes/altitudes.

6.3 Identification Status

FAA order 7110.65Z, *Air Traffic Control*, paragraph 5-3-7, "Identification Status", described procedures for informing a pilot when radar contact was lost. The paragraph stated in part:

b. Inform an aircraft when radar contact is lost.

PHRASEOLOGY–

RADAR CONTACT LOST (alternative instructions when required).

F. LIST OF ATTACHMENTS

Attachment 1: Interview Summaries

Attachment 2: Aircraft Accident Package

Attachment 3: Area F Sector 8 (R8) ATC Audio

Attachment 4: ADS-B Data

Attachment 5: Training and Administrative Documents

Submitted by:

Betty Koschig

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