

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



SPECIALIST'S FACTUAL REPORT OF INVESTIGATION

MIA01FA029

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

March 8, 2001

Cockpit Voice Recorder - 12

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

A. ACCIDENT

Location: Miami International Airport, Miami, Florida
Date: November 20, 2000
Time: 1222 eastern standard time (EST)
Aircraft: American Airlines Inc., flight 1291, Airbus A300B4, N14056
NTSB Number: MIA01FA029

B. GROUP

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

Member: TR Proven
Air Safety Investigator
Federal Aviation Administration

Member: Captain Rudy Canto
Director, Flight Operations Technical
Airbus

Member: Captain Ray B. Hays
A-300 Check Airman
American Airlines

Member: Captain Ben Rich
National Safety Committee
Allied Pilots Association, American Airlines

Member: Lonnie Glover
National Safety Committee
Association of Professional Flight Attendants
American Airlines

C. SUMMARY

A Fairchild model A-100A cockpit voice recorder (CVR), s/n 50909, was brought to the audio laboratory of the National Transportation Safety Board on November 21, 2000. The Cockpit Voice Recorder committee convened on November 29, 2000. A transcript was prepared of the entire 30:59 minute recording and is attached to this report.

D. DETAILS OF INVESTIGATION

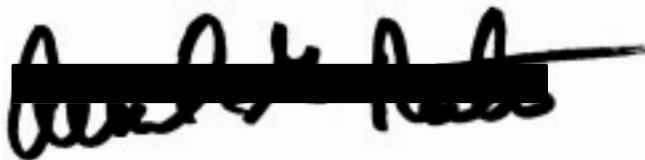
The exterior of the CVR showed no evidence of structural damage. The interior of the recorder and the tape sustained no apparent heat or impact damage. A Dukane underwater locator beacon (ULB) was installed and when tested in the laboratory, was found to operate satisfactorily.

The recording consisted of four channels of fair to poor quality audio information. One channel contained the cockpit area microphone audio information. Due to the high ambient noise level and relative low recording volume, very little data were obtained. Two other channels contained the Captain's and First Officer's audio panel information. The Captain's channel was somewhat over-modulated causing distortion and clipping to occur. The high recording level of the Captain's boom microphone audio masked some of his radio transmissions. The First Officer's audio was recorded at a very low level so most of his conversation and radio transmissions were difficult or impossible to hear. The fourth contained information similar to the First Officers channel. Timing on the tape was established using the data from the FAA ATC transcript and coordinated with microphone keying recorded by the flight data recorder.

The flight 1291 crew experienced a pressurization problem shortly after departing the Miami International Airport. During the return to Miami, the crew detected a cabin smoke alert and declared an emergency. The transcript started at 1155:28 EST, and continued uninterrupted until 1226:27 EST after the crew had shut down the

engines and auxiliary power unit (**APU**). The transcript contained the initial stages of climb, the descent, and landing. The recording ended shortly after the crew had conducted an evacuation and secured the aircraft on the taxiway.

As part of the Safety Board's accident investigation process, the pilots were invited to review the CVR transcript and suggest corrections or additions. To date they have not accepted the invitation.

A handwritten signature in black ink, which appears to read "Albert G. Reitan", is written over a solid black rectangular redaction box.

Albert G. Reitan
Transportation Safety Specialist (CVR)

Attachment:

Transcript of a Fairchild A-100A cockpit voice recorder (CVR), s/n 50909, installed on an American Airlines A-300B4, N14056, which was involved in an in-flight emergency and subsequent emergency landing and evacuation at the Miami International Airport, Miami, Florida, on November 20, 2000.

