

**NATIONAL TRANSPORTATION SAFETY BOARD  
Office of Research and Engineering  
Vehicle Recorder Division  
Washington, D.C. 20594**



**GROUP CHAIRMAN'S FACTUAL REPORT OF INVESTIGATION**

**DCA19LA134**

**By  
Joseph A. Gregor**

**WARNING**

The reader of this report is cautioned that the transcript of a cockpit voice recorder audio recording is not a precise science but is the best product possible from a Safety Board group investigative effort. The transcript or parts thereof, if taken out of context, could be misleading. The 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 Recorder Division

June 9, 2022

## **Cockpit Voice Recorder**

**Group Chairman's Factual Report**  
**By Joseph A. Gregor**

### **1. EVENT SUMMARY**

Location: New York, NY  
Date: April 10, 2019  
Aircraft: Airbus A321, Registration N114NN  
Operator: American Airlines, Flight 300  
NTSB Number: DCA19LA134

On 10 April, 2019, at about 2040 EDT, an Airbus A321, registration N114NN, operating as American Airlines flight 300 from JFK to LAX, experienced a roll during takeoff from runway 31L and hit a runway distance marker with the left wingtip. The flight crew corrected the roll, continued the climb, and safely returned to the airfield approximately 28 minutes later. Damage to the wing tip and leading edge was discovered at the gate during passenger unloading. Subsequent examination of the left wing structure revealed substantial damage as a result of the wing contact with the ground and distance marker. A CVR Group convened on April 29, 2019 and a transcript with summary was prepared for the 2-hour, 4-minute digital recording (see attached).

### **2. GROUP**

Chairman: Joseph A. Gregor  
Electronic Engineer  
National Transportation Safety Board

Member: Patrick Lusch  
Air Safety Investigator  
Federal Aviation Administration

Member: Captain Craig Hildebrandt  
Senior Director, Safety & Flight Operations Technical Affairs  
Airbus

Member: Captain John B. Carey  
National Safety Committee – Accident Investigations  
Allied Pilots Association

Member: Captain John Witten  
Airbus Technical Pilot  
American Airlines

### 3. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Division received the following CVR:

Recorder Manufacturer/Model: **L-3/Fairchild FA2100-1026-02**  
Recorder Serial Number: **946872**

#### 3.1 CVR Carriage Requirements

Per federal regulation, turbine engine powered aircraft operating under 14 CFR Part 121 must be equipped with a CVR that records a minimum of the last 2 hours of aircraft operation; this is accomplished by recording over the oldest audio data. When the CVR is deactivated or removed from the airplane, it retains only the most recent 2 hours of CVR operation. The accident aircraft was manufactured in 2014.

#### 3.2 Recorder Description

This model CVR, the L-3/Fairchild FA2100-1026-02, records a minimum of 120 minutes of digital audio stored on solid state memory modules. Four channels are recorded: one channel for each flight crew, one channel for a cockpit observer, and one channel for the cockpit area microphone (CAM).

#### 3.3 Recorder Damage

Upon arrival at the laboratory, it was evident that the CVR had not sustained any heat or structural damage and the audio information was extracted from the recorder normally, without difficulty.

#### 3.4 Audio Recording Description

Each channel's audio quality is indicated in Table 1.<sup>1</sup> Channel number three did not contain any audio information (nor was it required by federal regulations).

**Table 1: Audio Quality.**

Channel Number	Content/Source	Quality	Duration (nominal)
1	Pilot	Good	<<120min>>
2	First Officer (FO)	Good	<<120min>>
3	Other	Good	<<120min>>
4	CAM	Good	<<120 min>>

<sup>1</sup> See attached CVR Quality Rating Scale.

### **3.5 Timing and Correlation**

Timing on the transcript was established by correlating the CVR events to common events on the flight data recorder (FDR). Specifically, 20 radio calls were correlated to the times recorded by the FDR for 20 separate VHF keying events. Once a correlation between the two recorders was established, a reference to eastern daylight time (EDT) was established using time recorded by the FDR.

### **3.6 Description of Audio Events**

The recording began at 1940:09 EDT with the CVR recording sounds consistent with the flight prior to the accident takeoff.

At 2040:36 EDT, during the takeoff roll, the CAM recorded a sound consistent with the wing-strike event. The remainder of the recording captured the flight departing from the airport, the crew discussing the event, the return approach and landing at JFK, and post landing activities. The recording ended at 2144:09 EDT.

