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



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

# DCA19FA089

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

April 28, 2022

# **Cockpit Voice Recorder**

### Group Chairman's Factual Report By Joe Gregor

### **1. EVENT SUMMARY**

Location:	Presque Isle, Maine
Date:	March 04, 2019
Aircraft:	Embraer EMB-145XR, Registration N14171
Operator:	CommutAir, Flight 4933
NTSB Number:	DCA19FA089

On March 4, 2019, at 1129 eastern standard time, CommutAir flight 4933, an Embraer EMB-145XR, N14171, d.b.a. United Express, landed between runway 1 and taxiway A in moderate snow at Northern Maine Regional Airport at Presque Isle (PQI), Presque Isle, Maine. This was the second approach to runway 1 after having conducted a missed approach during the first approach. Radar track data show that the airplane was aligned right of runway 1 during both approaches. Of the 31 passengers and crew onboard, three passengers and one crewmember received minor injuries. The airplane was substantially damaged. The flight was operating under the provisions of Title 14 Code of Federal Regulations Part 121 as a regularly scheduled domestic passenger from Newark International Airport (EWR), Newark, New Jersey, to PQI.

## 2. GROUP

Chairman:	Joseph A. Gregor Electronic Engineer National Transportation Safety Board
Member:	Patrick A. Hempen Air Safety Investigator Federal Aviation Administration
Member:	Andrew P. Strojny III Lead Technical Pilot CommutAir
Member:	Captain Ilia Kamenir Air Line Pilots Association

# 3. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Division received the following CVR:

Recorder Manufacturer/Model:Honeywell 6022Recorder Serial Number:CVR120-06868

### 3.1 CVR Carriage Requirements

Per federal regulation, turbine engine powered aircraft operating under 14 CFR Part 121 must be equipped with a CVR that records a minimum of the last 2 hours of aircraft operation; this is accomplished by recording over the oldest audio data. When the CVR is deactivated or removed from the airplane, it retains only the most recent 2 hours of CVR operation. The accident aircraft was manufactured in 2004.

### 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 the last 30 minutes of operation. The 120-minute portion of the recording is comprised of one channel that combines three audio panels sources and a second channel that contains the cockpit area microphone (CAM) source. The 30-minute portion of the recording contains 3 channels of audio information: one channel for each flight crew member, and one channel for a cockpit observer.

### 3.3 Recorder Damage

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

### 3.4 Audio Recording Description

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

Table 1: Audio Quality.			
Channel Number	Content/Source	Quality	Duration (nominal)
1	Combined	Good	<<120 min>>
2	CAM	Good	<<120 min>>
3	Other	Good	<<30 min>>
4	First Officer	Good	<<30 min>>
5	Pilot	Good	<<30 min>>

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

### 3.5 Timing and Correlation

Timing on the transcript was established by correlating the CVR events to common events on the flight data recorder (FDR). Once a correlation between the two recorders was established, a reference to local time was determined using the time recorded by the FDR.

### 3.6 Description of Audio Events

The recording began at 0929:05 EST with the CVR recording sounds consistent with ground operations including de-icing activities. At approximately 0957:14 EST, the CVR recorded crew conversation consistent with performance of the before takeoff checklist followed five minutes later with the lineup checklist. At approximately 1003:40 EST, the CVR recorded sounds consistent with takeoff, contact with departure, and the crew running the after takeoff and climb checklists. The CVR then captured sounds consistent with the flight climbing to FL350 and being cleared direct to Presque Isle; including passenger announcements, crew performance of the cruise checklist, and conversations related to navigation and approach setup. At approximately 1042:37 EST, the CVR recorded sounds consistent with a SELCAL<sup>2</sup> message related to the weather at Presque Isle. About two minutes thereafter, the CVR captured sounds consistent with descent down to FL290 and discussion concerning the approach to Presque Isle.

At 1049:20 EST, the flight was cleared down to 8,000 feet and given an altimeter setting of 29.71 inches Hg. Approximately 1 minute thereafter, the CVR recorded sounds consistent with an AWOS<sup>3</sup> broadcast: "...remarks freezing rain information not available, northern Maine regional, automated weather observation, one five five zero zulu, wind one zero zero at zero seven, visibility one half...". This was followed by a crew discussion concerning the approach into Presque Isle, NOTAMS,<sup>4</sup> weather, and the requirements for PPR,<sup>5</sup> and sounds consistent with the flight contacting maintenance at Presque Isle.

The transcript began at 1055:25 EST. The transcript and recording ended at 1134:14 EST.

As part of the Safety Board's accident investigation process, the flight crew was invited to review the CVR transcript and suggest corrections or additions. They have not responded to the invitation.

<sup>&</sup>lt;sup>2</sup> Selective Calling (SELCAL) is an International Civil Aviation Organization (ICAO) managed communications method used to notify aircraft that a ground radio station wishes to communicate.
<sup>3</sup> Automated Weather Observing System.

<sup>&</sup>lt;sup>4</sup> Notice to Airmen.

<sup>&</sup>lt;sup>5</sup> Prior permission required.

### 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 CVR120-06868, installed on a CommutAir Embraer EMB-145 (N14171), which crashed upon landing at Northern Maine Regional Airport in Presque Isle, Maine.

#### EGEND CAM Cockpit area microphone voice or sound source HOT Flight crew audio panel voice or sound source RDO Radio transmissions from N14171 CTR Radio transmission from Boston center controller MAINT Radio transmission from Presque Isle maintenance -1 Voice identified as the pilot -2 Voice identified as the first officer -? 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.

