

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



GROUP CHAIRMAN'S FACTUAL REPORT OF INVESTIGATION

DCA17FA076

**By
Joseph A Gregor**

WARNING

The reader of this report is cautioned that the transcription 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
Washington, D.C. 20594

April 9, 2018

Cockpit Voice Recorder

Group Chairman's Factual Report
By Joseph A Gregor

1. EVENT SUMMARY

Location: Ypsilanti, Michigan
Date: March 8, 2017
Aircraft: Boeing MD-83, N786TW
Operator: Ameristar Air Cargo, Flight 9363
NTSB Number: DCA17FA076

On March 8, 2017, about 1452 EST, Ameristar Air Cargo, Inc. dba Ameristar Charters flight 9363, a Boeing MD-83, N786TW, ran off the end of runway 23L after executing a rejected takeoff at Willow Run Airport (YIP), Ypsilanti, Michigan. (The MD-83 was manufactured by McDonnell Douglas, which merged with Boeing in August 1997.) All 110 passengers and 6 crewmembers evacuated the airplane. One passenger was reported to have received a minor injury. The airplane sustained substantial damage (no post-crash fire occurred). The airplane was operating under the provisions of 14 *Code of Federal Regulations* (CFR) Part 121 as an on-demand charter flight and was destined for Washington Dulles International Airport (IAD), Dulles, Virginia. Daytime visual meteorological conditions prevailed at the time of the accident.

A solid-state cockpit voice recorder (CVR) was sent to the National Transportation Safety Board (NTSB) Vehicle Recorder Division for readout. The CVR group convened and a partial transcript was prepared for the 2-hour, 1 minute, 14-second digital recording (see attached).

2. GROUP

A group was convened on March 20, 2017.

Chairman: Joseph A Gregor
Electronic Engineer
National Transportation Safety Board

Member: Wilder Foote
Air Safety Investigator
Federal Aviation Administration

Member: Captain Chip Sieglinger
Flight Technical & Safety Flight Services
Boeing

Member: Pat Hulsey
Director of Operations
Ameristar Air Cargo, Inc.

3. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Division received the following CVR:

Recorder Manufacturer/Model: **L-3/Fairchild FA2100-1020**
Recorder Serial Number: **000357984**

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.

3.2. Recorder Description

This model CVR, the L-3/Fairchild FA2100-1020, 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.

Figure 1. L-3/Fairchild FA2100-1020 CVR recovered from N786TW.



3.4. Audio Recording Description

Each channel's audio quality is indicated in Table 1.¹ Channel number three did not contain any audio information. Channel number one was rated unusable due to the absence of HOT microphone information on that channel. Only radio/intercom information was found recorded on this channel.

Table 1: Audio Quality.

Channel Number	Content/Source	Quality	Duration
1	Radio/Intercom	Good	124 min
2	HOT-1	Excellent	124 min
3	Other	Good	124 min
4	CAM	Good	124 min

3.5. Timing and Correlation

Timing with respect to flight data recorder (FDR) data was obtained by correlating common events recorded on both the CVR and the FDR. This included two radio calls made in the last three minutes of the recording, along with FDR parameters (longitudinal acceleration and exhaust pressure ratios) associated with takeoff and abort initiation. Timing on the final transcript was established by correlating GMT time recorded on the FDR to elapsed time on the CVR for the common events mentioned above. The CVR events were offset to reflect the local eastern standard time of the accident according to the following formula:

$$\text{EST} = \text{CVR Elapsed Time} + 46174.7 \text{ seconds.}$$

3.6. Description of Audio Events

The recording began at 1249:35 EST and the transcript began at 1250:06 EST (see attached). The recording and transcript ended at approximately 1453:49 EST.

¹ See attached CVR Quality Rating Scale for source and quality definitions.

Attachment I

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.

Transcript of a L-3/Fairchild FA2100-1020 cockpit voice recorder, serial number 000357984, installed on a Boeing MD-83, N786TW, which crashed after an aborted takeoff from Willow Run Airport (YIP), Ypsilanti, Michigan.

LEGEND

ATIS	Automated terminal information service broadcast
CAM	Cockpit area microphone voice or sound source
FA	Flight attendant voice or sound source
GND	Radio transmission from the Hanscom ground controller
HDL	Ground handler voice or sound source
HOT	Flight crew audio panel voice or sound source
INT	Intercom
N555P	Aircraft (Baron) in the pattern at Willow Run
PA	Public address system sound source
RDO	Radio transmission from N121JM
TWR	Radio transmission from the Hanscom airport tower controller
-1	Voice identified as the check airman
-2	Voice identified as the captain
-3	Voice identified as cabin crewmember
-4	Additional voice identified as cabin crewmember
-5	Additional voice identified as cabin crewmember
-?	Voice unidentified
*	Unintelligible word
#	Expletive
@	Non-pertinent word
()	Questionable insertion
[]	Editorial insertion

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

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.

