

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



GROUP CHAIRMAN'S FACTUAL REPORT OF INVESTIGATION

DCA18MA142

**By
Joe 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

November 13, 2018

Cockpit Voice Recorder

Group Chairman's Factual Report
By Joe Gregor

1. EVENT SUMMARY

Location: Philadelphia, Pennsylvania
Date: April 17, 2018
Aircraft: Boeing 737-700, Registration N772SW
Operator: Southwest Airlines, Flight 1380
NTSB Number: DCA18MA142

On April 17, 2018, at 1103 eastern daylight time (EDT), Southwest Airlines flight 1380, a Boeing 737-700, N772SW, experienced a left engine failure and loss of engine inlet and cowling during climb at about flight level 320. Fragments from the engine inlet and cowling struck the wing, fuselage, and one cabin window, resulting in a depressurization. The flight crew conducted an emergency descent and diverted into Philadelphia International Airport (KPHL), Philadelphia, PA. Of the 144 passengers and five crewmembers onboard, one passenger received fatal injuries and eight passengers received minor injuries. The airplane sustained substantial damage. The regularly scheduled domestic passenger flight was operating under 14 Code of Federal Regulations Part 121 from LaGuardia Airport (LGA), Queens, New York, to Dallas Love Field (DAL), Dallas, Texas. A solid-state cockpit voice recorder (CVR) was sent to the National Transportation Safety Board (NTSB) Vehicle Recorder Division for evaluation. The CVR group meeting convened on April 23, 2018 and a transcript was prepared for the 2-hour, 62-second long¹ digital recording (see attached).

2. GROUP

Chairman: Dr. Joseph A Gregor
Electrical Engineer / CVR Specialist
National Transportation Safety Board

Member: Patrick Hempen
Air Safety Investigator, Accident Investigation and Prevention
Federal Aviation Administration

Member: Zekeriya Demir
Assistant Chief Pilot, Aircrew Operations
Boeing Global Services

¹ The CAM channel was 2-hours, 1-minute, 2-seconds long. The Combined headset microphone channel was 2-hours, 5-minutes long

Member: Eric Brandstetter
Assistant Chief Pilot, DAL Flight Operations
Southwest Airlines Co.

Member: Captain Scott Hutchinson
Safety Committee, Fatigue and Human Factors
Southwest Airlines Pilots Association

3. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Division received the following CVR:

Recorder Manufacturer/Model: **Honeywell 6022**
Recorder Serial Number: **2772**

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 Honeywell 6022, is a solid state CVR that records 120 minutes of digital audio. Specifically, it contains a 2-channel recording of the last 120 minutes of operation and separately contains 3-channel recording of each crew audio panel – captain, first officer, and jump seat – for the last 30 minutes of operation. The 120-minute portion of the recording is comprised of one channel that combines all three audio panel sources, and a second channel that contains the cockpit area microphone (CAM) source.

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 1.²

² See attached CVR Quality Rating Scale.

Table 1: Audio Quality.

Channel Number	Content/Source	Quality	Duration
1	HOT	Excellent	<<30 min>>
2	HOT	Excellent	<<30 min>>
3	HOT	Excellent	<<30 min>>
4	COMBINED	Good	<<120 min>>
5	CAM	Good	<<120 min>>

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, the timing of the engine failure event and the main gear touchdown on the runway. Once a correlation between the two recorders was established, a reference to local time as recorded by the FDR was determined.

3.6. Description of Audio Events

A transcript covering the entire 2-hour recording was produced. The recording began at 1052:57 EDT with the aircraft climbing toward FL220. At 1103:33 EDT the CAM recorded sounds consistent with the engine failure event. Directly thereafter, the crew microphone channels recorded sounds consistent with use of the crew oxygen masks. The recording captured the aircraft descending while declaring an emergency and requesting fire and medical support upon landing at Philadelphia. At 1120:31 EDT, the first officer announced, "K, extended." Approximately 1.5 seconds later the CAM recorded sounds consistent with nose gear touchdown. Approximately 10 minutes later, the CAM recorded sounds consistent with EMS personnel moving within the passenger cabin. At 1142:14 EDT, the CAM recorded sounds consistent with a first responder vehicle siren. At approximately 1236 EDT, the CAM recorded sounds consistent with the flight crew leaving the aircraft. At approximately 1239 EDT, the CAM recorded sounds consistent with ground crew personnel repositioning the aircraft. The recording ended at 1257:57 EDT.

As part of the Safety Board's accident investigation process, the flight crew was invited to listen to the CVR and review the CVR transcript and they accepted. This review was accomplished on September 5, 2018.

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 Honeywell 6022 solid-state cockpit voice recorder, serial number 2772, installed on a Southwest Airlines Boeing 737-700 (N772SW), which declared an emergency after experiencing an uncontained engine failure and landed at Philadelphia International Airport (KPHL) in Philadelphia, Pennsylvania.

LEGEND

APR	Radio transmission from the Philadelphia approach controller
CAM	Cockpit area microphone voice or sound source
CTR	Radio transmission from New York center controller
EMS	Emergency medical service voice or sound source
FC	Fire commissioner voice or sound source
GND	Radio transmission from the Philadelphia ground controller
HOT	Flight crew audio panel voice or sound source
INT	Intercom voice or sound source
RDO	Radio transmissions from N772SW
TWR	Radio transmission from the Philadelphia airport tower controller
-1	Voice identified as the captain
-2	Voice identified as the first officer
ARFF-1, 2, 3	Voice identified as air rescue and firefighting personnel
FA-1, 2, 3	Voice identified as a flight attendant
GND-1, 2, 3	Voice identified as ground personnel
OPS-1, 2, 3	Voice identified as operations personnel
-?	Voice unidentified
*	Unintelligible word
#	Expletive
@	Non-pertinent word
()	Questionable insertion
[]	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
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

10:52:57 [start of recording]

Start of Transcript

10:52:58

HOT [sound of flight attendant call chime].

10:53:00

FA-1 this is @ in the back.

10:53:02

HOT-1 hey @, this is @ @ and whenever you guys are both up here would you just give me a ring and just throw me some peanuts?

10:53:11

FA-1 * * * *.

10:53:16

HOT-1 I'll be at the door.

10:53:17

HOT-1 okay, bye.

10:53:19

FA-1 okay.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

10:53:21
HOT-1 you've got it all.

10:53:23
HOT-1 the radios, everything. 'cause I'm gonna get some peanuts.

10:53:44
HOT-2 hey hello.

10:53:44
FA-1 hey, we're ready.

10:53:45
HOT-2 okay.

10:53:46
FA-1 okay.

10:53:47
HOT-2 they're ready.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

10:53:29
CTR (Southwest thirteen eighty) amend altitude maintain flight level two two zero.

10:53:34
RDO-2 stop now at two two zero Southwest thirteen.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

10:53:52
FA-1 [sounds consistent with passenger briefing].

10:53:57
HOT-2 stopping at twenty two now.

10:53:58
HOT-1 okay.

10:54:07
HOT-1 @ is one fast talking girl. I listen to her P-A.