Time and Source	Intra-Aircraft Communication	Time and Source	Over-the-Air Communication
10:55:24.8	RECORDING TRANSCRIPT		
		10:55:24.8 CTR	and CommutAir forty nine thirty three required to read this FICON NOTAM to you for runway one you have ah field condition of three, three, three, one hundred percent, quarter inch dry snow, and ah yup that should be it, there is also a quarter inch dry snow on ah all of the taxiways as well braking action * reported as medium, and ah half inch of dry snow on the apron.
10:55:45.7 <b>HOT-1</b>	(got it), yup.		
		10:55:50.3 <b>RDO-1</b>	thank you CommutAir forty nine thirty three.
10:55:52.6 <b>HOT-1</b>	yeah * * *.		
10:56:09.1 <b>HOT-1</b>	(that's) six, minimum required five, actual forty four, alright there ya go.		
10:56:18.0 <b>HOT-1</b>	and winds are one zero zero at seven.		
10:56:21.8 <b>HOT-2</b>	yeah, little crosswind.		

		10:56:23.4 <b>CTR</b>	CommutAir forty nine thirty three continue your descent down ah at your discretion to four thousand one hundred.
		10:56:28.8 <b>RDO-1</b>	four thousand one hundred pilot's discretion CommutAir forty nine thirty three.
10:56:34.5 <b>HOT-2</b>	four thousand one hundred set.		
10:56:34.7 <b>HOT-1</b>	four thousand one hundred.		
10:56:38.3 <b>HOT-1</b>	alright two nine seven one.		
10:56:52.0 <b>HOT-1</b>	okay you got that *?		
		10:56:52.3 <b>CTR</b>	CommutAir forty nine thirty three I'm sorry say again please?
		10:56:55.3 <b>RDO-1</b>	a yes sir we do copy you're ah the latest ah information you gave us on the ah on the runway.
		10:57:01.0 <b>CTR</b>	standby a couple aircraft at once.
10:57:05.6 <b>HOT-2</b>	yup.		
10:57:07.8 <b>HOT-1</b>	ah may he's a maybe he didn't get my four thous-		
		10:57:10.3 <b>CTR</b>	and ah forty nine thirty three say again please?

		10:57:13.0 <b>RDO-1</b>	yes sir you just did say pilot's discretion four thousand one hundred CommutAir forty nine thirty three and we did copy the ah information you gave us on the runway.
		10:57:20.9 <b>CTR</b>	roger thank you and ah previous aircraft in about an hour ago ah broke out of clouds right around eleven-twelve hundred had the runway in sight by seven hundred.
		10:57:29.9 <b>RDO-1</b>	thank you we'll give ya ah information on that, thank you.
10:57:32.9 <b>HOT-2</b>	what he say broke out twelve hundred?		
10:57:34.1 <b>HOT-1</b>	eleven yeah eleven *.		
10:57:34.9 <b>HOT-2</b>	yeah.		
10:57:49.4 <b>HOT-1</b>	ice, ice four.		
10:57:51.1 <b>HOT-2</b>	yeah all of 'em?		

#### 10:58:57.1

HOT-2 okay this ap- this approach is uhm runway one approach eleven dash one to Presque Isle dated two November eighteen one oh eight point seven is the frequency final approach course is zero zero six ah the glideslope is EXCAL at nineteen twenty one, six hundred seventy eight foot ILS I mean six hundred seventy eight eight feet is the decision altitude at two hundred foot ILS, it's conditional we've got the conditions 'cause we have the altimeter, ah three thousand one hundred all sections around the PQI L-O-M ah there are no lights just the MALSRs down there, expecting what about a half mile and eleven hundred feet down there it shouldn't be that bad if we do have a missed approach it'll be a TOGA check max thrust flaps nine positive rate gear up, ahm we'll do it with the box ah let's climb to a hundred ah eleven hundred left turn to three thousand direct to PQI VOR and hold \*. probably come back in for the second one if we have the gas if we not we'll have to figure out what we're going is probably is Burlington.

#### 10:59:58.1

HOT-1 \* (seven point).

10:59:58.9	

**HOT-2** any questions about that?

11:00:00.3

HOT-1 no questions.

#### 11:00:01.2

**HOT-2** okay and if after a taxi after we get on the ground down there, taxi off.

#### 11:00:07.6

**HOT-1** if you need to take it all the way to the end you can \* \*.

11:00:10.7 <b>HOT-2</b>	yeah we'll try to make charlie but I think we'll prob- it it'll be slick so we'll slow it down a little bit more.
11:00:12.6 <b>HOT-1</b>	yeah, * *. yeah.
11:00:24.5 <b>HOT-2</b>	through ten.
11:00:25.4 <b>HOT</b>	[sound of three chimes].
11:00:29.7 <b>HOT-1</b>	forgot to give her, the seat belts are on. alright good.
11:00:44.9 <b>HOT-1</b>	did I (give you any of) those checklists? let's try that.
11:00:48.1 <b>HOT-2</b>	ah let's do the descent check and do the approach check.
11:00:50.8 <b>HOT-1</b>	descent check arrival briefing.
11:00:52.4 <b>HOT-2</b>	ah complete.
11:00:52.9 <b>HOT-1</b>	windshield heat is on. fasten belts are on. exterior lights are on. pressurization is checked. landing speeds reviewed and set.
11:00:59.7 <b>HOT-2</b>	reviewed and set.
11:01:01.1 <b>HOT-1</b>	two niner (seven one) left and center.