The transcription and detailed summary performed by the CVR Group begins at 2021:56 with crew conversation consistent with running of the before start checklist. Verbatim transcription was made of intra-cockpit communications related to takeoff configuration and settings, flight control checks, execution of the accident flight takeoff, in-flight damage assessment, discussion related to the decision to return to JFK, and post-landing discussion of the incident.

## Attachment I

### CVR Quality Rating Scale

The levels of recording quality are characterized by the following traits of the cockpit voice recorder information:

<b>Excellent Quality</b>	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.
<b>Good Quality</b>	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.
<b>Fair Quality</b>	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.
<b>Poor Quality</b>	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.
<b>Unusable</b>	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.

**Transcript of a L-3/Fairchild FA2100-1026-02 solid-state cockpit voice recorder, serial number 946872, installed on an American Airlines Airbus A321 (N114NN), which experienced a wing-strike on takeoff from JFK Airport in New York, NY.**

## **LEGEND**

<b>APR</b>	Radio transmission from JFK approach controller
<b>CAM</b>	Cockpit area microphone voice or sound source
<b>DEP</b>	Radio transmissions from JFK departure controller
<b>HOT</b>	Flight crew audio panel voice or sound source
<b>OPS</b>	Radio transmissions from airline operations controller
<b>PA</b>	Flight crew audio from Public Address system
<b>RAMP</b>	Radio transmissions from JFK ramp personnel
<b>RDO</b>	Radio transmissions from N114NN
<b>CTR</b>	Radio transmission from New York Center controller
<b>-1</b>	Voice identified as the pilot
<b>-2</b>	Voice identified as the first officer
<b>-?</b>	Voice unidentified
<b>*</b>	Unintelligible word
<b>#</b>	Expletive
<b>@</b>	Non-pertinent word
<b>{{ }}</b>	Words translated into English from Spanish
<b>( )</b>	Questionable insertion
<b>[ ]</b>	Editorial insertion

Note 1: Times are expressed in eastern daylight time (EDT).

Note 2: Generally, 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.

Note 4: A non-pertinent word, where noted, refers to a word not directly related to the operation, control or condition of the aircraft.

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
1940:08.6			
	<b>START OF RECORDING</b>		
	<b>START OF TRANSCRIPT</b>		
19:40:08.6	[audio consistent with prior flight].		
20:21:55.5	[call for before start checklist].		
20:22:09.5	ah, we talked about runway three one left at the intersection we're good for a flaps one configuration speeds fifty, fifty six, sixty, flex of forty three degrees.		
<b>CAM-1</b>			
20:26:44.8	[flight attendant pax brief].		
20:28:45.7	[engine start].		
20:31:29.0	let me know when you're ready for the flight controls.		
<b>CAM-1</b>			
20:31:30.7	I'm ready.		
<b>CAM-2</b>			
20:31:32.4	full up, full down, neutral, full left, full right. neutral, full left, full right, * *.		
<b>CAM-2</b>			
20:31:56.6	ah, do you, do you set this now or when you do that?		
<b>HOT-1</b>			
20:32:00.2	I do that, when, after we're outta here. yeah 'cause we don't do that right now.		
<b>HOT-2</b>			

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:32:04.7 <b>HOT-1</b>	okay, ah, after start checklist.		
20:32:11.2 <b>CAM-2</b>	I set the rudder trim as part of my ah, that's supposed to be zero.		
20:32:11.6	[call for clearance to taxi].		
20:32:13.1 <b>CAM-1</b>	oh okay.		
20:33:24.5	[call for the before takeoff check].		
20:33:44.5	[FO briefly discusses his before takeoff flow].		
20:34:10.1 <b>CAM-2</b>	and before takeoff flaps?		
20:34:13.1 <b>CAM-1</b>	one planned one indicated.		
20:34:15.6 <b>CAM-2</b>	one planned one indicated. takeoff data and speeds?		
20:34:19.4 <b>CAM-1</b>	checked.		
20:34:20.8 <b>CAM-2</b>	weight?		
20:34:23.0 <b>CAM-1</b>	one eighty three eight.		



Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:34:24.3 <b>CAM-2</b>	one eighty two nine.		
20:34:28.2 <b>CAM-2</b>	ah, stab trim?		
20:34:29.9 <b>CAM-1</b>	thirty one, checked.		
20:34:32.1 <b>CAM-2</b>	thirty one. flight controls?		
20:34:33.9 <b>CAM-1</b>	been checked.		
20:34:35.8 <b>CAM-2</b>	checked ah ECAM memo?		
20:34:38.6 <b>CAM-1</b>	takeoff signs blue.		
20:34:40.3 <b>CAM-2</b>	to the line.		
20:35:57.9 <b>PA-1</b>	[flight deck passenger brief].		
20:36:47.2 <b>HOT-1</b>	alright let's ah go below the line.		
20:36:51.7 <b>HOT-2</b>	runway and FMS.		
20:36:53.8 <b>HOT-1</b>	three one left at the intersection.		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:36:56.7 <b>HOT-2</b>	minimum takeoff fuel.		
20:36:59.4 <b>HOT-1</b>	ahhh. I'll look it up here in a sec.		
20:37:02.3 <b>HOT-2</b>	it's forty three five.		
20:37:03.1 <b>HOT-1</b>	okay we need forty three five we got forty six one.		
20:37:06.3 <b>HOT-2</b>	flight attendants?		
20:37:06.9 <b>HOT-1</b>	they been notified.		
20:37:08.2 <b>HOT-2</b>	engine mode?		
20:37:09.8 <b>HOT-1</b>	normal.		
20:37:11.0 <b>HOT-2</b>	TCAS.		
20:37:12.7 <b>HOT-1</b>	TARA.		
20:37:14.2 <b>HOT-2</b>	before takeoff's complete.		
20:37:23.1 <b>CAM-2</b>	thirty five nine, did they tell us than on the eig- on the ah clearance thirty five nine for departure?		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:37:28.5 <b>CAM-1</b>	thirty five nine I got it right here.		
20:37:38.8 <b>CAM-1</b>	that means we get to go.		
20:38:01.0 <b>HOT-2</b>	yeah, set thirty five nine er is that?		
20:38:03.3 <b>HOT-1</b>	yeah, no I got it. thirty five nine. yeah I got it *.		
20:38:10.5 <b>HOT-2</b>	there it is yeah.		
20:38:39.2 <b>CAM-1</b>	come on lady let us go.		
		20:38:42.7 <b>TWR</b>	American three hundred Kennedy tower runway three one left intersection kilo echo line up and wait.
		20:38:47.0 <b>RDO-2</b>	American three hundred line up and wait three one left kilo echo.
20:38:53.8 <b>HOT-2</b>	clear right.		
20:39:18.6 <b>CAM-2</b>	looks like it's right down the runway.		
20:39:23.3 <b>HOT-2</b>	no I guess it is from the right.		
		20:39:48.4 <b>TWR</b>	American three hundred winds zero one zero one seven runway three one left intersection kilo echo cleared for takeoff.