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
12:49:35	Start of Recording		
12:50:06	Start of Transcript		
12:50:06 CAM-2	ah we wanna see that right side put back.		
12:50:12 CAM-1	I might go in and get the * *.		
12:50:15 CAM-2	alright.		
12:50:16 CAM-2	you walked around and did all that?		
12:50:17 CAM-1	yeah absolutely.		
12:50:35 CAM	[unintelligible background voices and conversations consistent with passenger boarding].		
12:55:50 HDL-1	man alive.		
12:56:09 HDL-1	will be, should be pretty fun getting this thing off of the ground huh?		
12:56:12 CAM-2	yeah glad I don't have to get it back on the ground. Ahm thanks for comin' over.		
12:56:16 HDL-1	yeah no problem. better up here than out there.		
12:56:23 CAM-2	ahm just a couple forms we have to fill out for ground handlers. if you could please just write your name and then sign right there.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
12:56:28 HDL-1	okay. okay.		
12:56:36 CAM-2	appreciate it.		
12:56:37 HDL-1	yeah no problem.		
12:56:43 CAM-2	all that form is, is ah, certifying that you received training on all the duties that you already know how to do, so.		
12:56:51 HDL-1	right right.		
12:56:52 CAM-2	okay there's that one. and then for ah loading. ah can I just get the first names for the guys that are gonna load?		
12:57:02 HDL-1	yeah @, @, @, and @.		
12:57:14 CAM-2	ahm @?		
12:57:15 HDL-1	yes.		
12:57:19 CAM-2	okay when you load the bags start with the far back		
12:57:23 HDL-1	* the back first.		
12:57:24 CAM-2	the back of the back.		
12:57:25 HDL-1	I'll get yeah.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
12:57:26 CAM-2	and as soon as that's full then go the front of the number three pit.		
12:57:29 HDL-1	okay.		
12:57:30 CAM-2	and then hopefully everything will fit there if not then you know work your way forward.		
12:57:34 HDL-1	okay.		
12:57:35 CAM-2	cause this thing is ah nose-heavy so.		
12:57:38 CAM-2	the more weight we can get in the back the better.		
12:57:40 HDL-1	okay.		
12:57:40 CAM-2	and then keep track of the number of bags in each -		
12:57:42 HDL-1	yes sir.		
12:57:43 CAM-2	location please.		
12:57:44 HDL-1	yeah can do.		
12:57:45 CAM-2	thank you appreciate it.		
12:57:46 HDL-1	yeah no problem.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
12:57:47 CAM-2	alright good luck. we're all counting on you. [laughter].		
12:59:27 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:01:11 CAM-1	alright (can) you get some, speeds for a hundred and forty six thousand?		
13:01:18 CAM-2	that is gonna be the weight?		
13:01:23 CAM-2	we have a current temp?		
13:01:24 CAM-2	just get off of ah.		
13:01:26 CAM-1	* below (nine) * *.		
13:01:30 CAM-1	let's go off of this one, nine degrees.		
13:01:32 CAM-2	okay.		
13:01:39 CAM-1	you got that, good deal. **.		
13:01:48 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:03:42 CAM-2	I want to me show you this real quick. using nine degrees so ten degrees Fahrenheit * * one forty six V-speeds right here. is that, did I do that (correct)?		
13:03:53 CAM-1	* * ten (knots)?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:03:54 CAM-2	I'm sorry yeah, you need to be in this column.		
13:03:58 CAM-2	so it's, all the way down here?		
13:04:01 CAM-1	yeah. So * speed yeah. right there. flaps sixteen * use flaps fifteen.		
13:04:06 CAM-2	fifteen okay very good.		
13:04:07 CAM-1	fifteen.		
13:04:11 CAM-1	so what I used to do then, use max thrust.		
13:04:15 CAM-2	yeah.		
13:04:16 CAM-1	flaps fifteen.		
13:04:18 CAM-2	and then stab that's for stab which we don't know yet. and then speeds are one thirty nine.		
13:04:23 CAM-1	one thirty nine.		
13:04:24 CAM-2	one forty two.		
13:04:25 CAM-1	one forty two.		
13:04:26 CAM-2	one fifty.		
13:04:27 CAM-1	* fifty.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:04:28 CAM-2	one sixty five.		
13:04:30 CAM-2	and then the other * *.		
13:04:32 CAM-1	** delay rotation until at least V-two.		
13:04:36 CAM-2	yeah, that's.		
13:04:37 CAM-1	*** wait for me to call it.		
13:04:39 CAM-2	yup.		
13:04:46 CAM-2	I'd like to try to put the flightplan in the box if that's *. for practice.		
13:04:50 CAM-1	I'll ah read them off for you.		
13:04:55 CAM-1	CARLETON.		
13:04:56 CAM-2	* hold on.		
13:05:05 CAM-2	okay go ahead.		
13:05:08 CAM-1	next one is gonna be ah WOOST w- oscar oscar ah sie- sierra tango.		
13:05:16 CAM-1	next one is ah romeo india echo kilo echo.		
13:05:26 CAM-2	okay.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:05:27 CAM-1	next one is dryer delta juliet bravo.		
13:05:30 CAM-2	yup.		
13:05:34 CAM-1	next one is ah bravo oscar bravo charlie tango.		
13:05:44 CAM-1	next one is a BIGLE bravo india golf lima echo.		
13:05:53 CAM-2	'kay.		
13:05:56 CAM-1	next one is BLISS bravo lima india sierra sierra.		
13:06:02 CAM	[unintelligible background conversations].		
13:06:05 CAM-1	next one is OTMAN oscar tango mike alpha november.		
13:06:16 CAM-1	next one is JAMOX juliet alpha mike oscar x-ray.		
13:06:24 CAM-2	'kay.		
13:06:26 CAM-1	next one is LAYED lima alpha yankee echo delta.		
13:06:38 CAM-1	do we have any stars in there?		
13:06:41 CAM-2	oh that's, that's it?		
13:06:45 CAM-2	****.		
13:06:46 CAM-1	yeah.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:06:49 CAM-1	H-V-Q. let me see what's (wrong) with (any of that).		
13:06:57 CAM-1	* * * winds out of the west *.		
13:07:10 CAM-1	better not be # gusting to thirty knots out of the west.		
13:07:15 CAM-2	well then we'll use ah three zero * we have to.		
13:07:18 CAM-1	huh?		
13:07:19 CAM-2	have to use three zero then.		
13:07:25 CAM-1	yeah just put ah. put one nine right down for now.		
13:07:29 CAM-2	one nine right.		
13:07:35 CAM-1	(let's go).		
13:07:36 CAM-2	ah you wanna review it before you execute?		
13:07:38 CAM-1	*.		
13:07:40 CAM-2	so, HUNTINGTON, GIBBS two.		
13:07:44 CAM-1	you gotta go to the legs page.		
13:07:45 CAM-2	legs.		
13:07:48 CAM-2	CARLETON, WOOST, RIEKE, DRYER, BOBCAT.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:07:54 CAM-2	BIGLE, BLISS, OTMAN, JAMOX, LAYED.		
13:07:59 CAM-2	and I should close this discontinuity, right?		
13:08:01 CAM-1	yeah.		
13:08:04 CAM-2	HUNTINGTON, PINFA, WOOJO, BERT, WHO. BEEZLY, GIZMO, BBONE, KILMER, AUTO, MAY, GRIFFIN, GIBBS, SUNY, J, Y-D-Y-U-whatever, M- A-T-T-C then vectors, CLAY, MOHE now we're on for the runway, so.		
13:08:30 CAM-1	we'll just see what - we'll check it * it didn't match the last two fixes but that might be because of the runway.		
13:08:30 CAM-2	* *.		
13:08:35 CAM-2	right, right.		
13:08:36 CAM-1	we'll check it *.		
13:08:37 CAM-2	I'll execute, and then ah.		
13:08:41 CAM-2	total distance.		
13:08:44 CAM-2	what do you have for the - I have ah five hundred and forty three, nautical miles?		
13:08:48 CAM-1	yeah.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:08:49 CAM-2	is that right?		
13:08:50 CAM-1	yeah that's with the I-L-S.		
13:08:52 CAM-2	sure, sure.		
13:09:01 HOT-1	it's an hour down there password will be @.		
13:09:09 CAM-2	current time is eighteen oh nine, thirty, seven.		
13:09:15 CAM-1	three thousand.		
13:09:25 CAM-2	* * * thirty three?		
13:09:25 CAM-?	***.		
13:09:27 CAM-?	okay.		
13:09:29 CAM-1	ah, let's go ahead and do the brief ***.		
