

NATIONAL TRANSPORTATION SAFETY BOARD  
Vehicle Recorder Division

September 13, 2017

## Cockpit Voice Recorder

Specialist's Factual Report  
By Bill Tuccio, Ph.D.

### 1. EVENT SUMMARY

Location: Raleigh-Durham Airport, North Carolina  
Date: May 20, 2017  
Aircraft: Boeing 757-200, Registration N633DL  
Operator: Delta Airlines  
NTSB Number: DCA17LA122

A description of this accident may be obtained from the National Transportation Safety Board (NTSB) *Aviation Accident Database & Synopses*, available via the NTSB public website.

### 2. GROUP

A group was not convened.

### 3. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Division received the following Cockpit Voice Recorder (CVR):

Recorder Manufacturer/Model: **L-3 FA2100-1020**  
Recorder Serial Number: **01272**

#### 3.1 CVR Carriage Requirements

Per federal regulation, turbine engine powered aircraft operating under 14 *Code of Federal Regulations* Part 121 must be equipped with a CVR that records a minimum of the last 2 hours of aircraft operation; this is accomplished by recording over the oldest audio data. When the CVR is deactivated or removed from the airplane, it retains only the most recent 2 hours of CVR operation.

#### 3.2 Recorder Description

This model CVR, the L-3 FA2100-1020, is a solid state CVR that records 120 minutes of digital audio. Specifically, it contains a 2-channel recording of the last 120 minutes of operation and separately contains 4-channel recording of the last 30 minutes of operation. The 120-minute portion of the recording is comprised of one channel that combines three

audio panels sources and a second channel that contains the cockpit area microphone (CAM) source. The 30-minute portion of the recording contains 4 channels of audio information: one channel for each flight crew, one channel for a cockpit observer, and one channel for the CAM.

### **3.3 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.

### **3.4 Audio Recording Description**

The recording consisted of four channels of audio information, however none of the audio was pertinent to the incident/accident investigation. The audio was consistent with the CVR being overwritten or recorded over by subsequent events. Characteristics of overwritten CVRs include:

- Audio consistent with the airplane being stationary on the ground with electrical power on.
- Conversations or other audio consistent with maintenance personnel working in or near the cockpit.
- Background sounds in an unoccupied cockpit such as:
  - Radio transmission from other aircraft or ground facilities.
  - Unintelligible or difficult to discern conversation or other sounds likely emanating from the cabin or outside the airplane.