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		20:39:55.0 <b>RDO-2</b>	American three hundred cleared for takeoff runway three one left at kilo echo.
20:40:04.5 <b>CAM-1</b>	flex.		
20:40:05.0 <b>CAM-2</b>	flex set.		
20:40:13.4 <b>HOT-2</b>	eighty.		
20:40:14.8 <b>HOT-1</b>	check.		
20:40:29.7 <b>HOT-2</b>	V-1.		
20:40:31.4 <b>HOT-2</b>	rotate.		
20:40:32.2 <b>HOT-1</b>	@.		
20:40:33.6 <b>HOT-?</b>	w-.		
20:40:34.1 <b>CAM</b>	dual input [automated voice].		
20:40:34.3 <b>HOT-?</b>	whoop.		
20:40:35.7 <b>CAM</b>	[sound of noise].		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:40:36.7 <b>HOT-2</b>	your airplane, your airplane, your airplane.		
20:40:39.2 <b>HOT-2</b>	I don't know what's goin' on.		
20:40:42.9 <b>HOT-2</b>	* **?		
20:40:44.7 <b>HOT-1</b>	what the # (happened) **?		
20:40:45.2 <b>HOT-2</b>	I don't know. ah the engines all go, good.		
20:40:50.7 <b>HOT-1</b>	positive rate, gear up.		
		20:40:51.4 <b>TWR</b>	American three hundred Ranger transition and contact New York departure.
		20:40:56.6 <b>RDO-2</b>	American three hundred roger.
20:40:59.0 <b>HOT-1</b>	the # ju- * it just # rolled on me.		
20:40:59.8 <b>HOT-2</b>	what the # is that?		
20:41:04.2 <b>HOT-2</b>	are we continuing? #. (fly) these girls will never fly with us again.		
20:41:09.3 <b>HOT-2</b>	I thought we were gone.		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		20:41:14.5 <b>RDO-2</b>	departure American three hundred passing one thousand four hundred for five thousand.
		20:41:17.7 <b>DEP</b>	American three hundred radar contact climb maintain one one thousand.
		20:41:21.8 <b>RDO-2</b>	American three hundred climb and maintain one one thousand.
20:41:25.0 <b>HOT-2</b>	that scared the # outta me, I thought we were gone.		
20:41:29.0 <b>HOT-1</b>	the # airplane just rolled on me dude.		
20:41:30.6 <b>HOT-2</b>	I don't know.		
20:41:31.5 <b>HOT-2</b>	ah what do we do? can we continue, I mean that was ah.		
20:41:39.4 <b>CAM-1</b>	let's just check all the # #.		
20:41:42.0 <b>HOT-2</b>	yeah.		
20:41:43.6 <b>HOT-2</b>	okay. climb. let's just do what we're supposed to do first then we can look it all over.		
20:41:48.3 <b>HOT-2</b>	I don't know what the-		
20:41:48.7 <b>HOT-1</b>	flaps up, let's see if the flaps'll go up.		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		20:42:11.9 <b>DEP</b>	American three hundred departure one two four point seven five.
		20:42:15.4 <b>RDO-2</b>	American three hundred twenty four seventy five.
20:42:24.1 <b>HOT-2</b>	I thought oh for sure you musta' lost a engine looked over there both engines are runnin'.		
		20:42:33.4 <b>RDO-2</b>	departure American three hundred passing three thousand for one one thousand.
		20:42:37.3 <b>DEP</b>	American three hundred New York climb and maintain one seven thousand.
		20:42:40.3 <b>RDO-2</b>	American three hundred climb and maintain one, seven thousand.
20:42:45.1 <b>HOT-2</b>	seventeen.		
20:43:02.3 <b>HOT-1</b>	well she feels normal now.		
20:43:04.1 <b>HOT-2</b>	yeah I mean it it was rolling and you're like what the #, I looked and, that's when I took the, I tried and that's when you heard the dual input-		
20:43:10.2 <b>HOT-1</b>	naw I * thought-		
20:43:11.5 <b>HOT-2</b>	you know I mean.		
20:43:13.6 <b>HOT-1</b>	It was, it was takin' a lot of left rudder. and then, you know to keep it, to keep it centerline?		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:43:17.5 <b>HOT-2</b>	* you got zero?		
20:43:21.4 <b>HOT-2</b>	oh.		
20:43:22.7 <b>HOT-2</b>	# airplane, I swear to @.		
20:43:25.1 <b>HOT-2</b>	* * *.		
20:43:25.5 <b>HOT-1</b>	# hate flyin' this thing with any kinda crosswind.		
20:43:27.7 <b>HOT-?</b>	* * *.		
20:43:35.3 <b>HOT-2</b>	after takeoff's complete.		
20:44:49.9 <b>HOT-1</b>	# me I'm gonna take some time off after that #.		
20:44:52.3 <b>HOT-2</b>	tell me about it.		
20:44:54.5 <b>HOT-2</b>	holy # I'm not workin' tomorrow.		
20:44:59.9 <b>CAM-2</b>	it's like a weird electron had the rudder stuck or some #, you know?		
		20:45:09.3 <b>DEP</b>	American three hundred proceed direct Robinsville.



Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		20:45:11.9 <b>RDO-2</b>	American three hundred direct Robinsville.
20:45:17.3 <b>HOT-2</b>	you like it?		
20:45:18.3 <b>HOT-1</b>	yeah.		
20:45:20.9 <b>HOT-2</b>	whaddy say about that?		
20:45:22.4 <b>HOT-1</b>	I'm gonna # -		
20:45:23.7 <b>HOT-2</b>	write it up bad, right?		
20:45:24.7 <b>HOT-1</b>	I'm gonna # ASAP it.		
20:45:26.1 <b>HOT-1</b>	I mean I don't know what to write up.		
20:45:28.2 <b>HOT-2</b>	# rolled hard, hard left. like, I mean wh- * * * how much degree bank were, sixty degree bank or some #? for a second? I mean.		
20:45:52.1 <b>CAM</b>	[sound of interphone ring].		
20:45:53.8 <b>HOT-2</b>	ah they're callin' to see what the-		
20:45:56.5 <b>HOT-?</b>	* * *.		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:45:59.5 <b>INT-1</b>	hello.		
20:46:00.1 <b>FA-1</b>	@ what was that? that was so scary * * *?		
20:46:04.4 <b>INT-1</b>	I know, I think we, we, we think we our, our rudder got jammed. we're testing it out right now, we're just lookin' at all the flight controls-		
20:46:11.3 <b>FA-1</b>	okay.		
20:46:11.9 <b>INT-1</b>	and ah, right now she seems to be operating pretty smoothly, so.		
20:46:15.8 <b>FA-1</b>	okay. thank you I'm glad you're experienced.		
20:46:18.1 <b>INT-1</b>	yeah well, you know what? we, we, we're just having a conversation about that. # Airbus man. this is the kinda # we don't like about it. you know there's so many computers we don't, we don't know what it # does sometimes.		
20:46:30.9 <b>FA-1</b>	okay.		
20:46:32.0 <b>INT-1</b>	that was a ah full left rudder on the, on the runway to keep it on the runway and then ah the one- the once we got airborne she just went # tits up.		
		20:46:39.4 <b>DEP</b>	American three hundred contact New York Center one three four point six.

