

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA24FA176

AIR TRAFFIC CONTROL

ATC Services Review

March 17, 2026



National Transportation Safety Board

Office of Aviation Safety / Operational Factors Division (AS-30)

ATC Services Review Worksheet

Date of Event (UTC)

Apr 12, 2024

Review Date

Mar 17, 2026

Time of Event (UTC)

2034 UTC

Time of Event (LCL)

1634 EDT

Investigation Number

ERA24FA176

Keys Number

194081



CHART



AIRFIELD



SIAP/SID/STAR

A review of the ATC services provided in the above incident/accident was conducted by an ATC Investigator. Investigative work was limited to a review of the factual data collected over the course of the investigation and consideration of the current rules, regulations, and procedural guidance current at the time. The ATC investigator did not travel to the scene, nor to any ATC facilities in support of this investigation. Additionally, the ATC investigator did not conduct any personnel interviews, and all investigative work was conducted from their assigned office.

ATC Investigator: Brian Soper, Lead ATC Accident Investigator



SRT RELEASE APPROVED

Involved ATC Facilities: Facility 1: TYS ATCT

Facility 2: -----

Facility 3: -----

Facility 4: -----

Involved Aircraft: Aircraft 1: N9236J

Aircraft 2: -----

Aircraft 3: -----

Aircraft 4: -----

☒ Data Requested

☐ NOTAM Issues

Surveillance Data Source

FAA ADS-B Data

Audio Data Source

FAA Certified Audio

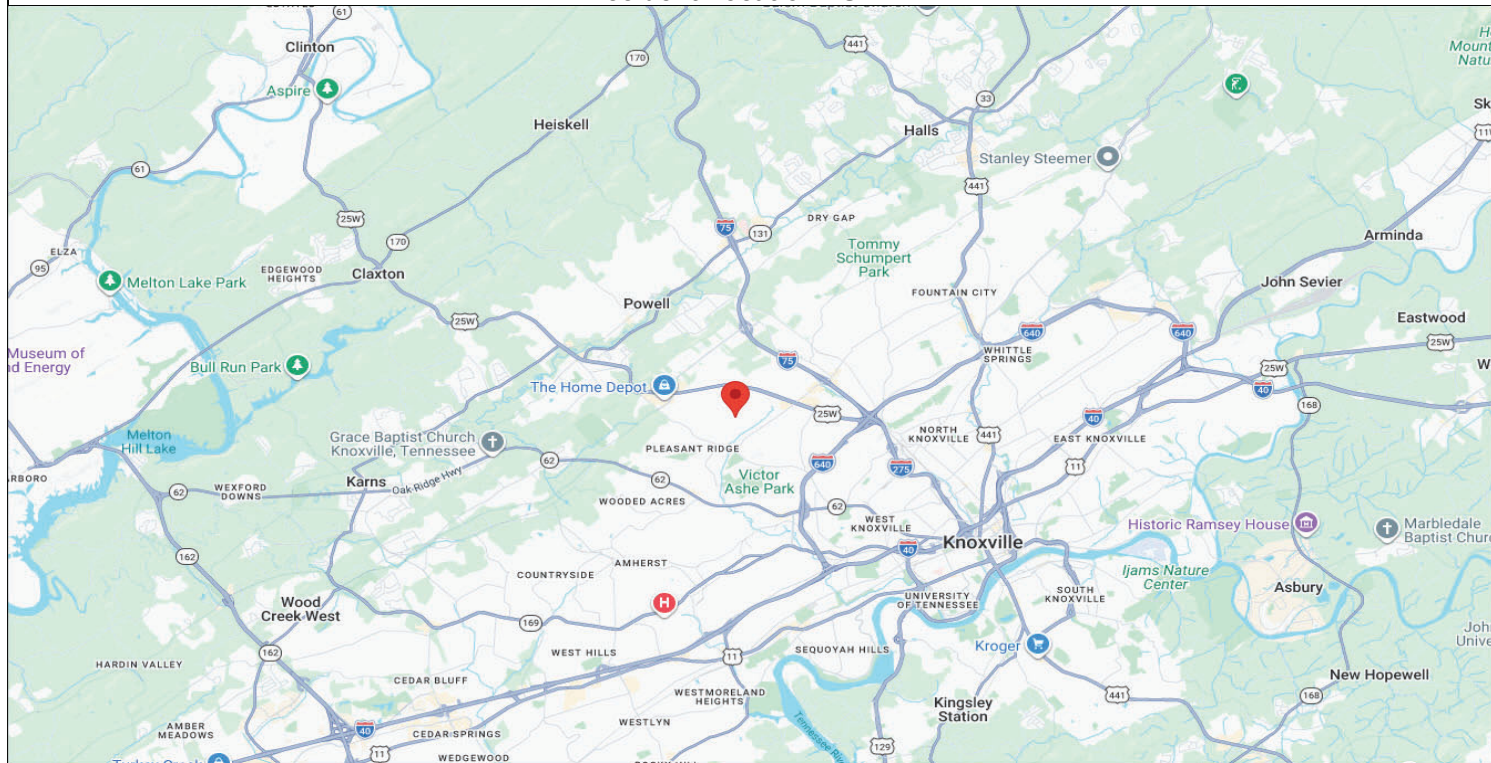
☐ ATC Procedures

☐ Safety Improvements

PRELIM Summary Information - SAFTI

On April 12, 2024, about 1633 eastern daylight time, a Piper PA-32R-301, N9236J, was substantially damaged when it was involved in an accident near Knoxville, Tennessee. The commercial pilot was fatally injured. The flight was operated under Title 14 Code of Federal Regulations Part 91 as a personal flight.

Accident Location - SAFTI



ATC Service Review Summary