13:09:32 CAM-2	alright. it's gonna be a left seat takeoff. a hundred and forty six thousand pounds flaps fifteen. speeds one thirty nine, one forty tow, one fifty, one sixty five, one ninety nine, two forty eight. max thrust we are going to delay our rotation because of the gusty, strong gusty winds, do the short segment climb checklist * better immediate return, quite honestly, I think it would be prudent to go over to Metro for the longer runway -		
13:09:58 CAM-1	absolutely, we're not coming *.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:10:01 CAM-2	there are no M-E-Ls here. ah taxi operations we'll just go right here golf to two three left. no hot spots. departure NOTAMS * frequencies are out of service we'll have to get our clearance some other way. and we'll use C-TAF to announce our intentions. departure SID ahm there is none, initial course of whatever they give us to ah join the ah course into CARLETON. two thirty three the initial heading, just runway heading. altitude we know is gonna be three thousand feet, probably eighteen ninety five for a Detroit ah departure, transponder code * *. call out any abnormalities that you see. really keep an eye out on what our airspeed is doing today. ahm, in the event of an engine fire or failure at or after V-1 we're going to continue the takeoff, treat it as an inflight emergency just head on over to Metro. level off height here is fifteen sixteen and is no * * procedure. and ah we'll head on over to Metro and do it visually. ah stall warning or windshear warning, we're not expecting any kind of stall today, but ah windshear for sure, keep an eye out on the ah, if you get any kind of a warning it's gonna be max thrust, ah all the way to firewall thrust if necessary, leave the aircraft configured, we'll fly out of the shear, back me up on the ah airspeed calls and the * speed calls. any questions anything to add?		
13:11:27 CAM-1	nope.		
13:11:29 CAM-2	let's do the ah before start to the line.		
13:11:35 CAM-2	is the mirror up to remind you of anything, for a reason? or, is that just up?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:11:41 CAM-1	briefing complete?		
13:11:42 CAM-2	completed, set.		
13:11:44 CAM-1	* * * .		
13:11:45 CAM-2	three on board.		
13:11:46 CAM-1	cockpit preparations.		
13:11:46 CAM-2	are complete.		
13:11:48 CAM-1	* preflight inspection?		
13:11:49 CAM-2	completed.		
13:11:49 CAM-1	* windows?		
13:11:50 CAM-2	closed and locked.		
13:11:51 CAM-1	** .		
13:11:51 CAM-1	* circuit breakers?		
13:11:52 CAM-2	are checked.		
13:11:53 CAM-1	checked oxygen and interphone.		
13:11:55 CAM-2	checked on one hundred percent.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:11:57 CAM-1	checked on one hundred percent, smoke goggles?		
13:11:58 CAM-2	are checked.		
13:11:59 CAM-1	pressurization?		
13:12:01 CAM-2	is ah auto up and set.		
13:12:02 CAM-1	air conditioning shutoff?		
13:12:04 CAM-2	is auto.		
13:12:04 CAM-1	anti-skid?		
13:12:05 CAM-2	is armed.		
13:12:06 CAM-1	(E)GPWS.		
13:12:07 CAM-2	tested.		
13:12:07 CAM-1	***.		
13:12:10 CAM-2	all normal. normal.		
13:12:10 CAM-1	emergency lights?		
13:12:11 CAM-2	ah armed.		
13:12:14 CAM-1	seatbelt no smoking sign?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:12:15 CAM-2	on.		
13:12:16 CAM-2	* * *?		
13:12:17 CAM-2	ah checked and set.		
13:12:21 CAM-2	checked and set.		
13:12:22 CAM-1	clocks and altimeters?		
13:12:24 CAM-2	I've got ah twelve minutes past. altimeter two niner eight one. seven hundred and eighty feet checked and set.		
13:12:28 CAM-1	eighteen twelve, two niner eight one, * * set. F-M-S?		
13:12:34 CAM-2	checked and set.		
13:12:40 CAM-1	checked and set. engine oil quantity?		
13:12:42 CAM-2	is checked.		
13:12:44 CAM-1	takeoff warning?		
13:12:46 CAM	[sound of warning tone] slats [electronic voice], [sound of warning tone] brake [electronic voice], [sound of warning tone] flaps [electronic voice], [sound of warning tone] slats [electronic voice].		
13:12:54 CAM-2	checked.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:12:56 CAM-1	ah rudder power?		
13:12:57 CAM-2	power.		
13:12:59 CAM-1	radar?		
13:12:59 CAM-2	is off.		
13:13:01 CAM-1	transponder?		
13:13:02 CAM-2	standby.		
13:13:03 CAM-1	radios?		
13:13:04 CAM-2	are set.		
13:13:04 CAM-1	set.		
13:13:05 CAM-1	rudder and aileron trim?		
13:13:07 CAM-2	free and zero.		
13:13:08 CAM-1	parking brakes.		
13:13:09 CAM-2	set * checked.		
13:13:11 CAM-2	(thank you).		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:13:35 CAM-2	feel sorry for the regional guys that're only going like an hour out of Metro and then coming back, you gotta fly in this # all day.		
13:13:49 CAM-2	at least long haul you can take off and get outta here.		
13:14:12 CAM-2	#.		
13:14:13 CAM-?	****.		
		13:14:39 ATIS	Willow Run tower information X-ray 1653z winds two six zero at three five gust five zero visibility one zero sky clear below one two thousand temperature one one dew point minus one one altimeter 29.81 remarks *** 1639z runway five right circle to land runway two seven ** landing and departing runway two seven ****.
13:15:31 CAM-1	I'm gonna, I'm gonna call ask @ can we legally use this weather? because I'm not, I'm not gonna have the FAA come afterwards, how did you guys take off outta there? hold on one second.		
13:15:40 CAM-2	yeah that's fine.		
13:15:43 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:15:45 CAM-2	you have the ah flight plan handy?		
13:15:48 CAM-1	they're gonna bring it out.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:15:51 CAM-1	they gotta send it to the other side * the power is out. [consistent with cell phone call].		
13:16:11 CAM-1	* got a little problem. ahm Willow Run. ah. tower is closed. airport uncontrolled because they lost power. ATIS is out of service. * last weather reported. you gotta call in to * * * one six five three. ah how do we legally take off? [consistent with cell phone call].		
13:16:44 CAM-1	yup. [consistent with cell phone call].		
13:16:53 CAM-1	gusting to fifty two knots *. [consistent with cell phone call].		
13:16:57 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:17:00 CAM-1	****.		
13:17:08 CAM-1	well @ is fine sir. [consistent with cell phone call].		
13:17:12 CAM-2	tell him the risk assessment went way up.		
13:17:25 CAM-1	yeah I just want to have something on record if the FAA comes back and say how did you guys take off. [consistent with cell phone call].		
13:17:51 CAM-2	they're comin' out.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:17:53 CAM-1	* can you call Ameristar and find out where our paperwork's * talk to @. [consistent with cell phone call].		
13:17:59 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:18:13 CAM-1	* fuel burn ***. [consistent with cell phone call].		
13:18:20 CAM-2	breezy out there.		
13:18:34 CAM-2	hi @ is @ there please? thank you. thank you. [consistent with cell phone call].		
13:18:41 CAM-1	yeah they reported I think eleven on the sixteen fifty three weather. [consistent with cell phone call].		
13:18:55 CAM-2	hi @ it's @ ah @ asked me to call you they still, they still have not brought our paperwork out **** we'll keep watching for it part of the airport, part of the airport has lost power so, we'll keep looking for it. alright perfect okay excellent. thank you. yeah bye bye. [consistent with cell phone call].		
13:18:58 CAM-1	* at what time? seventeen? okay and that was ten point ?? okay. * appreciate it. [consistent with cell phone call].		