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:46:40.6 <b>FA-1</b>	okay just keep us abreast. good job.		
20:46:42.5 <b>INT-1</b>	but right now it looks ah, you know, pretty good we've got ah, we got two good engines and all the flight controls are doin' what they should, so.		
		20:46:44.1 <b>RDO-2</b>	American three hundred one three four point six so long.
20:46:50.7 <b>FA-1</b>	what does the rudder do when we land? how does the, do we need the rudder when we land?		
20:46:55.0 <b>INT-1</b>	I don't, I don't think so because ah we should have ah pretty light winds right down the runway so we're gonna be okay there.		
		20:46:56.9 <b>RDO-2</b>	and American three hundred passing twelve point three for one seven thousand.
20:47:01.1 <b>FA-1</b>	okay.		
20:47:01.9 <b>INT-1</b>	but, yeah, yeah, I mean that's a good point we, we'll have to play that by ear once we get down there.		
20:47:06.6 <b>FA-1</b>	okay I'll spread the news thank you very much.		
20:47:08.8 <b>HOT-1</b>	*.		
		20:47:14.5 <b>RDO-2</b>	New York American three hundred passing one three thousand for one seven thousand.

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		20:47:18.0 <b>CTR</b>	American three hundred New York center higher at Robinsville Philadelphia altimeter is two niner niner two.
		20:47:24.1 <b>RDO-2</b>	American three hundred roger two nine nine two.
20:47:26.7 <b>CAM-2</b>	yeah I mean I'm just thinkin' with that kind of an extreme maneuver, you know just, for the politics of it all-		
20:47:34.7 <b>CAM-2</b>	it might not be a bad idea go back, because, these girls will never fly with us again I'm tellin' ya. and the, I mean that scared me that bad, that I've never been so scared in an airplane I don't think I thought. I mean I wasn't that scared because like, but I thought it was over. I thought we were goin down.		
20:47:44.4 <b>CAM-1</b>	what I don't, what I don't-		
20:47:50.8 <b>HOT-1</b>	you ever notice on this airplane you go, you go full controls sometimes it doesn't react, it doesn't do anything?		
20:47:56.0 <b>HOT-2</b>	no, I don't go full controls that often, so-		
20:47:59.5 <b>HOT-1</b>	but, yah the passengers are probably alway all wondering and then people could ah monday morning quarterback you on continuing, with * I'm just sayin' that, I'm just putting that out there. I mean, I feel safe you know * yeah let's go, but you I'm just saying, I just wanted.		
		20:48:33.2 <b>CTR</b>	American three hundred climb and maintain flight level two two zero.

