

National Transportation Safety Board

Office of Research and Engineering

Washington, D.C. 20594

Performance Study

Specialist Report

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A. INCIDENT

Location:	Philadelphia, Pennsylvania
Date:	August 10, 2018
Time:	2050 EDT
Airplane:	Gulfstream IV airplane, N619A
NTSB Number:	DCA18IA265

B. SUMMARY

On Friday August 10, 2018, about 2050 eastern daylight time, a Gulfstream IV airplane, N619A, operated by Pegasus Elite Aviation as PEGJET flight 19, was on a visual approach and cleared to land on runway 35 at Philadelphia International Airport (KPHL). During the approach, the airplane aligned with taxiway E. About 0.10 mile from the end of taxiway E, the pilot initiated a go-around. The airplane overflew four air carrier airplanes on taxiway E during the go-around climb. The incident airplane came within about 200 ft of the first airplane on the taxiway. At the time of the approach, the runway 35 runway end identifier lights and the precision approach path indicator lights were out of service. There were no injuries to the seven passengers and crew onboard, and the airplane was not damaged. The airplane was operating under 14 Code of Federal Regulation Part 135 as a charter flight.

C. PERFORMANCE STUDY

The airplane was equipped with a flight data recorder (FDR). The FDR recorded acceleration, speed, altitude, attitude, engine and control parameters, and a coarse recording of latitude and longitude.

Data from the airport surveillance radar (ASR-9) at Philadelphia International Airport (PHL), about one nautical mile (NM) away from the incident, were used in this study. ASR-9 data updates every 4.5 seconds and has an inherent uncertainty of ± 2 Azimuth Change Pulses (ACP) = $\pm (2 \text{ ACP}) \times (360^\circ/4096 \text{ ACP}) = \pm 0.176^\circ$ in azimuth, ± 50 ft in altitude, and $\pm 1/16$ NM in range. The PHL radar flight path is used throughout this report.

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Radar and FDR Time Correlations

The FDR did not record universal time, so FDR data was synchronized using the altitude recorded by the PHL radar. Figure 1 shows altitude from PHL radar and the time-adjusted FDR recorded altitude versus local time in Philadelphia (EDT).

