

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, DC 20594

June 19, 2012

Cockpit Voice Recorder

Specialist's Factual Report
By Bill Tuccio

1. EVENT

Location: Pueblo, Colorado
Date: February 02, 2012, 1915 Mountain Standard Time (MST)
Aircraft: Gates Learjet 35, N31WS
Operator: Travel Aire Services Incorporated
NTSB Number: CEN12FA151

2. GROUP

A group was not convened.

3. SUMMARY

On February 2, 2012, at 1915 mountain standard time (MST), a Gates Learjet 35, N31WS, veered off the side of the runway during take off from Pueblo Memorial Airport (PUB), Pueblo, Colorado. The airline transport rated captain, first officer and the eight passengers were not injured. The airplane sustained substantial damage to the wing. The airplane was registered to Extrapoint LLC, Lewes, Delaware, and operated by Travel Aire Services Incorporated, Pueblo, Colorado, under the provisions of 14 Code of Federal Regulations Part 91. Instrument meteorological conditions prevailed for the flight, which operated on an instrument flight rules flight plan. A tape cockpit voice recorder (CVR) was sent to the National Transportation Safety Board's Audio Laboratory for readout.

4. DETAILS OF INVESTIGATION

On February 08, 2012, the NTSB Vehicle Recorder Division's Audio Laboratory received the following CVR:

Recorder Manufacturer/Model: **Collins 642C-1**
Recorder Serial Number: **1577**

4.1. Recorder Description

Per federal regulation, aircraft manufactured prior to April 7, 2010, must be equipped with a CVR that records a minimum of the last 30 minutes 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 30 minutes of CVR operation. This model CVR, the Collins 642C-1, records 30 minutes of analog audio on a continuous loop tape in a four-channel format: one channel for each flight crew and one channel for the cockpit area microphone (CAM).

4.2. Recorder Damage

Upon arrival at the audio laboratory, it was evident that the CVR had not sustained any heat or structural damage. The recorder had a sticker on the unit indicating it had been overhauled on January 14, 2011. When the unit was opened to access the tape, it was discovered the tape was tangled around the final spool. Figure 1 through 6 show the disassembly process. Figure 1 shows the undamaged crash protected tape housing. Figure 2 shows folding of the tape on the initial feed spindle. Figures 3 and 4 show the final spindle with the tape tensioner still in place, with evidence of the tangle. Figure 5 shows multiple layers of tape on the spindle, after the tensioner was removed; and figure 6 shows the tangled tape after removal from the spindle.

Figure 1. Interior of unit showing crash protected tape housing.



Figure 2. Fold in tape on feed spindle.



Figure 3. Final tape spindle, tangled.