Air traffic control (ATC) services were provided by Knoxville Airport Traffic Control Tower and Terminal Radar Approach Control (TYS ATCT). A thorough review of ATC services provided was conducted and is documented here. ADS-B data provided by the FAA, were used to produce Figures 1-3 below, and altitudes in the figures are geometric altitude values from these data and not what the controller would have seen on their radar displays. ATC radar equipment displays altitude corrected for barometric pressure (altimeter) and rounded to the nearest 100 foot increment. ADS-B geometric altitude is presented in 25 foot increments, and while close to corrected barometric pressure, can vary. Both FAA STARS radar data on the ADS-B data were provided to NTSB Research and Engineering to conduct performance study work.

Staff were unable to verify whether precipitation was visible on the radar display workstation at the radar west (RW) position, and therefore cannot ascertain if there was a failure to call displayed precipitation. However, precipitation was already present at the field during takeoff, and the pilot had reported receipt of current weather. According to certified audio provided by the FAA, Automatic Terminal Information Service (ATIS) information India was current, and the current weather observation at the time of departure was:

METAR KTYG 121953Z 28013G24KT 10SM -RA SCT050 BKN065 OVC075 13/04 A2996 RMK AO2 PK WND 25027/1854 RAB37 SLP142 P0000 T01330039=

KTYG weather at 1553 EDT, wind from 280° at 13 knots with gusts to 24 knots, visibility 10 miles, light rain, scattered clouds at 5,000 feet above ground level (agl), broken ceiling at 6,500 ft agl, overcast clouds at 7,500 ft agl, temperature of 13° Celsius (C), dew point temperature of 4° C, and an altimeter setting of 29.96 inches of mercury (inHg). Remarks: Automated observation station with a precipitation discriminator, peak winds at 1454 EDT were from 250° at 27 knots, rain began at 1537 EDT, sea level pressure 1014.2 hectopascals (hPa), 0 inches of rain fell in the last hour, temperature 13.3° C, dew point temperature 3.9° C.

After departure, the pilot reported picking up moisture in the clouds and requested left/right deviations or higher. The RW controller approved the deviations as requested and offered him a climb to 10,000 feet - and the pilot accepted. About one minute later, the pilot declared "Mayday" and within seconds entered into a spiraling descent until radar contact was lost.