10:57:02
HOT-2 twenty eight.

10:57:04
HOT-1 okie dokie.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

10:56:54
CTR * * * -outhwest thirteen eighty climb and maintain * *
*.

10:56:58
RDO-1 Southwest thirteen eighty up to flight level two eight zero.

10:57:36
CTR Southwest thirteen eighty climb and maintain flight level three eight zero.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

10:57:44
CAM [sound of chime]

10:57:51
HOT-1 sorry.

11:03:33
CAM [sound of increased background noise].

11:03:39
CAM [sound of cabin altitude warning horn].

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

10:57:43
RDO-1 Southwest thirteen eighty up to flight level three eight zero.

11:00:51
CTR Southwest thirteen eighty contact New York center one three three point four seven.

11:00:57
RDO-1 * thirteen eighty * *.

11:01:33
RDO-1 center Southwest thirteen eighty flight level three zero zero for three eight zero.

11:01:39
CTR Southwest thirteen eighty New York hello.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:03:42
HOT-1 *.

11:03:46
HOT-1 * * *.

11:04:08
HOT-1 * * *.

11:04:25
HOT-? * *.

11:04:41
HOT-1 * * * *.

11:04:49
HOT [sounds consistent with breathing through oxygen masks].

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:04:21
CTR Southwest thirteen eighty cleared direct VINSE V-I-N-S-E.

11:04:28
CTR ah you know what you * * there ya go cleared direct VINSE V-I-N-S-E.

11:04:38
CTR Southwest thirteen eighty New York?

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:05:15
HOT-1 * * *

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:04:50
CTR Southwest thirteen eighty if you're trying to get me all I hear is static.

11:04:54
RDO-1 Southwest thirteen eighty has an engine fire descending.

11:04:59
CTR Southwest thirteen eighty ah you you're descending right now?

11:05:02
RDO-1 yes sir we're single engine descending have a fire in number, one.

11:05:07
CTR alright Southwest thirteen eighty ah wh- okay where would you like to go to which airport?

11:05:12
RDO-1 give us a vector for your closest.

11:05:16
CTR uhmm okay.

11:05:17
RDO-1 Philadelphia.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:05:32
HOT-1 okay have you got the aircraft?

11:05:38
HOT-1 okay have you got the aircraft?

11:05:40
HOT-1 completely?

11:05:44
HOT-1 and I'm going to go through Q-R-H * * * from the back.

11:05:52
PA-1 ladies and gentlemen this is you captain we're * * going into ah to Philadelphia * * ah remain seated thank you.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:05:18
CTR * just fly heading two five zero.

11:05:21
RDO-1 okay heading two five zero we're looking at ah Philly * * *

11:05:28
CTR Southwest thirteen eighty roger and ah standby.

11:05:52
CTR Southwest thirteen eighty cleared direct to the Philadelphia airport via direct.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:06:02
CAM bank angle [electronic voice].

11:06:09
HOT-1 alright you've got it ah turning he said turn two five zero?

11:06:16
HOT-1 alright you're * rudder's just a little off I got it.

11:06:33
CAM bank angle, bank angle [electronic voice].

11:06:36
HOT-1 okay, let me do that.

11:06:41
HOT-1 okay, I'm gonna give you some, trim.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:05:57
RDO-2 * * Philadelphia direct * * *.

11:06:28
CTR Southwest thirteen eighty * * * -

11:06:31
RDO-1 say again for Southwest thirteen eighty.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:06:46
HOT-1 I'm giving you trim into your good rudder.

11:06:50
HOT-1 'kay?

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:06:51
CTR Southwest thirteen eighty New York?

11:06:53
RDO-1 Southwest thirteen eighty go ahead.

11:06:55
CTR * Southwest thirteen eighty ah understand so there's a fire you're single engine 'cause of fire?

11:07:02
RDO-1 actually we're no fire now but we are single engine.

11:07:08
CTR okay you are single engine now okay cleared direct to Philly and ah I guess * * can you maintain one one eleven thousand?

11:07:15
RDO-1 yes sir.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:07:28
HOT-1 okay are you getting ah *.

11:07:34
HOT-1 ah alright I got your phone I'm gonna clear this area.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:07:16
CTR okay * thirteen eighty descend and maintain one one eleven thousand.

11:07:19
RDO-1 okay down to one one eleven thousand.

11:07:37
CTR Southwest thirteen eighty just so I can understand you said that you are still single engine and ah what else?

11:07:45
RDO-1 okay Southwest thirteen eighty- eighty we're single engine, that's it.

11:07:51
CTR okay single engine. maintain one one eleven thousand do you need anything standing by on the ground?

11:07:55
RDO-1 yes could ah you tell 'em roll the trucks it's on the ah engine number one captain's side.

11:08:01
CTR okay thank you Southwest thirteen eighty contact New York center one tree five point four five.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:08:08
HOT-2 * * altimeter setting.

11:08:11
HOT-1 I'll get it.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:08:06
RDO-1 three five four five good day.

11:08:12
RDO-1 center Southwest thirteen eighty declaring an emergency going through seventeen thousand need your local altimeter.

11:08:18
RDO-1 * altimeter?

11:08:19
CTR ah South- thirteen eighty ah New York the ah Baltimore altimeter is ah two niner eight zero and you're descending to one one thousand?

11:08:27
RDO-1 goin' down to one one thousand two nine eight zero?

11:08:31
CTR Southwest thirteen eighty, thank you.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:08:52
HOT-1 three - four.

11:08:54
HOT-2 ah.

11:08:58
HOT-2 * * two nine eight zero.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:08:34
RDO-1 ah then Southwest thirteen eighty we're one hundred and forty nine souls on board.

11:08:38
CTR I'm sorry how many souls on board?

11:08:40
RDO-1 one four niner.

11:08:43
CTR forty nine?

11:08:44
RDO-1 one hundred forty nine.

11:08:46
CTR okay thank you ma'am and how many uh how many hours of fuel you have?

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:09:04
HOT-1 alright your rudder is not trimmed out.

11:09:07
HOT-2 * * * there's not ah there's not much trim required.

11:09:15
HOT-1 alright, I tell you what, I'm going to go ahead -

11:09:30
HOT-1 wow. okay tell you what I'm gonna take it and you take over * * *.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:09:10
CTR thirteen eighty descend and maintain eight thousand.

11:09:13
RDO-1 Southwest thirteen eighty down to eight thousand.

11:09:17
CTR Southwest thirteen eighty * * of assistance at the at the airport correct?

11:09:21
RDO-1 yes sir we would like ah ah fire truck on the captain's side please.

11:09:26
CTR fire truck on the captain's side thank you ma'am.

TIME and SOURCE **INTRA-AIRCRAFT COMMUNICATION**
CONTENT

11:09:46

HOT-1 alright.

11:09:47

HOT-1 * * for engine ah severe damage.

11:09:52

HOT-2 autothrottle if engaged disengage.

11:09:57

HOT-1 * I'm sorry. say again.

11:09:59

HOT-2 autothrottle if engaged disengaged.

