

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



GROUP CHAIRMAN'S FACTUAL REPORT OF INVESTIGATION

ERA19FA210

**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

February 4, 2020

Cockpit Voice Recorder

Group Chairman's Factual Report
By Joe Gregor

1. EVENT SUMMARY

Location: Big Grand Cay, Bahamas
Date: July 04, 2019
Aircraft: Agusta AW139, Registration N32CC
Operator: Challenger Management, LLC
NTSB Number: ERA19FA210

On July 4, 2019, about 0154 eastern daylight time, an Agusta S.p.A. AW139, N32CC, owned by Challenger Management LLC, impacted the Atlantic Ocean near Big Grand Cay, Abaco, Bahamas. The helicopter was being operated under the provisions of title 14 *Code of Federal Regulations* Part 91 as a personal flight. Dark night visual meteorological conditions prevailed at the time and an instrument flight rules flight plan was filed for a flight from Walker's Cay Airport (MYAW), Walker's Cay, Bahamas. The flight originated about 0153 from a concrete pad located at Big Grand Cay, Abaco, Bahamas. 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 July 23, 2019 and a transcript was prepared for the 2-hour, 3-minute, 42-second digital recording (see attached).

2. GROUP

Chairman: Joe Gregor
Vehicle Recorder Specialist
National Transportation Safety Board

Member: Kyle Garner
Vehicle Recorder Specialist
National Transportation Safety Board

Member: Dale Williams
Airports Inspector
Airport Safety & Standards/Operations
Federal Aviation Administration

Member: Nigel Talbot
Airworthiness – Accident/Incident Investigation Manager
Leonardo Helicopters

3. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Division received the following CVR:

Recorder Manufacturer/Model: **Penny & Giles MPFR**
Recorder Serial Number: **272004 - 001**

3.1 CVR Carriage Requirements

Per federal regulation, multiengine aircraft or rotorcraft with more than six passenger seats and requiring two pilots manufactured prior to April 7, 2010, and operated under 14 CFR 91, must be equipped with a CVR that records a minimum of the last 30 minutes of aircraft operation; this is accomplished by recording over the oldest audio data. The accident aircraft was manufactured in 2008. When the CVR is deactivated or removed from the airplane, it retains only the most recent 30 minutes or 2 hours of CVR operation depending on the CVR model.

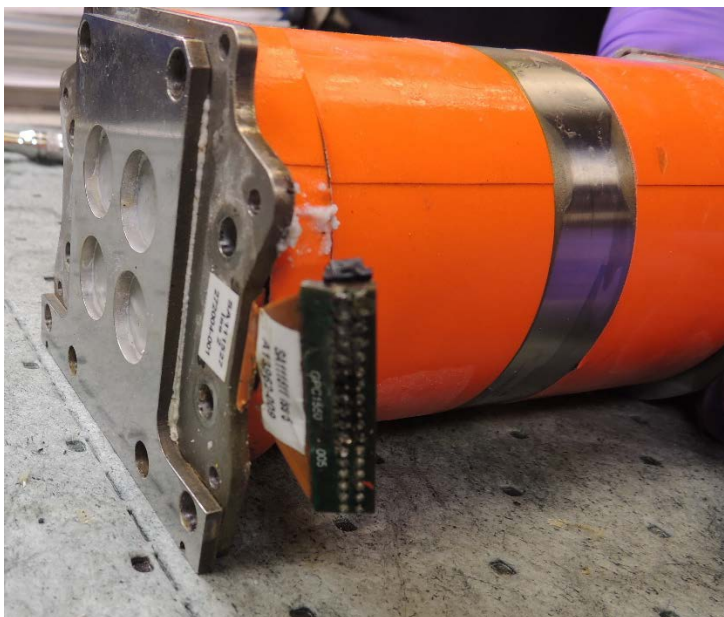
3.2 Recorder Description

This model CVR, the Penny & Giles MPFR, 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 a 4-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 4 channels of audio information: one channel for each flight crew, one channel for a cockpit observer, and one channel for the CAM.

3.3 Recorder Damage

Upon arrival at the laboratory, it was evident that the exterior of the CVR had sustained both water and structural damage. The memory board within the crash-protected case suffered damage to the ribbon cable interfacing the module to the remainder of the recorder (see figure 1).

Figure 1. Penny & Giles MPFR memory module from s/n 272004-001.



The memory module was desalinated, cleaned, dried in a vacuum oven, and microscopically inspected. No further damage was identified. The damaged ribbon cable was cut away and a manufacturer provided daughtercard was used to interface the module with a surrogate recorder. The audio was downloaded using this configuration normally, and without difficulty, using the manufacturer supplied download software.

3.4 Audio Recording Description

Each channel's audio quality is indicated in Table 1.¹ The CAM channel was dominated by aircraft noise at all times except when the helicopter was on the ground with the engines at low power setting. Channel number one did not contain any audio information (nor was it required by federal regulations).

