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

December 21, 2001

Air Traffic Control Recording

Specialist's Report
by Joseph A. Gregor

A. ACCIDENT

Location:	New York, New York
Date:	September 11, 2001
Time:[1]	
Aircraft:	Boeing 767-200ER
NTSB Number:	DCA01SA060

B. GROUP

N/A

C. SUMMARY

On September 11, 2001 American Airlines Flight 11, a Boeing 767 crashed into Tower 1 of the World Trade Center in New York City, New York. A certified analog copy of air traffic control (ATC) transmissions recorded on September 11, 2001 at various tower, departure, and Air Route Traffic Control Center (ARTCC) positions along the route of flight was sent to the audio laboratory of the National Transportation Safety Board. These recordings were used to create an audio track and text transcript of the aircraft-ground communications from takeoff to accident time.

D. DETAILS OF INVESTIGATION

Transmissions between the accident aircraft and ATC were recorded and an analog copy was sent to the Safety Board's audio laboratory. The tapes cover the following ATC positions and time periods:

Facility	Time Period[1] (UTC)	Position
BOS	1152:37 – 1217:48	LCE
BOS	1155:32 – 1210:49 1157:42 – 1210:00	ID (B) SL
ZBW	1205:32 – 1208:50	Sector 47R
ZBW	1204:51 – 1233:59	Sector 46R

Sections of the tape recordings containing air-ground transmissions to and from the incident aircraft were digitized at a 22,050 Samples/second data rate and saved as standard Microsoft *.wav* files. Individual *.wav* files were combined into a single 35 minute 12 second long *.wav* file containing all transmissions to and from the incident aircraft from 1159:02 UTC (aircraft cleared for takeoff) to 1234:14. A transcript was obtained from the final composite recording. Times are approximate due to limitations inherent in the data obtained from the FAA.

Joseph A. Gregor
Electrical Engineer

Transcript of ATC communications with a Boeing B-767-200ER (American Airlines flight 11) which crashed into Tower 1 of the World Trade Center in New York City, New York on September 11, 2001.

LEGEND

AAL-11	Radio transmission from American B-767-200ER, flight 11
LCE	Radio transmission from Local Control East
ID (B)	Radio transmission from Initial Departure position B
SL	Radio transmission from Lincoln Departure
47R	Radio transmission from Sector 47 Radar position
46R	Radio transmission from Sector 46 Radar position
*	Unintelligible word
#	Expletive
( )	Questionable insertion
[ ]	Editorial insertion
...	Pause
--	Interruption

Note 1: Times are expressed in universal coordinated time (UTC).

Note 2: Only radio transmissions to and from the accident aircraft were transcribed.

Note 3: Words shown with excess vowels, letters, or drawn out syllables are a phonetic representation of the words as spoken.

INTRA-COCKPIT COMMUNICATION		AIRCRAFT-TO-GROUND COMMUNICATION	
Time (UTC) SOURCE	CONTENT	Time (UTC) SOURCE	CONTENT
Start of recording			
Start of transcript			
		1159:02 **LCE**	American eleven heavy traffic's orbiting north of the field at thirty five hundred feet maintain three thousand runway four right, cleared for takeoff. [BOS 1152-1217 LCE]
		1159:11 **AAL-11**	maintain three cleared for takeoff on four right. what are the winds? [BOS 1152-1217 LCE]
		1159:14 **LCE**	wind three three zero at niner. [BOS 1152-1217 LCE]
		1159:16 **AAL-11**	***. [BOS 1152-1217 LCE]
		1200:11 **LCE**	American eleven heavy contact departure that traffic's now in your ten o'clock and two miles thirty four hundred feet. [BOS 1152-1217 LCE]
		1200:19 **AAL-11**	* we have him in sight and going to departure so long American eleven heavy. [BOS 1152-1217 LCE]

