

National Transportation Safety Board

Office of Research and Engineering

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COCKPIT VOICE RECORDER

Specialist's Factual Report

October 28, 2024

WARNING

The reader of this report is cautioned that the summary of a cockpit voice recorder audio recording is not a precise science but is the best product possible from a National Transportation Safety Board investigative effort. The summary or parts thereof, if taken out of context, could be misleading. The summary should be viewed as an accident investigation tool to be used in conjunction with other evidence gathered during the investigation. Conclusions or interpretations should not be made using the summary as the sole source of information.

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A. ACCIDENT

Location: Orlando, FL
Date: January 28, 2024
Time: 1623 eastern standard time (EST)
Airplane: Honda HA-420, GC Aviation, N103JT

B. COCKPIT VOICE RECORDER SPECIALIST

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C. FEDERAL CARRIAGE REQUIREMENTS

The event aircraft, N103JT, was operating as a Title 14 *Code of Federal Regulations* (CFR) Part 135 flight. The event aircraft was manufactured in 2019 and was operating such that it was required to be equipped with a cockpit voice recorder (CVR) that records a minimum of the last 2 hours of aircraft operation.

D. DETAILS OF THE INVESTIGATION

A CVR group was not convened. The NTSB Vehicle Recorder Division received the following cockpit voice and flight data recorder (CVFDR):

Recorder Manufacturer/Model:	Universal Avionics CVFDR
Part Number:	1065-01-00
Recorder Serial Number:	2051

1.0 Recorder Description

The Universal Avionics CVR records a minimum of 120 minutes of digital audio stored on solid-state memory modules. Four channels are recorded: one channel for each required flight crew, one for a third crew member/observer, and one for the cockpit area microphone (CAM).

1.1 Recorder Damage

Upon arrival at the laboratory, it was evident that the CVR had not sustained any heat or structural damage and the audio information was extracted from the recorder normally, without difficulty.

1.2 Audio Recording Description

Each channel's audio quality is indicated in Table 1.¹ Channel number four did not contain any audio information (nor was it required by federal regulations).

Table 1. Audio Quality.

Channel Number	Content/Source	Quality	Duration (h:mm:ss)
1	Cockpit Area Microphone	Excellent	2:02:45
2	Captain	Excellent	2:02:45
3	First Officer	Excellent	2:02:45
4	Observer - Blank	N/A	N/A

1.3 Timing and Correlation

Timing on the transcript was established by correlating the CVR events to common events on the flight data recorder (FDR). Specifically, the last six radio transmissions that the aircraft made were correlated to the radio transmit microphone key parameter from the FDR. Each of the six radio transmissions acted as an anchor point for a linear interpolation between the remaining CVR events. Once a correlation between the two recorders was established, a reference to local time was determined. The CVR times were offset to reflect the local eastern standard time (EST) of the accident. Times are given in EST for the remainder of this report.

1.4 Description of Audio Events

In agreement with the Investigator-In-Charge, a CVR group did not convene. A summary of events from the CVR follows.

The recording began at 14:59:33 during cruise flight enroute to Orlando International Airport (MCO).

At 15:01 the flight crew reviewed the Automatic Terminal Information Service (ATIS) Uniform for MCO, which indicated that wind was from 270 degrees at 14 knots gusting to 24 knots. The crew discussed the crosswind component of the reported winds on the runways at MCO, and the aircraft operating limitations and company procedures. The crew observed that Orlando Executive Airport (ORL) had runway 25, which would be more favorable for the reported winds.

The pilot monitoring asked the passengers if they had a car waiting for them at MCO and commented to the pilot flying about arranging a ride for the passengers from ORL to MCO.

¹ Appendix A comprises the CVR Quality Rating Scale.

At 15:56 the crew received ATIS Victor for MCO, which reported that winds were from 260 degrees at 16 knots, gusting to 23 knots.

At 16:07 the crew discussed the Automated Surface Observing System (ASOS) at MCO. The pilot flying said he had checked ASOS four times in the last 20 minutes, and only one report mentioned gusts. He said the winds had been reported at 13 to 14 kts and were currently from 270 deg at 13 kts. The pilot flying planned to ask for a wind check when they were on final.

At 16:20 the aircraft was cleared to land on runway 36L at MCO. Air Traffic Control (ATC) reported wind from 290 deg at 21 knots. The crew discussed and calculated that they would have a 19 knot crosswind.

At 16:22:01 the terrain awareness and warning system (TAWS) announced that they were at 500 ft. They asked for a wind check, and ATC reported that winds were from 290 at 19 knots, gusting to 24 knots. The captain and first officer both said that they calculated the crosswind to be 19 knots.

At 16:22:23 the pilot flying said "18". At 16:22:30 the pilot monitoring said "19". At 16:22:38 the pilot flying said "17".

The aircraft touched down at 16:22:54. As the aircraft touched down, ATC reported winds during a transmission to another aircraft, stating wind was from 290 at 20 knots gusting to 24 knots. Sounds of impact could be heard at 16:23:06.

The aircraft taxied clear of the runway and the crew decided to shut down to assess damage. The aircraft powered off at 16:28:27.

At an unknown time in the future, while the CVR was still installed, the aircraft was powered back on. The remainder of the recording consisted of conversation between ground personnel assessing the aircraft. The ground personnel mentioned that the FDR circuit breaker was not pulled.

Submitted by:

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Mechanical Engineer - Recorder Specialist

APPENDIX A. CVR QUALITY RATING SCALE

The levels of recording quality are characterized by the following traits of the cockpit voice recorder information:

Excellent Quality Virtually all of the crew conversations could be accurately and easily understood. The transcript that was developed may indicate only one or two words that were not intelligible. Any loss in the transcript is usually attributed to simultaneous cockpit/radio transmissions that obscure each other.

Good Quality Most of the crew conversations could be accurately and easily understood. The transcript that was developed may indicate several words or phrases that were not intelligible. Any loss in the transcript can be attributed to minor technical deficiencies or momentary dropouts in the recording system or to a large number of simultaneous cockpit/radio transmissions that obscure each other.

Fair Quality The majority of the crew conversations were intelligible. The transcript that was developed may indicate passages where conversations were unintelligible or fragmented. This type of recording is usually caused by cockpit noise that obscures portions of the voice signals or by a minor electrical or mechanical failure of the CVR system that distorts or obscures the audio information.

Poor Quality Extraordinary means had to be used to make some of the crew conversations intelligible. The transcript that was developed may indicate fragmented phrases and conversations and may indicate extensive passages where conversations were missing or unintelligible. This type of recording is usually caused by a combination of a high cockpit noise level with a low voice signal (poor signal-to-noise ratio) or by a mechanical or electrical failure of the CVR system that severely distorts or obscures the audio information.

Unusable Crew conversations may be discerned, but neither ordinary nor extraordinary means made it possible to develop a meaningful transcript of the conversations. This type of recording is usually caused by an almost total mechanical or electrical failure of the CVR system.