11:01:03.3 <b>HOT-2</b>	ah right and cross checked.
11:01:04.6 <b>HOT-1</b>	descent checklist is complete. approach brief, approach briefing?
11:01:07.6 <b>HOT-2</b>	complete.
11:01:08.3 <b>HOT-1</b>	* on * GPS ah once * identify those. ah for now they're set flight attendants notified approach check is complete.
11:01:15.3 <b>HOT-2</b>	thank you.
11:01:16.1 <b>HOT</b>	[sound consistent with MORSE code identifier for PQI localizer].
11:01:29.9 <b>HOT-1</b>	it's been identified.
11:01:31.0 <b>HOT-2</b>	sweet.

11:01:42.0 CTR

CommutAir forty nine thirty three cross CORAC at or above three thousand two hundred cleared ILS runway one approach at Presque Isle.

11:01:49.4

RDO-1 cross CORAC at ah three thousand two hundred and ah cleared for the ILS runway one into Presque Isle ah CommutAir forty nine thirty three.

11:01:58.7 <b>HOT-2</b>	alright heading bugs straight ahead.
11:02:01.7 <b>HOT-1</b>	yeah.
11:02:01.7 <b>HOT-2</b>	go to NAV. approach button on here.
11:02:06.6 <b>HOT-2</b>	got the boards out. flight idle.
11:02:09.5 <b>HOT-1</b>	got it.
11:02:09.6 <b>HOT-2</b>	comin' down.
11:02:34.0 <b>HOT-1</b>	chilly.
11:02:35.0 <b>HOT-2</b>	yeah a little bit.
11:03:20.2 <b>HOT-2</b>	about halfway when we go back to pink needles I know it's gonna # it up comin' in. we'll see what it does here.
11:03:41.3 <b>HOT-1</b>	go green now * * zero zero six.
11:03:43.9 <b>HOT</b>	[sound similar to altitude alert warning tone].
11:03:45.6 <b>HOT-1</b>	forty one, thirty one.

11:03:49.0 <b>HOT-1</b>	you want some flaps?
11:03:50.8 <b>HOT-2</b>	yeah gimme flaps nine.
11:03:51.0 <b>HOT-1</b>	**.
11:03:52.1 <b>HOT-1</b>	'kay. flaps nine. should help you there.
11:04:08.5 <b>HOT-2</b>	ah looks like * looks like the loco's starting to come alive.
11:04:12.3 <b>HOT-1</b>	yeah.
11:04:17.1 <b>HOT-2</b>	LOCs captured.
11:04:26.5 <b>HOT-1</b>	* * * girl. [sound similar to chuckle].
11:04:29.2	
HOT-2	yeah right?
	yeah right? * * *.
<b>HOT-2</b> 11:04:39.0	

		11:05:35.2 CTR	CommutAir forty nine thirty three radar services terminated change to advisory frequency approved, cancel on the ground one two one point six or with me in the air ah twenty four seventy five.
		11:05:44.6 <b>RDO-1</b>	alright we'll cancel with you and we'll switch over CommutAir forty nine thirty three.
		11:05:49.4 <b>RDO-1</b>	Presque Isle traffic Commut- forty nine thirty three is two miles from FEROG is inbound for the ILS runway one Presque Isle traffic.
11:05:57.6 <b>HOT-1</b>	four minutes out.		
		11:05:58.8 <b>MAINT</b>	forty nine thirty three Presque Isle maintenance we'll off * zero one.
		11:06:03.1 <b>RDO-1</b>	alright we're * showing four minutes out sir.
11:06:06.6 <b>HOT-2</b>	alright ah all of our P-P-R requirements are complete.		
11:06:11.0 <b>HOT-1</b>	he said he he'll be out in zero one one minute?		
11:06:13.6 <b>HOT-2</b>	ah he said he was ah he was out of the way now. so he's clear.		
11:06:20.0 <b>HOT-1</b>	so we need to veri-* on the radio that we're cleared to land?		

11:06:22.9 <b>HOT-2</b>	nope.
11:06:23.0 <b>HOT-1</b>	nothing?
11:06:23.4 <b>HOT-2</b>	nope.
11:06:24.0 <b>HOT-2</b>	we're just callin' it in the blind like we usually do now. we're the only show in town today.
11:06:25.9 <b>HOT-1</b>	okay.
11:06:27.9 <b>HOT-1</b>	'kay.
11:06:28.6 <b>HOT-2</b>	I'm assuming.
11:06:29.0 <b>HOT-1</b>	I don't know if (you) need to specify your runways clear. you know, so.
11:06:31.6	
HOT-2	yeah.
	yeah. okay glideslope looks like it's alive.
HOT-2 11:06:34.2	

11:06:44.8 <b>HOT-2</b>	alright gear down flaps twenty two.
11:06:47.2 <b>CAM</b>	[sound of increased wideband background noise].
11:06:47.3 <b>HOT-1</b>	gear down, speed checks, flaps twenty two.
11:06:53.9 <b>HOT-1</b>	alright your mins will be six seventy eight.
11:07:02.0 <b>HOT-1</b>	* * you're cleared to land.
11:07:05.3 <b>HOT-2</b>	you got it.
11:07:25.9 <b>HOT-1</b>	I don't know where you like your bug I always put it on the approach.
11:07:28.1 <b>HOT-2</b>	that's fine yeah I like it there.
11:07:31.7 <b>HOT-1</b>	and you're ah three thousand for the missed.
11:07:34.3 <b>HOT-2</b>	thank you.
11:07:34.9 <b>HOT-1</b>	put that in there for ya.
11:07:35.9 <b>HOT-2</b>	flaps forty five landing check.
11:07:37.4 <b>HOT-1</b>	speed checks flaps forty five.