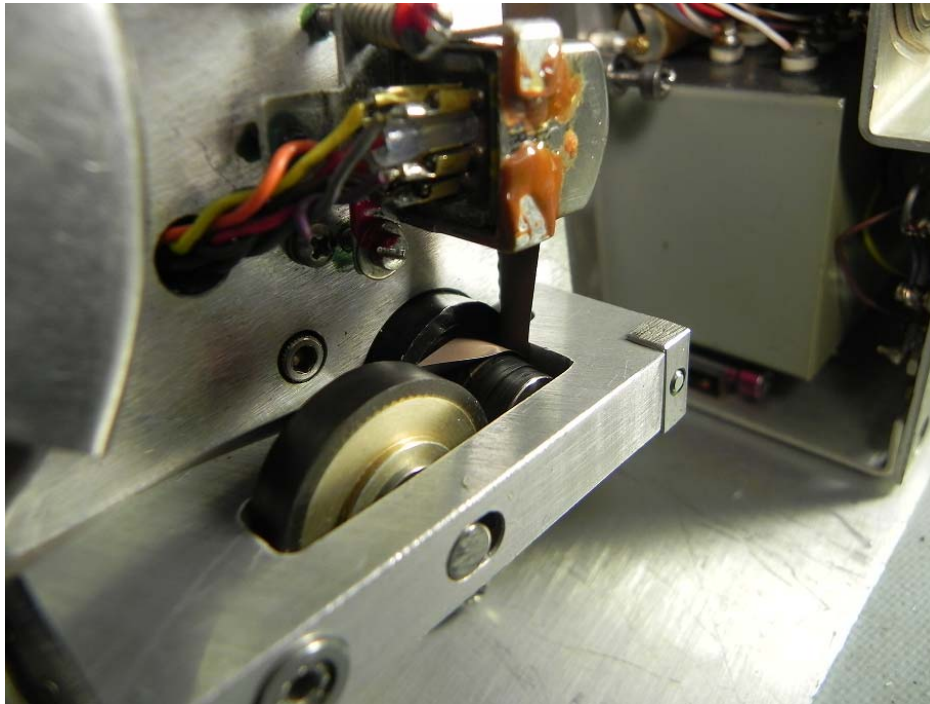


Figure 4. Close up of final tape spindle tangle.

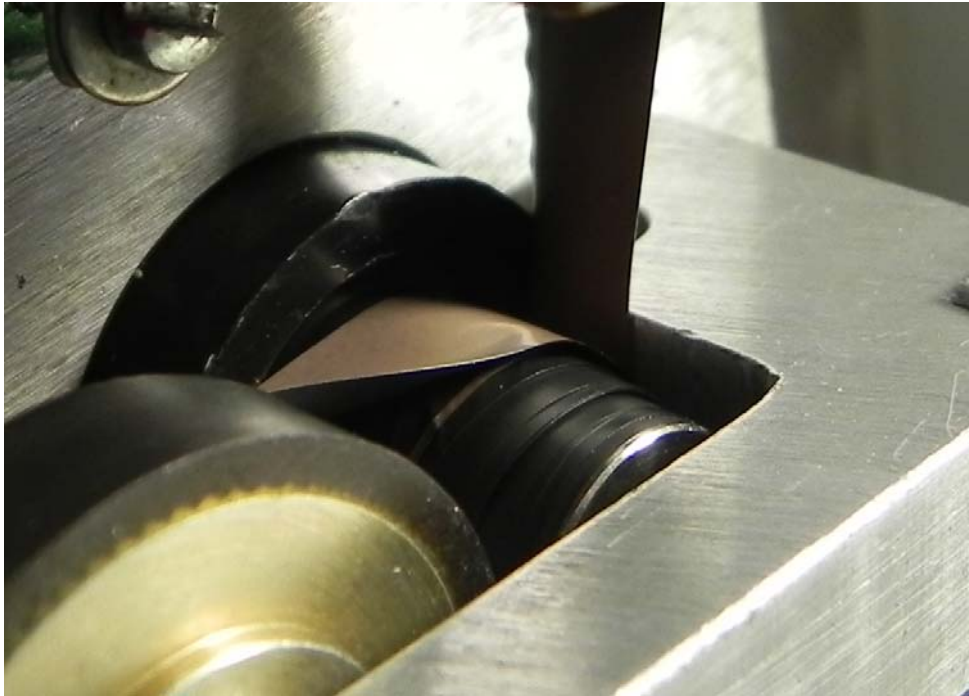


Figure 5. Final spindle with tape tensioner removed.



Figure 6. Amount of tape in final spindle tangle.



4.3. CVR Channels

The recording consisted of four channels of audio information, however none of the audio was pertinent to the accident investigation. The audio was consistent with the CVR being inoperative at the time of the accident.

Characteristics of an inoperative CVR that were observed on the accident unit include:

- Physical damage to the tape caused by the tape feed assembly (figures 2 through 6), with no damage to the CVR exterior housing;
- Inconsistent recording speed on the recorded contents;
- Large areas of silence;
- Conversations not consistent with the accident event or post-accident events.

The audio content was insufficient to determine when the recorder failed.

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