13:19:34 CAM-2	he got an e-mail from somebody that it's on its way, but he's gonna call again to follow up.		
13:20:33 CAM-1	It's all * * start loading aft * *.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:20:37 CAM-2	and to keep track of the bags. he understood all that, so.		
13:20:51 CAM-2	that's extra envelope is for, Dulles, and then I got a fuel vendor audit out for Dulles, and then the PHM-four -		
13:20:59 CAM-2	did you set this thing ***?		
13:21:00 CAM-2	I did not, you don't have too.		
13:21:03 CAM-1	ah I don't know * * *.		
13:21:05 CAM-2	the PHM-four is still out and the HAZMAT form is still out.		
13:21:09 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:21:17 CAM	[sound consistent with stab trim aural annunciation].		
13:21:31 FA-4	it's pretty nice for you, you don't have to screen.		
13:21:33 CAM-?	huh?		
13:21:34 CAM-2	hey @ how are you?		
13:21:35 FA-?	we're not making any money though. and we're not making any money for your guys, like we always do.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:21:37 FA-4	* we're missin' out on our twenty eight bucks.		
13:21:44 FA-4	yeah you guys screen and we get the money.		
13:21:48 CAM-2	oh you said screen, I though you said nice for us that we didn't have to scream.		
13:21:52 FA-4	ah we'll do that during takeoff, I'm sure.		
13:21:56 CAM-2	I was trying to figure out what you meant. I thought-		
13:21:58 CAM-?	security.		
13:21:59 CAM-2	yeah I got it.		
13:22:03 CAM-1	I didn't see the shear ***.		
13:22:07 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:22:29 CAM-1	thank you. appreciate it. for some reason they don't have any power here.		
13:22:30 CAM-?	***.		
13:22:34 CAM-1	thank you appreciate it.		
13:22:35 CAM-2	thanks for bringing it over.		
13:22:36 CAM-?	yeah, cool.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:22:38 CAM-?	***.		
13:22:39 CAM-2	oh yeah.		
13:22:42 HDL-3	even rockin' the airplane *.		
13:22:44 CAM-2	oh yeah.		
13:22:52 HDL-3	should be everything there. hopefully.		
13:22:55 CAM-?	***.		
13:23:01 HDL-3	is that everything you needed?		
13:23:03 CAM-1	well I just needed two of these but we'll make it work.		
13:23:05 HDL-3	oh you need two?		
13:23:07 CAM-1	yeah no worries.		
13:23:10 HDL-3	can you make out without one?		
13:23:12 CAM-1	yeah.		
13:23:13 HDL-3	I can go get you another if you need it.		
13:23:15 CAM-1	no I'll I'll e-mail the it in instead of the, mailing it in.		
13:23:19 HDL-3	okay, have a safe flight gentlemen. thank you.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:23:42 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:24:09 CAM-1	it's gonna be very bumpy *.		
13:24:29 CAM-1	[sound of sneeze] yeah you would think they would have backup generators.		
13:24:32 CAM-2	yeah.		
13:24:47 CAM-2	so you'll have to call flight service on your phone? I don't know of any other way to get 'em.		
13:25:28 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:25:39 CAM-1	thank you.		
13:25:59 CAM-1	* * * is ten two seventy six.		
13:26:05 CAM-2	*** the flight plan?		
13:26:07 CAM-1	***?		
13:26:09 CAM-2	seven five forty three.		
13:26:15 CAM-2	***.		
13:26:17 CAM-1	sixteen three.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:27:22 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:28:54 CAM-2	so what did @ we okay to go with that recorded weather it - it's an hour old?		
13:28:59 CAM-1	no, naw you gotta in and check on the ah ARCAM. it's it's on there in that runway analysis stuff and they have a ah I've never done it so I gotta go in myself. You, you can pull up the last temperatures that way and put a time on it. temperatures pretty much all everything you need.		
13:29:19 FA-1	could you guys call AVFLT and see if they ah loaded * * flagpole for the van, they're asking if we can clarify that * it's loaded on the bus.		
13:29:28 CAM-1	which AVFLT?		
13:29:29 FA-1	** these people that loaded -		
13:29:32 CAM-1	the power is out.		
13:29:34 FA-1	and all the water and ah.		
13:29:37 CAM-1	I don't even have their phone number *.		
13:29:40 CAM	***.		
13:29:46 CAM-2	it was in the, it was in the bus?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:29:48 FA-1	yeah.		
13:29:51 CAM-1	why don't we ask one of the?		
13:29:52 FA-1	why didn't she ask that when she was inside?		
13:29:57 CAM-?	whatever.		
13:29:59 FA-1	ah one of those one.		
13:30:00 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:30:17 CAM-2	here's a number if you wanna call. area seven three four, four eight two -		
13:30:24 CAM-1	hold on a second, seven three four.		
13:30:27 CAM-2	four eight two.		
13:30:27 CAM-1	yep.		
13:30:28 CAM-2	two six two one.		
13:30:34 CAM-2	* frequency ** it's not gonna work.		
13:30:48 CAM-1	yeah the power is out.		
13:30:50 CAM-2	yeah so nothing's gonna work.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:30:55 CAM-2	when the guy comes up to give us the bag count we'll get it from him.		
13:31:15 CAM-1	I don't think we can reach Detroit on the ground here.		
13:31:18 CAM-2	I don't think so.		
13:31:19 CAM-1	huh?		
13:31:20 CAM-2	we can try.		
13:31:22 CAM-2	it'd make life a lot easier.		
13:32:35 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:34:42 CAM-2	was the phone *?		
13:34:44 CAM-1	no its a-		
13:34:46 CAM-2	one of their ah guys will come up and give us the bag count and we'll ask him then.		
13:34:50 FA-1	that's uncle @ he's inside, right?		
13:34:52 CAM-?	yeah. there ya go.		
13:35:00 CAM-?	I forgot about him.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:35:02 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:35:37 CAM-2	hey @?		
13:35:54 CAM-2	hey @? Oh ah you're on the phone, I'm sorry.		
13:36:00 FA-1	they're coming inside right now @, so, yeah.		
13:36:08 FA-1	yeah it was with the luggage it was with the luggage.		
13:36:14 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:37:01 HDL-2	alright ahm for the rear bin we have, do you want the three sections or a total?		
13:37:07 CAM-2	ah three sections.		
13:37:07 CAM-1	do you guys have the players bags and everything on?		
13:37:10 HDL-2	ah the second bus has just left, so they'll be here in about fifteen.		
13:37:14 CAM-1	okay.		
13:37:15 HDL-2	but in the very rear section, twenty nine.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:37:18 CAM-2	look wait a minute there's another bus coming, so are you gonna add to that?		
13:37:20 HDL-2	yes.		
13:37:21 HDL-2	yeah, the- this is just in the back bin.		
13:37:23 CAM-2	okay so.		
13:37:23 CAM-1	* full already?		
13:37:24 HDL-2	the back bin's full, so twenty nine, twenty seven, and seven.		
13:37:31 CAM-1	seven in the mid already?		
13:37:32 HDL-2	yeah * yeah.		
13:37:35 CAM-1	we don't want anything in the forward, so make sure to fill up the -.		
13:37:39 HDL-2	* the mid? okay, yeah I mean, the basketball team normally isn't a terribly large amount. so, hopefully we'll be able to do that.		
13:37:46 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:37:50 HDL-2	so in D-two,		
13:37:53 CAM-1	alright.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:37:55 CAM-1	twenty nine.		
13:37:59 CAM-1	twenty nine times thirty.		
13:38:01 CAM-1	D-two is all the way back, it's ah eight seventy.		
13:38:04 CAM-2	eight seven. eight seven zero.		
13:38:08 CAM-1	* * *.		
13:38:12 CAM-1	and a D-one, ah twenty seven bags at eight ten.		
13:38:18 CAM-2	okay.		
13:38:26 CAM-1	and in C-two, you need to scratch that off and -		
