

Docket No. **SA-522**

Exhibit No. **12A**

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C.

COCKPIT VOICE RECORDER TRANSCRIPT

American Airlines Flight 587

DCA02MA001

**Belle Harbor, NY
November 12, 2001**

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



SPECIALIST'S FACTUAL REPORT OF INVESTIGATION

DCA02MA001

by

**Albert G. Reitan
Transportation Safety Specialist**

Warning

The reader of this report is cautioned that the transcription of a CVR tape is not a precise science but is the best product possible from an NTSB group investigative effort. The transcript, or parts thereof, if taken out of context, could be misleading. The attached CVR transcript 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 transcript as the sole source of information.

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

October 2, 2002

Cockpit Voice Recorder - 12

**Group Chairman's Factual Report
by Albert G. Reitan**

A. ACCIDENT

Location: Belle Harbor, New York
Date: November 12, 2001
Time: 0917 eastern standard time (EST)
Aircraft: American Airlines, flight 587, Airbus A-300-605R, N14053
NTSB Number: DCA02MA001

B. GROUP

Chairman: Albert G. Reitan
Transportation Safety Specialist (CVR)
National Transportation Safety Board

Member: Tony James
Air Safety Investigator
Federal Aviation Administration

Member: David Sebastian
Investigator - Engineering Department
Bureau Enquetes - Accidents (BEA)

Member: Rudy Canto
Director, Flight Operations Technical
Airbus

Member: Captain Ray Hayes
A-300 Check Airman
American Airlines

Member: Captain Charles Hepp
National Training & Safety Committee
Allied Pilots Association - American Airlines

C. SUMMARY

A Fairchild model A-100A cockpit voice recorder (CVR), s/n (unknown), was brought to the audio laboratory of the National Transportation Safety Board on November 12, 2001. The Cockpit Voice Recorder committee convened on November 14, 2001. A transcript was prepared of the entire 30:39 minute recording and is attached to this report.

D. DETAILS OF INVESTIGATION

The exterior of the CVR showed evidence of significant structural damage. The front panel of the recorder, including the underwater locator beacon, was missing. The outer metal enclosure was heavily covered with soot and dented so it was necessary to cut it away to gain access to the tape reel. The exterior of the crash case was not damaged. The tape sustained no apparent heat damage but several inner windings were slightly crinkled, possibly due to impact forces. This portion of the recording contained the oldest data which covered the events before the flight left the gate.

The recording consisted of four channels of excellent to poor quality audio information. One channel contained the cockpit area microphone audio information. Two other channels contained the Captain and First Officer audio panel information. All three of these channels were of excellent quality. The flight crewmembers were wearing hot boom microphones and their individual voices were recorded on their respective channels. The fourth contained a high frequency squeal and was mostly unreadable.

Correlation of the CVR recording to eastern standard time (EST) was established using information from the aircraft digital flight data recorder (DFDR) and the Air Traffic Control (ATC) transcript developed by the FAA. These data were then correlated to microphone keying and other events that were common to the CVR and FDR. A detailed explanation of the time correlation procedure is available in the Aircraft Performance Group Chairman's factual report.

The transcript started at 0845:35 EST as the crewmembers were finishing their pre-flight preparation and waiting for pushback clearance. The transcript continued as the flight

departed the gate and taxied to runway one three left. The transcript contained the taxi, takeoff, and initial departure portion of the flight. The transcript continued uninterrupted until 0916:14.8 EST when electrical power was removed from the CVR.

(original document signed)

Albert G. Reitan
Transportation Safety Specialist (CVR)

Attachment:

Transcript of a Fairchild A-100A cockpit voice recorder (CVR), s/n (missing), installed on an Airbus A-300-605R, N14053, which was involved in a collision with terrain shortly after departing the John F. Kennedy International Airport (JFK), New York, on November 12, 2001.