11:07:41.7 <b>HOT-1</b>	landing check flight attendant is notified landing gear down three green.		
11:07:45.5 <b>HOT-2</b>	that's verified.		
11:07:46.4 <b>HOT-1</b>	flaps forty five landing check is complete.		
		11:07:50.4 <b>RDO-1</b>	Presque Isle traffic CommutAi ah EXCAL and ah we are landi
11:08:09.6 <b>HOT-2</b>	alright looks like EXCAL comin' up that's final approach fix inbound.		
11:08:11.2 <b>HOT-1</b>	so you got yeah.		
11:08:14.8 <b>HOT-1</b>	EXCAL, and that is at nineteen twenty one so you're good.		
11:08:21.8 <b>HOT-1</b>	*.		
11:08:37.7 <b>HOT-1</b>	thousand to go. stable.		
11:08:44.4 <b>HOT-1</b>	ground contact.		
11:09:03.4 <b>HOT-1</b>	want me to turn the lights on or anything?		

Presque Isle traffic CommutAir forty nine thirty three is from ah EXCAL and ah we are landing runway one.

11:09:05.2 **RDO-1** 

[sound similar to five microphone clicks].

11:09:06.2 <b>HOT-2</b>	yeah. turn 'em on. they're at one twenty they at one twenty two point six.		
11:09:09.6 <b>HOT-1</b>	twenty two point six?		
11:09:10.5 <b>HOT-2</b>	yeah.		
		11:09:17.5 <b>RDO-1</b>	[sound similar to five microphone clicks].
11:09:19.6 <b>HOT-1</b>	five hundred.		
11:09:28.4 <b>HOT-1</b>	four hundred.		
11:09:30.9 <b>HOT-1</b>	**.		
11:09:33.3 <b>HOT-1</b>	three hundred.		
11:09:36.9 <b>HOT-2</b>	autopilot's comin' off.		
11:09:37.3 <b>HOT</b>	autopilot, autopilot [sound of electronic voice].		
11:09:38.0 <b>HOT-1</b>	alright.		
11:09:40.4 <b>HOT-1</b>	and one hundred to go - two hundred to go *.		
11:09:45.5 <b>HOT</b>	approaching minimums [sound of electronic voice].		

11:09:51.4 <b>HOT</b>	minimums, minimums [sound of electronic voice].
11:09:53.3 <b>HOT-1</b>	runway in sight. see it?
11:09:55.3 <b>HOT-2</b>	yeah.
11:09:56.7 <b>HOT-2</b>	well I got somethin' looks like a runway up there.
11:09:58.1 <b>HOT-1</b>	yeah.
11:09:58.7 <b>HOT</b>	one hundred [sound of electronic voice].
11:10:01.0 <b>HOT-1</b>	yeah.
11:10:02.3 <b>HOT-1</b>	watch your speed yeah watch watch your, go go up, go-up go-up, go-up go-up.
11:10:06.4 <b>HOT</b>	[sounds similar to stick shaker].
11:10:06.5 <b>HOT-1</b>	no no no, yeah yeah, no no, go go go-up.
11:10:08.3 <b>HOT-1</b>	go.
11:10:08.7 <b>HOT-1</b>	go missed. go missed.
11:10:09.5 <b>HOT-2</b>	yeah we're goin' missed.

11:10:10.2 <b>HOT-1</b>	TOGA, check thrust flaps nine.
11:10:12.0 <b>HOT-1</b>	go go go.
11:10:14.8 <b>HOT-1</b>	(not waving off).
11:10:15.8 <b>HOT-2</b>	sorry about that. looked at the wrong thing.
11:10:16.4 <b>HOT-1</b>	that's alright.
11:10:17.0 <b>HOT</b>	don't sink [sound of electronic voice].
11:10:18.2 <b>HOT-1</b>	go up. go up, go up.
11:10:18.4 <b>HOT</b>	[sound of master caution aural alert].
11:10:18.8 <b>HOT</b>	don't sink [sound of electronic voice].
11:10:23.5 <b>HOT-1</b>	positive rate.
11:10:24.6 <b>HOT-2</b>	gear up.
11:10:26.2 <b>HOT</b>	[sound of master warning aural alert].
11:10:27.6 <b>HOT</b>	landing gear [electronic voice].

11:10:29.6 <b>HOT</b>	[sound of master warning aural alert].		
11:10:30.7 <b>HOT-1</b>	it's alright got it.		
		11:10:32.9 <b>RDO-1</b>	Presque Isle traffic CommutAir forty nine thirty three is ah going missed runway one.
11:10:38.1 <b>HOT-1</b>	* * * * fifteen.		
11:10:40.2 <b>HOT-2</b>	okay flaps up climb thrust climb angle * * flaps up too slow.		
11:10:44.2 <b>HOT-1</b>	*.		
11:10:48.7 <b>HOT-1</b>	flaps zero.		
		11:10:56.1 <b>RDO-1</b>	Presque Isle traffic CommutAir forty nine thirty three is going missed.
11:11:00.2 <b>HOT-1</b>	* *.		
		11:11:01.1 <b>RDO-1</b>	departure CommutAir forty nine thirty three?
		11:11:03.9 <b>CTR</b>	CommutAir forty nine thirty three center.
		11:11:05.4 <b>RDO-1</b>	yeah we went missed on runway one we're gonna give it another try.