PERTINENT INFORMATION:

- The LC controller confirmed that the pilot had the current ATIS information prior to departure.
- The RW controller accommodated the pilot's request for course deviation and higher altitude.
- The pilot did not report icing.
- There were no reports of icing from any other aircraft in the previous hour.
- PIREPs were required to be solicited and had been in the previous hour.
- A PIREP was received for moderate turbulence within the hour but not disseminated to N9623J.
- The RW controller did not inquire further about the "moisture" the pilot reported picking up.
- Reported weather at TYS at the time of departure and through time of accident was VFR.
- Rain was present reported in the observation and present at the time of N9623J's departure.
- The RW controller advised supervisor immediately regarding loss of radar and radio communications.
- ALNOT procedures were initiated as required.
- Training was in progress at the RW position.

ATC Supporting Data

The following data and documentation was provided by the FAA under KSN request 24-266, as well as OpsVue track data. These data and documentation were used to conduct this review, and are included in attachments as indicated in the section "Docket Attachments" at the end.

- Certified ATC Audio Recordings
- ADS-B Data
- FAA STARS Radar Data
- OpsVue Track Data
- FAA SCT TRACON Aircraft Accident Package
- FAA SRT Findings

FAA SRT Findings - Released

An SRT was conducted on 4-13-2024 and these were the preliminary findings of the SRT:

- The ATM described the traffic volume as light and the complexity as routine. The weather was reported as VFR, with wind 280 at 13 knots, gusting to 24 knots, visibility was 10 miles with light rain, a scattered layer at 5,000 feet, and an overcast ceiling at 6,500 feet. All equipment was reported as operational. There were no unusual situations that would cause a distraction.
- There were six controllers, two trainees, and one OS on duty. There were two positions open in the tower with one controller and one OS on position. The OS was providing general supervision while working the Local Control position.
- There were two positions open in the TRACON with two controllers and one trainee on position. Training was in progress on the Radar West (RW) position, which was the involved position. A CIC was providing general supervision while working the Radar East (RE) position. There were three controllers and one trainee available. The ATM stated that the position configuration was not normal for the time of day and volume of traffic.
- The ATM briefed weather was depicted in the RE sector, on the east side of the airspace; however, it was unknown as to what level of weather was depicted in the RW sector.
- N9236J was approved to climb to 10,000 feet and stated the aircraft was accumulating moisture. There was no follow-up with the pilot as to whether the aircraft had encountered icing. An AIRMET forecasting icing for the area was in effect during the event.
- N9236J was observed making a westbound turn, then an inaudible transmission is heard.
- The trainee attempted to reestablish communication with N9236J; however, was unsuccessful.
- The OJTI intervened and N9236J responded by transmitting Mayday, then immediately coordinated the issuance of an ALNOT with Atlanta Center.
- The ATM briefed that the position configuration did not meet facility expectations, as there should have been standalone oversight in the TRACON.
- A position relief briefing occurred prior to the event; however, the ATM stated the level of detail in the briefing did not meet their expectations.
- The RE controller solicited and received PIREPs; however, it is unknown as to whether PIREPs had been solicited or received by the RW controller within the hour. No PIREPs had been entered into AISR for widespread dissemination within the hour by the RW controller.

ALL INFORMATION IN SRT FINDINGS WERE PRELIMINARY ONLY AND BASED SOLELY ON INFORMATION AVAILABLE AT THE TIME THE SRT WAS CONDUCTED.

FAA Certified ADS-B Data

The below information and included graphics were developed using certified Automatic Dependent Surveillance - Broadcast (ADS-B) data provided by the FAA. These data are direct source data that has extracted and exported by the FAA's Office of Accident Investigation and Prevention (AVP-100) using the SBS Analysis Tool (SAT). 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. ADS-B data is subject to coverage limitations like any other system that relies on line-of-sight signal transmission, so there can be portions of a flight track that are unavailable, or will have to be combined with other source data for the most complete flight track.