INTRA-COCKPIT COMMUNICATION		AIRCRAFT-TO-GROUND COMMUNICATION	
Time (UTC) SOURCE	CONTENT	Time (UTC) SOURCE	CONTENT
		1200:30 AAL-11	departure good morning American eleven heavy with you passing through ah two thousand for three thousand. [BOS 1155-1210 Initial Dept.]
		1200:36 ID (B)	American eleven heavy Boston departure radar contact good morning traffic ten o'clock two miles maneuvering Cessna Skylane VFR at three thousand five hundred. [BOS 1155-1210 Initial Dept.]
		1200:43 AAL-11	we have him in sight American eleven. [BOS 1155-1210 Initial Dept.]
		1201:19 ID (B)	American eleven heavy climb and maintain eight thousand. [BOS 1155-1210 Initial Dept.]
		1201:21 AAL-11	eight thousand American eleven heavy. [BOS 1155-1210 Initial Dept.]
		1202:14 ID (B)	American eleven heavy turn right heading one eight zero. [BOS 1155-1210 Initial Dept.]
		1202:16 AAL-11	one eighty American eleven heavy. [BOS 1155-1210 Initial Dept.]
		1203:03 ID (B)	American eleven heavy climb and maintain one four thousand. [BOS 1155-1210 Initial Dept.]

INTRA-COCKPIT COMMUNICATION		AIRCRAFT-TO-GROUND COMMUNICATION	
Time (UTC) SOURCE	CONTENT	Time (UTC) SOURCE	CONTENT
		1203:06 **AAL-11**	one four thousand American eleven heavy. [BOS 1155-1210 Initial Dept.]
		1203:34 **ID (B)**	American eleven heavy turn right heading two two zero. [BOS 1155-1210 Initial Dept.]
		1203:37 **AAL-11**	two zero American eleven. [BOS 1155-1210 Initial Dept.]
		1204:27 **ID (B)**	American eleven heavy turn right heading two seven zero contact Boston approach one two seven point two good day. [BOS 1155-1210 Initial Dept.]
		1204:32 **AAL-11**	twenty seven two and two seventy American eleven so long. [BOS 1155-1210 Initial Dept.]
		1204:48 **AAL-11**	American eleven heavy with you passing through one zero thousand for one four thousand. [BOS 1157-1210 Lincoln Dept.]
		1204:52 **SL**	American eleven heavy Boston approach fly heading two seven zero. [BOS 1157-1210 Lincoln Dept.]
		1204:55 **AAL-11**	* seventy American eleven. [BOS 1157-1210 L-incoln Dept.]

INTRA-COCKPIT COMMUNICATION		AIRCRAFT-TO-GROUND COMMUNICATION	
Time (UTC) SOURCE	CONTENT	Time (UTC) SOURCE	CONTENT
		1205:14 SL	American eleven heavy contact Boston center one three three point four two. [BOS 1157-1210 Lincoln Dept.]
		1205:19 AAL-11	thirty three forty two so long American eleven. [BOS 1157-1210 Lincoln Dept.]
		1205:32 AAL-11	Boston center good morning American eleven with you passing through one one thousand for one four thousand. [BOS 1207-1214 Sector 47R]
		1205:36 47R	American eleven Boston center good morning climb maintain flight level two three zero proceed direct CHESTER. [BOS 1207-1214 Sector 47R]
		1205:41 AAL-11	two three zero direct CHESTER American eleven. [BOS 1207-1214 Sector 47R]
		1208:47 47R	American eleven contact Boston center one two seven point eight two. [BOS 1207-1214 Sector 47R]
		1208:50 AAL-11	twenty seven eighty two so long American eleven. [BOS 1207-1214 Sector 47R]
		1209:17 AAL-11	Boston center good morning American eleven with you passing through one niner zero for two three zero. [BOS 1204-1233 Sector 46R]

INTRA-COCKPIT COMMUNICATION		AIRCRAFT-TO-GROUND COMMUNICATION	
Time (UTC) SOURCE	CONTENT	Time (UTC) SOURCE	CONTENT
		1209:22 **46R**	American eleven Boston uh center roger climb and maintain level two eight zero. [BOS 1204-1233 Sector 46R]
		1209:25 **AAL-11**	two eight zero American eleven. [BOS 1204-1233 Sector 46R]
		1210:13 **46R**	American eleven climb maintain flight level two niner zero. [BOS 1204-1233 Sector 46R]
		1210:15 **AAL-11**	niner zero American eleven. [BOS 1204-1233 Sector 46R]
		1211:58 **46R**	American eleven your traffic is at uh two o'clock two zero miles southwest bound MD-80 three one oh. [BOS 1204-1233 Sector 46R]
		1212:04 **AAL-11**	American eleven roger. [BOS 1204-1233 Sector 46R]
		1213:29 **46R**	American eleven turn twenty degrees right. [BOS 1204-1233 Sector 46R]
		1213:31 **AAL-11**	twenty right American eleven. [BOS 1204-1233 Sector 46R]
		1213:47 **46R**	American eleven climb maintain flight level three five zero. [BOS 1204-1233 Sector 46R]