13:38:31 CAM-2	oh because it's gonna be -		
13:38:32 CAM-1	yeah. just initial it.		
13:38:42 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:38:57 CAM-1	we got one eighty six, two hundred.		
13:39:00 CAM-2	two hundred. three seventy * * and then *.		
13:39:05 CAM-1	* one * is.		
13:39:07 CAM-2	eight ten.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:39:07 CAM-1	eight ten.		
13:39:08 CAM-2	* (eight seventy).		
13:39:10 CAM-1	(eight seventy).		
13:39:12 CAM-1	you put fuel down already?		
13:39:14 CAM-2	ah, I put eighteen thousand in the wing, I did not put anything in the center yet. because I wasn't sure how much we were gonna burn down.		
13:39:23 CAM-2	want ah twelve thousand in the center?		
13:39:26 CAM-1	ah we'll show ah thirty point five total fuel.		
13:39:28 CAM-2	so twelve five then.		
13:39:33 CAM-1	ah we can show thirty one * * *.		
13:39:34 CAM-2	so then it'll be thirteen thousand in the center.		
13:39:38 CAM-1	*.		
13:39:44 CAM-1	*** fuel burn is, ten two seventy six, ten two seventy six.		
13:40:05 CAM	[sound similar to sneeze.]		
13:40:11 CAM-2	God bless you.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:40:39 CAM	***.		
13:40:48 CAM-2	so @, we're gonna have both the band, and and the team on board or?		
13:40:52 FA-1	looks that way. [sound of laughter].		
13:40:56 CAM	[non-flight related conversation].		
13:41:26 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:41:53 CAM-2	what is ah departure eighteen ninety five out here?		
13:41:56 CAM-1	that's Detroit.		
13:41:59 HOT	[sound similar to static].		
13:42:08 HOT	[sound similar to static].		
13:42:13 CAM-2	I don't think so.		
13:42:15 CAM-1	* hearing *?		
13:42:18 CAM-2	not hearing anything?		
13:44:47 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:46:10 CAM-1	can we get some candy please? we just ran out.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:46:11 FA-1	we just ran out *.		
13:46:13 CAM-1	yeah right [sound of laughter]		
13:46:20 CAM-2	you want some trail mix. ***.		
13:47:02 CAM-2	did you see *** when we pulled up to the airport? did you look?		
13:47:07 CAM-1	yeah I looked I couldn't see it.		
13:48:01 CAM-1	huh look at this.		
13:48:04 CAM-2	what am I looking at?		
13:48:05 CAM-1	a roof panel that came up?		
13:48:09 CAM-2	still there.		
13:48:10 CAM-1	on the building.		
13:48:20 CAM-2	okay we're hearing them.		
13:48:38 CAM-1	that's why I called them instead of. I didn't want to tie up Detroit approach because that's the same frequency for everyone going into Metro.		
13:48:45 CAM-2	that's fine. they don't sound very busy right now.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
13:49:23 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
13:54:35 HDL-2	[non-flight related conversation].		
13:57:25 CAM-2	I tried that earlier * * the other ramp * worked.		
13:57:53 CAM-1	maintenance said told me that you gotta have a signal going from NAV one one to the the autothrottles. it's like why would, why would that be connected?		
13:58:04 CAM-2	I don't know. that doesn't make sense. but if that's true. so.		
13:58:09 CAM-1	that's why it didn't work.		
13:58:15 CAM-1	they said they replaced the receiver on that thing.		
13:58:17 CAM-2	right.		
13:58:21 CAM-1	did you see that fuel ticket * *?		
13:58:24 CAM-2	ah they never brought one on.		
13:58:26 CAM-1	I had a little yellow one * * somewhere ***.		
13:58:36 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:02:54 FA-3	we got two police officers that going to be flying with 'em.		
14:02:58 CAM-1	fill out a form?		
14:02:58 FA-3	they don't have, they don't have their forms. I gotta get the forms. oh shoo.		
14:03:01 CAM-2	I'll get it.		
14:03:01 CAM-1	I'll get 'em.		
14:03:06 CAM-1	they're law enforcement officers?		
14:03:07 FA-3	yes.		
14:03:08 CAM-1	okay.		
14:03:09 FA-3	and they're carrying weapons on them.		
14:03:11 CAM-1	alright.		
14:03:14 CAM-1	so which one is that one?		
14:03:16 CAM-2	P-H-M seven and eight.		
14:03:21 CAM-1	I think we only need seven for * *. because I haven't seen it. all I've seen here are P-H-M fours.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:03:25 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
14:03:29 CAM-2	is it the other one?		
14:03:38 CAM-1	are they here on the airplane?		
14:03:40 FA-3	no they're still inside.		
14:03:45 CAM-2	it might be in that ah three ring binder, in the locked **. because I haven't seen it. all I've seen are P-H- M fours.		
14:03:58 FA-3	I'm gonna I probably have some in mine.		
14:04:01 CAM-1	would you bring that ah, overhead, binder?		
14:04:04 FA-3	*.		
14:04:05 CAM-2	he needs the key, right, isn't the key over here?		
14:04:09 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:04:33 FA-2	ladies and gentlemen welcome onboard Ameristar charter. please remember that all carry on articles must be stowed and properly secured under the seat in front of you or in an overhead compartment. please use caution when opening the overhead compartment, if you article do not fit properly or you need assistance in stowing **** can I have the attention of the passenger seated in an emergency exit row, please read the emergency * criterion on the safety information card in the seat packet in front of you review the information explaining the exit row requirements. if you are seated **** criterion or are unable to carry out the instructions feel free to let one of the flight attendants know so you can be reseated at this time. in compliance with federal regulations smoking is not permitted in this cabin. the smoking of e-cigarettes is not permitted in the aircraft. thank you for your attention.		
14:04:38 CAM-2	there's two ah breakers popped here.		
14:04:40 CAM-1	what is it?		
14:04:42 CAM-2	forward water system, and, they're both water related. they, they can go in, right?		
14:04:50 CAM	[multiple unintelligible voices].		
14:05:37 FA-3	okay tell them I'm coming out.		
14:05:49 CAM-1	that's all you need.		
14:05:51 FA-3	just this one?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:05:53 CAM-1	that for * passengers are not *.		
14:06:00 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
14:06:56 CAM-1	[sound similar to phone ringtone] honey I gotta call you when I get to Washington, I'm very busy *****. [consistent with cell phone call].		
14:09:12 CAM	[sound similar to telephone ringtone].		
14:10:16 CAM	[unintelligible voices].		
14:10:21 CAM-?	this is one of the police officers **.		
14:10:30 FA-?	you guys have ahm paperwork for an armed ***?		
14:10:33 CAM-2	I gave it to @ already.		
14:10:34 FA-?	oh okay I didn't know about that.		
14:10:35 CAM-2	yeah he's got it.		
14:10:37 FA-?	okay.		
14:10:38 CAM	[sounds consistent with passengers boarding the aircraft].		
14:11:48 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:13:54 INT	[sound similar to passenger call button].		
14:14:03 FA-2	@?		
14:14:05 FA-5	@?		
14:14:05 FA-5	yes?		
14:14:06 FA-2	can you ah bring a few sick bags up for me please?		
14:14:09 FA-5	say that one more time.		
14:14:10 FA-2	can you bring up a few sick bags for me?		
14:14:13 FA-5	sick bags?		
14:14:14 FA-5	okay.		
14:14:15 FA-2	thank you.		
14:15:28 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
14:19:02 CAM-2	your phone rang while you were gone, so you got a missed call.		
14:19:11 CAM-1	can't even fit bags.		