LEGEND

HOT	Crewmember hot microphone voice or sound source
RDO	Radio transmission from accident aircraft
CAM	Cockpit area microphone voice or sound source
RMP	Radio transmission from local ramp control
PA	Voice transmitted over aircraft public address system
INT	Voice transmitted over aircraft interphone system
GND	Radio transmission from JFK ground control
TWR	Radio transmission from JFK control tower
JAL47	Radio transmission from Japan Airlines flight 47
PD14	Radio transmission from police department flight 14
DEP	Radio transmission from New York departure control
-1	Voice identified as Pilot-in-Command (PIC)
-2	Voice identified as Co-Pilot (SIC)
-3	Voice identified as pushback crewman
-?	Voice unidentified
*	Unintelligible word
@	Non-pertinent word
#	Expletive
---	Break in continuity
()	Questionable insertion
[]	Editorial insertion
...	Pause

Note 1: Times are expressed in eastern standard time (EST).

Note 2: For ATC transmissions, generally, only radio transmissions to and from the accident aircraft were transcribed.

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. |

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0845:35			
	START of RECORDING		
	START of TRANSCRIPT		
0845:50			
CAM	[sound similar to paper rustling]		
0846:04			
CAM-1	[unintelligible comment]		
0846:05			
HOT-2	now what?		
0846:08			
HOT-2	it's part of the job. quick nap. [sound of yawn]		
0846:44			
CAM-1	** seagulls getting in *. why are they flying around that construction site?		
0846:50			
CAM-1	oh, coffee truck.		
0846:51			
HOT-2	[sound of chuckle] flying around 'cause it looks like a dump. that's why. they don't know any better.		
0847:02			
HOT-2	good question.		
0847:10			
HOT-2	this thing's going triple the speed it was.		
0847:18			
HOT-2	did you see that thing the union passed just before they approved the whole thing they changed some something with the list or something.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0847:24 CAM-1	St. Louis thing.		
0847:26 HOT-2	what did they do?		
0847:28 CAM-1	aah, you know.... we were talking about this last time, I guess you know. @@ was (always saying) how I, I was getting the, the information, and um, I guess there were some uh, holes in the previous document, where the pilots of TWA guys in St. Louis given a certain scenario could cross through the fence and come out of the AA system as Captains.		
0848:00 HOT-2	eeewh.		
0848:03 CAM-1	beyond that I, I don't, I can't really explain it. * uh, but my understanding is, they, they plugged those holes in the fence.		
0848:13 HOT-2	'kay.		
0848:20 CAM-1	sit there and read this, this the legalese stuff * . I mean you really have to sit down and study this to get it.		
0848:25 HOT-2	really hard. oh yeah.		
0848:32 HOT-2	and it's also a "mute" point seeing how it's passed now.		
0848:35 CAM-1	yeah.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0848:39 HOT-2	which is good which means @@ was causing trouble and he.... plugged the hole.		
0848:44 CAM-1	you know he's a force now. he outta run for aaaah, union job.		
0848:58 CAM-1	boy, he's a New Yorker with an attitude.		
0849:02 HOT-2	we need a new @.		
0849:04 CAM-1	yeah.		
0849:06 CAM-1	well, @. irreplaceable. what was he saying to you this morning, anything?		
0849:11 HOT-2	nothing.		
0849:12 CAM-1	'cause he's still on the inside, isn't he?		
0849:14 HOT-2	oh yeah.		
0849:15 CAM-1	huh?		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0849:16 HOT-2	he's a @.... he's on the inside, very much so.... he still goes down, you know, DDR, doing you know.... whatever.... he's very much on the inside. trust me, when friggin has a problem he goes.... this guy did this or whatever. call @ man. @ got a friggin wealth of knowledge sitting there. it's like @.... except that there's a wealth of knowledge on how to give things back which we shouldn't have been tapping.		