LEGEND

HOT	Crewmember hot microphone voice or sound source
RDO	Radio transmission from accident aircraft
CAM	Cockpit area microphone voice or sound source
O 2	Voice or sound transmitted through crew oxygen mask microphone
PA	Voice transmitted over aircraft public address system
INT	Voice transmitted over aircraft interphone system
DEP	Radio transmission from Miami departure controller
APR	Radio transmission from Miami approach controller
TWR	Radio transmission from Miami tower controller
FWD	Radio transmission from AA Ft. Worth dispatch
FC	Radio transmission from Miami Fire Command
RMP37	Radio transmission from Miami Fire Emergency Vehicle #37
-B	Voice or sounds heard through both pilot channels
-1	Voice identified as Pilot-in-Command (PIC)
-2	Voice identified as Co-Pilot (SIC)
-3	Voice identified as male flight attendant
-4	Voice identified as female flight attendant
-5	Voice identified as aircraft mechanical voice
-?	Voice unidentified
*	Unintelligible word

(Continued next page)

@	Non-pertinent word
#	Expletive
---	Break in continuity
O	Questionable insertion
[]	Editorial insertion
...	Pause

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

Note 2: For **ATC** transmissions, 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.

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
1155:28 START of RECORDING START of TRANSCRIPT			
1155:33 CAM-2	it's all right too.		
		1155:33 DEP	American twelve ninety one heavy, contact Miami center now one three four point six. tell 'em you're doing two hundred fifty knots.
		1155:38 RDO-1	thirty four six , good day.
		1156:02 RDO-1	Miami, American twelve ninety one level one six thousand, two hundred fifty knots.
		1156:09 CTR	American twelve ninety one, Miami center roger. stand by for higher.
1156:21 HOT-1	thank you.		
		1156:23 CTR	American twelve ninety one, climb and maintain flight level two three zero.
		1156:27 RDO-1	leaving sixteen for two three zero, American twelve ninety one.
1156:31 INT-1	holy #, we're depressurizing. get down. *.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1156:34 CAM	[sound similar to triple chime auto-pilot disconnect signal]		
1156:36 HOT-1	hold it, hold it, hold it, hold it. we're *, we're *....		
1156:39 CAM-2	* all right.		
1156:40 HOT-1	hold it, hold it.		
1156:41 CAM-2	all right.		
1156:42 HOT-1	let's check everything.		
1156:43 CAM	[chime similar to manual activation of cabin to cabin call signal]		
		1156:44 RDO-1	and Miami, American uh, twelve ninety one. we need to uh, descend down to ten thousand for a few minutes here.
		1156:49 CTR	you need to go back to ten?
		1156:50 RDO-1	affirmative.
		1156:52 CTR	American twelve ninety one roger uh, descend an maintain one zero thousand.
		1156:55 RDO-1	we're out of sixteen for twelve, American twelve ninety one.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1156:58 HOT-1	go down to ten. we've lost pressuriz.... don't, don't rush, don't rush man. get the oxygen on.		
1157:05 02-B	[sound similar to both pilots breathing through oxygen masks]		
		1157:28 CTR	*** ninety one uh, if you have any problems **** back up.
		1157:33 RDO-1	American twelve ninety one, we're *, we had a pressurization problem here. we're gonna check it out and uh, let you know what's going on.
		1157:41 CTR	*** ninety one ****
1157:42 02-1	outflow valve wide open.... the outflow valve's wide open. we got a problem.		
1157:44 CAM-4	***** really.		
1157:56 CAM-2	we know.		
1157:58 CAM	[sound similar to flight attendant call chime]		
1157:58 CAM-2	we got it.		
1158:14 CAM	[sound similar to master caution alert]		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		1158:30 CTR	American twelve ninety one uh, fly heading of uh, one zero zero please.
1158:36 02-1	you got it?		
		1158:37 RDO-2	one zero zero, roger.
		1159:09 CTR	and American twelve ninety one when you're ready to climb uh, don't start your climb. I do have some other traffic. just advise me please.
1159:12 CAM	[sound similar to altitude alert signal]		
		1159:16 RDO-2	ah roger that. we'll call you. we're gonna need this heading for a little while. we'll probably remain here. we'll call you back.
		1159:22 CTR	roger.
1159:25 CAM	[all remaining cockpit and radio conversations sound as though oxygen mask microphones are no longer used]		
1159:29 HOT-1	ten thousand.		
1159:32 HOT-1	we've got a pressurization problem. I don't know if you can feel it in your ears. okay, the airplane has lost pressurization so we're gonna call you. it looks like manual might be working. ** outflow valve is.... ***.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		1159:55 RDO-1	and Miami, American twelve ninety one.
		1159:60 CTR	American twelve ninety one, go ahead... American twelve ninety one, go ahead... American twelve ninety one, go ahead.
		1200:14 RDO-1	yeah, we are unable to control the pressurization *. we're gonna have to go back to Miami *, get this problem fixed.
		1200:25 CTR	and American twelve ninety one roger uh, fly heading of uh, just fly heading one one five for now and uh, stand by.
		1200:32 RDO-1	'kay, heading one one five. thanks.
1201:07 CAM-1	you got the radios. I'm gonna contact dispatch.	1201:35 RDO-1	Ft. Worth dispatch, American, twelve ninety one we're lookin' for desk thirty eight.
1201:43 CAM-2	we're goin'.		
1201:43 CAM-1	we're goin' back.		
1201:44 CAM-3	okay, I'll make a PA.		
1201:45 CAM-1	yeah, make a PA, ** is there....		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1201 :49 HOT-1	... * emergency, okay uh, we'll be on the ground in about fifteen minutes, okay. uh, we just had a problem. tell 'em, tell 'em that the air conditioning system ***.... okay.	1202:01 CTR	****, American twelve ninety one uh, do you need any assistance uh, at the airport or anything from us?
1202:06 HOT-1	no.	1202:07 RDO-2	that's negative for twelve ninety one.
		1202:09 CTR	okay roger and uh, come left to direct JUNUR be a right turn direct JUNUR he in a....
		1202:14 RDO-1	Ft. Worth dispatch uh, American twelve ninety one desk thirty eight.
		1202:19 FWD	twelve ninety one go ahead for thirty eight.
		1202:21 RDO-1	how you doin' um uh, we just departed Miami an * passing up through fourteen thousand feet uh, we lost pressurization uh, both auto controllers went on us uh, manual. seems to uh, have gotten it out. we lost control of the forward outflow valve uh, we're gonna go back uh, get some uh.... uh, maintenance uh, * going back to Miami now.
		1202:45 FWD	okay understand, twelve ninety one comin' back to uh, back to Miami. you got a EOM?

