NATIONAL TRANSPORTATION SAFETY BOARD
Office of Research and Engineering
Washington, D.C. 20594

August 16, 2000

Air Traffic Control Recording

Report Regarding the Use of Oxygen Masks

By Anna W. Cushman, Group Chairman

A. ACCIDENT

Location:	Aberdeen, South Dakota
Date:	October 25, 1999
Time:	About 1713 UTC (universal coordinated time)
Aircraft:	Learjet 35, N47BA
NTSB Number:	DCA00MA005

B. GROUP

Chairman:	Anna W. Cushman Aerospace Engineer National Transportation Safety Board
Member:	James B. Tidball Coordinator - Airworthiness, Learjet Bombardier Aerospace
Member:	Jeffrey L. Fetter Engineering Specialist – Flight Test Center, Learjet Bombardier Aerospace
Member:	Mike A. Cummins Senior Product Safety Specialist, Engines & Systems Honeywell
Member:	Tony Vecchio Director of Maintenance Sunjet Aviation
Member:	Ron Dass Chief Inspector Sunjet Aviation
Member:	Victoria Anderson Air Safety Investigator Federal Aviation Administration

C. SUMMARY

On October 25, 1999 a Learjet 35, N47BA, impacted terrain near Aberdeen, South Dakota. A certified analog copy of air traffic control (ATC) transmissions

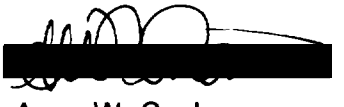
recorded on October 25, 1999 at the Jacksonville Air Route Traffic Control Center (ARTCC) was brought to the audio laboratory of the National Transportation Safety Board. Group members were asked to ascertain as to whether the pilot transmitting to Jacksonville ARTCC was speaking through an oxygen mask.

D. DETAILS OF INVESTIGATION

On October 25, 1999 a Learjet 35, N47BA, departed Orlando, Florida on an IFR flight plan to Dallas, Texas. While climbing after departure from Orlando, N47BA was in communication with controllers from the Jacksonville ARTCC. There were seven transmissions from the accident aircraft recorded at two Jacksonville ARTCC sectors.

On June 20, 2000 Learjet, Inc. in Wichita, Kansas, conducted a flight test with the Safety Board. A ground communications station at the Learjet facility recorded the pilots transmitting normally and with the use of an oxygen mask.

Group members listened to the difference between the flight test transmissions, with the mask on and off, and then made a comparison to the accident aircraft's transmissions. On August 9, 2000 all group members except the FAA listened and compared the recordings – the FAA evaluated the recordings on August 16, 2000. All members have unanimously agreed that the pilot transmitting to Jacksonville ARTCC from N47BA was not wearing an oxygen mask during those transmissions.



Anna W. Cushman
Aerospace Engineer

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorders Division
Washington, D.C. 20594

July 3, 2000

Audio Tape

Specialist's Factual Report
by Anna W. Cushman

A. ACCIDENT

Location:	Aberdeen, South Dakota
Date:	October 25, 1999
Time:	About 1713 UTC (universal coordinated time)
Aircraft:	Learjet 35, N47BA
NTSB Number:	DCA00MA005

B. GROUP

No Group.

C. SUMMARY

On October 25, 1999 a Learjet 35, N47BA, impacted terrain near Aberdeen, South Dakota. Magnetic tape was found at the accident site and given to the National Transportation Safety Board. The tape was brought to the Safety Board's audio laboratory in Washington, DC on June 21, 2000 for examination.

D. DETAILS OF INVESTIGATION

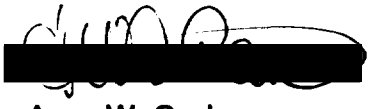
On October 25, 1999 a Learjet 35, N47BA, departed Orlando, Florida on an IFR flight plan to Dallas, Texas. After departing Orlando, the en-route air traffic controller cleared N47BA to climb and maintain 39,000 feet. N47BA immediately acknowledged the request - this was the last communication from the accident aircraft. The aircraft

continued on its course until 1713 UTC, at which time it crashed near Aberdeen, South Dakota.

Magnetic tape was recovered from the accident site and given to the audio lab for further examination. The 1/8-inch tape was determined to be audio tape, similar to the tape used in music cassettes and audio microcassettes. The tape was untangled and found to be in five separate pieces of varying length, totally approximately 30 feet.

Each side of each section of tape was visually examined using Magna-See. Magna-See is a liquid solution that visually enhances, without altering, the signal recorded on magnetic tape. The tape did not show any visual evidence of recorded data.

The tape sections were mounted onto cassette reels and played in a cassette player at various speeds. Each side of the tape and all possible audio tracks were played. There was no audible evidence of recorded audio data on any of the five sections of tape. After performing a visual and aural examination of the magnetic audio tape, it was determined that the tape did not contain any audio information.



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