11:10:01

HOT-1 disengaged.

11:10:02

HOT-2 thrust lever affected engine confirmed closed.

11:10:05

HOT-1 * it's confirmed I've got number two.

TIME and SOURCE **AIR-GROUND COMMUNICATION**
CONTENT

11:10:08

CTR * * thirteen eighty is the engine on fire?

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:10:25
HOT-2 engine start lever affected engine confirm?

11:10:28
HOT-1 confirm. confirmed.

11:10:30
HOT-2 cutoff?

11:10:31
HOT-1 cutoff.

11:10:33
HOT-2 engine fire switch confirm pull?

11:10:37
HOT-1 okay.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:10:11
RDO-2 negative.

11:10:14
CTR Southwest thirteen eighty contact Philly approach one two four point three five.

11:10:18
RDO-2 two four three five Southwest thirteen eighty.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:10:39
HOT-2 confirmed?

11:10:39
HOT-1 confirmed.

11:10:45
HOT-2 engine fire switch on or overheat light illuminated rotate if not illuminated.

11:10:53
HOT-1 alright then don't rotate it.

11:10:56
CAM [sound of fire bell].

11:10:57
CAM-2 system tests good.

11:10:59
CAM-1 alright.

11:11:00
HOT-2 ah go to Q-R-H engine severe damage.

11:11:02
APR thirteen eighty Philly.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:11:27
HOT-1 alright.

11:11:31
HOT-1 we're down to six.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:11:04
RDO-1 go ahead.

11:11:05
APR Southwest thirteen eighty * * * descend and descend
and maintain six thousand.

11:11:10
RDO-1 Southwest thirteen eighty down to six thousand.

11:11:13
APR when you get a chance I need ah fuel remaining and
souls on board.

11:11:16
RDO-1 okay one hundred and forty nine souls on board. five
hours of fuel.

11:11:22
APR thank you very much.

11:11:24
RDO-1 roger.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:11:45
HOT-2 hey we're gonna need a few minutes right? to run a couple
checklists? is that right?

11:11:49
HOT-1 nope just keep goin'.

11:11:50
HOT-2 okay.

11:12:13
HOT-? hello?

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:11:37
APR Southwest thirteen eighty fly heading zero niner zero
please.

11:11:40
RDO-2 heading zero niner zero Southwest thirteen eighty.

11:11:53
APR Southwest thirteen eighty can I get the fuel in pounds
and the exact nature of the emergency please?

11:11:59
RDO-1 engine ah engine severe damage. engine failure. and
exact pounds of fuel * fifteen seventeen twenty one *
thousand.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:12:16

HOT-1 hello?

11:12:23

HOT-1 think we had a rapid D as well.

11:12:25

CAM-2 I know.

11:12:27

HOT-2 so ah.

11:12:28

HOT-1 alright

11:12:28

HOT-2 I'm off of oxygen we're below ten thousand feet.

11:12:36

HOT-2 okay choose one high airframe vibration occurs and continues after shutdown.

11:12:47

CAM-1 you know what? you really should.

11:12:14

APR thank you.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:12:50

HOT-2 I can't hear you.

11:12:52

HOT-2 I'll take you off a mask.

11:12:54

CAM-1 yeah thank you.

11:12:55

HOT-2 * * *.

11:12:57

CAM-1 hah.

11:12:58

HOT-2 okay there's your heading select we're down to six thousand.

11:13:00

CAM-1 heading select okay. you might have to take the aircraft for just a minute I haven't got I have got it trimmed real well. but we've got a-

11:13:04

HOT-2 okay.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:13:05
HOT-2 I'll take it.

11:13:08
HOT-2 we're down to six so I'll * keep goin' down.

11:13:12
CAM-1 * * * just hold it for just a second.

11:13:22
CAM-1 and we're got. severe damage. alright. I've got it back.

11:13:31
CAM-1 four thousand.

11:13:34
HOT-2 'kay. check your speed.

11:13:36
CAM-1 yeah I'm trying to slow down on purpose.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:13:19
APR South * thirteen eighty fly heading zero niner zero descend and maintain four thousand.

11:13:26
RDO-2 four thousand heading zero nine zero Southwest, thirteen eighty.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:13:42
CAM-1 and ah let's plan on landing with.

11:13:47
HOT-1 extended final.

11:13:51
HOT-2 yeah we got a couple a checklists to run.

11:13:53
HOT-1 yeah I think it -

11:13:54
HOT-2 I wanna talk to the girls as well. we don't know what happened back there.

11:13:56
HOT-1 ah. you talk to the girls. I've got everything here.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:13:44
APR and Southwest thirteen eighty you going to go right in or do you need extended final?

11:13:48
RDO-1 extended final.

11:13:50
APR thank you.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:14:00
HOT-2 okay.

11:14:24
INT-2 you guys there? hello?

11:14:30
HOT-1 tell.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:14:02
APR Southwest thirteen eighty contact approach now on one two eight point four.

11:14:07
RDO-1 Southwest thirteen eighty one two eight point four. we need a single channel no more channel switching.

11:14:14
APR thirteen eighty you're on approach frequency one two eight point four. you're where you should be. maintain four thousand and ah do you need any further assistance from me? what type of final do you want? I heard short. or a long.

11:14:24
RDO-1 yeah, we're gonna need a long final.

11:14:26
APR I'm gonna let you drive until you tell me you wanna turn base okay, so ah.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:14:36
HOT-2 I've got no reply from the back.

11:14:49
HOT-1 no reply in the back?

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:14:31
APR at least a twenty five mile final, longer than that I'll have to do some coordination but that'll be fine we'll get that done for you.

11:14:37
RDO-1 okay, twenty is good. and ah, we may need shorter here in a moment. tell me the runway we're settin' up for.

11:14:45
APR set up for two -

11:14:47
RDO-1 say again.

11:14:50
APR Southwest thirteen eighty you'll be landing two seven left, two seven left today. and ah you just let me know when you need to turn base ah I ah right now I only have one person in front of you which is a Southwest * I'm sure he'll pull off if you need to go.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:15:00

CAM [sound of chime].

11:15:01

HOT-1 okay, talk to the girls.

11:15:02

FA-2 we're goin' down.

11:15:04

INT-2 hello it's @.

11:15:04

FA-2 he we got * * a window open and somebody - is out the window.

11:15:09

INT-2 okay.

11:15:09

FA-2 we- we're almost landing.

11:15:10

INT-2 okay we wer' we're coming down is everyone else in their seats strapped in?

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:15:14

FA-2 yeah everyone still in their seats, we have people have been helpin' her get in I don't know what her condition is. but the window is completely out.

11:15:23

INT-2 okay we're gonna slow down.

11:15:24

HOT-2 slow down to two hundred ten knots right now.

11:15:26

FA-2 * * * (alrighty) are we almost there?

11:15:29

INT-2 yes we're gonna land as soon as we can.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:15:29

RDO-1 * * * * we're gonna need to slow down a bit.

11:15:29

FA-2 okay, thank you.

11:15:33

FA-? [unintelligible background voices].