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		20:48:36.9 <b>RDO-2</b>	American three hundred climb and maintain flight level two two zero.
20:48:40.6 <b>HOT-2</b>	or maybe call maintenance to cover you're #. and tell 'em what happened and see what they- or just ah I don't know yeah.		
20:48:47.4 <b>HOT-1</b>	you know, I think you're right.		
20:48:49.8 <b>HOT-2</b>	two two zero.		
20:48:50.9 <b>HOT-1</b>	twenty two.		
20:48:53.8 <b>HOT-2</b>	I think you gotta cover your # on this one.		
20:49:19.8 <b>HOT-1</b>	let's ah, let's coordinate a return to ah Kennedy. you think?		
20:49:29.0 <b>HOT-2</b>	I just, yeah, I, I don't know, you know it's, it's a tough call.		
20:49:31.8 <b>HOT-1</b>	even if, even if, if there's nothing wrong.		
20:49:33.0 <b>HOT-2</b>	I just wanted to put that out and let you think about that. yeah		
20:49:35.2 <b>HOT-1</b>	yeah.		
20:49:39.2 <b>HOT-1</b>	well I-		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:49:40.1 <b>HOT-2</b>	you don't wanna talk to maintenance, er, ah maybe kinda get the blessing from somebody else, maybe?		
20:49:44.4 <b>HOT-1</b>	no.		
20:49:45.4 <b>HOT-2</b>	no, you wanna just go back?		
20:49:48.6 <b>HOT-1</b>	yeah and they, they can pull all the # out and see what the # happened.		
20:49:51.3 <b>CAM</b>	[sound of single chime].		
20:49:51.8 <b>HOT-2</b>	okay.		
		20:49:56.7 <b>RDO-2</b>	and New York American ah three hundred.
		20:49:58.9 <b>CTR</b>	go ahead.
		20:50:00.5 <b>RDO-2</b>	hey ah when, when we had departed-
20:50:04.3 <b>HOT-2</b>	standard.		
		20:50:05.3 <b>RDO-2</b>	when we departed ah right as we rotated we had a ah a strong roll to the left and ah wh- as we climb out we decided we would like to return to Kennedy.
		20:50:15.6 <b>CTR</b>	alright American three hundred ah, I understand is this an emergency?

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:50:20.1 <b>HOT-2</b>	you wanna declare an emergency?		
20:50:21.8 <b>HOT-1</b>	* let, let, let's not declare an emergency, as long as the airplane is flying.		
		20:50:25.2 <b>RDO-2</b>	naw the airplane's flying great right now we'd just like to return to Kennedy have them check it out.
		20:50:29.8 <b>CTR</b>	alright roger ah just fly your present heading I'll have the ve-ah American three hundred amend your altitude if can comfortably stop at flight level two zero zero.
		20:50:38.3 <b>RDO-2</b>	American three hundred ah maintain flight level two zero zero.
20:50:41.9 <b>HOT-1</b>	autopilot one is on.		
20:50:42.9 <b>HOT-2</b>	two zero zero okay, I'm gonna hit divert on this just so I, * get them in the ballgame. alright?		
20:50:51.0 <b>HOT-2</b>	if I can figure *.		
20:50:51.8 <b>HOT-1</b>	tell you what, why don't you take the airplane and the radios.		
20:50:54.4 <b>HOT-2</b>	okay.		
20:50:57.0 <b>HOT-2</b>	do divert, I'm gonna put it in there, okay? K-J-F-K.		
20:51:04.5 <b>HOT-2</b>	estimated arrival time ah zero ah one twenty? figure one fifteen?		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:51:09.9 <b>HOT-1</b>	yeah, fifteen after.		
20:51:10.5 <b>HOT-1</b>	oh yeah yeah.		
		20:51:16.1 <b>CTR</b>	alright American three hundred you're cleared to Kennedy via right turn heading, take the heading zero six zero for now maintain flight level two zero zero.
		20:51:27.8 <b>RDO-2</b>	ah heading zero six zero, right turn to zero six zero maintain flight level two zero zero American three hundred.
20:51:34.0 <b>HOT-2</b>	estimated arrival fuel. about ah forty one.		
20:51:49.2 <b>HOT-1</b>	alright thanks. you got you got the radio and the airplane I'm gonna talk to them.		
20:51:51.3 <b>HOT-2</b>	* * got the airplane.		
		20:51:56.1 <b>CTR</b>	and American three hundred I just wanna, what was the actual reason? I know you said you after you departed you, you rolled to the left, what happened?
20:52:03.7 <b>FA-1</b>	@ here.		
20:52:03.7 <b>HOT-2</b>	what do you think our bank was, like forty five degree bank or something?		
20:52:06.0 <b>INT-1</b>	hey @ it's @.		



Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		20:52:06.6 <b>RDO-2</b>	yeah ah as soon as we rotated we were, we were ah bankin' ah ah uncontrolled bank forty five degrees to the left. and then the airplane that we we're able to get it, get it ah recovered and then the normal climbout everything seemed great. you know I don't know if it was, I don't know if it was a ah, ah ah turbulence from another aircraft? I don't think so there's a good s' crosswind but we had ah ah uncommanded roll to the left as we ah rotated.
20:52:06.9 <b>FA-1</b>	yeah.		
20:52:08.6 <b>INT-1</b>	hey listen ahm. we're we're looking at these systems and ah we've just got some anomalies we we're going to go ahead and turn back and head back to Kennedy.		
20:52:16.9 <b>FA-1</b>	going back. we're goin' back. okay?		
20:52:19.3 <b>INT-1</b>	we're going to go back and put this thing on the ground and give ah give it back to maintenance and let them take a look at it.		
20:52:22.9 <b>FA-1</b>	thank you @.		
20:52:24.2 <b>INT-1</b>	Ahm so I'm gonna go ahead and let the * the folks know and then ah we'll ah.		
20:52:27.5 <b>FA-1</b>	okay the passengers * * a guy just came up here and he wanted to know what the # that was, flew two hundred million miles and he's like I've never felt anything like that and I didn't say anything to him because, that's on, that's on you.		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		20:52:33.8 <b>CTR</b>	and American three hundred turn right heading zero nine zero descend and maintain one seven thousand the Philadelphia altimeter is two niner niner two.
20:52:39.6 <b>INT-1</b>	yeah no I'm go* I'm gonna go ahead and, talk to them right now and let 'em know we're going back to Kennedy.		
		20:52:43.1 <b>RDO-2</b>	American three hundred right heading zero niner zero descend and maintain one seven thousand.
20:52:43.6 <b>FA-1</b>	okay thank you very much		
20:53:03.3 <b>CAM-2</b>	okay new destination ahm.		
		20:53:13.6 <b>CTR</b>	American three hundred turn right heading one hundred hun-ah turn right heading one zero zero.
		20:53:18.4 <b>RDO-2</b>	American three hundred right heading one zero zero.
20:53:20.5 <b>CAM-2</b>	I'm gonna put Kennedy as a new destination.		
		20:53:20.8 <b>CTR</b>	American three hundred as far as you know are there any injuries?
		20:53:24.4 <b>RDO-2</b>	American three hundred ah negative there's no injuries.
		20:53:27.2 <b>CTR</b>	roger.

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:53:36.4 <b>HOT-2</b>	okay I put Kennedy as our new destination.		
20:53:45.6 <b>HOT-2</b>	so what are they landing?		
20:53:47.8 <b>HOT-1</b>	ah fours I believe, or you could just pull up an ATIS.		
		20:53:50.6 <b>CTR</b>	American three hundred descend and maintain one seven thousand.
		20:53:53.6 <b>RDO-2</b>	American three hundred descend and maintain one seven thousand.
20:53:56.1 <b>HOT-2</b>	two nine nine two I think it is?		
20:53:57.8 <b>HOT-1</b>	'kay.		
20:54:01.3 <b>CAM-2</b>	four *.		
		20:54:01.7 <b>CTR</b>	American three hundred contact New York approach on one two four point seven five.
20:54:05.7 <b>CAM</b>	[sound of interphone ring].		
		20:54:08.2 <b>RDO-2</b>	twenty four seventy five American three hundred.
20:54:08.3 <b>INT-1</b>	@.		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:54:08.9 <b>FA-1</b>	@ there's a guy in business class left hand side aircraft left side over the wing and he said the wing looks dented it doesn't look normal left hand side.		
20:54:17.7 <b>INT-1</b>	gosh I don't know what that means but it doesn't matter we're going back * * *.		
20:54:21.6 <b>FA-1</b>	ahm are we gonna dump fuel?		
20:54:23.6 <b>INT-1</b>	no, no, no, no.		
20:54:24.3 <b>FA-1</b>	no. okay thank you.		
		20:54:30.5 <b>RDO-2</b>	ah Kennedy American ah three hundred ah levelling one seven thousand.
		20:54:34.3 <b>APR</b>	American three hundred New York roger ah let's see descend and maintain one two twelve thousand.
		20:54:38.4 <b>RDO-2</b>	American three hundred descend and maintain one two thousand.
20:54:54.5 <b>HOT-2</b>	alright so we got the new ATIS.		
20:54:56.2 <b>HOT-1</b>	alright I'm just * I just off for a second.		
20:54:58.4 <b>HOT-2</b>	okay.		
20:55:00.6 <b>HOT-2</b>	ILS four right.		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
20:55:00.8 <b>PA-1</b>	ladies and gentlemen this is the captain speaking if I can have your attention please, ah we've got an issue with the airplane involving our ah flight control computers and ah we are ah made the decision to return to ah JFK airport and land the airplane and ah let the maintenance folks ah take it over. should be ah touching down in Kennedy in about fifteen minutes or so, no cause for alarm the aircraft has been ah secured with the faulty system isolated and ah she's handling very nicely at this point but ah no sense in ah continuing on to LA ah with with an aircraft ah in this particular condition so we're gonna just for safety' ah purposes ah return to JFK and land. and ahm once we get on the ground safely back at the gate we'll start working the issue of getting a new airplane or ah figuring out how to get you all on your way. appreciate your patience as ah we keep the operation as safe as ah as possible. thanks again, again landing in about fifteen minutes.		
20:56:11.9	[call for descent check].		
20:56:34.8	[flight attendant giving passenger briefing].		
20:59:00.9	[2nd call for descent check].		
21:00:05.5	[flight requests RWY 4L].		
21:00:27.9 <b>CAM</b>	[sound of interphone ring].		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
21:00:33.0 <b>INT-1</b>	hey it's @.		
21:00:33.8 <b>FA-1</b>	hey @ ahm so actually we're the more we look at it the wing actually does a little a little damage I don't know if you wanna @ to come out and look at it, just so you guys know.		
21:00:42.7 <b>INT-1</b>	well if the airplanes flying okay and I don't know what, what we can see out there but we, we're going to ah.		
21:00:48.7 <b>FA-1</b>	all we can do is land it.		
21:00:50.0 <b>INT-1</b>	we're gonna land.		
21:00:50.7 <b>FA-1</b>	okay, alright. thanks.		
21:00:51.8 <b>INT-1</b>	and ah right now looks like a normal landing but you guys just be prepared for the worst case scenario.		
21:00:54.5 <b>FA-1</b>	okay, okay. thank you.		
21:00:57.5	[3rd call for descent checklist]		
21:02:25.3	[CAPT informs FO he's going off the radio for a moment].		
		21:02:29.1 <b>RDO-1</b>	ah JFK operations American three hundred.