FAA Certified Radar Data

The below information and included graphics were developed using certified radar data provided by the FAA. These data may come from STARS, ERAM, or surface radar systems such as ASDE-X/ASSC. Radar systems vary significantly in operation and range. Primary radar referring to the actual "skin paint" target return, and secondary radar being the transponder. Radar data is still a primary means of aircraft tracking used by ATC. These data are provided in various formats, some of which require specialized processing or extraction by ATC specialists. Radar data is subject to coverage limitations like any other system that relies on line-of-sight signal transmission, so there can be portions of a flight track that are unavailable, or will have to be combined with other source data for the most complete flight track.

Flight Track Information

OpsVue track data indicated that the accident airplane departed runway (RWY) 23L at McGhee Tyson Airport (TYS) in Knoxville, Tennessee at about 1617. After departure, the airplane made a right turn out to a NNW bound heading and began climbing on course. The airplane was reportedly climbing to an assigned altitude of 10,000 feet, however upon reaching a high of about 8,500 feet, the airplane began to descend, and track data indicated an "abrupt" left turn about 90 degrees, then back to the right and entering into a clockwise spiraling descent, increasing in ground speed rapidly until track data was lost approximately 15 nm NNW of TYS at about 1634.

- First Track Data: 1617:30 EDT | 1075 ft msl | 91 kts | H223 - Over RWY 23L @ TYS
- Last Track Data: 1633:33 EDT | 5750 ft msl | 223 kts | H169 - About 15 nm NNW of TYS

ATC Communications

Below is an abbreviated history of flight/sequence of events as documented in the FAA Aircraft Accident Package. A partial transcript of pilot/controller communications is included in Attachment 5.

NOTE: All times are in eastern daylight time (EDT) and are rounded to the nearest minute, and altitudes are in feet above mean sea level (msl).

- 1611 - N9623J called and requested their instrument flight rules (IFR) clearance. The clearance delivery (CD) controller issued their clearance to Grand Rapids (GRR) and verified they had the current automatic terminal information service (ATIS).
- 1613 - N9623J requested taxi from the Signature ramp and the ground control (GC) controller instructed them to taxi to runway 23L to alpha eight (A8) via taxiway alpha (A).
- 1616 - N9623J called ready for take off from A8 and the local control (LC) controller cleared them for takeoff from runway 23L and instructed them to fly runway heading.
- 1618 - The LC controller instructed N9623J to contact departure.
- 1619 - N9236J checked in with departure climbing out of 2,400 feet and the radar west (RW) controller instructed them to turn right direct Grand Rapids and to climb and maintain 8,000 feet.
- 1631 - N9236J requested deviations left, right, or higher because they had experienced moisture in the clouds. The RW controller approved left and right deviations and instructed them to climb and maintain 10,000 feet (after obtaining concurrence from the pilot).
- 1633 - After a couple indiscernible radio calls, N9236J declared "MAYDAY MAYDAY MAYDAY." The RW controller continued to attempt communicating with N9236J and provide assistance, but observed the aircraft target in a spiraling descent until radar contact was lost.

No further transmissions were recorded from N9623J. The RW controller notified the operations supervisor (OS) and immediately initiate an alert notice (ALNOT).