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		1202:50 RDO-1	yeah, be on the ground in about fifteen uh, twenty minutes.... and * negative emergency.
		1203:01 FWD	okay, negative on emergency, copy.
1203:18 HOT-1	you got it 'cause I'm not....		
1203:19 CAM-2	roger.		
1203:20 HOT-1	right. I was talking to dispatch let 'em know what was going on.		
1203:59 CAM-2	* right turn cleared Miami.		
1204:09 CAM	[sound of "cavalry charge" similar to auto-pilot disconnect signal]		
1204:13 CAM	[sound of "cavalry charge" similar to auto-pilot disconnect signal]		
1204:33 HOT-1	** position manual control.		
1204:40 CAM-?	****		
1204:57 CAM-2	twenty point five.		
1205:02 HOT-1	I'm listening now.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1205:03 CAM-2	'kay.		
1205:07 INT-3	*, hello captain.		
		1205:11 RDO-2	Miami approach, American twelve ninety one with you over ten thousand.
		1205:15 APR	American twelve ninety one heavy, Miami approach good afternoon. expect runway three zero. Miami information Uniform is current. the altimeter's three zero one zero.
		1205:22 RDO-2	three zero one zero expect three zero.
		1205:27 APR	twelve ninety one heavy, you can continue the right turn to a three three zero heading, three thirty intercept the three zero localizer.
		1205:34 RDO-2	three thirty to intercept the loc American twelve ninety one.
		1205:37 APR	the reason you're returning to Miami is due to a pressurization problem?
1205:40 HOT-1	yep, I'll get it in there.		
1205:42 CAM-2	thanks Neal for getting that for me.	1205:42 RDO-2	affirmative.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		1205:44 APR	do you require any assistance when you land?
		1205:44 RDO-2	that's negative. we'll need no assistance and uh, we'll • from there.
		1205:48 APR	okay, thank you.
1205:54 HOT-1	okay. we **....		
1206:15 HOT-1	got to change the destinationso you can get your localizer thirty....		
1206:19 CAM-2	yeah, I was about to.... in the middle of doing that when they gave me the turn.		
1206:23 HOT-1	okay. I get the uh, thing set up for you.		
		1206:27 APR	American twelve ninety one heavy, maintain four thousand.
		1206:29 RDO-2	goin' down to four thousand, American twelve ninety one.
1206:32 CAM-2	thank you.		
1206:33 HOT-1	four. localizer to thirty. I'll get it out for you.... one eleven seven.... three oh four.... you set.... three thousand 'til OLDIE.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1206:57 CAM-2	okay, I'll do it manually. visual. hope you got the loc.		
1207:25 PA-1	well ladies and gentlemen, this is captain*....		
1207:26 CAM	[sound of "cavalry charge" similar to auto-pilot disconnect signal]		
1207:29 PA-1	we needed to turn back to Miami uh, we've had a problem with our air conditioning system on the aircraft. **** continue to Port au Prince. we're heading back to Miami now. should be on the ground in about fifteen minutes uh. ***** continue the flight.		
1207:42 CAM-3	don't smell *****.		
1207:50 CAM-2	I got a loc star, I want to make sure it is correct.		
1208:00 HOT-1	did he clear the intercepts?		
1208:01 CAM-2	yes he did.		
1208:02 HOT-1	okay, you're on. I'm showing it good.... you could direct OLDIE.		
1208:12 CAM-2	yeah, clear some of that out.		
1208:29 CAM-2	need to listen up 'cause I think I'm having trouble.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		1208:31 APR	American twelve ninety one is two two miles from OLDIE. cross OLDIE at three thousand or above. cleared localizer approach runway three zero.