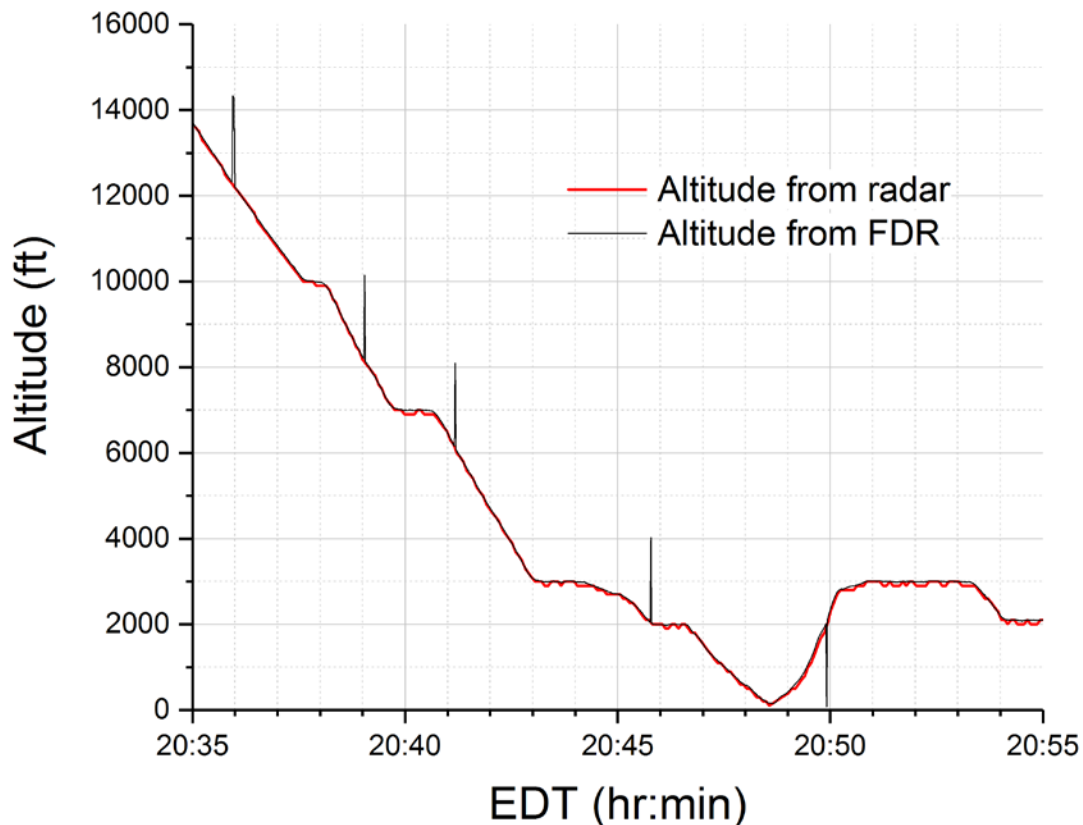


Figure 1. Altitudes from radar and incident airplane FDR.

Incident Approach and Go-Around

The airplane was to land on Runway 35 at PHL. Figure 2 shows the approach to Runway 35, the go-around, and the landing on Runway 27R. Figure 3 shows the airplane lined up with Taxiway E, to the left of Runway 35, rather than the intended runway surface. The centerlines of Runway 35 and Taxiway E are 400 ft apart. The runway is 150 ft wide, while the taxiway is 100 ft wide.

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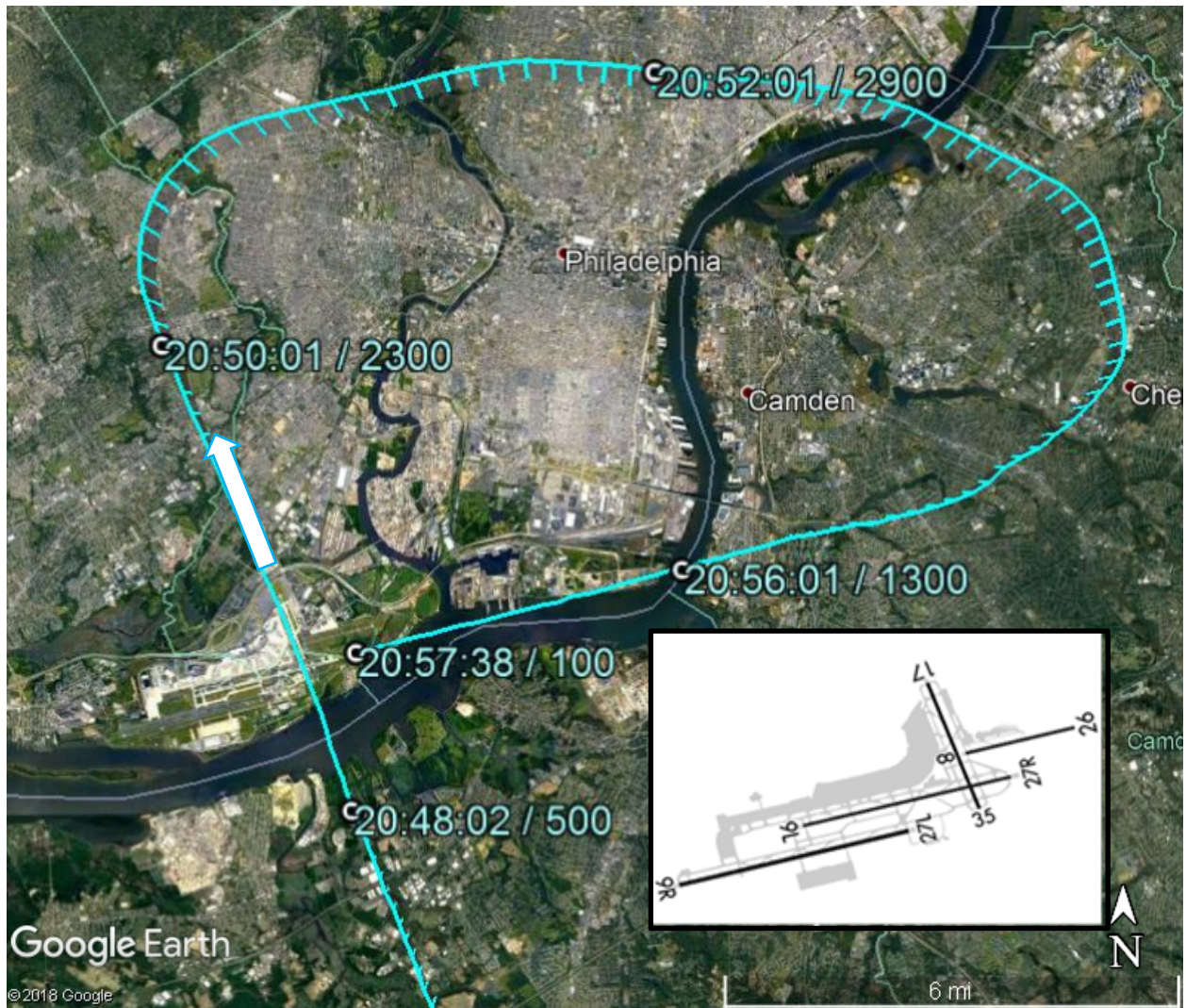