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		21:02:32.3 <b>OPS</b>	three hundred heard you're coming back go.
		21:02:34.5 <b>RDO-1</b>	yeah we're coming back, ah we had some kind of a flight control malfunction I don't know but we're not gonna take this thing to LA until somebody looks at it but any way you got, you got a gate for us?
21:02:41.0 <b>HOT-2</b>	flaps1.		
		21:02:46.1 <b>OPS</b>	forty six, give me a call when you're on the ground.
		21:02:48.1 <b>RDO-1</b>	okay gate forty six we'll do it thanks.
21:03:01.7	[CAPT informs FO of a passenger reporting damage to left wing].		
21:03:45.2	[flaps 2].		
21:03:54.2	[flight cleared ILS 4L].		
21:04:19.9	[sounds consistent with gear down].		
21:04:42.1	[4th call for descent checklist].		
21:05:21.0	[flaps 3].		

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
21:05:41.8	[call for landing checklist].		
21:06:08.7	[flaps full].		
21:06:32.0	[flight switched to tower].		
21:06:50.5	[flight given reported winds of 010 / 17G23 and cleared to land 4L].		
21:07:59.7	[autopilot disconnect].		
21:08:36.2	[sounds consistent with landing].		
21:09:06.3	[sounds consistent with normal taxi to the gate].		
21:18:07.1	[discussion of error messages related to liquid level transmitter and AOA probe three].		
21:18:36.6	[call for shutdown checklist].		
		21:19:37.0 <b>RAMP</b>	dude there's extensive damage on that leading edge on that left hand side. bad damage.
		21:19:41.7 <b>RAMP</b>	what did you hit?
21:19:45.9 <b>CAM-2</b>	did we hit something?		



Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
		21:19:48.6 <b>RAMP</b>	I'm glad you guys made it * * * *.
21:19:51.2 <b>CAM-2</b>	yeah we hit something, because felt it, we felt it, we we don't know but we rolled hard left.		
		21:19:52.7 <b>RAMP</b>	yes. * * *.
		21:19:55.9 <b>RAMP</b>	I'm glad you guys are okay guys.
21:19:56.5 <b>CAM-1</b>	on ah on rotation, the airplane just rolled.		
21:19:57.7 <b>CAM-2</b>	yes.		
21:20:01.8 <b>CAM-2</b>	holy #. good thing we came back.		
21:20:28.8 <b>CAM-2</b>	flying great after that incident though, you know? which is really weird.		
21:22:58.9	[sound consistent with electrical power transition].		
21:23:46.2	[discussion with ground crew].		
21:25:25.7	[sounds consistent with cell phone calls discussing the event].		
21:43:41.9	[discussion of pulling the CVR circuit breaker].		

Time and  
Source

Intra-Aircraft Communication

Time and  
Source

Over-the-Air Communication

---

2144:08.8

**END OF TRANSCRIPT**

**END OF RECORDING**