#### 11:11:07.5 НОТ [sound of altitude alerter]. 11:11:08.4 HOT-1 (two for) three thousand. 11:11:08.6 CTR roger. 11:11:10.2 HOT-1 (acceleration altitude V) two plus fifteen. 11:11:13.5 HOT-2 flaps up climb thrust climb check. 11:11:16.8 HOT-1 we'll talk about that later, okay? ahm okay so go over-11:11:20.2 RDO-1 you wanna give us a heading for forty nine thirty three? 11:11:22.6 CTR CommutAir forty nine thirty three are you executing the published missed approach? 11:11:25.7 RDO-1 yes sir. 11:11:27.6 HOT-1 let's go F-M-S and NAV. 11:11:31.8 HOT-1 alright watch your speed. 11:11:36.4 HOT-1 let's go ahead and start \* \*. 11:11:36.7

**CTR** CommutAir forty nine thirty three IDENT.

11:11:41.3 <b>HOT-1</b>	you got autopilot on? I'm gonna throw that on for ya.		
11:11:43.4 <b>HOT-2</b>	(pilot on it).		
11:11:47.1 <b>HOT-1</b>	you're pink. alright. NAV.		
11:11:52.5 <b>HOT-2</b>	what the heck happened?		
11:11:54.2 <b>HOT-1</b>	we'll talk about it.		
11:12:01.3 <b>HOT-1</b>	climb checklist landing gear is up and flaps zero.		
11:12:06.8 <b>HOT-1</b>	(verified).		
11:12:14.5 <b>HOT-1</b>	* climb.		
11:12:17.9 <b>HOT-1</b>	(climb) * (complete).		
11:12:20.9 <b>HOT-1</b>	alright let's do this again.		
		11:12:22.5 <b>CTR</b>	CommutAir forty nine thirty three IDENT?
11:12:25.2 <b>HOT-1</b>	did you IDENT on that?		
11:12:28.4 <b>HOT-1</b>	ah sorry.		

		11:12:31.6 <b>RDO-1</b>	do you see us there CommutAir forty nine thirty three?
		11:12:35.0 <b>CTR</b>	CommutAir forty nine thirty three IDENT.
11:12:37.6 <b>HOT-1</b>	did you do IDENT? I did.		
		11:12:41.9 CTR	CommutAir forty nine thirty three radar contact ahm, eight miles north of the Presque Isle ah VOR at three thousand. you able main your own train of * avoidance * three thousand one hundred.
		11:12:53.0 <b>RDO-1</b>	ah yeah we can go ahead and do three thousand one hundred now, for CommutAir forty nine thirty three.
		11:12:56.6 <b>CTR</b>	CommutAir forty nine thirty three roger climb and maintain ah three thousand two hundred.
		11:13:00.9 <b>RDO-1</b>	alright three thousand two hundred CommutAir forty nine thirty three.
11:13:16.3 <b>HOT-1</b>	alright we're not, yeah we're holding on P-Q-I for now.		
		11:13:28.2 <b>RDO-1</b>	Presque Isle maintenance CommutAir forty nine thirty three we went missed on that approach ah we'll call you back again ah for another try.
11:13:40.1 <b>HOT-1</b>	* *.		

11:13:49.8 <b>HOT-1</b>	did you lose the localizer?		
11:13:52.0 <b>HOT-2</b>	I don't think so, I ah I think my problem was is I went outside the airplane, too early, and I didn't have the runway.		
		11:13:55.1 <b>CTR</b>	CommutAir forty nine thirty three * * gonna ah * the * ILS runway one approach?
11:13:57.4 <b>HOT-1</b>	'kay, 'kay.		
11:14:01.1 <b>HOT-2</b>	that was that was, I think what happened.		
11:14:03.0 <b>HOT-1</b>	okay, no worries, yeah.		
11:14:05.2 <b>HOT-1</b>	I was lookin' outside-		
11:14:05.9 <b>HOT-2</b>	I thought I had the runway then I was like that is not the runway.		
11:14:08.2 <b>HOT-1</b>	yeah okay * yeah I thought that too, so.		
11:14:13.0 <b>HOT-2</b>	so next time, we're gonna do this again, I'm (gonna) stay inside on the localizer.		
11:14:15.1 <b>HOT-1</b>	yeah.		

		11:14:15.9 <b>CTR</b>	CommutAir forty nine thirty three, center?
		11:14:17.9 <b>RDO-1</b>	yes sir go ahead.
11:14:18.9 <b>HOT-1</b>	oh.		
		11:14:19.7 <b>RDO-1</b>	yes sir, go ahead.
		11:14:21.1 <b>CTR</b>	CommutAir forty nine thirty three are you going to reattempt the ILS runway one approach?
		11:14:24.5 <b>RDO-1</b>	yes sir we are.
11:14:30.0 <b>HOT-2</b>	so I'm stayin' on the on the on the flight director till two hundred this time.		
		11:14:31.4 CTR	* would you like ah vectors for the approach or would just like to proceed back to CORAC and then ah once you're established ah given a, a clearance for the approach there.
11:14:36.0 <b>HOT-2</b>	vectors.		
		11:14:40.7 <b>RDO-1</b>	well, let's go ahead and get some ah, some ah, ah vectors over to CORAC for now we'll go ahead, go ahead and get set up for now.
		11:14:50.8 <b>CTR</b>	roger standby.

11:15:06.7 <b>HOT-1</b>	okay as soon as he tells us we'll, we'll get- set up there.		
		11:15:20.2 <b>CTR</b>	CommutAir forty nine thirty three fly heading ah two zero five be vectors for ILS runway one approach.
		11:15:25.0 <b>RDO-1</b>	two zero five heading CommutAir forty nine thirty three.
11:15:28.1 <b>HOT-1</b>	alright lets do this again arrival runway zero one, zero one, activate. okay let me put in CORAC here.		
11:15:53.7 <b>HOT-1</b>	okay I tell you what I'm gonna extend the line for ya.		
11:15:56.3 <b>HOT-2</b>	'kay.		
11:16:11.6 <b>HOT-1</b>	six point two or * * sixty five. we're good.		
		11:16:19.6 <b>RDO-1</b>	Presque Isle maintenance CommutAir forty nine thirty three.
		11:16:23.3 <b>MAINT</b>	forty nine thirty three Presque Isle maintenance.
		11:16:25.3 <b>RDO-1</b>	okay sir ah we're gonna give this another try for ah, for a Presque Isle so we are looking at about ah, right now we're gonna go ahead and ah circle it around.
		11:16:35.0 <b>MAINT</b>	yeah okay we'll be all clear runway one.