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:15:33

FA-2 oh no.

11:15:38

HOT [sound similar to chime].

11:15:45

FA-2 ladies and gentlemen please remain seated we're * * back ladies and gentlemen we are almost landing.

11:15:47

HOT-2 okay we have somebody that's flown outside the *.

11:15:54

HOT-1 alright. severe damage. ah let's just ah. Let's just a let's do severe damage checklist and let's get it turned in *.

11:16:02

HOT-2 okay isolation valve closed, pack affected side off, A-P-U bleed switch off choose, A-P-U available for start, start.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:15:34

APR Southwest thirteen eighty, speed is your discretion. maintain ah at any altitude above three thousand feet and you let me know when you want to turn base.

11:15:42

RDO-1 alright down to three thousand.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:16:15
HOT-1 okay if we're going to do a flaps five landing (I believe).

11:16:18
HOT-2 flaps five.

11:16:19
HOT-1 because I don't know the controllability of this thing.
gimme flaps one.

11:16:26
HOT-2 flaps one.

11:16:39
HOT-2 so we'll do a visual?

11:16:39
FA-2 everybody breathe and relax. everybody breathe we are
almost landing.

11:16:44
FA-2 * * * * everybody breathe we are almost there.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:16:31
RDO-1 Southwest thirteen eight'd like to turn, start turning,
inbound.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:16:50
FA-2 * *.

11:16:56
CAM [sound of altitude alert tone].

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:16:47
APR Southwest thirteen eighty turn ah just start turning southbound there there's Southwest seven three seven on a four mile final be turning southbound start looking for the airport it's off to your right and slightly behind you there. and ah altitude is your discretion use caution for the ah downtown area maintain ah advise you maintain at or above two thousand two hundred per ah the M-V-A.

11:17:04
RDO-1 okay could you have the ah medical meet us there on the runway as well we've got ah injured passengers.

11:17:12
APR injured passengers okay and are you is your airplane physically on fire?

11:17:16
RDO-1 no it's not on fire but part of it's missing.

11:17:22
RDO-1 they said there's a hole and ahm someone went out.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:17:28
CAM-1 okay landing gear.

11:17:31
HOT-1 okay, landing gear.

11:17:33
CAM [sound of chime].

11:17:35
CAM [sound of altitude alert tone].

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:17:27
APR ahm, I'm sorry you said there was a hole and somebody went out?

11:17:30
RDO-1 yes.

11:17:32
APR Southwest thirteen eighty it doesn't matter ah we'll work it out there so the airport's just off to your right report it in sight please.

11:17:37
RDO-1 in sight. Southwest thirteen eighty airport's in sight.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:17:46
CAM [sound of increased background noise].

11:17:56
HOT-1 alright flaps to five.

11:17:59
HOT-2 five.

11:18:02
HOT-1 thank you. and give me. give me a good speed for five.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:17:41
APR Southwest thirteen eighty you're cleared visual approach two seven right contact the tower on one one eight point five.

11:17:45
RDO-1 okay cleared the visual two seven right.

11:17:48
APR two seven left and tower's on eighteen five.

11:17:50
RDO-1 we're goin' on two seven left. and switchin' tower good day.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:18:02

HOT-2 [sound of numbers recited under the breath].

11:18:11

HOT-2 okay, you're set up for the I-L-S.

11:18:14

HOT-2 ah one. flaps five are you sure? how about just fifteen? it's something we know.

11:18:25

HOT-1 okay. I'm gonna plan on. yeah, yes.

11:18:30

HOT-2 fifteen? one forty three. one forty eight.

11:18:37

HOT-2 there's flaps.

11:18:38

HOT-1 alright, we're gettin' a little low. you have the right frequency for this?

11:18:45

RDO-2 Phila tower Southwest ah thirteen eighty landing on ah two seven right.

11:18:48

CAM glide slope, glide slope, glide slope [electronic voice].

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:18:48
HOT-1 heavenly father * * *. [spoken under the breath].

11:18:56
HOT-1 No.

11:19:11
HOT-2 hold on I'm getting you.

11:19:18
HOT-2 okay. so we're a little low. we're at flaps five right now. ah
your speed for flaps fifteen would be -.

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:18:53
TWR Southwest thirteen eighty wanna land two seven right?

11:18:57
RDO-2 ah two seven left I'm sorry two seven left.

11:18:59
TWR Southwest thirteen eighty runway two seven left
cleared to land wind two eight zero at one nine gust
two five.

11:19:06
RDO-2 two seven left cleared to land ah Southwest thirteen
eighty.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:19:25

HOT-1 its taking us a little time to get back on it.

11:19:28

CAM glide slope [electronic voice].

11:19:31

HOT-1 would you put visual on my HUD for me V-M-C?

11:19:33

CAM glide slope [electronic voice].

11:19:39

CAM glide slope [electronic voice].

11:19:49

HOT-2 okay five hundred feet. landing gear down. flaps five.
speed brakes * armed.

11:19:53

HOT-1 uh oh, that's gone ah there we go.

11:19:55

CAM glide slope [electronic voice].

11:19:56

HOT-1 before landing checklist.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:19:57

HOT-2 speedbrake?

11:19:58

HOT-1 armed. with a green light.

11:20:00

HOT-2 landing gear?

11:20:01

HOT-1 you do it if I don't see it.

11:20:02

CAM glide slope, glide slope, glide slope, glide slop, glide slope
[electronic voice]. too low terrain [electronic voice].

11:20:02

HOT-1 down green light.

11:20:04

HOT-2 flaps are fif-.

11:20:05

HOT-1 I can't hear you.

11:20:07

HOT-2 flaps?

<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>
11:20:08 HOT-1	position five green light.		
11:20:10 HOT-2	alright.		
11:20:10 CAM	glide slope, glide slope, glide slope, glide slop, glide slope [electronic voice]. too low terrain, too low terrain [electronic voice].		
11:20:11 HOT-2	your speed is good.		
11:20:13 CAM	[heads down, stay down; from the passenger cabin; spoken repeatedly].		
11:20:20 HOT-2	okay, looking good, speed's one eighty.		
11:20:20 CAM	glide slope [electronic voice]. too low terrain, too low terrain [electronic voice].		
11:20:22 HOT-2	fifty feet.		

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:20:24
HOT-2 thirty feet.

11:20:27
CAM ten [electronic voice].

11:20:27
HOT-2 ten.

11:20:31
HOT-2 'kay, extended.

11:20:32
CAM [sound consistent with nose gear touchdown].

11:20:34
HOT-2 one deployed.

11:20:37
HOT-2 six thousand feet remaining.

11:20:43
HOT-1 thank you lord. thank you thank you thank you lord.

11:20:47
HOT-2 eighty 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>
11:20:51 HOT-2	sixty knots.		
11:20:56 HOT-1	I'm gonna get off.		
11:20:57 HOT-2	okay d'you need me to tell them to - to not we're not gonna evacuate?		
11:21:01 HOT-1	yeah.		
11:21:02 HOT-2	stay in seats?		
11:21:03 FA-3	* * stay in your seats though. stay in your seats until we know from the captain what -.		
11:21:03 FA-2	[unintelligible].		
11:21:07 INT-2	okay listen up, listen up, this is the flight deck, stay in your seats, stay in your seats we're pulling off the runway, emergency equipment will be pulling up stay in your seats.		