1208:36 HOT-1	I got it.		
		1208:37 RDO-1	three thousand or above. cleared for the localizer three zero, American twelve ninety one.
1208:41 HOT-1	yeah I'm listening up to you.		
1208:42 HOT-1	I, I just had to had to call di sp ...		
1208:42 CAM-2	okay great. I'm gonna keep talking to him. you keep doing your thing.		
1208:46 HOT-1	okay, I got you direct OLDIE.		
1208:47 CAM-2	slats extend.		
1208:48 HOT-1	three thousand. ***.		
1208:49 CAM-2	get 'em out.		
1208:50 HOT-1	***		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1209:07 HOT-1	what the #'s the cabin altitude, *.		
1209:30 CAM-2	my throttles.		
1210:16 HOT-1	cabin pressure • control.		
1210:47 HOT-1	I'll never get this # thing down.		
1210:57 HOT-1	* altitude.		
1211:01 CAM-2	four sixty.		
1211:06 CAM	[sound similar to altitude alert signal]		
1211 :12 CAM-2	one to go.		
1211 :16 HOT-1	look at this thing, look at this. this cabin altitude * that ain't. it's showin'....		
1211:22 CAM-2	hopefully we're not that.		
1211:24 HOT-1	no we're not. it can't be....		
1211 :25 CAM-2	yeah.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1211:26 HOT-2	...you know we're depressurized. it can't be that. it's just screwed up. that could be the problem.		
1211:32 CAM-2	blow the top off.		
1211:34 HOT-1	comin' up on three thousand.		
1211:41 CAM	[sound similar to increase in engine RPM]		
1211:46 HOT-1	I can feel my ears popping now.		
1211:47 CAM-2	yep, you know what happened? I switched the air conditioning heat it up and it went right as I switched the air conditioning.		
1211:53 HOT-1	it's feeling warm in here too.		
1211:54 CAM-2	cause I took it <i>off</i> uh.... max cool....		
1211:57 HOT-1	** packs, packs look fine though I mean we're getting air....		
1212:00 CAM-2	...that's when it happened, I took it <i>off</i> of max cool and I turned 'em up and that's when it happened.		
1212:05 HOT-1	this outflow is orange it's full uh, wide open.		
1212:09 CAM	[sound similar to increase in engine RPM]		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1212:16 CAM	[ding dong sound similar to flight call chime starts and continues to end of recording]		
1212:19 HOT-1	this thing is staying pegged up here. [sound of tapping]		
1212:22 HOT-1	what's that?		
1212:23 CAM-?	•		
1212:24 HOT-1	no.		
1212:28 CAM-2	that working?		
1212:28 HOT-1	no, no, I'm not doing that.		
1212:31 CAM	[sound similar to lavatory aural smoke warning signal starts and continues]		
1212:32 CAM-4	smoke in the lav.		
1212:34 CAM-4	smoke alarm.		
1212:35 CAM-2	#. smoke in the back.		
1212:36 HOT-1	there's smoke?		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1212:37 CAM-3	in the back.		
1212:37 CAM-4	smoke in the back.		
1212:38 CAM-2	I'm going to hurry it up.		
1212:40 HOT-1	no smoke?		
1212:43 CAM	[sound similar to decrease in engine RPM]		
1212:44 HOT-1	they got no smoke.		
1212:46 CAM-2	no smoke?		
1212:46 HOT-1	they're getting the alarm for smoke.		
1212:48 CAM-2	oh.		
1212:48 HOT-1	we got a bunch of # going on here.		
1212:49 CAM-2	all right. I'm gonna speed it up. I'm not gonna take my time.		
1212:51 HOT-1	don't speed it up. they say there's no smoke.		
1212:52 CAM-2	all right.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1212:54 HOT-1	they're just getting the alarm going off.... I don't see any other problems.		