14:19:12 CAM-2	huh?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:19:13 CAM-1	it's * (forward) is packed.		
14:19:14 CAM-2	oh is it?		
14:19:35 CAM-2	so how did you do this R-C-A-M thing?		
14:19:39 CAM-1	* * *.		
14:19:40 CAM-?	*.		
14:19:41 CAM-2	because the power's out right so you couldn't -		
14:20:04 CAM-1	(we) can erase A and B too.		
14:20:08 CAM-2	I didn't put anything in.		
14:20:10 CAM-1	ah look here.		
14:20:40 CAM-2	well if they make it to Sunday they gotta pack for five days. four days I guess.		
14:21:06 CAM-?	almost there.		
14:21:10 CAM	[multiple unintelligible background voices].		
14:22:22 CAM-2	do you know how * those numbers broke down?		
14:22:24 CAM-1	ah you're probably gonna have to move some passengers, to the back.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:22:28 CAM-1	how many do we have one twelve?		
14:22:29 CAM-2	I didn't hear a count.		
14:22:33 CAM-1	no count yet?		
14:22:35 FA-1	there's still people loading stuff. (we don't) everybody on board.		
14:22:36 CAM-1	* * *		
14:22:39 CAM-1	what where's @ with the paperwork?		
14:22:41 FA-1	* (@) is outside, doing something.		
14:22:45 CAM	[unintelligible background voices and conversation consistent with passenger boarding].		
14:23:27 CAM-?	hey @.		
14:23:31 FA-2	we got one, minus one, so one oh nine.		
14:23:38 CAM-1	one ten with you?		
14:23:40 FA-2	yeah one ten with me.		
14:23:41 CAM	[unintelligible].		
14:23:41 CAM-2	* * * * paperwork.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:24:15 CAM-1	@.		
14:24:18 FA-1	what's up?		
14:24:19 CAM-1	I cannot have more than thirty passengers in zone one.		
14:24:21 FA-1	in zone one?		
14:24:25 CAM-1	that, that's all you gotta count.		
14:24:34 CAM-1	we'll just do this, ah you ready?		
14:24:35 FA-1	yeah.		
14:24:37 CAM-1	zone one twenty five at forty eight seventy five.		
14:24:44 CAM-?	(okay).		
14:24:45 CAM-1	zone two forty at seventy eight hundred.		
14:24:48 CAM-?	okay.		
14:24:49 CAM-1	zone three forty five at eighty * -		
14:24:52 FA-1	so we have thirty two in zone one but look eight of them are kids, like little tiny kids.		
14:24:58 CAM-1	(we) show there's twenty five, forty, forty five.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:25:00 FA-1	twenty five, forty, forty five.		
14:25:04 CAM-2	forty five at how much?		
14:25:05 CAM-1	eighty seven seventy five.		
14:25:06 CAM-2	k.		
14:25:10 CAM-1	uhmm.		
14:25:12 CAM-2	zero fuel weight?		
14:25:13 CAM-1	zero fuel weight is one one four, four seven six.		
14:25:17 CAM	[unintelligible].		
14:25:24 CAM-2	taxi?		
14:25:25 CAM-1	taxi weight ah one four five, four seven six.		
14:25:32 CAM-1	takeoff weight one four five zero seven six.		
14:25:36 CAM-2	yup.		
14:25:37 CAM-1	landing weight one three four, eight hundred. * * forward C-G three point seven. aft twenty two point one. wet eleven point seven.		
14:25:54 CAM-?	*.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:25:55 CAM-1	stab trim is ah seven point zero. [sound similar to stabilizer trim aural movement sound].		
14:26:07 CAM-2	* * * for A B and C two *.		
14:26:10 CAM-1	ah that's right ah. in ah section A show twenty bags at seven eighty six.		
14:26:21 CAM-2	okay.		
14:26:22 CAM-1	and in C thirty or I mean ah.		
14:26:26 CAM-2	B?		
14:26:27 CAM-1	yeah in B a twenty - let's show - yeah, thirty at eleven sixty.		
14:26:34 CAM-1	and C- two is gonna be ah twenty at a thousand.		
14:26:39 CAM-2	okay.		
14:26:43 CAM-1	you got everything?		
14:26:44 CAM-2	yes.		
14:26:45 CAM-2	here ya go.		
14:26:50 CAM-2	before start below the line.		
14:26:52 CAM-1	yeah I gotta * * *.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:26:53 CAM-2	alright.		
14:26:59 CAM-1	* * *		
14:27:03 HOT	[sound similar to passenger call chime].		
14:27:07 CAM-1	they're still loading *.		
14:27:09 CAM-2	yeah.		
14:27:41 CAM	[occasional unintelligible background voices].		
14:28:23 FA-3	I gotta stand in here for a minute, I'm cold.		
14:28:27 CAM-2	I'm sorry?		
14:28:28 FA-3	I gotta stand in here for a second I'm freezing.		
14:28:30 CAM-2	It feels like the temperature is dropping.		
14:28:32 FA-3	I know.		
14:28:50 CAM	[occasional unintelligible background voices].		
14:30:11 CAM-1	where ah * * where's the * sitting.		
14:30:20 FA-1	five, D?		
14:30:22 CAM-1	both of them?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:30:25 FA-1	* * *, I wasn't even aware of it until he came on.		
14:30:31 CAM-2	alright, below the line.		
14:30:32 CAM-1	fuel pumps and crossfeed.		
14:30:33 CAM-?	* * *.		
14:30:36 CAM-2	on and closed.		
14:30:37 CAM-1	fuel pumps, quantity * * *, fuel quantity?		
14:30:40 CAM-2	ah required is sixteen three we have thirty thousand five hundred on board.		
14:30:44 CAM-1	sixteen three * * * on board ah.		
14:30:44 CAM	[multiple unintelligible voices].		
14:30:47 CAM-1	V- speeds?		
14:30:48 CAM-2	ah the one forty six thousand pound flaps fifteen, one thirty nine, one forty two, one fifty, one sixty five, one ninety nine, two forty eight set *.		
14:30:56 CAM-1	one thirty nine, one forty two, one fifty * * * * stabilizer trim *.		
14:31:01 CAM-2	okay envelopes out?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:31:03 CAM-1	ah I e-mailed it in.		
14:31:05 CAM-2	seven point zero.		
14:31:06 CAM-1	pull the - pull the chocks.		
14:31:07 CAM-?	pull chocks.		
14:31:08 CAM-2	seven point zero checked and set.		
14:31:10 CAM-1	seven point zero checked and set. * *?		
14:31:12 CAM-2	checked and set.		
14:31:14 CAM-?	[unintelligible].		
14:31:21 CAM-1	tower's still down?		
14:31:22 CAM-2	ah I checked about ten minutes ago and it was, yes. keep trying.		
14:31:32 FA-4	ladies and gentlemen in preparation for our departure we do ask that all passengers be seated with their seatbelts fastened low and tight across their ** portable electronic devices * cell phones laptops be turned off and stowed at this time. we appreciate your cooperation thank you.		
		14:31:41 RDO-1	Willow Run tower Ameristar ninety three sixty three.
14:31:55 CAM-2	ready for start please.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:31:58 HOT-1	ready * start.		
14:32:01 HOT-1	documents.		
14:32:03 CAM-2	crossfeeds are open.		
14:32:04 HOT-1	documents.		
14:32:05 CAM-2	oh documents on board.		
14:32:06 HOT-1	cabin.		
14:32:07 CAM-2	ah secured.		
14:32:08 HOT-1	cockpit door.		
14:32:09 CAM-2	it'll be locked.		
14:32:10 HOT-1	pneumatic crossfeed.		
14:32:11 CAM-2	open.		
14:32:12 HOT-1	hydraulics.		
14:32:13 CAM-2	on high and checked.		
14:32:14 HOT-1	anti-collision lights.		
14:32:15 CAM-2	on.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:32:16 HOT-1	annunciator door lights.		
14:32:17 CAM-2	checked and lights out.		
14:32:19 CAM-?	* * * this thing.		
14:32:19 HOT-1	air conditioning supply switch.		
14:32:21 CAM-2	off.		
14:32:22 HOT-1	fuel pumps.		
14:32:23 CAM-2	uhm set.		
14:32:24 HOT-1	pitot windshield heat.		
14:32:25 CAM-2	captain on.		
14:32:26 HOT-1	ignition?		
14:32:27 CAM-2	is on.		
14:32:28 HOT-1	pneumatic pressure.		
14:32:28 CAM-2	check.		
14:32:29 HOT-1	alright ready for start check's complete.		
14:32:29 CAM-2	go ahead and start the right engine please.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:32:44 HOT-1	start valve open. oil pressure.		
14:33:09 CAM-2	forty percent.		
14:33:14 CAM-2	starting left engine.		
14:33:21 CAM-1	start valve open.		
14:33:31 CAM-1	Michigan. [consistent with cell phone call].		