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:21:31
HOT-1 alright, ah I'm gonna get this out, and.

11:21:38
FA-1 * because we have a serious situation right now, and this
 needs to be taken seriously, okay?

11:21:43
PA-1 alright ladies and gentlemen this is your captain the fire
 truck's comin' up on the captains side everyone remain
 seated and we'll get everybody off as soon as possible.
 thank you for cooperating listen to your flight attendants.

11:21:56
CAM [sound of chime].

11:21:57
INT-1 go ahead.

11:21:57
FA-1 hey do I need to open the slide?

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:21:17
TWR Southwest thirteen eighty right turn when you're able.
 if you wanna stop wherever you need to is fine.

11:21:23
RDO-1 thank you we're gonna stop right here by the ah fire
 truck thanks guys for the help.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:22:00

INT-1 ah no not right now is it how is there smoke?

11:22:03

FA-3 there is no smoke right now but we have a full window open, we're doing compressions on someone (in the aircraft).

11:22:07

INT-1 okay you just take care of the people don't get out yet.

11:22:09

FA-3 okay we will not get out yet.

11:22:10

INT-1 thanks bye.

11:22:12

HOT-1 alright.

11:22:12

HOT-? we're on the ground.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:22:12

RDO-2 do you have a frequency for our fire, chief?

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:22:19
HOT-1 what, sorry, sorry.

11:22:21
HOT-2 one three five point one.

11:22:24
HOT-1 one three five, one.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:22:15
TWR Southwest thirteen eighty if go over to one three five point one they'll.

11:22:26
RDO-1 and fire truck this is captain from seven seven two.

11:22:33
TWR fire truck twenty one that's the captain there go ahead.

11:22:35
RDO-1 yes sir I believe captains side is where we had the damage, and that's the engine that went out.

11:22:41
ARFF-1 ah yeah we we're, we're examining damage now check for a heat source ah is there any injuries inside the aircraft itself w- also we had no signs of any smoke or fire from the outside right now.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:23:03
HOT-1 alright, do we ah let's shut down our engine here. you get us on A-P-U? are we on A-P-U?

11:23:08
HOT-2 yes we're on A-P-U.

11:23:11
HOT-1 alright.

11:23:13
CAM-2 do you wanna put the flaps down? should we put the flaps down just in case we have to evacuate, later on?

11:23:19
CAM-1 yeah.

11:23:22
CAM-1 it'll be, electrical. ah, get your electrics on.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:22:55
RDO-1 okay we do have injured inside so as soon as ah we can get those taken care of that'd be great.

11:23:11
ARFF-1 we we're gonna get you back to the gate but first we wanna make sure * * outside * smoke or heat.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:23:48
HOT-1 alright, I'm gonna go back there, and ah you've got the helm. we've got, let's do our shutdown checklist.

11:23:55
CAM-2 yup, I've got it.

11:23:57
CAM-2 parking brake set?

11:23:59
HOT-1 set

11:23:59
CAM-2 start levers?

11:24:00
HOT-1 cutoff

11:24:01
CAM-2 fuel pumps?

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:23:26
RDO-1 alright we're to- we're puttin' our flaps down just in case because we did have some smoke initially up here.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:24:02

HOT-1 ahh.

11:24:05

HOT-1 one on.

11:24:06

CAM-2 window heat?

11:24:07

HOT-1 off.

11:24:07

CAM-2 probe heat?

11:24:08

HOT-1 off.

11:24:08

CAM-2 anti ice?

11:24:09

HOT-1 off.

11:24:10

CAM-2 hydraulic pumps?

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:24:10
HOT-1 electrics, we were using 'em.

11:24:12
CAM-2 'kay it's it's done.

11:24:15
CAM-1 *. off.

11:24:19
HOT-2 start switches?

11:24:21
HOT-1 eh, off.

11:24:23
HOT-2 oil quantity?

11:24:24
HOT-1 is ahm, seventy three.

11:24:27
HOT-2 hydraulic quantity?

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:24:13
ARFF -1 foxtrot twenty one ARFF command to pilot seven
thirty seven, Southwest.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:24:28
HOT-1 is ah.

11:24:31
HOT-2 radar?

11:24:32
HOT-1 radar is off * *.

11:24:35
CAM-2 transponder?

11:24:39
CAM-1 alright I'm just gonna check in back.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:24:29
ARFF -1 Philly tower. foxtrot twenty one.

11:24:31
TWR twenty one *.

11:24:34
ARFF -1 can we talk to the pilot again?

11:24:39
RDO-2 go ahead for southwest ah thirteen eighty.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:24:49
CAM-1 [sounds of captain in cabin briefing passengers and in-flight crew on job well done and status of the deplaning].
[sound of clapping].

11:25:12
HOT-2 @ @? Alright.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:24:43
RDO-2 Southwest thirteen eighty is up on thirty five one.

11:24:51
TWR foxtrot twenty one that's the pilot there go ahead.

11:24:55
ARFF -1 alright how many injuries do you have on the aircraft?

11:24:57
RDO-2 we're trying to ah, were trying to figure it out right now. standby.

11:25:18
OPS-1 * * to bring them out?

11:25:20
ARFF-1 Philly ARFF command we're gonna have busses come over for ya, and were gonna deplane and ah have some paramedics come on and take a look at the patients.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:25:34
HOT-2 @ @ how many injuries do we have?

11:25:52
HOT-2 okay, you need to undo the slide over here.

11:25:55
CAM-? okay.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:25:36
ARFF-1 pilot copy that information?

11:25:38
RDO-2 say again for pilot.

11:25:39
ARFF-1 truck comin' over, and we're gonna board the plane and take a look at the passengers. and we're gonna have some busses come over * * plane. we have a fuel-

11:25:46
RDO-2 okay board on the ah forward crew entry door left hand side.

11:25:55
ARFF-1 are we able to board on the ah R-1?

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:25:58
FA-1 open the slide for them to come out?

11:26:00
HOT-2 no. no, no, no, no.

11:26:01
CAM-1 he's got EMSs coming in.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:26:02
RDO-2 ah, we can if you need that, yes.

11:26:06
HOT-2 they need to undo both front slides.

11:26:08
HOT-1 okay, open up.

11:26:09
CAM-? * * * *.

11:26:10
HOT-2 un, un, no unlatch.

11:26:11
HOT-1 no, no.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

11:26:12

CAM-1 unlatch, meaning don't, okay.

11:26:13

HOT-2 *.

11:26:14

HOT-1 *.

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:26:14

RDO-2 * you gonna bring air stairs up fire chief?

11:26:16

HOT-1 get your girt bars up.

11:26:17

FA-? okay.

11:26:18

HOT-1 girt bars up.

11:26:20

FA-? flight attendants disarm doors.

