NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, DC 20594

November 7, 2013

Summary Cockpit Voice Recorder

Specialist's Factual Report
By James Cash

1. EVENT

Location:	Morgantown, West Virginia
Date:	June 22, 2012, 1001 Eastern daylight Time (EDT)
Aircraft:	Hawker Beechcraft 90, N508GT
Operator:	OZ Gas Aviation LLC
NTSB Number:	ERA12FA409

2. GROUP

A group was not convened.

3. SUMMARY

On June 22, 2012, at 1001 eastern daylight time a Raytheon Aircraft Company C90GT, N508GT, operated by Oz Gas LLC, was substantially damaged when it struck a communications tower near Morgantown, West Virginia. The certificated airline transport pilot was fatally injured. No flight plan had been filed for the Title 14 Code of Federal Regulations Part 91 positioning flight, from Nemacolin Airport (PA88), Farmington, Pennsylvania, to Morgantown Municipal Airport (MGW), Morgantown, West Virginia.

A solid-state cockpit voice recorder (CVR) was sent to the National Transportation Safety Board's Audio Laboratory for readout.

4. DETAILS OF INVESTIGATION

On June 27, 2012, the NTSB Vehicle Recorder Division's Audio Laboratory received the following CVR:

Recorder Manufacturer/Model:	**L-3/Fairchild FA2100-1010**
Recorder Serial Number:	**367379**

4.1. Recorder Description

Per federal regulation, because the aircraft was certificated to be operated by one pilot, it was not required to be equipped with a cockpit voice recorder. The aircraft, however, was equipped with a solid-state CVR that recorded 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 L-3/Fairchild FA2100-1010, records 30 minutes of digital audio stored in solid-state memory modules. Four channels of audio information are retained: 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 only minor heat and physical damage and the audio information was extracted from the recorder normally, without difficulty.

4.3. CVR Channels

The recording consisted of two channels of audio information. One of the channels contained audio information from the pilot's audio panel. The quality of this channel was good.[1] One channel contained the cockpit area microphone (CAM) audio information. The quality of this channel was good. The third and fourth channel did not contain audio, nor was it required by law to do so. The quality of these channels was unknown.

4.4. Timing and Correlation

The times used in this report are expressed as Local Time of the accident (EDT).

Timing of the transcript was aligned with the local accident time as provided by the Investigator-in-Charge.

[1] See Attachment I for the CVR Quality Rating Scale

4.5. Summary of Recording Contents

In agreement with the Investigator-In-Charge, a CVR group did not convene and a summary transcript of the 30 minute recording was prepared. (Attachment 2)

James Cash
Vehicle Recorder Division

Attachment I

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.

Attachment -2 Summary Report

Local Time		Text
9:24:28.7	Comment	Start of recording
9:25:00.3	Comment	When recording starts, aircraft is in a VFR climb to eight thousand feet destination Papa Alpha eight eight airport (Nemacolin Airport), talking to Cleveland Center
9:26:48.4	Comment	Pilot can be heard talking to a male passenger about destination
9:27:28.9	Comment	Pilot advised Cleveland Center that he was descending to six thousand five hundred.
9:27:51.5	Comment	Unintelligible background conversation of passenger can be heard during most of the flight
9:28:09.6	Comment	Aircraft contacted Johnstown approach controller
9:38:29.8	Comment	Pilot advised Johnstown approach that he was descending to four thousand five hundred
9:40:38.2	Comment	Johnstown approach advised pilot that the airport was at 12 o'clock 10 miles pilot advised airport was in sight and canceled his flight following
9:40:57.8	Comment	Pilot made radio call to Nemacolin traffic that he was landing on runway two three
9:43:14.8	Comment	Sound of radio altimeter aural call of "five hundred feet"
9:43:21.8	Comment	Passenger made comment to pilot that "he didn't hear any terrain warning alert", pilot's response was that he "turned it off".
9:44:00.0	Comment	Sound of touchdown
9:45:01.5	Comment	Engines were shutdown
9:45:13.0	Comment	Electrical power was removed from CVR
9:50:58.5	Comment	Recording starts again
9:51:04.1	Comment	Sound of 1st engine start
9:51:47.3	Comment	Sound of 2nd engine start
9:55:25.3	Comment	Pilot made radio call to Nemacolin traffic that he was back taxiing on runway two three for takeoff
9:57:07.1	Comment	Sound of increasing engine noise
9:57:29.1	Comment	Sound similar to gear retract motor
9:57:48.5	Comment	Sound of altitude alert

9:58:35.7	Comment	Pilot attempted contact Morgantown approach
9:59:01.8	Comment	Pilot contacted Morgantown again
9:59:06.9	Comment	Clarksburg approach answered
9:59:11.5	Comment	Pilot reported his position as fourteen miles to the northeast landing Morgantown
9:59:58.2	Comment	Approach reported that he had radar contact nine miles east of the Morgantown airport at three thousand one hundred, instructed pilot to maintain VFR, to expect runway one eight, and to advise when pilot has the Morgantown weather
10:00:20.5	Comment	Sound of altitude alert tone
10:00:27.7	Comment	Sound of Morgantown automated weather broadcast starts and continues until end of recording
10:01:00.1	Comment	Sound of first impact
10:01:01.9	Comment	End of recording