0849:54 CAM-1	what?		
0849:57 HOT-2	@ was calling up @. you know we were paying @? this # union didn't even tell us way back then.		
0850:02 CAM-1	is that right?		
0850:03 HOT-2	oh yeah. @ was hired as a consultant. and taken off flight.... no one told us about that.		
0850:15 CAM-1	I didn't know that.		
0850:16 HOT-2	yeah.		
0850:17 CAM-1	so they, they really didn't tell us.		
0850:18 HOT-2	oh no.		
0850:19 CAM-1	they still haven't told us. we just found out.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0850:21 HOT-2	[sound of hiccup and cough] excuse me, I was just reading uh, aaaah I think I found it out in the accounting thing. I was scouring through um, APA's accounting. all the people that got flight time pay and how much it was. you know and that's where I found it, that @ got removed from, trip pay. paid by APA, which could only be one, I mean, what else is he doing?		
0850:50 CAM-1	yeah.		
0851:03 HOT-2	[sound similar to yawn]		
0851:11 HOT-2	[sound of singing]		
0851:24 HOT-2	I think across from it, it said consulting. [sound of chuckle]		
0851:27 CAM-1	said what?		
0851:28 HOT-2	said removed from trip. it said like reason or whatever. it said consulting or something.		
0851:32 CAM-1	*.		
0851:33 HOT-2	consultant, yeah.		
0851:56 HOT-2	well we're getting paid, that's nice. thank you very much. can't beat that.		
0852:17 CAM-1	***.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0852:18 CAM	[sound of clunk]		
0852:44 HOT-1	the door is closed.		
0852:46 HOT-2	*		
0852:50 HOT-?	before *.		
0852:52 HOT-2	*		
		0852:53 INT-3	ground to cockpit?
		0852:54 INT-1	hello.
		0852:55 INT-3	hello cockpit. we just locked up and we're all secure below, standing by.
		0852:58 RDO-2	American five eighty eight, ready to do push-back.
		0853:01 INT-1	okay, brakes released. standby for the clearance.
		0853:03 RMP	five eighty seven, stand by. you're gonna be number two to push. I'll give you a call.
		0853:06 RDO-2	stand by, American five eighty seven.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0853:08 HOT-2	uuuuh, probe heat.		
0853:11 HOT-1	on.		
0853:11 HOT-2	ECAM doors display, slides?		
0853:12 HOT-1	green and armed.		
0853:13 HOT-2	beacon, nav lights?		
0853:14 HOT-1	on, on.		
0853:15 HOT-2	cabin ready?		
0853:15 HOT-1	received.		
0853:18 HOT-2	checklist is done. we're not cleared.		
0853:21 HOT-1	okay.		
0853:24 HOT-2	number two.		
0853:26 HOT-1	three four and all right five thousand pounds heavy?		
0853:47 HOT-1	hmhhh.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		0853:55 INT-1	I guess there's traffic out there somewhere.
0853:58 HOT-1	where's the TPS?		
		0854:05 INT-3	oh yeah, it's just pulling up now.
0854:18 HOT-1	two.... three.... oh, two three nine, okay.		
0855:23 HOT-2	[sound of humming]		
0855:27 HOT-1	what's the temperature?		
0855:57 PA-1	well ladies and gentlemen, Captain States again. we're all buttoned up ready to go. we're just waiting for an airplane behind us uuuh, to move on out of our way, and then we will be pushing back.		
0856:07 CAM	[sound of hi-lo chime]		
0856:08 PA-4	[sound of male flight attendant beginning passenger announcement in Spanish]		
		0856:08 RMP	American five eighty seven....
		0856:09 RDO-2	yes.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		0856:11 RMP	five eight seven, do you still have a ground crew there?
		0856:12 RDO-2	I believe we have ground crew.
0856:14 HOT-2	yes, we have ground crews still?		
		0856:15 RMP	American five eighty seven, (have your ground crew to reference the company seven thirty seven departing the alley), you're cleared to push.
0856:16 HOT-1	huh? what?		
		0856:20 RDO-2	reference the seven three, we're cleared to push, American five eighty seven heavy.
		0856:30 INT-1	evidently there's a seven thirty seven back there uh, once you see him, we're cleared to push.