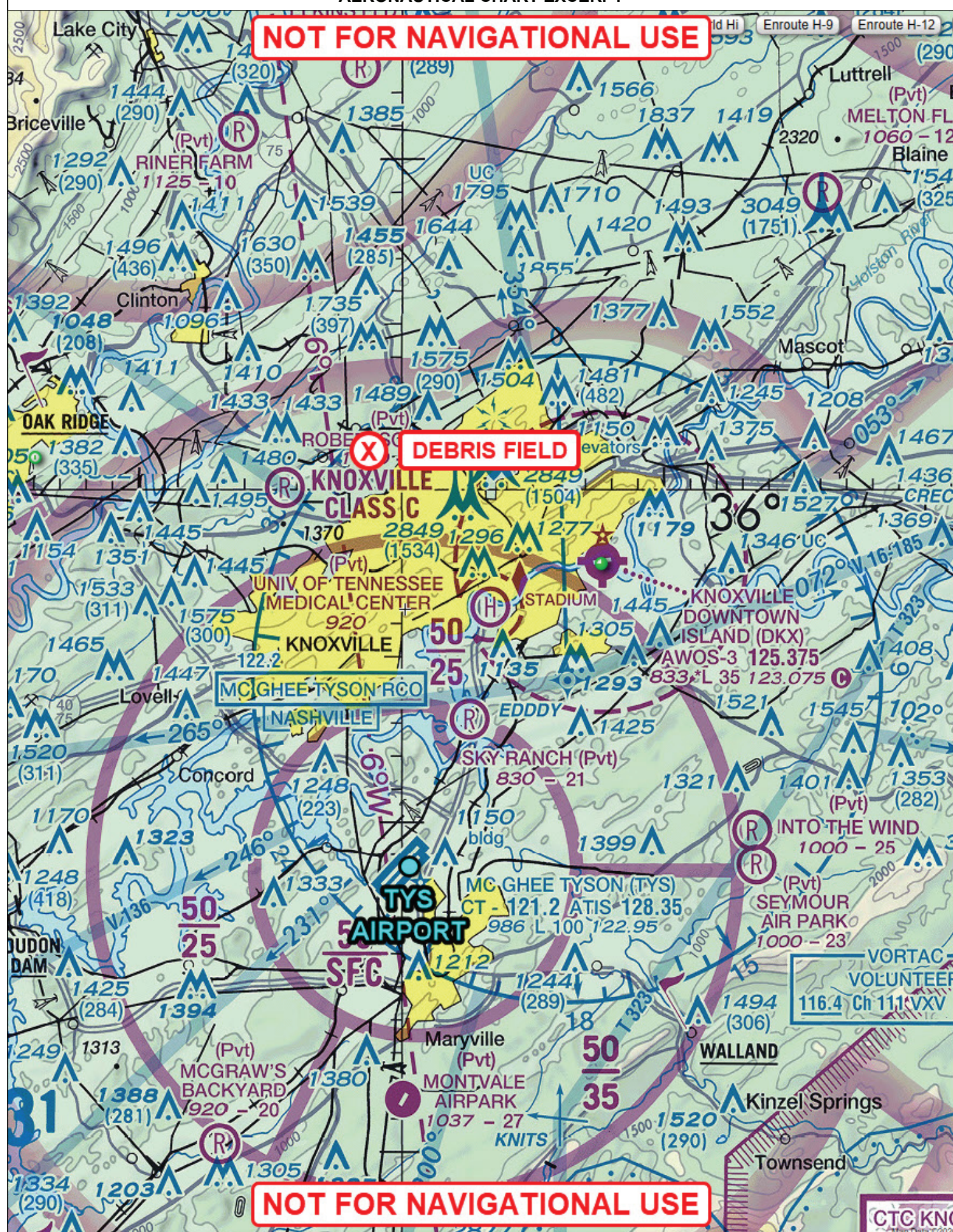
Included Figures

- Figure 1: Overview of entire accident flight track.
- Figure 2: Profile view of the final segment of the accident flight track.
- Figure 3: Overview of final segment of the accident flight track with pertinent flight details.
- Figure 4: Overview of final segment of the accident flight track with debris field information.