INTRA-COCKPIT COMMUNICATION		AIRCRAFT-TO-GROUND COMMUNICATION	
Time (UTC) SOURCE	CONTENT	Time (UTC) SOURCE	CONTENT
		1213:57 46R	American eleven climb maintain flight level three five zero. [BOS 1204-1233 Sector 46R]
		1214:08 46R	American eleven Boston. [BOS 1204-1233 Sector 46R]
		1214:23 46R	American eleven Boston. [BOS 1204-1233 Sector 46R]
		1214:33 46R	American one one uh the American on the frequency how do you hear me? [BOS 1204-1233 Sector 46R]
		1215:15 46R	American eleven Boston. [BOS 1204-1233 Sector 46R]
		1215:22 46R	American eleven if you hear Boston center ident. [BOS 1204-1233 Sector 46R]
		1215:49 46R	American eleven if you hear Boston center ident please or acknowledge. [BOS 1204-1233 Sector 46R]
		1216:32 46R	American eleven if you hear Boston center ah re-contact Boston Center on one two seven point eight two, that's American eleven one two seven eight two. [BOS 1204-1233 Sector 46R]
		1217:05 46R	American eleven, American one one Boston. [BOS 1204-1233 Sector 46R]

INTRA-COCKPIT COMMUNICATION		AIRCRAFT-TO-GROUND COMMUNICATION	
Time (UTC) SOURCE	CONTENT	Time (UTC) SOURCE	CONTENT
		1217:56 46R	American eleven if you hear Boston center ident please. [BOS 1204-1233 Sector 46R]
		1218:56 46R	American eleven Boston. [BOS 1204-1233 Sector 46R]
		1220:08 46R	American eleven American one one how do you hear the center? [BOS 1204-1233 Sector 46R]
		1222:27 46R	American eleven Boston. [BOS 1204-1233 Sector 46R]
		1224:33 46R	is that American eleven trying to call? [BOS 1204-1233 Sector 46R]
		1224:36 AAL-11	**. [BOS 1204-1233 Sector 46R]
		1224:38 AAL-11	we have some planes. just stay quiet and you'll be okay we are returning to the airport. [BOS 1204-1233 Sector 46R]
		1224:46 46R	and uh who's trying to call me here? [BOS 1204-1233 Sector 46R]
		1224:53 46R	American eleven are you trying to call? [BOS 1204-1233 Sector 46R]

INTRA-COCKPIT COMMUNICATION		AIRCRAFT-TO-GROUND COMMUNICATION	
Time (UTC) SOURCE	CONTENT	Time (UTC) SOURCE	CONTENT
		1224:56 AAL-11	nobody move. everything will be okay. if you try to make any moves, you'll endanger yourself and the airplane. just stay quiet. [BOS 1204-1233 Sector 46R]
		1233:59 AAL-11	nobody move please. we are going back to the airport. don't try to make any stupid moves. [BOS 1204-1233 Sector 46R]

End of transcript

[+]times verified via FAA timecode reader.

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1159:11	AAL-11	maintain three cleared for takeoff on four right. what are the winds? [BOS 11:52-1217 LCE]
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1159:16	AAL-11	***. [BOS 11:52-1217 LCE]
1200:11	LCE	American eleven heavy contact departure that traffic's now in your ten o'clock and two miles thirty four hundred feet. [BOS 11:52-1217 LCE]
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1200:30	AAL-11	departure good morning American eleven heavy with you passing through ah two thousand for three thousand. [BOS 11:55-1210 Initial Dept.]
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1203:03	ID (B)	American eleven heavy climb and maintain one four thousand. [BOS 11:55-1210 Initial Dept.]
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1205:41	AAL-11	two three zero direct CHESTER American eleven. [BOS 1207-1214 Sector 47R]
1208:47	47R	American eleven contact Boston center one two seven point eight two. [BOS 1207-1214 Sector 47R]
1208:50	AAL-11	twenty seven eighty two so long American eleven. [BOS 1207-1214 Sector 47R]
1209:17	AAL-11	Boston center good morning American eleven with you passing through one niner zero for two three zero. [BOS 1204-1233 Sector 46R]
1209:22	46R	American eleven Boston uh center roger climb and maintain level two eight zero. [BOS 1204-1233 Sector 46R]
1209:25	AAL-11	two eight zero American eleven. [BOS 1204-1233 Sector 46R]
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