1213:03 CAM-2	told him we wouldn't need any ground or anything. you want to change that.... in case there is a fire?		
1213:10 CAM-4	***		
1213:11 HOT-1	do you see any evidence of fire?		
1213:13 CAM-4	no.		
1213:13 HOT-1	no, okay. no evidence of fire. better just....		
1213:30 CAM-2	some little thing under the sink.		
1213:31 HOT-1	no let's slow it down. we don't need to rush.		
1213:33 CAM-2	all right.		
1213:34 CAM	[sound similar to decrease in engine RPM]		
1213:38 HOT-1	just goin' to end up getting high and fast and we'll # it all up, you know. so just....		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1213:50 CAM-2	'kay, at OLDIE we can go down to fifteen hundred.... fifteen, fifteen, in just a second.		
1213:58 HOT-1	fifteen hundred's the next altitude....		
1214:00 CAM-2	yes it is.		
1214:01 HOT-1	I'll stick it in there for you.		
1214:04 HOT-1	can you deactivate it?		
1214:14 CAM-2	how about fifteen, fifteen?		
1214:17 HOT-1	you know what?		
1214:18 CAM-2	what's that?		
1214:19 HOT-1	ready, holding, going to fifteen hundred. level change, fifteen flaps, thank you.		
		1214:25 APR	American twelve ninety one heavy, contact the tower one, one eight point three, good day.
		1214:27 RDO-1	eighteen three good day, American twelve ninety one.
1214:34 HOT-1	know what? I'll have a fire truck standing by in case....		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1214:36 CAM-2	yeah, I was getting ready to say the same. can't hurt.		
		1214:41 RDO-1	tower, American uh, twelve ninety one is with you inside OLDIE for three zero.
		1214:45 TWR	American twelve ninety one heavy Miami center, land runway three zero. the winds three six zero at seven. your traffic is short final.
		1214:51 RDO-1	cleared to land three zero, American twelve ninety one and uh, we would like to have uh, fire trucks standing by um, uh, declaring an emergency at this time, um we are getting some warnings of a fire in all, although there is no evidence of a fire at this time.
1215:06 CAM	[sound similar to lavatory aural smoke warning signal stops]		
1215:11 CAM	[sound of unintelligible conversation in background]		
		1215:12 TWR	American twelve ninety one heavy roger. you're cleared to land the winds three six zero at seven. do you have souls on board and uh, how much fuel?
		1215:24 RDO-1	standby.... fifty thousand pounds of fuel.
1215:31 HOT-1	are, are you going down?		
1215:32 CAM-2	yes.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		1215:33 TWR	three thousand?
1215:34 HOT-1	you're cleared to fifteen hundred.		
1215:38 HOT-1	uh, I'll get it. you gotta get down. flaps twenty, gear down.		
1215:42 CAM	[sound similar to landing gear operation]		
		1215:49 TWR	if it's too much for you, that's okay, American twelve ninety one. we need the souls on board and the fuel remaining but
		1215:55 RDO-1	yeah, we're fifty thousand pounds of fuel on board.
1216:07 CAM-2	thirty forty.		
1216:09 HOT-1	thirty forty.... we give you one thirty six. there you go.		
1216:17 HOT-1	you're a little high.		
1216:18 CAM-2	ya, I'm trying to bleed off some of the speed.		
1216:24 HOT-1	get down first then we'll get the speed off.		
1216:29 HOT-1	ah see, I don't want you to get high like this. **. cleared to land.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
		1216:45 RDO-1	one thirty on the souls on board, one thirty.