Figure 2. Airplane path to runway 35, go around, and landing on 27R. The inset is a diagram of the PHL airport.

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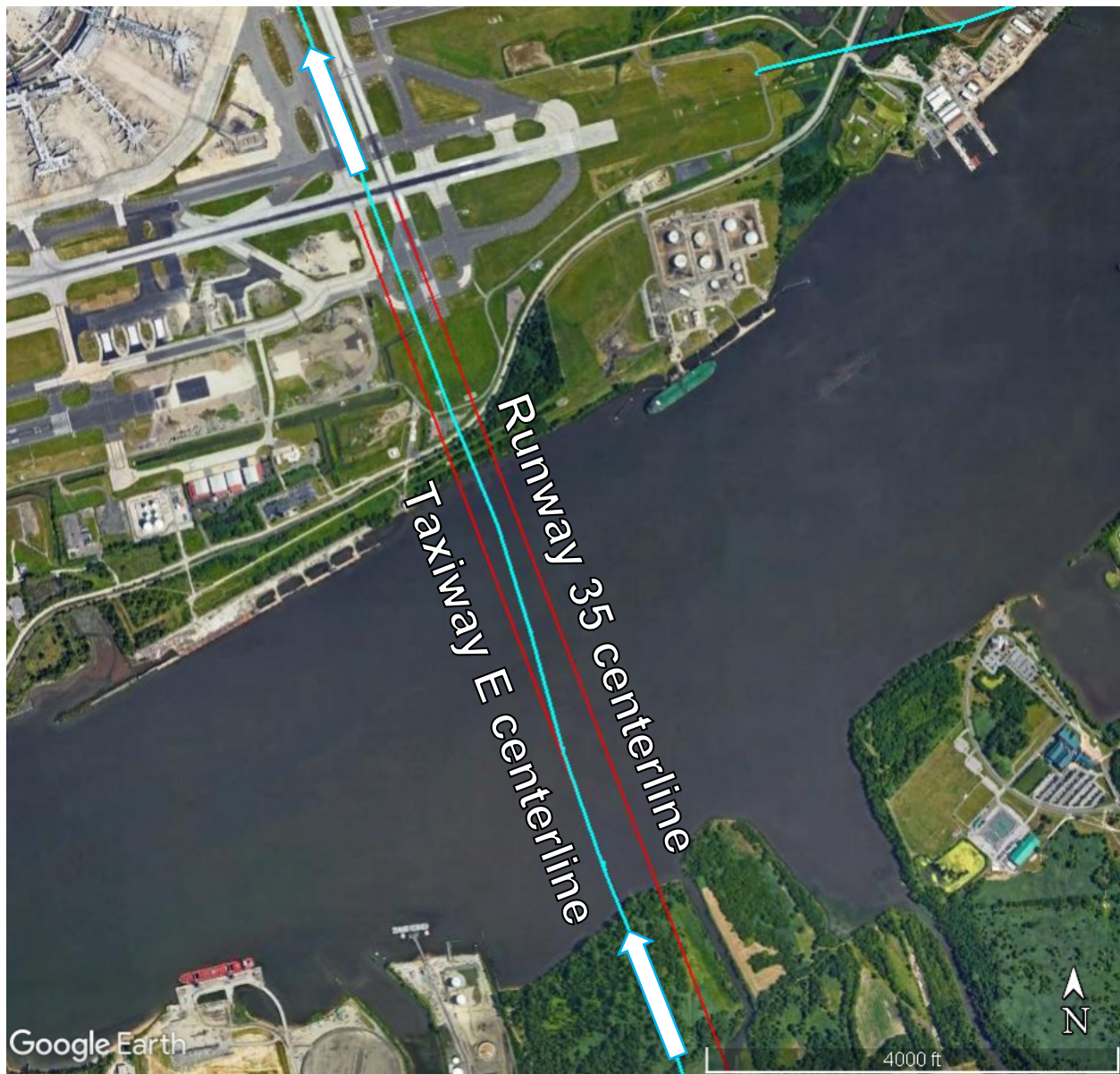


Figure 3. Airplane path in blue, the direction is indicated by white arrows. The airplane was lined up with Taxiway E, rather than Runway 35.