		0856:31 INT-3	okay cockpit um, they just disconnected and, should be another couple of minutes.
		0856:37 INT-1	okay, whatever you like.
0856:49 HOT-2	I can't believe how much money GE makes just renting little shacks to construction people. you know if GE's in uh, it's huge money. I mean they don't, they don't....		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0856:56 HOT-1	they're, they're, you know if you looked into it, you could probably find GE in virtually, everything.		
0857:02 HOT-2	GE is actually like one of the largest banks in the world. it's like the largest bank in the world.		
0857:05 HOT-1	yeah.		
0857:07 HOT-2	they have more flexibility because they don't have the restrictions of a bank. banks have certain restrictions as to what they can and can't do as far as, their hands tied. ah,ah, it's unbelievable.		
0857:22 HOT-2	they, they own more aircraft than American Airlines.		
0857:25 HOT-1	GE does?		
0857:32 HOT-2	I'm not gonna say size wise but a lot of those corporate jets and all that other stuff....		
0857:35 HOT-1	yeah.		
0857:36 HOT-2	...more aircraft.		
0857:37 HOT-1	just numbers, yeah.		
		0858:00 INT-3	hey cockpit, that aircraft is clear, we'll start our pushback.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		0858:04 INT-1	brakes released, cleared to push.
0858:10 HOT-1	three sixty nine, what were we threeeee.... forty nine.		
0858:17 HOT-2	what do you need?		
0858:32 HOT-1	fifty one, fifty one, one fifty six, twenty one one. * change, forty two C.		
		0859:27 INT-3	ground to cockpit, you're cleared to start.
		0859:29 INT-1	cleared to start.
0859:34 HOT-1	starting two.		
0859:37 HOT-1	valves open.		
0859:37 CAM	[sound similar to ECAM chime]		
		0859:53 INT-3	parking brakes park.
		0859:55 INT-1	brakes are parked, cleared to disconnect, see you out front.
		0859:58 INT-3	ground to cockpit, disconnecting, see ya out front.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		0900:00 INT-1	so long.
		0900:02 INT-3	so long.
0900:15 HOT-2	forty five N two.		
0900:17 HOT-1	the valve is closed.		
0900:21 HOT-1	starting one.		
0900:25 HOT-1	valve's open.		
0900:47 HOT-1	see ya salute, four guys going away.		
0901:03 HOT-2	forty five N two.		
0901:05 CAM	[sound similar to Selcal buzzer]		
0901:07 HOT-2	APU?		
0901:07 HOT-1	valves closed, done.		
0901:13 HOT-2	you got your four guys, all set?		
0901:13 HOT-1	yep, dos, tres.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		0901:14 RDO-2	American five eighty seven, we're gonna be going over to ground. we'll talk to you later.
		0901:15 RMP	five eighty seven, cleared to contact ground, have a good flight.
		0901:20 RDO-2	good day.
		0901:24 RDO-2	morning ground, it's American five eighty seven heavy with the information Delta coming out of uh, Tango Alpha.
0901:30 HOT-2	clear right.		
0901:31 HOT-1	clear left. fifteen when you're ready.		
0901:32 CAM	[sound of several clicks]		
		0901:33 GND	American five eighty seven heavy Kennedy ground, runway three one left for departure. taxi left on Bravo. hold short of Juliet.
		0901:39 RDO-2	left Bravo, short of Juliet, American five eighty seven heavy.
0901:55 HOT-2	come back.		
0902:05 HOT-1	your leg, you check the rudders.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0902:23 HOT-2	rudders check.		
0902:26 HOT-1	okay.		
0902:40 HOT-2	taxi checklist is complete.		
0902:59 HOT-2	takeoff checklist, anti-ice?		
0903:01 HOT-1	off.		
0903:02 HOT-2	auto-brakes.		
0903:03 HOT-1	max.		
0903:38 HOT-2	okay, the box is updated. we have, stand alone sheet, for... runway thirty one left. flaps fifteen, bleeds on. assumed temperature is supposed to be forty two. we have forty two set. weight was three forty nine point three. and your stand alone sheet's for three forty nine three. weights check, temperature check. and I'm gonna double check the winds here. forty two degrees is supposed to give us one oh one point one. we got one oh one point one. numbers are one fifty, fifty four and fifty six.... three thirty at eleven. winds checked. takeoff data and TRP for thirty one left.		