14:33:34 CAM-1	oil pressure.		
14:33:38 CAM-1	yes. [consistent with cell phone call].		
14:33:57 CAM-2	forty percent.		
14:33:58 HOT	[electronic sound consistent with transfer of electrical power].		
14:34:00 CAM-?	got it?		
14:34:01 HOT-1	ah good day sir this is Ameristar ninety three sixty three, that's Alpha Juliet India nine three six three. ah we're on the ground in Detroit Willow Run ah Yankee India Papa and tower I guess they lost power out here so we need to try to get a clearance with you going to Dulles. [consistent with cell phone call].		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:34:26 HOT-1	it's gonna be departing runway two three left and we'll be ready in five minutes. [consistent with cell phone call].		
14:34:32 CAM-2	after start.		
14:34:41 HOT-1	all right. appreciate it. [consistent with cell phone call].		
14:34:46 CAM-1	after start. pneumatic crossfeeds?		
14:34:47 FA-4	at this time we do ask that you give your undivided attention to the flight attendant nearest you while important safety information is review. please observe the no smoking signs and fasten seatbelt signs when they are illuminated. federal aviation regulations require passenger compliance with lighted passenger information sign and posted placards and all crewmember instructions. please take a moment to review the passenger information card located in the seat pocket in front of you. it illustrates the location of operat-		
14:34:47 CAM-2	closed.		
14:34:48 CAM-1	transponder?		
14:34:49 CAM-2	* *.		
14:34:49 CAM-2	transponder one.		
14:34:50 CAM-1	hydraulics?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:34:51 CAM-2	on high and checked.		
14:34:52 CAM-1	A-P-U air switch?		
14:34:53 CAM-2	is off.		
14:34:53 CAM-1	engine anti-ice?		
14:34:54 CAM-2	is off.		
14:34:55 CAM-2	off.		
14:34:55 CAM-1	ignition?		
14:34:56 CAM-2	off.		
14:34:56 CAM-1	electrical system?		
14:34:57 CAM-2	checked.		
14:34:58 CAM-1	* ignition (start) switches?		
14:35:00 CAM-2	auto.		
14:35:00 CAM-1	* * *.		
14:35:01 CAM-2	on.		
14:35:02 CAM-1	annunciators.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:35:02 CAM-2	checked.		
14:35:03 CAM-1	shoulder harnesses.		
14:35:04 CAM-2	on left.		
14:35:05 CAM-1	on right. ground equipment?		
14:35:07 CAM-2	clear left.		
14:35:08 CAM-1	after start checklist complete.		
14:35:09 CAM-2	start taxiing out.		
		14:35:19 RDO-1	Willow Run traffic Ameristar ninety three sixty three MD-eighty is taxiing from the ah east ramp out to runway ah two three left any inbound traffic and traffic in the pattern please advise Willow Run.
14:35:35 HOT-1	easy on the tiller.		
14:35:36 CAM-2	*.		
14:35:37 HOT-1	yup. [consistent with cell phone call].		
14:35:41 HOT-1	okay. [consistent with cell phone call].		
14:35:46 HOT-1	yup. [consistent with cell phone call].		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:35:48 HOT-1	eight one eight one. [consistent with cell phone call].		
14:35:51 HOT-1	okay. [consistent with cell phone call].		
14:35:52 HOT-1	thank you sir I appreciate it. [consistent with cell phone call].		
14:36:03 CAM-2	okay I'll taxi slow on the off chance.		
14:36:06 HOT-1	yeah * do the taxi check first and then we'll-		
14:36:08 CAM-2	slats extend flaps fifteen taxi checklist.		
14:36:11 HOT-1	no, no, no straight ahead.		
14:36:29 HOT-1	taxi checklist, flaps and slats.		
14:36:31 CAM-2	no this goes to two seven we're gonna use two-		
14:36:33 HOT-1	yes we gotta take two seven to two three.		
14:36:35 CAM-2	okay.		
14:36:36 CAM-2	umh, fifteen, fifteen, fifteen, takeoff and a blue light.		
14:36:41 HOT-1	fifteen, fifteen, fifteen, takeoff, blue light.		
14:36:44 HOT-1	ah V-speeds.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:36:46 CAM-2	off the one forty six thousand pound card one thirty nine, one forty two, one fifty, recheck.		
14:36:51 HOT-1	one thirty nine, one forty two, one fifty recheck.		
14:36:55 HOT-1	stab trim.		
14:36:56 CAM-2	seven point zero, set.		
14:37:00 HOT-1	seven point zero units set, annunciators checked, I'll get the flight attendants here in a little bit.		
14:37:07 HOT-1	we'll just wait here. * you see the windsock, what's it better for?		
14:37:10 CAM-2	ah, I, I prefer two three *.		
14:37:14 CAM-2	it's variable.		
14:37:21 CAM-2	gonna hold short until you make the announcement.		
14:37:24 HOT-1	yes sir this is ah Ameristar ninety three sixty three we're on the ground here at Willow Run holding short of runway two three left ah ready to go like to get a clearance to Dulles. [consistent with cell phone call].		
14:37:37 HOT-1	it's ah alpha juliet india nine three six three, it's Amerista ninety three sixty three. [consistent with cell phone call].		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:37:46 HOT-1	thanks. [consistent with cell phone call].		
14:37:58 HOT-1	I don't see anything in the system. [consistent with cell phone call].		
14:38:06 HOT-1	no flightplan stored that's just great, ah, okay I guess we need to ah call the company and have them refile then. [consistent with cell phone call].		
14:38:16 HOT-1	[sound similar to chuckle] * I ah. thank you bye-bye. [consistent with cell phone call].		
14:38:23 CAM-2	unbelievable.		
14:38:26 HOT-1	it's just one thing after another.		
14:38:27 CAM-2	oh yeah.		
14:38:32 HOT-1	you know what? it's probably faster just for me to file myself, right?		
14:39:10 HOT-1	briefers. [consistent with cell phone call].		
14:39:18 HOT-1	Michigan. [consistent with cell phone call].		
14:39:47 HOT-1	yes sir ah we'd like to file an I-F-R flightplan please. [consistent with cell phone call].		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:39:52 HOT-1	ah it's gonna be for alpha juliet India ah nine three six three that's Ameristar nine three six three, ah. no alpha juliet india nine three six three. it's an MD-eighty three slant let me see what we got * slant lima, ah, usually the company does this, so let me know what else you need. ah airspeed four five zero knots. ah it's gonna be kilo yankee india papa. Detroit Willow run. ah at nineteen ah as soon as possible nineteen forty five Z. altitude will be flight level three one zero. the route of flight will be ah direct to Carlton charlie romeo lima, jet three four to Dryer that's delta juliet bravo, J-eighty five to hotel victor quebec and then it's the Gibbz two arrival that's golf india bravo bravo zulu two into Dulles. destination Dulles kilo india alpha delta and alternate airport will be ah Baltimore kilo bravo whiskey india. time in route one hour and thirty - fifteen minutes. fifteen minutes. just tell 'em its a (flow) * *. [consistent with cell phone call].		
14:41:33 CAM-2	*		
14:41:33 HOT-1	I'm sorry. fuel on board is a two hours and thirty minutes. ah first initial alpha. last name ah golf romeo uniform sierra echo uniform sierra. based at alpha delta sierra. and the phone ah one eight hundred three six eight five three eight seven. five three eight seven. ah total people on board is ah hundred ah fifteen. and ah red and blue on white. yeah it's november seven eight six tango whiskey. [consistent with cell phone call].		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:41:37 CAM-2	ladies and gentlemen from the flight deck welcome aboard flight nine three six three service to Washington Dulles airport, flight time today one hour fifteen minutes, experiencing just a short delay here on the ground. power on the airports not working * * air traffic *****. [sound similar to flight attendant bell].		