		11:16:37.7 <b>RDO-1</b>	okay can you make sure those light are on for us?
		11:16:40.6 <b>MAINT</b>	yes we will.
		11:16:41.8 <b>RDO-1</b>	thank you sir appreciate it, we'll give you a call back here ah once we get closer. thank you.
11:16:45.6 <b>HOT-2</b>	ah did you ever see the lights at all last time?		
11:16:47.6 <b>HOT-1</b>	I saw them yeah but.		
11:16:48.7 <b>HOT-2</b>	did ya?		
11:16:50.7 <b>HOT-1</b>	yeah.		
11:17:00.0 <b>HOT-1</b>	it's really white down there that's the problem.		
11:17:01.9 <b>HOT-2</b>	yeah. everything is washed out.		
11:17:06.0 <b>HOT-1</b>	yeah.		
11:17:39.4 <b>HOT-1</b>	alright.		
11:17:44.5 <b>HOT-1</b>	if we don't see it we'll just go to, Vermont.		
11:17:46.7 <b>HOT-2</b>	you got it.		

11:17:47.1 <b>HOT-1</b>	you know? so.
11:17:50.5 <b>HOT-1</b>	you want some flaps nine or anything?
11:17:52.1 <b>HOT-2</b>	yeah do flaps nine.
11:17:53.3 <b>HOT-1</b>	* * okay, let me make an announcement.
11:17:55.5 <b>PA-1</b>	ladies and gentlemen from the flight deck, ah, there's a little bit of snowing down there so ah we did have to go missed, ah however we're going to give this another try, again ah there's just a little bit of snow down there, and ah, as you can see ah towards the ground there's a little bit of white down there so, just * * ah for now remain seated and we're gonna give this another try for landing, thank you.
11:18:15.6 <b>HOT-1</b>	alright.
11:18:17.8 <b>HOT</b>	[sound of interphone call chime].
11:18:19.2 <b>INT-1</b>	hey.
11:18:19.5 <b>FA-1</b>	hey, we didn't hear anything.
11:18:21.5 <b>INT-1</b>	okay.
11:18:22.0 <b>FA-1</b>	it was very very low.

11:18:23.4 <b>INT-1</b>	yeah, I know I don't know what's wrong with mine, but we, we went missed, as you can tell-	
11:18:27.7 <b>FA-1</b>	yeah.	
11:18:28.1 <b>INT-1</b>	eh as I had mentioned earlier so we're gonna give this another try.	
11:18:31.4 <b>FA-1</b>	okay.	
11:18:31.9 <b>INT-1</b>	okay? thanks bye.	
11:18:35.7 <b>HOT-2</b>	alright so this time I'll stay on the flight director until, things start screaming minimums-	
11:18:38.9 <b>HOT-1</b>	yeah.	
11:18:40.1 <b>HOT-1</b>	yup.	
11:18:40.3 <b>HOT-2</b>	then I'll look up-	
11:18:41.7 <b>HOT-2</b>	if there's nothing there then we'll go, if there is something there we'll land.	
11:18:41.7 <b>HOT-1</b>	yup.	
11:18:43.4 <b>HOT-1</b>	yup.	

11:18:44.5 <b>HOT-1</b>	yup, sounds good.
11:18:44.7 <b>HOT-2</b>	and what I gonna be specific lookin' for is lights that surround this airport.
11:18:47.9 <b>HOT-1</b>	yup, yup.
11:18:51.7 <b>HOT-2</b>	and you said you did see 'em last time?
11:18:53.8 <b>HOT-1</b>	I ah ah saw the thing but ah I said everything is white down there, so.
11:18:57.4 <b>HOT-2</b>	yeah all I saw was the antennas at the end of the runway.
11:19:00.3 <b>HOT-1</b>	yeah, yeah I'll give you the countdown five four three two one, at two, you know, obviously (take) the autopilot on and just stay on the- and that ah, the flight director, okay, yeah, yeah.
11:19:03.1 <b>HOT-2</b>	yeah.
11:19:08.2 <b>HOT-2</b>	yeah I'll stay on the flight director this time.
11:19:11.7 <b>HOT-2</b>	I just thought we could pick it up man we just, I did not see it. I thought I saw it, that was the problem.

#### 11:19:13.8

HOT-1	yeah no worries, yeah no worries. just stay on the
	flight director and the glideslope and ah a lot of times
	what I do is I'll-

#### 11:19:18.4

HOT-2 yeah.

#### 11:19:20.7

CTR

CommutAir forty nine thirty three turn left heading of one niner zero.

#### 11:19:24.1

RDO-1

left turn one ninety CommutAir forty nine thirty three.

### 11:19:26.9

**HOT-1** is I'll stay in there 'cause otherwise once you go out visual, it's ah- you know you start going high and low and then it gets really screwed up so.

#### 11:19:35.1

HOT-2 yup, no l agree.

#### 11:19:39.0

HOT-2 that's just me being a rookie.

#### 11:19:40.9

HOT-1 I know, yeah.