0904:28 HOT-1	two hundred forty six people, crew of nine, two hundred fifty five SOBs. takeoff data, set and cross-checked, flex power. three one left, Kennedy.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0904:36 HOT-2	set and cross-checked. takeoff data and TRP.		
0904:39 HOT-2	AFS panel and radios?		
0904:41 HOT-1	aah, fifty six is preset, two forty two, everything else remains the same, set checked.		
0904:45 HOT-2	gotcha.		
0904:47 HOT-2	flaps fifteen, stab trim is nose up point seven.... stab trim?		
0904:53 HOT-1	uuuuh, point seven nose up set.		
0904:56 HOT-2	slats and flaps?		
0904:57 HOT-1	calls for fifteen, fifteen, set at fifteen, fifteen, fifteen. fifteen, uploaded.		
0905:01 HOT-2	verified fifteen, fifteen.		
0905:05 HOT-2	ECAM?		
0905:06 HOT-1	checked.		
0905:08 HOT-2	takeoff config?		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0905:09 HOT-1	norm f' takeoff.		
0905:11 HOT-2	takeoff briefing?		
0905:12 HOT-1	all right, you start out. if something happens prior to V one, call what you see, I'll decide whether or not to abort. uuh, unless it an engine failure or an inability to fly, we'll plan on continuing the takeoff. uh, it's a hundred feet and then uh, a left turn to what?		
0905:40 HOT-1	uh, runway heading to three hundred feet, that's a heading to two one zero to a thousand feet and then it's the uh, engine uh, clean-up or the airplane clean-up stuff.... after the immediate action items you have the airplane, the radio we'll plan on left hand traffic to come back to uh, either one of the three ones.... highest min safe altitude on runway heading is twenty eight hundred foot, and once you make a left turn over water it's eighteen hundred feet. the terrain is flat with towers. otherwise you plan on about a heading two two zero, five thousand feet. questions?		
0906:15 HOT-2	no.		
0906:16 HOT-1	briefing complete.... the Concorde returns.		
		0906:53 GND	Japan Air forty seven, continue via Bravo, turn right at Juliet, cross runway four left.
		0907:00 JAL47	Japan Air forty seven, on Bravo, Juliet cross runway two two uh, four left.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		0907:07 GND	Japan Air four seven, that's correct, thanks.
0907:55 HOT-2	I was flying in here about three nights ago, comin' innnn, 'bout ten o'clock, doing that twelve, twelve, thirty departure turn, Dingo turn. so I don't know comin' in here, not ten o'clock somewhere there, nine o'clock, somewhere, and uh....		
		0908:01 GND	Japan Air forty seven heavy, monitor the tower one one niner point one. so long.
		0908:05 JAL47	one one nine one, Japan Air forty seven, so long.
0908:12 HOT-2	Egypt Air, was told to do. they were rocketing off towards the city and they were told to....		
0908:17 HOT-1	Egypt Air was told to do what?		
0908:19 HOT-2	turn thirty degrees, somewhere you know, like, you know, it was thirty degrees off their course. they were turn told to pick up a heading, and he said "roger" and he didn't turn. and the controller said, "pick up this heading." and he didn't turn. he says, "you need to turn immediately now Egypt Air, and I wanna know why you're not turning." finally he turned he says, "Egypt Air, we need to discuss on the ground why it took you fifteen miles to make a heading change when I asked you and you responded." they were really....		
0908:47 HOT-1	pissed.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0908:48 HOT-2	...pissed, and uh I think they were like ready to....		
0908:51 HOT-1	launch the fleet.		
0908:52 HOT-2	oh yeah, 'cause he was heading towards the city. he was....		