Table 1: Audio Quality.

| Channel Number | Content/Source | Quality | Duration |
|-----------------------|-----------------------|----------------|-----------------|
| 1 | Observer | Good | <<30 min>> |
| 2 | Pilot | Good | <<30 min>> |
| 3 | First Officer (FO) | Good | <<30 min>> |
| 4 | CAM | Poor | <<30 min>> |
| 5 | Combined | Good | <<2 hr>> |
| 6 | CAM | Poor | <<2 hr>> |

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 last six radio transmissions that the aircraft made were correlated to the radio transmit microphone key parameter from the

¹ See attached CVR Quality Rating Scale.

FDR. Each of the six radio transmissions acted as an anchor point for a linear interpolation between the remaining CVR events.² Once a correlation between the two recorders was established, a reference eastern daylight time (EDT) was determined using data recorded by the FDR.

3.6 Description of Audio Events

The recording began at 2349:47 EDT on the previous day and the verbatim transcript began at 2353:43 EDT on July 3, 2019. The recording and transcript ended at 0153:29 EDT on July 4, 2019.

² Timing correlation accurate to ± 1 second with 95% confidence level.

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 Penny & Giles MPFR solid-state cockpit voice recorder, serial number 272004 - 001, installed on an Challenger Management, LLC Agusta AW139 (N32CC), which crashed after takeoff at Big Grand Cay, Bahamas.

LEGEND

| | |
|------------|---|
| CAM | Cockpit area microphone voice or sound source |
| HOT | Flight crew audio panel voice or sound source |
| RDO | Radio transmissions from N32CC |
| CTR | Radio transmission from center controller |
| TWR | Radio transmission from the Palm Beach airport tower controller |
| -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 daylight time (EDT).

Note 2: Generally, only radio transmissions to and from the accident aircraft were transcribed.

Note 3: Words shown with excess vowels, letters, or drawn out syllables are a phonetic representation of the words as spoken.