		1216:48 TWR	thank you.
		1216:51 TWR	the wind's three five zero at niner
		1216:54 RDO-1	thank you.
1216:56 HOT-1	'kay, you're good. on, on glide slope.		
1217:03 HOT-1	five hundred. you're sinkin' thousand. plus ten.		
1217:08 HOT-1	four hundred. slightly on the right side.		
1217:20 HOT-1	two hundred. you're lined up on the right.		
1217:22 CAM-2	yeah, roger that.		
1217:25 HOT-1	little low.		
1217:27 HOT-1	one hundred.		
1217:30 CAM-5	fifty.		
1217:31 CAM-5	forty.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1217:32 CAM-5	thirty.		
1217:34 CAM-5	twenty.		
1217:37 CAM-5	ten.		
1217:39 CAM	[sound similar to decrease in engine RPM]		
1217:43 CAM	[sound similar to aircraft touching down on runway]		
1217:46 HOT-1	reverse.		
1217:50 HOT-1	two reversers.		
1217:53 CAM	[sound similar to increase in engine RPM]		
1217:54 HOT-1	hundred knots.		
1217:57 HOT-1	eighty.		
1217:59 CAM	[sound similar to decrease in engine RPM]		
1218:01 HOT-1	I got it.		
1218:04 CAM	[sound of chime similar to master caution alert signal]		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1218:21 CAM-2	twenty one eight, I've got it. I've gotcha from here.	1218:07 TWR	American twelve ninety one heavy, do you require any assistance?
1218:22 HOT-1	yeah.	1218:10 RDO-1	would like uh, fire trucks out here please uh, just to look over the aircraft to see if there's any evidence of fire.
1218:24 CAM	[sound of clicks]	1218:15 TWR	okay, uh yeah, they're coming. * switch to ground control one * so you can hear what they're saying. I'll tell ground about it.
1218:24 CAM-2	I'll take care of the check list.		
1218:32 CAM	[sound similar to altitude alert signal]		
1218:36 CAM	[sound similar to stabilizer trim-in-motion "whooper"]	1218:34 RDO-2	ground American twelve ninety one's with you.... clearing the active.
		1218:38 GND	American twelve ninety one heavy, roger the fire equipment is right there. do you have any uh, specific areas you're looking at.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1218:40 CAM	[sound similar to stabilizer trim-in-motion "whooper"]		
1218:43 CAM-2	you know we got indications of a fire. we lost pressurization, so there may be some other things going on.		
1218:54 CAM-2	boss, what do you think about that? yeah nay?		
1218:56 HOT-1	what?		
1218:57 CAM-2	APU.		
1218:58 HOT-1	yeah, light it up.		
1219:12 HOT-1	Jose		
1219:15 CAM	[sound of click]		
1219:18 CAM	[change of pattern in cabin chime similar to manual activation of cockpit to cabin call signal]		
1219:20 HOT-1	Jose.... hello? this, this is Neal up in the front. would you guys please check the lavs see if you have any * indication of fires anywhere?		
		1219:30 RDO-2	plus, it's going <i>off</i> in the front but we can't tell.
1219:33 HOT-1	your lav fire. tell him we're showing a lav fire.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1219:37 CAM-2	front left?	1219:35 RDO-2	we're showing a lav fire.
1219:38 HOT-1	yep.	1219:39 RDO-2	on the front left ***.
1219:41 HOT-1	and it it was affff....	1219:43 GND	*** side of the aircraft.
		1219:45 FC	roger, we don't, we don't, see anything, ah, have him taxi to the ramp and we'll ** unit follow him in.
		1219:53 GND	twelve ninety one heavy, did you copy?
		1219:54 RDO-2	we copy.
		1219:55 GND	what gate ***?
		1219:57 RDO-2	we don't have a gate right now. if you could work out one for us, we'd appreciate it.
		1220:01 GND	okay *.