0908:54 HOT-1	oh really.		
0908:56 HOT-2	oh yeah, that's why he's ticked, that's why he's so ticked.		
		0908:58 GND	American five eighty seven heavy, follow the Japan Air heavy Boeing seven forty seven ahead. monitor the tower one one niner point one. so long.
		0909:03 RDO-2	follow Japan Air over to tower nineteen one, American Five Eighty seven heavy.
0909:09 HOT-2	really ticked.		
0909:13 HOT-1	follow JAL.		
0909:17 HOT-2	these guys just uh, merged. with Japan and another j.... what's the other Japan company?		
0909:20 HOT-1	All Nippon?		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0909:21 HOT-2	no, not Nippon, there's another one I think. they merged this morning.		
0909:27 HOT-1	really.		
0909:27 HOT-2	[sound of yawn] yeah. the big news, Japan and what other Japanese airline is I *, I don't think it was All Nippon it was uh....		
0910:15 HOT-1	crossing two two right. clear on the left.		
0910:20 HOT-2	on the right.		
		0910:27 TWR	Japan Airlines forty seven heavy, Kennedy tower, runway three one left, taxi into position and hold.
		0910:32 JAL47	runway three one left, taxi into position and hold.
		0910:34 TWR	PD fourteen uh, caution wake turbulence, there'll be uh, several heavy jets departures over Canarsie momentarily.
		0910:41 PD14	roger that PD fourteen, we'll be looking.
0910:44 CAM	[sound of clunk]		
0910:51 PA-1	well ladies and gentlemen, at long last, we are number two for takeoff. uuh, toward the northwest today. immediately after takeoff we'll be in a left hand turn heading for the shoreline		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
	and uh, getting ourselves pointed southbound. 'bout another two or three minutes it'll be our turn to go. flight attendants, prepare for takeoff please.		
		0911:08 TWR	Japan Airlines forty seven heavy, wind three zero zero at one zero runway three one left, cleared for takeoff.
		0911:12 JAL47	runway three one left, cleared for takeoff, Japan Air forty seven heavy.
0911:27 HOT-1	yeah, I guess that controller was bent outta shape, huh?		
0911:29 HOT-2	ticked.		
0911:33 HOT-1	can't hardly blame him.		
0911:35 HOT-2	ah, I'm sure.		
		0911:36 TWR	American five eighty seven heavy Kennedy tower, caution wake turbulence runway three one left, taxi into position and hold.
		0911:41 RDO-2	position and hold three one left, American five eighty seven heavy.
0911:44 HOT-1	position and hold. I see traffic out there. hopefully he's going to the right side.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0911:55 HOT-2	takeoff briefing we got, PA?		
0911:57 HOT-1	[sound of single chime]		
0911:58 HOT-1	complete.		
0912:00 HOT-2	ignition.		
0912:05 HOT-1	Reach? ignition's off.		
0912:07 HOT-2	bleeds?		
0912:09 HOT-1	bleeds are on.		
0912:12 HOT-1	he say Reach?		
0912:13 HOT-2	Reach four oh one or something like that yeah.		
0912:16 HOT-1	Air Force is coming to Kennedy.		
0912:19 HOT-2	is that a Reach, that's the Air Force?		
0912:20 HOT-1	yeah, that's the....		
0912:20 HOT-2	transponder?		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0912:21 HOT-1	TARA.		
0912:22 HOT-1	it's a tanker.		
0912:24 HOT-1	the call sign. that looks like a seven four out there though.		
0912:30 HOT-1	all right, position and hold on the uh, left side.		
0912:36 HOT-1	final appears clear, transponder is TARA....		
0912:38 HOT-2	brake.... thank you. brake fans?		
0912:39 HOT-1	fans are off.		
0912:40 HOT-2	lights to go. I'm gonna make... left turn two twenty. go out the Bridge five thousand feet's the top. if we have a problem, I'll clean it up at six.... ten.... left traffic for this runway....		
		0913:05 TWR	Japan Air forty seven heavy, fly the Bridge Climb, contact New York departure, good morning.
		0913:10 JAL47	Bridge Climb, switch to departure, Japan Air four seven, good morning.