The autopilot was disengaged at 20:46:35, when the airplane was about 5.5 NM from the runway threshold (Figure 4). The airplane aligned with the centerline of runway 35 at 20:47:07. At 20:47:30, the airplane moved to the left and by 20:48:02 it was lined up with Taxiway E. At 20:48:20, the airplane began to move right again and initiated a go-around while between the extended centerlines of the taxiway and the runway.

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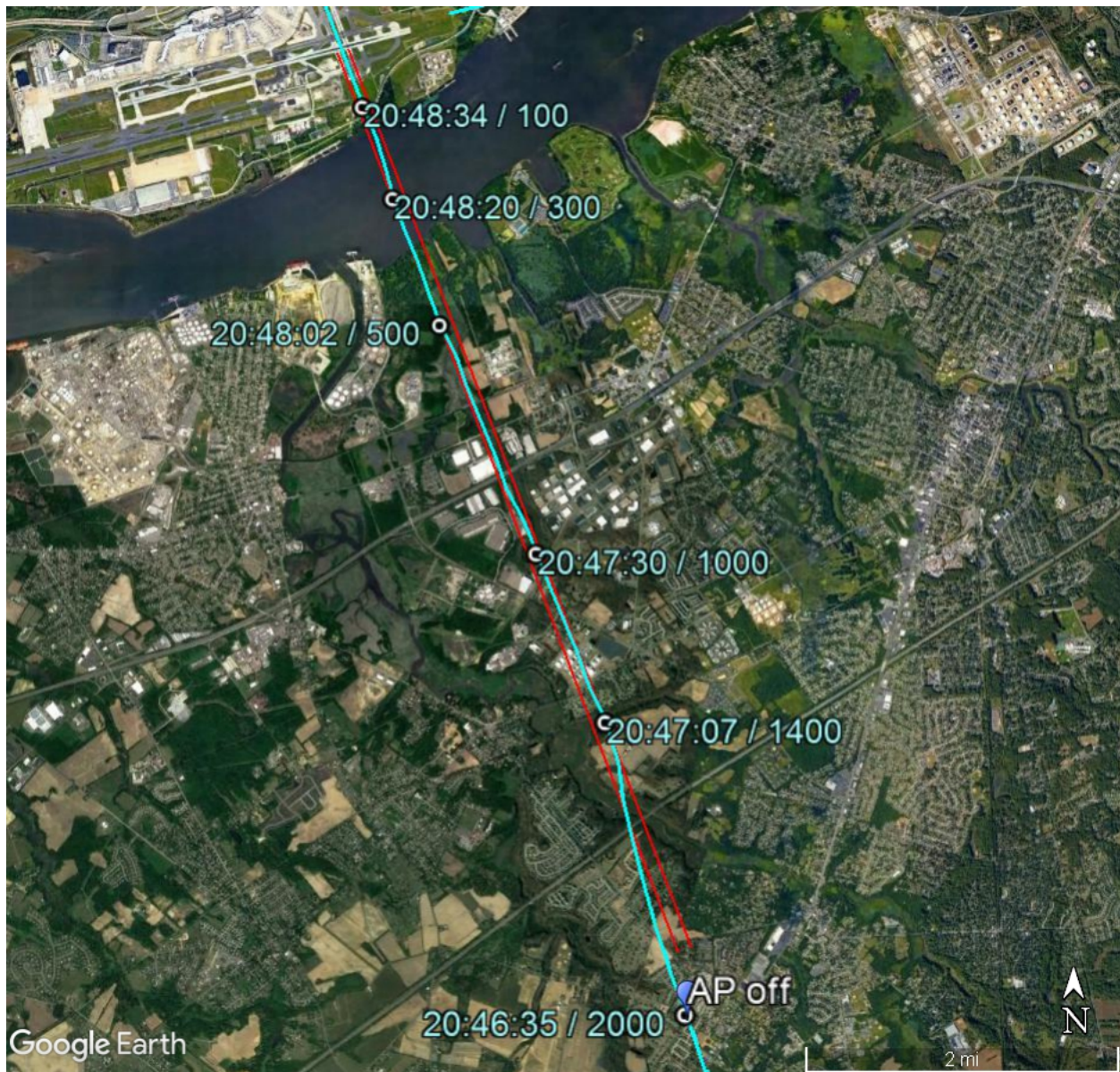


Figure 4. Airplane approach to Runway 35 with autopilot disengagement noted.