14:42:53 HOT-1	that's it. [consistent with cell phone call].		
14:43:12 HOT-1	that's it. [consistent with cell phone call].		
14:43:20 HOT-1	naw we got, all that I appreciate the help. thank you sir. [consistent with cell phone call].		
14:43:25 HOT-?	* * *.		
14:43:26 HOT-1	what a # cluster#.		
14:43:32 HOT-1	yup.		
14:43:41 HOT-1	@ said he had issues, filing it.		
14:44:01 HOT-1	yes sir ah this ah Ameristar ninety three sixty three ah on the ground here at Willow Run hopefully the ATC clearance is in the system this time. not yet? okay, sounds good appreciate that. okay, I'll call back here in a few minutes. Alright, sounds good, thank you, bye. [consistent with cell phone call].		
14:44:37 CAM-2	let's run the taxi check while were waiting from the top please.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:44:40 HOT-1	we did that. the taxi check.		
14:44:41 CAM-2	I don't think we completed it.		
14:44:43 HOT-1	yeah.		
14:44:45 HOT-1	ah taxi check ah flap, flaps and slats?		
14:44:45 CAM-2	yeah.		
14:44:47 CAM-2	I have fifteen, fifteen, fifteen, takeoff and a blue light.		
14:44:51 HOT-1	fifteen, fifteen, fifteen, takeoff blue light. flight controls elevator on.		
14:44:55 CAM-2	checked.		
14:44:55 HOT-1	checked A-P-U.		
14:44:57 CAM-2	off.		
14:44:58 HOT-1	and ah fuel heat?		
14:45:00 CAM-2	should be off.		
14:45:00 HOT-1	off. takeoff briefing?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:45:02 CAM-2	ah left seat takeoff. assigned headings, probably three thousand feet. emergency return we'll just take it right over to Metro airport landing on one of the two one * *.		
14:45:16 HOT-1	before takeoff the line flaps and slats.		
14:45:18 CAM-2	are fifteen, fifteen, fifteen, takeoff and a blue light.		
14:45:21 HOT-1	fifteen, fifteen, fifteen, takeoff blue light. V-speeds?		
14:45:24 CAM-2	off the one forty six thousand pound card, one thirty nine, one forty two, one fifty recheck.		
14:45:29 HOT-1	one thirty nine, one forty two, one fifty, rechecked. stab trim?		
14:45:32 CAM-2	seven point zero set.		
14:45:35 HOT-1	seven point ah zero units set. annunciators checked. I'll get the flight attendants here.		
14:45:41 CAM-2	I told them to be seated for departure, I got the two dings so ah we're good to go.		
14:45:45 HOT-1	oh.		
14:46:00 CAM-2	wonder why more often than not we have trouble * *.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:46:15 CAM-2	I should also add to my briefing we're gonna delay rotation because of the gusty winds.		
14:46:20 HOT-1	yeah I'll just call rotate.		
14:46:21 CAM-2	yup.		
14:46:41 CAM-2	I'll get those n- those phone number from you.		
14:46:44 HOT-1	huh?		
14:46:44 CAM-2	I'll get those phone number from you * later today. I don't know if I have those numbers, for my own use in the future.		
14:47:07 HOT-1	yeah sir it's Ameristar ninety three sixty three again any luck? ready to copy. [consistent with cell phone call].		
14:47:37 HOT-1	Ameristar ninety three sixty three cleared to Dulles via Akron five departure Akron direct ah hotel victor quebec as filed. three thousand three one oh in ten eighteen ninety five in seven two one four in the box hold for release. and yeah we're number one ready to go runway two three left. Two three left, yes sir. [consistent with cell phone call].		
14:48:14 HOT-1	yeah void if not off by fifty one and ah time now forty eight and a half. that's all we need appreciate the help. [consistent with cell phone call].		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:48:24 HOT-1	heading three zero zero. hold that. [consistent with cell phone call].		
14:48:26 HOT-1	ah departure. thank you bye. [consistent with cell phone call].		
14:48:29 HOT-1	let me put that in real quick * Akron five. It's gonna be the one oh six out of thirteen four.		
14:48:33 CAM-2	what is it?		
14:48:36 CAM-2	alright.		
14:48:39 CAM-2	thank you.		
14:48:42 HOT-1	fix. V-lock.		
14:48:47 CAM-2	Akron five?		
14:48:49 HOT-1	yeah.		
14:49:25 HOT-1	there ya go. so heading three zero zero on departure.		
14:49:25 CAM-2	ready?		
14:49:27 CAM-2	alright.		
14:49:28 CAM-2	three hundred heading up to three thousand. ready?		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:49:30 HOT-1	yup.		
14:49:31 CAM-2	alright, let's announce our intentions.		
14:49:33 HOT-1	yup.		
		14:49:35 RDO-1	Willow Run traffic ah Ameristar ninety three sixty three is taking an active runway ah two three left for departure and ah it will be a right turn out ah north west departure any inbound traffic please advise Willow Run.
		14:49:49 N555P	and a Willow Run Baron triple five papa is ah four to the northwest I'm entering a right downwind for runway two seven and I've got the ah Ameristar MD-80 visual.
		14:50:01 RDO-1	thank you sir appreciate it.
14:50:02 CAM-2	before takeoff to the line.		
14:50:04 HOT-1	ah below the line.		
14:50:05 CAM-2	*		
14:50:05 HOT-1	depart - ah departure runway two three left confirm ignition is on transponder T-A-R-A and landing lights are on runway alignment's set * * *.		
14:50:09 CAM-2	left confirmed.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:50:19 INT-1	ladies and gentlemen from the flight deck ah we've been cleared for departure flight attendants please be seated.		
14:50:42 HOT-1	final's clear.		
14:50:45 CAM-2	clear left.		
14:50:47 HOT-1	clear right.		
		14:50:48 N555P	and Willow Run traffic Baron five five five papa's right downwind two seven. we're gonna be a full stop.
14:51:06 CAM-2	alright, runway alignment is checked.		
14:51:08 HOT-1	checks.		
14:51:11 CAM-2	before takeoff is complete.		
14:51:12 HOT-1	go.		
14:51:18 HOT-1	looks like the wind is a little bit from the right.		
14:51:20 CAM-2	right.		
14:51:21 CAM-2	I'm gonna * some right crosswind *.		
14:51:27 CAM-2	autothrottles on please. set takeoff thrust.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:51:35 HOT-1	takeoff thrust set N1's checked.		
14:51:38 HOT-1	airspeed alive.		
14:51:41 HOT-1	clamp.		
14:51:43 HOT-1	eighty knots.		
14:51:44 CAM-2	checked.		
		14:51:45 N555P	ah Willow Run Baron triple five papa right * two seven full stop.
14:51:55 HOT-1	V-one.		
14:52:01 HOT-1	rotate.		
14:52:04 HOT-1	V-two.		
14:52:05 CAM-2	hey what's goin' on?		
14:52:08 CAM-2	abort.		
14:52:09 HOT-1	no. not above - #.		
14:52:15 HOT-1	# don't abort above V-one like that.		
14:52:19 HOT-1	#.		
14:52:19 CAM-2	it wasn't flying.		

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION</u> <u>CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION</u> <u>CONTENT</u>
14:52:22 HOT-1	#.		
14:52:23 CAM	[sounds consistent with departure from the prepared surface].		
14:52:27 CAM	speed brake speed brake speed brake [electronic voice].		
14:52:27 FA-1	heads down, stay down, heads down, stay down, heads down, stay down.		
14:52:32 CAM	landing gear landing gear [multiple repetitions electronic voice].		
14:52:37 PA-1	evacuate, evacuate, evacuate.		
14:52:41 CAM-2	it wasn't flying. it wasn't - I had it all the way back here it wasn't flying.		
14:52:46 CAM	[sounds consistent with emergency evacuation of the cabin].		
14:53:12 CAM-2	it was not rotating I had it all the way back here.		
14:53:29 CAM-2	#.		
14:53:47 HOT-1	evacuation checklist.		
14:53:49	End of Recording		
14:53:49	End of Transcript		