

**NATIONAL TRANSPORTATION SAFETY BOARD
Office of Research and Engineering
Vehicle Recorder Division
Washington, D.C. 20594**



SPECIALIST'S FACTUAL REPORT OF INVESTIGATION

CEN19LA054

**By
Joe Gregor**

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 Safety Board group 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.

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division

January 23, 2020

Cockpit Voice Recorder

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1. EVENT SUMMARY

Location: Uvalde, Texas
Date: January 12, 2019
Aircraft: Bombardier CL-600-2A12, Registration N813WT
Operator: TW 601-C Investment, LLC
NTSB Number: CEN19LA054

On January 12, 2019, about 1130 central standard time, a Canadair CL-600-2A12, N813WT, owned by a limited liability company and operated by an airline transport pilot, impacted terrain following a runway excursion at the Ox Ranch Airport (01TX), Uvalde, Texas. The airplane was operated as a 14 Code of Federal Regulations Part 91 charter flight. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed for the cross-country flight that originated at Addison, Texas, and was destined 01TX. A tape cockpit voice recorder (CVR) was sent to the National Transportation Safety Board (NTSB) Vehicle Recorder Division for evaluation.

2. GROUP

A group was not convened

3. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Division received the following CVR:

Recorder Manufacturer/Model: **Fairchild GA-100**
Recorder Serial Number: **1021**

3.1 CVR Carriage Requirements

Per federal regulation, multiengine aircraft with more than six passenger seats and requiring two pilots manufactured prior to April 7, 2010, and operated under 14 CFR 91/135, 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. The accident aircraft was manufactured in 1983.

3.2 Recorder Description

This model CVR, the Fairchild GA-100, records a minimum of 30 minutes of analog audio on a continuous loop tape in a four-channel format: one channel for each flight crew, one channel for a cockpit observer, and one channel for the cockpit area microphone (CAM). When the CVR is deactivated or removed from the airplane, it retains only the most recent 30 minutes of CVR operation.

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.

Upon opening the CVR to extract the magnetic tape recording medium for readout, the tape was found to be broken. A significant amount of degraded magnetic material was also found flaked from the tape and deposited in the area around the recording heads.

Figure 1. Internal view of tape transport from the GA-100 (s/n 1021).

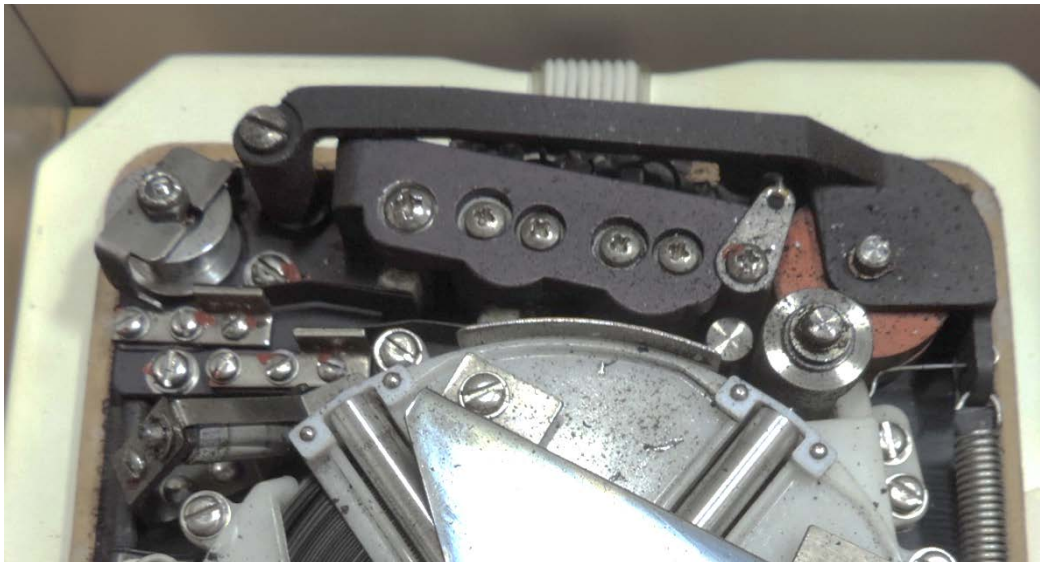
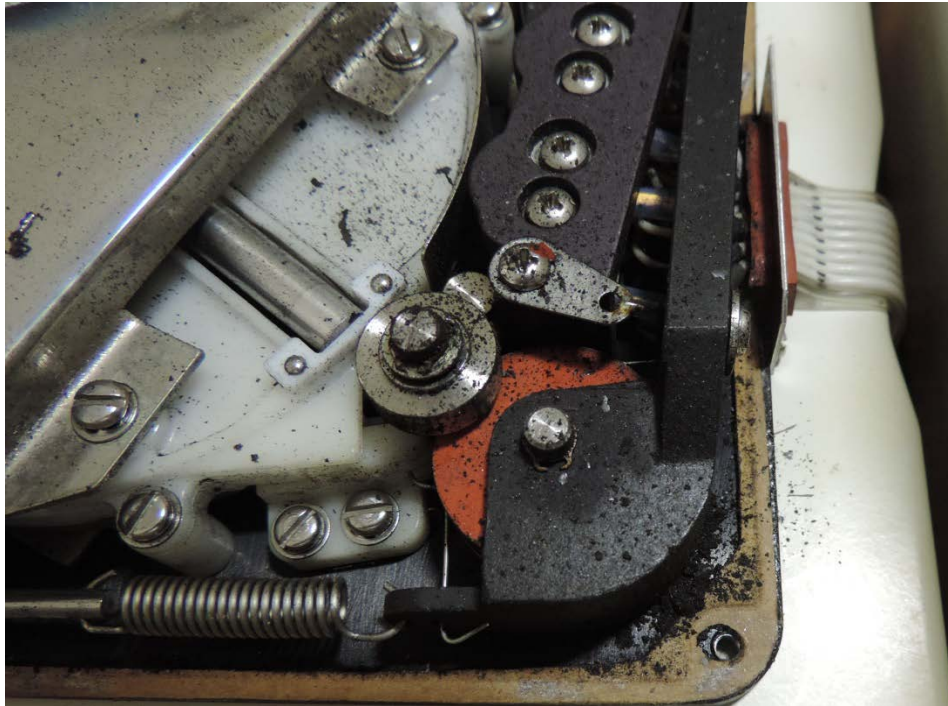


Figure 2. Closeup of tape transport from the GA-100 (s/n 1021).



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 recorded audio was of poor quality including significant wow & flutter (indicative of a problem with the tape and/or tape transport mechanism) and contained audio consistent with events associated with an earlier flight that had landed normally.