11:26:22

HOT-1 okay, I got the comm now they're doing girt bars up.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:26:25

HOT-2 ah. it's hard to talk to him.

11:26:28

CAM [unintelligible background conversation].

11:26:28

HOT-2 he-.

11:26:31

HOT-1 okay. they got the guy that went out. they pulled him back.
his face is very bad.

11:26:36

HOT-2 okay.

11:26:38

HOT-1 why don't you text company or call company. tell 'em
where we are.

11:26:44

HOT-2 you have my phone.

11:26:45

HOT-1 oh yes I took it off. ahm. we didn't have hydraulics comin'
in either.

11:26:50

HOT-2 we had no hydraulics, no oil, we lost our engine.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:26:53

HOT-1 well, that was, interesting.

11:26:56

HOT-1 good job on the initial ha- handling. that was a, crazy ride.

11:27:10

CAM-? aft doors disarmed and cross-checked.

11:27:37

CAM-? * real quick * there are no more injuries that I have *.

11:27:47

HOT-1 did, huh? okay well let him come on, is is he comin' on?
aha.

11:27:56

CAM-? not yet.

11:27:58

RDO-1 and this is ah thirteen eighty we need EMS on-board is there a way to get them up here?

11:28:09

CAM-2 @ this is @ @ ah thirteen eighty ah we've ah are you aware of our situation at all? [consistent with cell phone call]

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

11:28:27
CAM-2 * there we had we lost a window, we lost a window, and a passenger got pulled out the window, they were able to pull him in. we lost ah we lost I think hydraulics and we have diverted into Philly. we're safe on the ground with EMS responding right now. [consistent with cell phone call]

11:28:39
HOT-1 (but) he's dead. [spoken at a whisper].

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:28:11
TWR foxtrot twenty one did you copy that?

11:28:23
ARFF-1 foxtrot twenty one.

11:28:25
TWR yeah they wanna know if they can get EMS on-board the aircraft sir.

11:28:29
ARFF-1 we're in the process bringin' EMS on.

11:28:31
TWR good thank you.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:28:55

CAM-2 no, ah we don't we don't know we we ah don't know, we we had a rapid decompression. yes. ahm we're having fire trucks. yes, yes I am am. but I, I think everybody's gonna I, I believe everyone's going to be okay I, uh, we have the paramedics here, they're trying to get on the plane. and ah we'll call you back in a little while. okay. okay [consistent with cell phone call]

11:29:27

CAM-? if there's anyone that needs medical attention please let me know right now.

11:29:36

CAM-? thank you for getting us here safely guys.

11:29:38

HOT-1 you're welcome.

11:29:40

CAM-2 let's think about what else we need to do.

11:29:42

HOT-1 *.

11:29:43

CAM-2 how are they getting this on-board the plane? to get him off.

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION CONTENT</u>
11:29:46 HOT-1	oh. they have a big ah.		
11:29:50 CAM-1	* gonna just go see because, he said he was bringing around * * *.		
11:29:58 CAM	[unintelligible conversation].		
11:30:13 CAM-?	'kay they're coming with a (ladder).		
11:30:20 CAM-?	(ladies and gentlemen) medical is coming now please clear the aisle, please clear the aisle. * * right through here. * * * where is he. * * * defibrillator * * * [unintelligible conversation].		
11:30:38 ARFF-?	where is he?		
11:30:53 CAM-2	it's just the one guy, that's hurt?		
11:30:55 CAM-1	* lady.		

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:30:56

CAM-2 a lady.

11:30:57

CAM-1 yeah. * * * * *.

11:31:28

CAM-2 okay uhm. * told dispatch * * *. we're shut down. ahm.

11:31:40

CAM-1 because we only have the one injury.

11:31:44

CAM-2 we probably need to pull the cockpit voice recorder circuit breaker.

11:31:56

CAM-2 it's on your side.

11:31:58

HOT-1 oh, you know, I just saw this great thing in here.

11:32:03

HOT-1 yeah. was it smoky back there? it got smoky up here or something. no I got smoke over here in the air. yeah. I, I had it over here.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:32:07

CAM-? it got smoky for a hot second.

11:32:09

CAM-2 wha- it was on the ground, right?

11:32:15

CAM-? I had it over here.

11:32:16

CAM-? the big thing was, when the window blew, ah that's all the debris came in, pieces * * everywhere.

11:32:24

CAM-1 well it was rapid depressure, I know it was crazy thank you for keeping your cool back there.

11:32:41

ARFF-? @, bag and oh two, bag and oh two.

11:32:45

CAM-1 yeah.

11:32:46

ARFF-2 did you pull the fire handle on it? on number one?

11:32:50

CAM-2 yes.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:32:50

CAM-1 yes.

11:32:51

ARFF-2 is there still power on the airplane?

11:32:52

CAM-1 yes.

11:32:52

CAM-2 yes.

11:32:53

ARFF-2 thank you. just wanna make sure. * * fuel *.

11:32:57

CAM-1 yes.

11:32:59

CAM-1 well I guess whenever it blew up those lines that valve doesn't do anything with ah-.

11:33:07

CAM-1 well we have it shutoff at the ah at the ah fire valve. I mean-

11:33:12

ARFF-2 did you pull the fire handle up?

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:33:13

CAM-1 yeah.

11:33:14

CAM-2 yes.

11:33:14

ARFF-2 okay, so * * * all the breakers are in?

11:33:18

CAM-2 yeah they are in. they're all in.

11:33:21

CAM-1 breakers are in.

11:33:36

HOT-1 alright, let's see, we're lookin' for uhm I had circuit breakers located in here, the other day, when I was meandering through. okay here we go, ah, * flight controls * miscellaneous *.

11:33:44

CAM-2 captain audio. interphone and warning.

11:34:28

CAM-2 here we go. make no statement. voice recorder circuit breaker contact dispatch call SWAPA. you do that I'll contact SWAPA.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:34:39

CAM-1 do what, all of the above? [sound of laughter] I'll call dispatch.

11:34:43

CAM-2 no, no, I mean you need to pull the circuit breaker. That's our next step.

11:34:46

CAM-1 oh.

11:34:50

CAM-? [unintelligible conversations].

11:35:17

CAM-? you want webbing down there?

11:35:19

CAM-2 I need to talk to the officer on duty emergency. it is. [conversation consistent with a cell phone call].

11:35:27

CAM-1 * * to do whatever we need to do. right now keep the passengers come of it may be good to @ it may be good just * water * * * I mean bringing cans rather than giving to people *.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

11:35:40

CAM-2 @ @ first officer [speaker spells out last name]. yes. thirteen eighty. [speaker recites a phone number]. yes we're okay. we're at Philly, I got another call, standby. [conversation consistent with a cell phone call].

11:35:45

CAM-? * * * .

11:36:27

CAM-2 this is @. yeah what's up? okay, list- li- I need you, sir can you please listen to me? I have an emergency situation right now. I've diverted into Philadelphia. we have a possible passenger that's in very deep emergency ah medical condition right now. I don't have time to deal with scheduling. we'll, we'll call you. yeah. we'll ca- okay. bye-bye. [conversation consistent with a cell phone call].

