

DOCKET NO. **SA - 510**

EXHIBIT NO. **13 F**

**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.**

**Group Chairman's Cockpit Voice Recorder & Flight Data Recorder
Time Correlation Study**

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NATIONAL TRANSPORTATION SAFETY BOARD
Office of Research and Engineering
Washington, D.C.

December 15, 1994

Group Chairman's Cockpit Voice Recorder & Flight Data Recorder
Time Correlation Study

A. ACCIDENT DCA-94-MA-076

Location: Aliquippa, Pennsylvania
Date : September 8, 1994
Time : 1904 Eastern Daylight Time
Aircraft: Boeing 737-300, N513AU

B. GROUP IDENTIFICATION

Although this study was conducted under the Aircraft Performance Group, no group members participated in the activity.

C. SUMMARY

On September 8, 1994 at 1904 Eastern Daylight Time, USAir Flight 427, a Boeing 737-3B7, N513AU, crashed while maneuvering to land at Pittsburgh International Airport, Pittsburgh, Pennsylvania. The airplane was being operated on an instrument flight rules (IFR) flight plan under the provisions of Title 14, code of Federal Regulation (CFR), Part 121, on a regularly scheduled flight from Chicago O'Hare International Airport, Chicago, Illinois, to Pittsburgh. The airplane was destroyed by impact forces and fire near Aliquippa, Pennsylvania. All 132 persons on board the airplane were fatally injured.

D. DETAILS OF INVESTIGATION

FDR and CVR microphone keying information were used to help establish a time correlation between the Cockpit Voice Recorder (CVR) and Flight Data Recorder (FDR) on Flight 427. The CVR transcript gives the beginning of each radio transmission in local time (EDT). The FDR records whether the microphone is "keyed" (on) or "not keyed" (off) once each second.

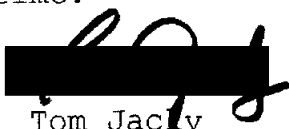

For the purposes of this study, power to the FDR and CVR was assumed to be removed simultaneously. The CVR transcript identifies this time as 31:02.6 Elapsed Time. The FDR indicates this time as 32:39.9 Elapsed Time. Therefore,

FDR/CVR Time Correlation

CVR Elapsed Time + 0001:37.3 yields FDR Elapsed Time

The 97.3 second offset added to CVR Elapsed Time produced the FDR's Elapsed Time, to the nearest second. The time correlation was used to further compare the FDR and CVR data.

A plot of USA427 FDR data overlayed with selected CVR excerpts is included in Attachment 1. The plot covers the time from 130 to 160 FDR elapsed time.


Tom Jacky
Aerospace Engineer 

Attachments

1. FDR/CVR Overlay Plot

ATTACHMENT 1

FDR & CVR Overlay Plot

USAIR 427