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1220:05 CAM	[sound similar to cockpit call aural]		
1220:08 CAM-2	yes.		
1220:10 HOT-1	we got a loop B fault.... hold on there.		
1220:15 CAM-2	roger that. lav L, she saying it smells like smoke.		
		1220:20 RDO-1	okay, we're evacuating.
1220:20 HOT-1	run the evacuation checklist.		
1220:30 PA-1	ladies and gentlemen, we will be evacuating the aircraft. wait for the signal and uh, we will be evacuating the aircraft. please wait for the signal.		
		1220:32 RDO-2	ground, American twelve ninety one ** going to evacuate. we do have a fire.
		1220:36 GND	say again.
		1220:36 RDO-2	we have a fire, we're going to evacuate right here.
		1220:39 FC	fire command to ground. he said he does have a fire. they are evacuating the aircraft at this time.
1220:43 HOT-1	run the checklist.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1220:43 CAM-2	brakes parked, fuel levers? off.		
1220:46 HOT-1	off.		
1220:47 CAM-2	* turn 'em off?		
1220:48 HOT-1	turn 'em off.		
1220:50 CAM-?	* gonna evacuate the aircraft?		
1220:51 CAM-2	ram air switch, on.		
1220:52 CAM	[sound similar to cockpit call aural]		
1220:55 CAM-2	aaaaah.		
1220:56 HOT-1	that's a hard one.... it's over here. no, ram air, wait.		
1221:04 CAM-2	roger that, ram air switch <i>off</i> ? flight attendants notified?		
1221:07 HOT-1	they're notified.		
1221:07 CAM-2	emergency exit lights on?		
1221:09 HOT-1	on.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1221:11 CAM-2	evacuation signal, command? fuel isolation valve switches off.		
1221:15 CAM	[sound similar to evacuation signal starts and continues]		
1221:17 HOT-1	evacuate.		
1221:22 CAM-2	(engine), APU fire handles pulled?		
1221:26 CAM-4	* slides.		
1221:27 CAM-?	want to (blow or deploy) the slides?		
1221:28 CAM	[brief interruption in CVR audio similar to aircraft power transfer]		
1221:30 CAM-2	fire bottles....		
1221:31 CAM	[sound of chime similar to master caution alert signal]		
1221:32 CAM	[sound of a series of chimes similar to master warning signal]		
1221:33 CAM-2	fire bottles if required?		
1221:37 HOT-1	fire bottles required, not required.		
1221:39 CAM-2	pulling circuit breaker number two trip?		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1221:45 HOT-1	these fire handles pulled, all of 'em?		
1221:47 CAM-2	nope, it just says uh, engine. we had engine and fire APU fire handles pulled?		
1221:53 CAM-4	none of the doors will open.		
1221:55 CAM	[sound of chime similar to master caution alert signal]		
1221:55 CAM-2	aaand, fire bottles if required, no. voice recorder circuit breaker pulled.		
1222:02 HOT-1	• what else?		
1222:03 CAM-2	uuuh, crew evacuation responsibilities.		
1222:05 HOT-1	** circuit breaker.		
1222:08 CAM	[sound similar to evacuation signal diminishes in volume]		
1222:11 CAM-3	we pressurized?		
1222:12 CAM-?	**		
1222:13 HOT-1	what else?		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1222:15 HOT-1	what else?		
1222:18 CAM-2	I'll find the circuit breaker, that's it. that completes the check-list.		
1222:21 CAM-1	okay I'm goin in the back.		
1222:22 CAM-2	all right.		
1222:22 CAM-1	you got everything?		
1222:23 CAM-2	* find this checklist.		
1222:24 CAM-4	the doors won't open.		
1222:24 CAM-1	what?		
1222:25 CAM-4	the doors won't open.		
1222:26 CAM-?	doors won't open?		
1222:30 CAM-2	might be the pressurization.		
1222:31 CAM-?	pressure.		
1222:32 CAM-1	pressure is, ram air switch is open.		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1222:35 CAM-?	pressure?		
1222:36 CAM-?	shh....		
1222:38 CAM-1	it's depressurizing, it's depressurizing.		
1222:44 CAM-1	the ram air switch is on.		
1222:48 CAM-1	turn the packs off. engines are off.		
1222:53 CAM	[loud sound similar to rushing air for two seconds]		
1222:57 CAM-?	#.		
1222:59 CAM-?	something's up.		
1223:00 CAM-?	let's go.		
1223:00 CAM	[unidentified loud ratcheting sound]		
1223:01 CAM-?	Jose went out? ***		
1223:03 CAM-?	[several unintelligible comments]		