#### 11:19:56.8

**HOT-1** are you okay to try this again or?

#### 11:19:58.0

HOT-2 oh I'm okay I just I just realized my error last time 'cause I, I was overconfident and said oh we got it now.

#### 11:19:59.0

HOT-1 \* \*.

11:20:00.8 <b>HOT-1</b>	* *.
11:20:03.7 <b>HOT-1</b>	yeah.
11:20:04.1 <b>HOT-2</b>	then I went visual.
11:20:04.9 <b>HOT-1</b>	it's really white down there.
11:20:05.8 <b>HOT-2</b>	after I went visual I * * * quickly realized that was the wrong way to do business.
11:20:07.7 <b>HOT-1</b>	yeah.
11:20:07.8 <b>HOT</b>	incoming call, incoming call [electronic voice].
11:20:10.0 <b>HOT-1</b>	* * * if you guys are doing other * go for it * * is showing good.
11:20:15.3 <b>HOT-2</b>	'kay.
11:20:22.8 <b>HOT-1</b>	yeah stay inside and I'll let you know when you can look up.
11:20:25.5 <b>HOT-2</b>	you got it.
11:20:36.4 <b>HOT-1</b>	if I say a go missed-

11:20:38.3 <b>HOT-1</b>	give it power. alright? TOGA check thrust. first thing.		
11:20:38.6 <b>HOT-2</b>	T- just TOGA and go.		
11:20:40.6 <b>HOT-2</b>	yeah.		
		11:21:17.4 <b>CTR</b>	CommutAir forty nine thirty three turn left heading one zero zero.
		11:21:20.6 <b>RDO-1</b>	left turn one zero zero CommutAir forty nine thirty three.
11:21:22.4 <b>HOT-1</b>	I would start slowing down * * FEROG and then ah glideslope probably comin' in.		
		11:21:29.1 <b>RDO-1</b>	Presque Isle maintenance CommutAir forty nine thirty three we're takin' a left turn for FEROG now so.
11:21:41.0 <b>HOT-1</b>	'kay I don't know what that was.		
		11:21:46.2 <b>RDO-1</b>	Presque Isle maintenance CommutAir forty nine thirty three.
		11:21:49.4 <b>MAINT</b>	forty nine thirty three Presque Isle maintenance.
		11:21:51.5 <b>RDO-1</b>	yes sir okay we're gonna give this one a try we're takin' ah here to FEROG which I believe is about sixteen miles out or so less than that so ah we're lookin' about seven minutes out.

		11:22:01.8 <b>MAINT</b>	yeah we'll be clear runway one and the lights are on bright.
		11:22:05.7 <b>RDO-1</b>	appreciate it sir.
11:22:09.4 <b>HOT-1</b>	alright we got this.		
11:22:13.7 <b>HOT-1</b>	one oh eight seven you got that in?		
11:22:17.4 <b>HOT</b>	incoming call, incoming call [electronic voice].		
11:23:38.4 <b>HOT-2</b>	he has not cleared us, has he?		
11:23:39.7 <b>HOT-1</b>	no.		
		11:23:41.2 <b>CTR</b>	CommutAir forty nine thirty three you are eight miles south of

zero four zero cleared for the ILS ah runway one

CommutAir forty nine thirty three.

got the ground already this time.

EXCAL turn left heading zero four zero maintain three thousand two hundred until established on the localizer cleared ILS runway one approach into Presque Isle.

11:23:57.8

11:23:56.3 HOT-2

11:23:52.4 HOT-1

HOT-1 yeah.

		11:23:58.5 CTR	CommutAir forty nine thirty three you are eight miles south of EXCAL turn left heading zero four zero maintain three thousand two hundred 'til established on the localizer cleared ILS runway one approach.
11:23:58.6 <b>HOT-1</b>	remember (airspeed) * * *. ah.		
		11:24:08.3 <b>RDO-1</b>	yeah sorry about that we're on the other frequency zero four zero cleared for the ILS runway one CommutAir forty nine thirty three.
		11:24:13.7 <b>CTR</b>	CommutAir forty nine thirty three affirmative and report established on the localizer.
		11:24:17.6 <b>RDO-1</b>	will advise CommutAir forty nine thirty three.
11:24:20.9 <b>HOT-2</b>	alright. I'm a		
		11:24:21.1 <b>RDO-1</b>	Presque Isle traffic CommutAir forty nine thirty three is ah over FEROG ah inbound for the ILS runway one.
11:24:28.0 <b>HOT-1</b>	so I'm workin' two frequencies here.		
11:25:03.4 <b>HOT-1</b>	(alright) localizer's comin' in alive.		
11:25:06.8 <b>HOT-2</b>	localizer is alive so is the glideslope.		
11:25:09.2 <b>HOT-1</b>	yup.		

11:25:15.9 <b>HOT-1</b>	*.		
11:25:21.2 <b>HOT-2</b>	this whole CORAC business right here is I think that's got to be recycled or somethin'.		
11:25:25.3 <b>HOT-1</b>	I'll do direct to ah EXCAL now okay?		
11:25:26.2 <b>HOT-2</b>	yeah.		
11:25:28.6 <b>HOT-2</b>	yeah we can do gear down flaps twenty two.		
11:25:30.5 <b>CAM</b>	[sound of increased broadband background noise].		
11:25:30.6 <b>HOT-1</b>	gear down, flaps twenty two.		
		11:25:33.5 <b>RDO-1</b>	CommutAir forty nine thirty is ah established on the localizer runway one to Presque Isle.