11:36:27

CAM-1 @ @ @ hey I got a quick question. where is the cockpit recorder circuit breaker? * * * * lost * * pressurization * * * *. oh I found it, I found it. flight recorder. I'm gonna pull all three. * * * okay. I just pulled all three. * * yeah we will * * lost engine * [conversation consistent with a cell phone call].

11:36:31

CAM-? * * blue bag * * blue bag * * .

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:36:41

CAM-? yup * blue bag *.

11:36:51

CAM-? * I don't know yet. yup. * * * to (help). * * * * *.

11:37:06

CAM-2 hello? are you there? is this SWAPA? okay I just had some * * * okay. uhm whadda, what do you need? ah a window blew out of our airplane. a rapid decompression. okay. [conversation consistent with a cell phone call].

11:37:38

CAM-2 did we get this, circuit breaker?

11:37:40

CAM-1 yeah.

11:38:02

CAM-? [barely intelligible communication from ground or ARFF personnel].

11:38:03

HOT-1 so, I'm just wondering so I can tell the passengers. ahm, we're gonna wait here until we have everything secured and then get.

11:38:19

HOT-1 okay. okay. * tell 'em what's goin' on.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:38:34

CAM-1 [barely audible sounds consistent with captain briefing passengers on status of the deplaning process].

11:39:46

CAM [unintelligible background voices].

11:39:48

CAM-2 yes. hello? okay are you with SWAPA safety? ah. ahm, yes. now we had a window blow out and a passenger fly out the window. they caught her. yes a passenger was outside the airplane and they pulled her back in. @ @ [speaker spells out last name] eight @. na I'm the first officer she's busy. ah LaGuardia to Dallas, we're in Philadelphia. ah, uhm, thirty eight thousand? * * * * thirty eight we were at thirty eight and we had been for a while. ah, I don't but I'm guessing on the captain's side, that's the engine we lost. we lost an engine and ha- and hydraulics. yes. yes. yes. ah I think that's right, yeah. ah no we had some quantity. yeah. yeah we had about. right now we have fifty six percent. * * female she's in really bad shape. she's in bad, bad shape. I would say that but I'm not a doctor. yeah. most I think maybe the top half. I don't know it's very hard to get information. I don't know. [conversation consistent with a cell phone call].

11:42:14

CAM [sound of siren].

<u>TIME and SOURCE</u>	<u>INTRA-AIRCRAFT COMMUNICATION CONTENT</u>	<u>TIME and SOURCE</u>	<u>AIR-GROUND COMMUNICATION CONTENT</u>
11:42:59 CAM-2	did the engine blow up?		
11:43:00 CAM-1	ah the forward, forward section here on.		
11:43:14 CAM-2	okay, it loo- it looks like we lost a couple of the fan blades on, on, on, th- ah the ah the ah inlet. and the engine ah I thi- I hard to guess. is this recorded? okay ahm I think a fan blade ble- I think the engine blew up I think a fan blade pierced our window I think we had a rapid decompression because of that. that's what I think happened. [conversation consistent with a cell phone call].		
11:43:19 CAM-1	forward section.		
11:43:42 CAM-1	oh yeah.		
11:43:46 CAM-2	we did do a high dive, yeah. a controlled high dive, yeah. [conversation consistent with a cell phone call].		
11:43:55 CAM	[sound of clapping].		

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:44:04

CAM-2 it was like it seized. it was like, it was just. it was chaos dude it was chaos. it it it seized, it. yeah. is there anything else you need right away from us? we shouldn't be making any statements to anybody is that correct? I called the dispatch, I just gave them a brief overview of what happened. we are, we're trying to get the passengers off. yeah yeah no no we're stopped on the we're off the runway they got air stairs out here * *. [conversation consistent with a cell phone call].

11:44:10

CAM-1 it was seized and there was no hydraulics.

11:44:29

CAM [unintelligible conversation].

11:46:58

ARFF-3 alright * * * ah ah you know what we'll transport * yeah let them go we'll get * * we'll clean him up alright ya let them go. clean ya, there's another medic unit coming they'll clean you up.

11:47:27

CAM-2 [sounds consistent with a personal cell phone call].

11:47:57

ARFF-3 you got everything shutdown including radar?

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:48:01
CAM-2 everything is shutdown except the APU is running.

11:48:04
ARFF-3 okay. just as long as the radar is shut down.

11:48:08
CAM-2 the radar is shut down yes.

11:48:09
ARFF-3 I don't want my chief killed.

11:48:29
CAM-2 hey what's up?

11:48:30
GND-1 you okay? making sure yo- you're alright.

11:48:33
CAM-2 yeah.

11:48:35
GND-1 I don't know yet. my question for you is. do you think its mechanical, or birdstrike, or or do I have to think like the FBI is coming out? * * 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>
11:48:46 CAM-2	mechanical, I'm not supposed to say things- it happens, it happens.		
11:48:48 GND-1	I'm only * really concerned like terrorist, that's what we're-		
11:48:52 CAM-2	no		
11:48:53 GND-1	okay, okay, okay. I know, I'm just, I'm just.		
11:48:59 CAM-2	a hundred percent.		
11:49:00 GND-1	okay I appreciate it. but are you okay?		
11:49:03 GND-1	I'm here I'm here to *.		
11:49:03 CAM-2	I'm okay.		
11:49:04 CAM-2	yeah I appreciate it. were gonna-		

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:49:07

ARFF-3 how many souls you have on board?

11:49:08

CAM-2 ahm. hold on.

11:49:12

ARFF-3 * * * the flight attendant * * in the back * *.

11:49:16

CAM-2 just give me a second.

11:49:17

ARFF-3 I'm trying to get a head count.

11:49:19

CAM [sounds consistent with flight attendant passenger announcement].

11:49:22

CAM-2 I wanna say one forty seven.

11:49:24

CAM-? one forty seven?

11:49:25

ARFF-3 one forty seven counting crew?

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:49:28
CAM-2 that's one forty two plus two that's one forty four plus five
crew one forty nine total.

11:49:36
ARFF-3 one forty nine total?

11:49:36
CAM-2 one forty nine total souls on board.

11:49:36
CAM foxtrot twenty one driver foxtrot twenty one.

11:49:39
ARFF-3 one forty nine, total.

11:49:41
CAM-2 total.

11:49:41
ARFF-3 okay and we just transported one so one's down so * * *
you should have one forty eight on board.

11:49:46
CAM-2 okay.

11:49:47
CAM [sound consistent with cell phone ringtone].

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

11:50:07

CAM [unintelligible background conversations].

11:51:55

CAM [sounds consistent with initiation of passenger deplaning activities].

11:53:14

CAM-? okay I need about fifty people first.

11:57:02

CAM-1 clear the aisle's please clear the aisle we got something coming up clear the aisles.

11:57:21

CAM [sounds consistent with passenger deplaning activities].

11:58:52

CAM-? * * send out update to the chief * * update about * * *
okay the deputy the chief * *.