Docket Attachments

- Attachment 1: ATC Audio Recordings
- Attachment 2: ADS-B Data
- Attachment 3: STARS Radar Data
- Attachment 4: OpsVue Track Data
- Attachment 5: ATC Audio Partial Transcript
- Attachment 6: FAA Aircraft Accident Package

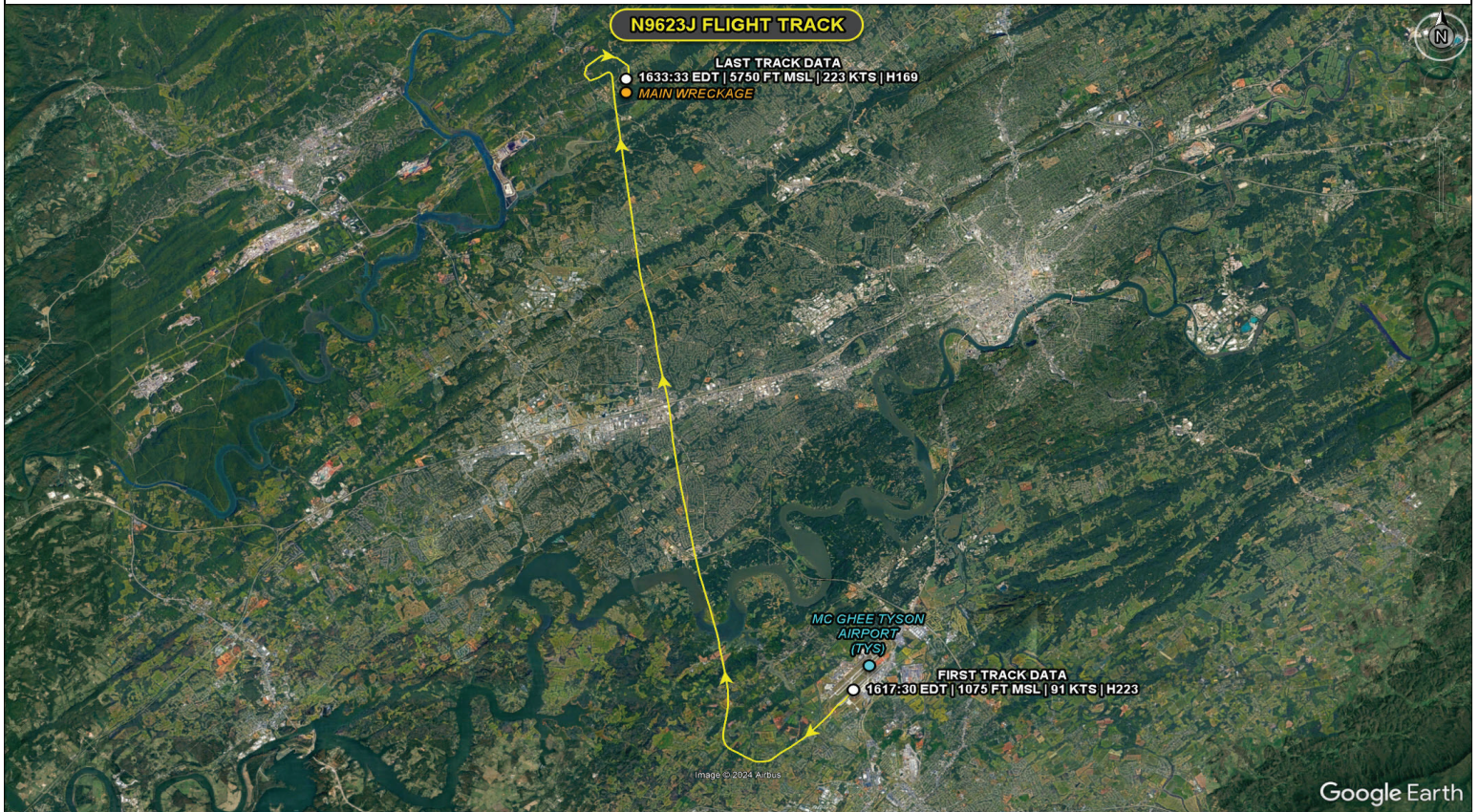
NOT FOR NAVIGATIONAL USE



NOT FOR NAVIGATIONAL USE

CTC KNO

Figure 1



Caption: Overview of entire accident flight track.