0913:21 HOT-1	you have the airplane.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0913:21 HOT-2	I got the brakes.		
0913:22 HOT-1	I have the radios.		
		0913:27.6 TWR	American five eight seven heavy, wind three zero zero at niner, runway three one left, cleared for takeoff.
		0913:31.7 RDO-1	cleared for takeoff, American ah, five eight seven heavy.
0913:35.3 HOT-2	you happy with that distance?		
0913:38.5 HOT-1	aah, he's.... we'll be all right once we get rollin'. he's supposed to be five miles by the time we're airborne, that's the idea.		
0913:45.5 HOT-2	so you're happy. lights?		
0913:47.1 HOT-1	yeah, lights are on.		
0913:47.8 HOT-2	takeoff check's complete, I'm on the roll. thank you sir.		
0913:53.5 HOT-1	thrust SRS, runway.		
0913:54.7 CAM	[sound similar to increase in engine RPM]		
0914:03.8 HOT-2	you got throttles.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0914:08.9 HOT-1	eighty knots, thrust blue.		
0914:23.4 HOT-1	V one.		
0914:24.3 HOT-1	rotate.		
0914:25.7 HOT-1	V two		
0914:28.5 HOT-1	V two plus ten.		
0914:30.4 HOT-2	positive rate, gear up please.		
0914:31.5 HOT-1	gear up.		
0914:33.1 CAM	[sound of thump and two clicks]		
0914:38.5 HOT-2	heading select.		
0914:41.9 HOT-1	clear left.		
		0914:42.6 TWR	American five eight seven heavy, turn left. fly the Bridge Climb. contact New York departure. good morning.
		0914:48.3 RDO-1	American five eighty seven heavy, so long.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0914:51.4 HOT-1	gear's up.		
0914:52.5 HOT-2	check speed, level change.		
0914:54.8 HOT-2	flaps up.		
0914:56.5 HOT-2	climb power.		
0914:57.1 CAM	[sound of click]		
		0915:00.0 RDO-1	ah New York, American five eighty seven heavy, thirteen hundred feet, we're climbing to five thousand.
		0915:04.7 DEP	American five eight seven heavy, New York departure. radar contact. climb maintain one three thousand.
		0915:10.2 RDO-1	one three thousand feet, American five eighty seven heavy.
0915:14.6 HOT-2	one three I see, slats retract.		
0915:16.5 HOT-1	slats.		
0915:17.2 CAM	[sound of several clicks]		
0915:28.5 HOT-1	clean machine.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0915:28.5 HOT-2	[sound similar to yawn] thank you.		
		0915:36.4 DEP	American five eighty seven heavy, turn left, proceed direct WAVEY.
0915:37.3 HOT-1	[sound of brief squeak and a rattle]		
		0915:41.0 RDO-1	uh, we'll turn direct WAVEY, American five eighty seven heavy.
0915:44.4 HOT-2	left turn direct WAVEY....		
0915:44.7 HOT-1	little wake turbulence, huh?		
0915:45.6 HOT-2	...yeah.		
0915:47.3 HOT-2	[sound similar to five sets of stabilizer trim switch clicks]		
0915:48.2 HOT-2	two fifty thank you.		
0915:51.8 CAM	[sound of a thump]		
0915:52.3 CAM	[sound of click]		
0915:52.9 CAM	[sound of two thumps]		
0915:54.2 HOT-2	max power. [spoken in strained voice]		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0915:55.0 HOT-1	you all right?		
0915:55.3 HOT-2	yea, I'm fine.		
0915:56.3 HOT-1	hang onto it. hang onto it.		
0915:56.6 CAM	[sound of snap]		
0915:57.5 HOT-2	let's go for power please.		
0915:57.7 CAM	[sound of loud thump]		
0915:58.5 CAM	[sound of loud bang]		
0916:00.0 HOT-2	[sound similar to human grunt]		
0916:00.2 CAM	[roaring noise starts and increases in amplitude]		
0916:01.0 HOT-2	holy #.		
0916:01.0 CAM	[sound similar to single ECAM chime]		
0916:02.0 CAM	[sound similar to single ECAM chime]		
0916:04.4 CAM	[sound similar to stall warning repetitive chime for 1.9 seconds]		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
0916:06.2 CAM	[roaring noise decreases and ends]		
0916:07.5 HOT-2	what the hell are we into *. we're stuck in it.		
0916:07.5 CAM	[sound similar to continuous repetitive chimes for one second]		
0916:09.6 CAM	[sound similar to continuous repetitive chimes for three seconds]		
0916:12.8 HOT-1	get out of it, get out of it.		
0916:14.8 END of RECORDING END of TRANSCRIPT			