The FDR did not record a go-around parameter. The engines were advanced slightly from 47% to 51% at 20:48:22 (Figure 5), which corresponds to the time when the airplane left the alignment with the taxiway and began moving right towards the runway alignment (Figure 4). Then, at 20:48:36, the engines were advanced to above 80% and the airplane began to climb. This occurred when the airplane was about 125 ft above the ground and about 500 ft from the paved surfaces of the airport.

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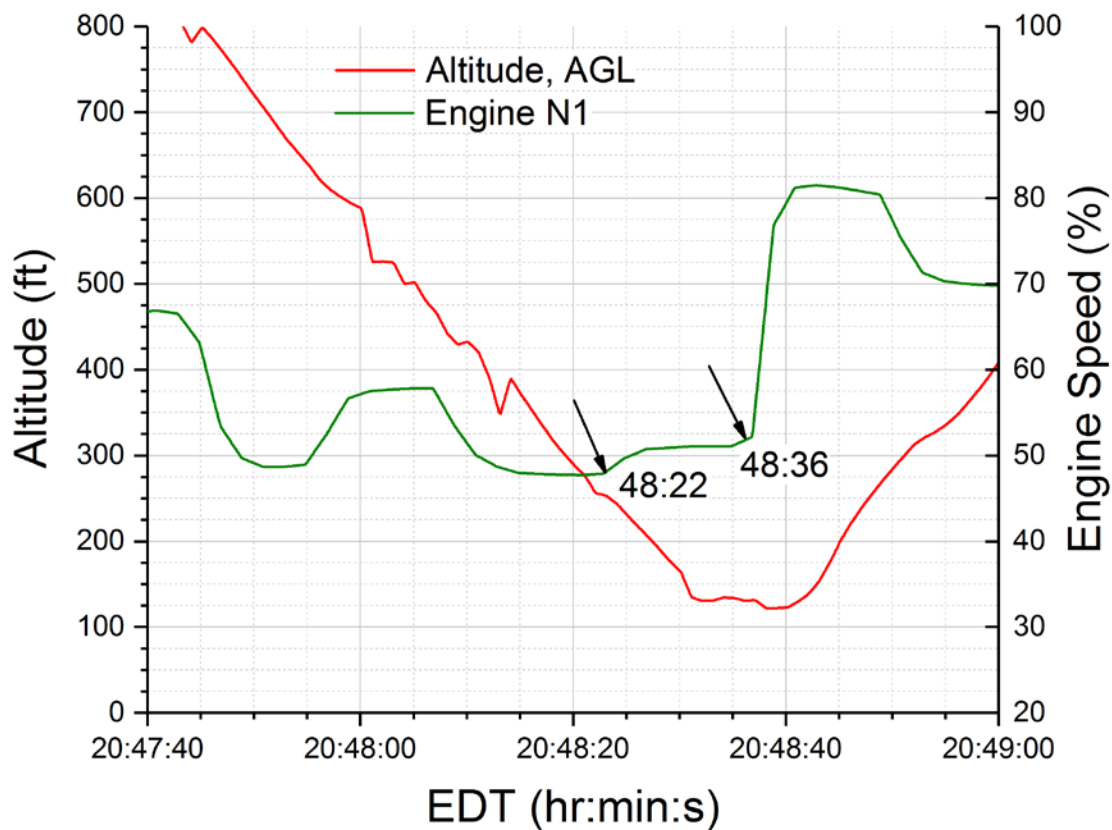


Figure 5. Altitude above ground level and engine speed versus time. Two increases in N1 and their times are noted with arrows.

D. CONCLUSIONS

While on approach to Runway 35 at PHL, the autopilot was disengaged when the airplane was about 5.5 NM from the runway threshold. The airplane was initially lined up with the intended runway, before aligning with Taxiway E to the left of the runway. The airplane reached a minimum altitude of about 125 ft and a go-around was initiated before the airplane was over the paved surfaces of the airport. The airplane then proceeded to land on runway 27R.

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