ADD

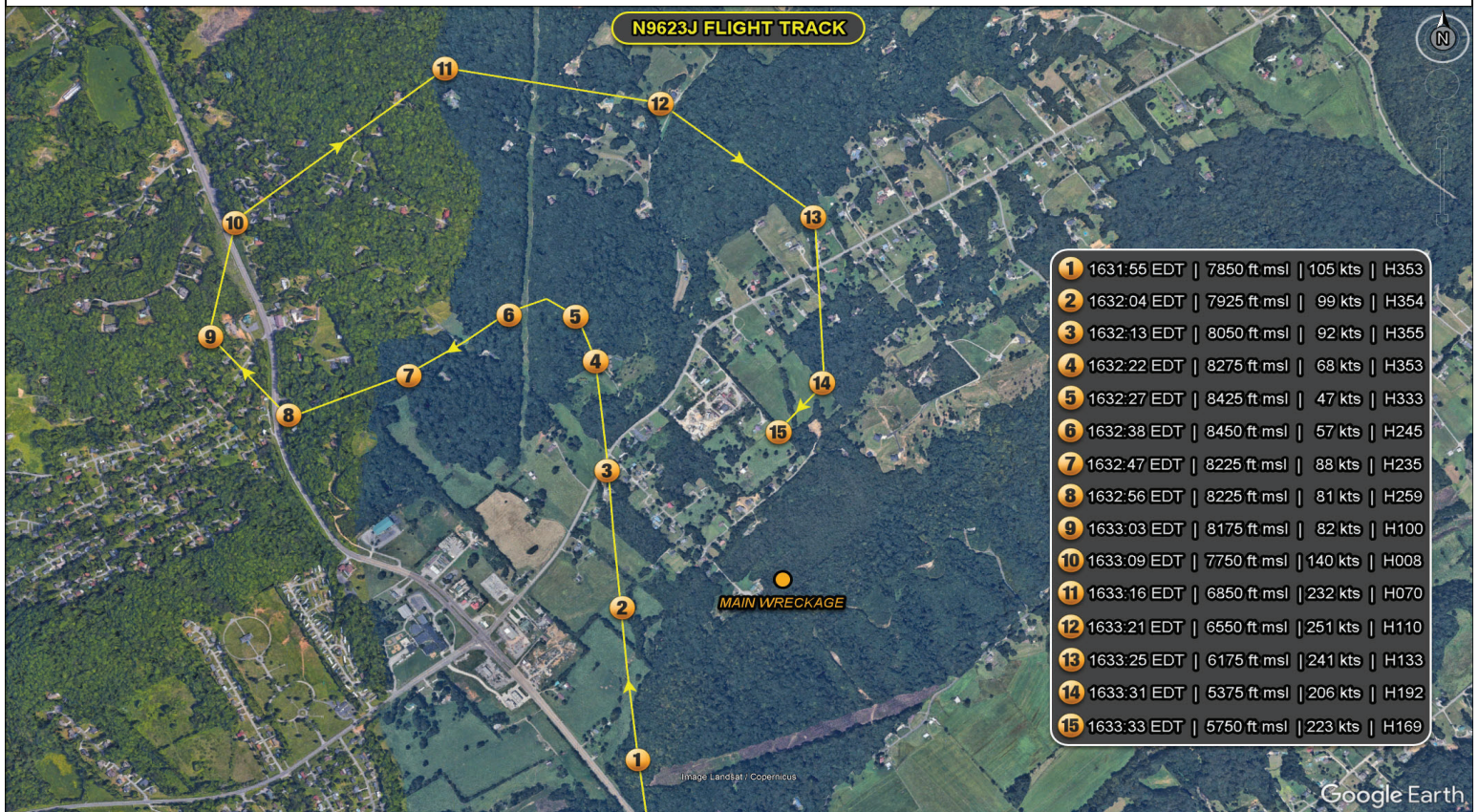
Figure 2



Caption: Profile view of the final segment of the accident flight track.