11:59:02

CAM [unintelligible background conversations].

12:16:14

CAM-1 alright * * APU * *.

12:16:25

CAM-2 we don't have any power so.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

12:16:28

CAM-1 I mean just you know like this.

12:16:29

CAM-2 yeah.

12:16:30

CAM-? first officer?

12:16:31

CAM-2 yes.

12:16:31

CAM-? okay I have the deputy chief wants to talk to you. er the commissioner wants to talk to you. when you get a chance. as soon as * * * as soon as everybody's off *.

12:16:40

CAM-2 oh okay.

12:16:51

CAM-1 * * * anything we don't need. alright. I'm gonna.

12:17:07

CAM-1 well @. good job.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

12:17:11

CAM-2 good job to you.

12:17:11

CAM-1 I know you didn't have time to go through all of it but I could feel that it was just not in good condition is why-

12:17:17

CAM-2 and she wasn't in good condition.

12:17:19

CAM-1 is why I said give us a short one, we'll do checklists, you and I.

12:17:21

CAM-2 that's fine, I understand.

12:17:22

CAM-1 you and I between the two of us I knew we wouldn't land with, out the gear. you know what I mean?

12:17:26

CAM-2 yeah.

12:17:26

CAM-1 and so, I just thought, you know what we just need to. and the flaps five was my call not a checklist call because of the severe damage. and I could feel -

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

12:17:33

CAM-2 I understand we and we we didn't know what the damage was and there and actually to look at the leading edge look at the leading edge.

12:17:36

CAM-1 I know.

12:17:37

CAM-1 and no hydraulics.

12:17:40

CAM-1 right I didn't wanna have, asymmetrical.

12:17:43

CAM-2 yeah.

12:17:43

CAM-1 too much flap with asymmetrical.

12:17:45

CAM-2 and we had a huge runway. I mean.

12:17:46

CAM-1 yeah. yeah.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

12:17:48

CAM-1 Philly was great call on your part. excellent call.

12:17:50

CAM-2 so.

12:17:51

CAM-1 so that's just why I just wanted to know you don't have to defend my skipping of some of the checklists to get on the ground.

12:17:54

CAM-2 no.

12:17:58

CAM-2 * we were. we were in the red.

12:18:01

CAM-1 yeah.

12:18:01

CAM-2 we were in the red.

12:18:02

CAM-1 yeah. we got put there real fast.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

12:18:04

CAM-2 yeah.

12:18:04

CAM-1 I mean. because when it happened it was very ha- I could tell it was hard to control I was trying not to do any inputs for you so you could feel.

12:18:11

CAM-2 it was, that's why that's why I put you know, I ah I was back at idle.

12:18:15

CAM-1 right.

12:18:17

CAM-2 and I was keeping my feet off the rudders because I was able to.

12:18:19

ARFF-4 captain?

12:18:19

CAM-1 yes?

12:18:20

ARFF-4 how are you?

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

12:18:21
CAM-1 good.

12:18:21
RDO-1 * * *.

12:18:24
CAM [discussion between captain and ARFF].

12:18:24
CAM-1 thank you guys for being here waitin' on us. it makes people a lot more encouraged to know you'all are right here we're just gettin' off the runway they'd be right * help was on it's way.

12:18:35
ARFF-1 yeah as soon as we know, it'd been better if we had a discrete. ah we were goin' back and forth. and ah havin' a discrete frequency I * just kept you on that one line and kept on talking to you. and then I woulda kno-

12:18:45
CAM-1 I asked for one but they were like but you're on approach.

12:18:50
ARFF-1 we- that was good. because they're in a process of givin' a discrete frequency.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

12:18:53

CAM-1 well that would be great.

12:18:54

ARFF-1 yeah so ah.

12:18:56

CAM-1 do we have any word on our?

12:18:58

ARFF-1 it doesn't, look good I haven't got a * word yet but it doesn't look *.

12:19:04

CAM-1 you haven't been back there yet?

12:19:05

ARFF-1 you haven't seen the engine yet have you?

12:19:07

CAM-1 I, I just- * * but, it was it it tore out our hydraulics. I mean it it's just a mess.

12:19:08

CAM-2 just peakin' out the front.

12:19:12

ARFF-1 *.

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**

12:19:16

ARFF-1 a FAA's here's here NTSB's coming * * gonna be a long day for ya.

12:19:22

CAM-1 yeah. yeah but we got everybody else here. * I think that's our only injury. and I don't mean to say it lightly.

12:19:33

CAM-2 it'll be the first one in Southwest history. [spoken quietly].

12:19:42

CAM [sounds consistent with passenger and crew cleanup, paperwork, and deplaning activities].

12:20:22

CAM-1 [sound consistent with cell phone call].

12:20:27

CAM-1 well the the last person just steppin' off the wheelchair.

12:21:17

FC how you doin'?

12:21:18

CAM-2 hey what's up?

12:21:18

FC I am the commissioner the fire commissioner.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

12:21:20

CAM-2 okay.

12:21:21

FC of the of Philadelphia.

12:21:22

CAM-2 yeah.

12:21:23

FC first of all obviously are you both alright?

12:21:25

CAM-1 yes.

12:21:26

CAM-2 yes.

12:21:26

FC * heck of a job. I used to be the boss here, before I became the commissioner and I * -

12:21:34

CAM-? captain? were gettin' on the.

12:21:34

CAM-1 yes.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

12:21:35

CAM-1 okay, we'll catch up with you guys.

12:25:45

CAM [multiple partially audible conversations between crew, maintenance, FAA, and ARFF].

12:27:39

CAM-2 we need a few minutes to write some stuff in our logbook. and then we can go.

12:30:02

CAM-? I guess they had you pull some. I see breakers pulled here?

12:30:06

CAM-1 ah it was in the checklist to pull, pull some.

12:30:10

CAM-? that's FDR CVR.

12:30:13

CAM-1 is that the right one?

12:30:15

CAM-? yeah. its good.

12:30:17

CAM-1 I called uh my friend in maintenance just to make sure I was pulling the right ones.

TIME and SOURCE

INTRA-AIRCRAFT COMMUNICATION
CONTENT

TIME and SOURCE

AIR-GROUND COMMUNICATION
CONTENT

12:30:20

CAM-? yeah.

12:30:25

CAM [sounds consistent with deplaning activities and crew conversations with ground-based personnel].

12:35:37

CAM-2 @ @.

12:35:38

CAM-1 yeah?

12:35:38

CAM-2 DOM is going to take it just leave it * leave * the APU goin'.

12:35:42

CAM-1 okay.

12:35:56

CAM [unintelligible background conversations].

12:38:56

CAM [sound similar to fire siren].

12:39:03

CAM [sounds consistent with ground personnel entering the plane for movement off the field].

**TIME and
SOURCE**

**INTRA-AIRCRAFT COMMUNICATION
CONTENT**

12:57:57 [end of recording]

End of Transcript

**TIME and
SOURCE**

**AIR-GROUND COMMUNICATION
CONTENT**