INTRA-COCKPIT COMMUNICATION

AIR-GROUND COMMUNICATION

TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1223:08 CAM-?	stand back, stand back, stand back.		
1223:09 CAM-?	we're depressurized now.		
1223:13 CAM-1	get 'em out.		
1223:15 CAM	[sound similar to cabin door actuation and slide inflation]		
1223:22 CAM	[sounds similar to numerous cabin crew evacuation commands start and continue]		
1223:33 CAM-1	help 'em off.		
		1223:36 R MP 37	ramp thirty seven to ground.
		1223:37 GND	ramp thirty seven, ground.
		1223:39 R MP 37	close runway one two three zero at this time. close one two three zero this time.
		1223:42 GND	thank you, we're staying off of it.
1223:44 CAM	[sounds similar to numerous cabin crew evacuation commands continue]		
1224:32 CAM	[sounds similar to cabin crew evacuation commands diminish]		

INTRA-COCKPIT COMMUNICATION		AIR-GROUND COMMUNICATION	
TIME & SOURCE	CONTENT	TIME & SOURCE	CONTENT
1224:57 CAM-?	okay, nobody's here *?		
1224:58 CAM-?	no.		
1224:59 CAM-?	no.		
1224:60 CAM-?	okay, that's it.		
1225:07 CAM-2	oh #.		
1225:10 CAM	[more sounds similar to cabin crew evacuation commands]		
1226:13 CAM-?	all right, let's go.		
1226:27 END of RECORDING END of TRANSCRIPT			