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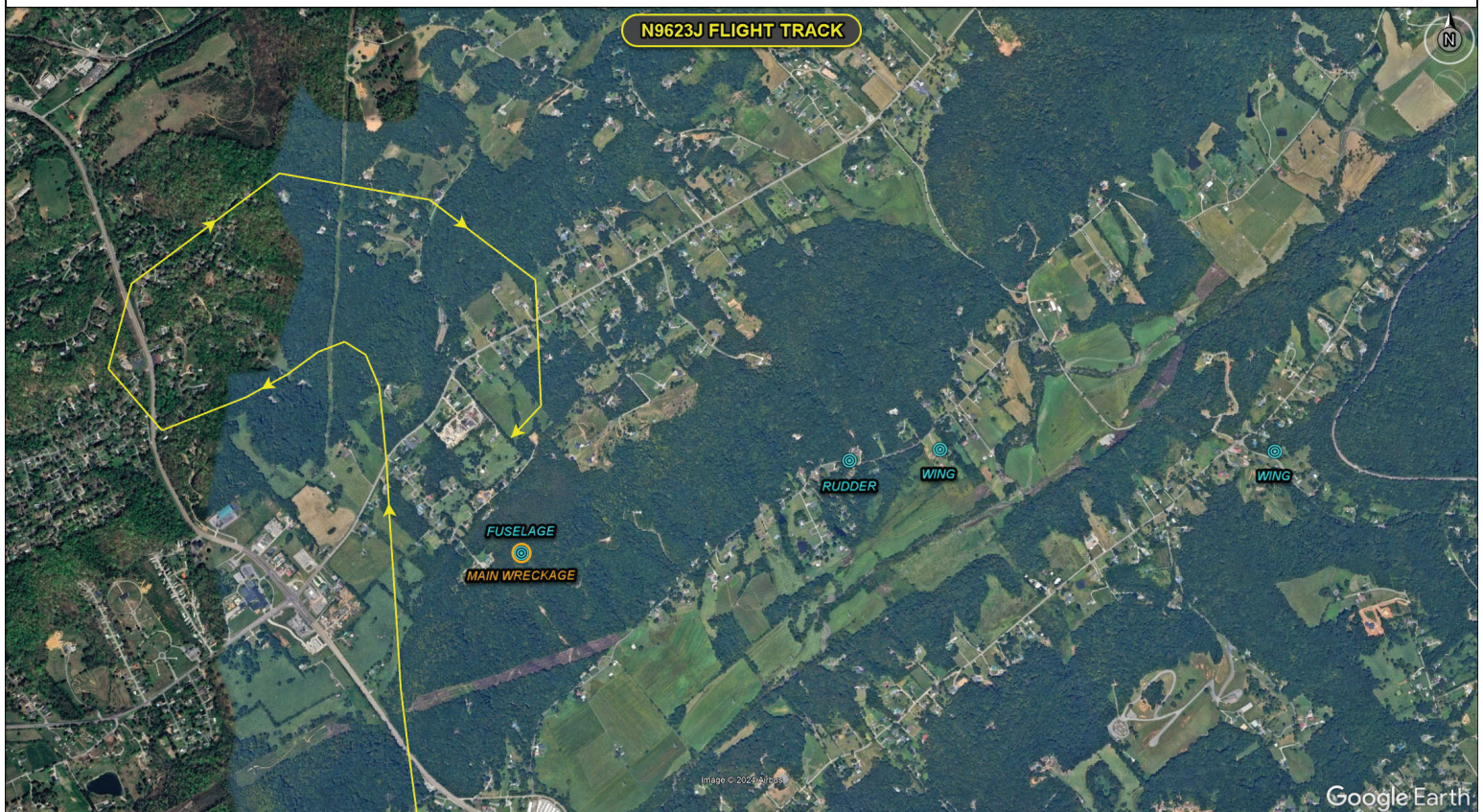
Figure 3



Caption: Overview of final segment of the accident flight track with pertinent flight details.

ADD

Figure 4



Caption: Overview of final segment of the accident flight track with debris field information.

ADD