11:25:38.4 <b>CTR</b>	CommutAir forty nine thirty three roger change to advisory frequency is approved you can cancel with me in the air on this frequency or on the ground on one two one point six.
11:25:45.5 <b>RDO-1</b>	roger will advise thank you * *.
11:25:47.4	

CTR roger.

11:25:4	19.2
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RDO-1

Presque Isle traffic CommutAir forty nine thirty three is inbound for runway one.

11:25:54.6 <b>HOT-1</b>	alright. keep it in.
11:25:59.6 <b>HOT-2</b>	alright takin' my cues from you @.
11:26:01.8 <b>HOT-1</b>	you got it just stay in, stay on that ah flight director okay?
11:26:04.3 <b>HOT-2</b>	you got it.
11:26:15.4 <b>HOT-1</b>	actually we're gonna keep this *.
11:26:17.0 <b>HOT-2</b>	flaps forty five landing check.
11:26:22.9 <b>HOT-1</b>	flaps forty five landing che- landing gear down three green?
11:26:26.1 <b>HOT-2</b>	that's verified.
11:26:27.0 <b>HOT-1</b>	alright ahh. flight attendants notified landing gear three green * flaps forty five landing check is complete. alright sounds good.
11:26:33.7 <b>HOT-1</b>	* * (thirty).

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11:26:41.2 <b>HOT-1</b>	(keep it right) here. keep it in here, okay?		
11:26:43.7 <b>HOT-2</b>	you got it.		
11:26:44.8 <b>HOT-1</b>	because this (won't) screw you up, *.		
		11:26:51.4 <b>RDO-1</b>	Presque Isle traffic CommutAir forty nine thirty three is four miles ah runway one.
11:27:01.0 <b>HOT-1</b>	that is EXCAL.		
11:27:20.6 <b>HOT-1</b>	thousand feet, you're stable.		
11:27:56.9 <b>HOT-1</b>	five hundred.		
11:27:58.7 <b>HOT-2</b>	five hundred cleared to land. I'm inside you're outside.		
11:28:01.1 <b>HOT-1</b>	cleared to land stay in.		
11:28:07.0 <b>HOT-1</b>	four hundred.		
11:28:09.3 <b>HOT-1</b>	keep the autopilot on until two okay?		
11:28:11.0 <b>HOT-2</b>	l will.		
11:28:14.4 <b>HOT-1</b>	alright three hundred.		

11:28:21.8 <b>HOT-1</b>	alright there's two hundred, get the autopilot off.
11:28:25.5 <b>HOT-2</b>	you said on?
11:28:26.3 <b>HOT-1</b>	ah autopilot off, yeah.
11:28:27.5 <b>HOT-2</b>	off.
11:28:28.2 <b>HOT-1</b>	yeah, yeah.
11:28:28.4 <b>HOT</b>	autopilot, autopilot [electronic voice].
11:28:29.6 <b>HOT</b>	approaching minimums [electronic voice].
11:28:30.4 <b>HOT-1</b>	one hundred.
11:28:37.3 <b>HOT</b>	minimums, minimums [electronic voice].
11:28:39.1 <b>HOT-1</b>	alright runway in sight twelve o'clock lights are ah.
11:28:42.0 <b>HOT-2</b>	'kay I'm stayin' on the flight director 'cause I don't see it yet.
11:28:42.1 <b>HOT-1</b>	* *. stay in, stay in. just stay in it. stay in, stay in.
11:28:45.9 <b>HOT</b>	one hundred [electronic voice].

11:28:47.1 <b>HOT-1</b>	stay in, okay? stay in. ah # is it?
11:28:52.7 <b>HOT-1</b>	what the, #.
11:28:52.9 <b>CAM</b>	[sound of impulsive noise].
11:28:53.5 <b>HOT-2</b>	l don't know what I'm seein'.
11:28:54.5 <b>HOT-1</b>	ah.
11:28:54.6 <b>CAM</b>	[sound of high level impulsive noise].
11:28:55.3 <b>HOT</b>	landing gear [electronic voice].
11:28:57.4 <b>HOT</b>	[sound of master warning].
11:28:58.8 <b>HOT</b>	takeoff [electronic voice].
11:29:00.4 <b>HOT</b>	flaps [electronic voice].
11:29:02.0 <b>HOT</b>	brakes [electronic voice].
11:29:03.7 <b>HOT</b>	[sound of master warning].
11:29:05.1 <b>HOT</b>	landing gear [electronic voice].

11:29:05.3 <b>CAM-1</b>	I got it, I got it, the localizer was * *.
11:29:08.2 <b>HOT</b>	[repeated aural configuration warnings].
11:29:09.1 <b>CAM-2</b>	the localizer was what?
11:29:10.0 <b>CAM-1</b>	the localizer was *. it's alright. that's alright.
11:29:14.0 <b>CAM-1</b>	what the #.
11:29:17.6 <b>PA-1</b>	remain seated, remain seated, remain seated.
11:29:20.5 <b>PA-1</b>	remain seated, remain seated.
11:29:20.6 <b>CAM-3</b>	-remain seated, remain seated-
11:29:23.6 <b>CAM-1</b>	run the checklist [repeated seven times].
11:29:33.8 <b>CAM-2</b>	*.
11:29:39.1 <b>CAM-1</b>	remain seated, remain seated.
11:29:45.5 <b>CAM-2</b>	what checklist do you want me to run @
11:29:49.4 <b>CAM-1</b>	(let's run the) shutdown check. shutdown.

### 11:29:52.9

**CAM** [sounds consistent with checklist usage and aircraft evacuation].

#### 11:29:52.9

**CAM** [sound of interphone chime].

#### 11:34:14.3 END OF TRANSCRIPT END OF RECORDING