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

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|-----------------|--|-----------------|--|
| 23:49:47.0 | START OF RECORDING START OF TRANSCRIPT | | |
| 23:55:41.8 | HOT-1 [radio call pertaining to clearance to Palm Beach for N32CC]. | | |
| | | 00:07:32.7 | HOT-1 [Palm Beach ATIS-H 2053z]. |
| | | 00:19:48.7 | HOT-1 [N32CC receiving vectors for Palm Beach]. |
| | | 00:33:18.2 | HOT-1 [sounds consistent with approach and landing] |
| | | 00:52:58.9 | HOT-1 [Palm Beach ATIS-P 0353z]. |
| 00:53:42.8 | HOT-1 alright lets just go tower and tell 'em we're goin'. you wanna do or I'll do it or what you wanna do? | | |
| 00:53:47.6 | HOT-2 you can do it. | | |
| 00:53:48.3 | HOT-1 okay. | | |
| 00:53:49.0 | HOT-2 alright just uh I'm catching up @, give me a second. | | |
| 00:53:51.0 | HOT-1 no problem you got plenty of time. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|----------------------------|---|
| 00:54:01.2 HOT-1 | oh man we gotta get this thing - I know, eh, I hope we can see a little bit. | | |
| 00:54:07.0 HOT-2 | what? | | |
| 00:54:08.0 HOT-1 | we'll cross through there. | | |
| 00:54:09.3 HOT-2 | * - we'll be * * I'll put it at two thousand. | | |
| 00:54:12.3 HOT-1 | I'm gonna tell 'em we're gonna go out to the - northeast? is that what we'll tell 'em? | | |
| 00:54:16.3 HOT-2 | yeah. | | |
| | | 00:54:20.4 RDO-1 | Palm Beach tower helicopter three two charlie, charlie. |
| | | 00:54:27.5 TWR | three two charlie, charlie Palm Beach. |
| | | 00:54:30.4 RDO-1 | yea I like, I'm sitting over here at ah the west end of Atlantic at tango i'd like to pick up and go to the northeast three two charlie, charlie. |
| | | 00:54:43.9 TWR | three two charlie, charlie roger squawk zero two one zero departure from the ramp will at pilots * * northeast * as requested. |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|----------------------------|--|
| | | 00:54:53.9 RDO-1 | 'kay taking off at own risk to the northeast squawking zero tow one zero for three two charlie, charlie. |
| 00:55:00.7 HOT-2 | alright, I'm with you now. | | |
| 00:55:02.2 HOT-1 | okay. | | |
| 00:55:11.3 HOT-1 | nose wheel lock, I didn't lock it. it locked itself, okay. | | |
| 00:55:25.7 HOT-1 | gears up. | | |
| 00:55:28.7 HOT-2 | you're set for two thousand, you don't have a heading yet but I'll give you a heading. | | |
| 00:55:35.1 HOT | landing gear [electronic voice]. | | |
| 00:55:37.7 HOT-2 | alright (I got/go to) a heading of like ah - zero five zero for the time being which is on the nose, and your altitude's set for two thousand. | | |
| 00:55:43.9 HOT-1 | okay, go ahead punch it. | | |
| 00:55:46.8 HOT-2 | yup. | | |
| 00:55:47.6 HOT-1 | heading. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|--------------------------|---|
| 00:55:50.4 HOT-1 | yup, altitude right here's the altitude. | | |
| 00:55:50.9 HOT | [sound similar to warning chime]. | | |
| 00:55:55.1 HOT-1 | that's it, you had it. | | |
| 00:55:56.4 HOT | [sound similar to warning chime]. | | |
| 00:55:56.8 HOT-2 | yup. | | |
| 00:55:59.6 HOT-2 | airspeed that is, not heading. | | |
| 00:56:01.1 HOT-1 | I got- no you're good, you're good you got it all. | | |
| 00:56:02.7 HOT | traffic, traffic [electronic voice]. | | |
| 00:56:04.2 HOT-1 | you're goin' up to two thousand, we probably need to stay at fifteen hundred though. or at one thousand. | | |
| 00:56:09.0 HOT-2 | okay. | | |
| | | 00:56:11.2 CTR | three two charlie, charlie radar contact altimeter's two niner. niner, niner. |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|----------------------------|---|
| | | 00:56:16.1 RDO-1 | two niner, niner, niner I goin' ah, I'm eight hundred going to one thousand three two charlie, charlie. |
| 00:56:41.6 HOT-2 | yeah I'm just catching up @, it's been a while. | | |
| 00:56:43.2 HOT-1 | that *, * * *, I'm trying to get him to sell this # thing. | | |
| 00:56:43.8 HOT-2 | [sound of laughter] | | |
| 00:56:44.4 HOT-1 | I'm trying to get him sell this # thing. | | |
| 00:56:47.8 HOT-2 | and buy what a one six nine? | | |
| 00:56:49.0 HOT-1 | ah anything besides maintenance whore. | | |
| 00:56:53.5 HOT-2 | what's happening with the one thirty? | | |
| 00:56:55.5 HOT-1 | it should be about ready. | | |
| 00:56:57.1 HOT-2 | good. * coordinate * * let * Airbus know 'cause training. | | |
| 00:57:50.5 HOT-1 | oh it's goin' to be a dark # goin' over there. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|----------------------------|--|
| 00:57:52.6 HOT-2 | yeah I'm just trying to turn the lights down. | | |
| 00:58:40.6 HOT-1 | you want me to talk to her? | | |
| 00:58:41.9 HOT-2 | nah I was checkin' * I'm checking my radios. that was all. | | |
| 00:58:45.5 HOT-1 | think I aughta tell her? * * * . | | |
| 00:58:47.9 HOT-2 | yeah. | | |
| | | 00:58:49.7 RDO-1 | and tower, helicopter three two charlie, charlie we'd like to go ahead VFR. |
| | | 00:58:54.8 TWR | three two charlie, charlie roger squawk VFR frequency change approved, good night. |
| | | 00:58:58.2 RDO-1 | have a good day, appreciate your help. |
| 00:59:09.4 HOT-1 | ah, it's gonna be darker than # out here. | | |
| 00:59:12.0 HOT-2 | yup. I'm trying to get some of the lights down in this thing. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 00:59:15.8 HOT-1 | that's alright how uh high you want- think we aughta go? | | |
| 00:59:19.4 HOT-2 | I would go pretty high. | | |
| 00:59:21.0 HOT-1 | twenty five hundred? | | |
| 00:59:22.4 HOT-2 | yeah. | | |
| 00:59:23.7 HOT-1 | that's what I did today. | | |
| 00:59:39.7 HOT-2 | can you turn that down. I don't know if we need that on actually. just to help you with night vision. there ya go. and then bring the P- MFD and PFD down and let's get that night vision improved. | | |
| 00:59:49.9 HOT-1 | okay, here's (dem/dim)* right here. | | |
| 00:59:51.5 HOT-2 | yup. | | |
| 00:59:57.7 HOT-2 | there ya go, that's better. | | |
| 01:00:01.4 HOT-2 | give a chance for your night- your eyes to adapt before you get to the island. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:00:13.4 HOT-2 | you wanna go direct? | | |
| 01:00:18.1 HOT-1 | # it, let's go. there ain't nothin' they can do now are they. | | |
| 01:00:22.2 HOT-1 | let's make sure you're goin' direct, you go direct. | | |
| 01:00:26.2 HOT-2 | yup. | | |
| 01:00:26.7 HOT-1 | okay, island. | | |
| 01:00:28.6 HOT-2 | I'm lookin' for direct *. | | |
| 01:00:29.9 HOT-1 | direct right here. | | |
| 01:00:30.9 HOT-2 | yup. | | |
| 01:00:31.6 HOT-1 | * * *, push nav. | | |
| 01:00:39.0 HOT-1 | don't want this son of a # to turn over on us now. | | |
| 01:00:39.4 HOT | [sound similar to warning chime]. | | |
| 01:00:42.6 HOT-2 | now we're good. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:00:44.0 HOT-1 | I'm goin' up (two/too) *, so. | | |
| 01:00:45.8 HOT-2 | okay, it's coupling. | | |
| 01:00:48.4 HOT-1 | yup. | | |
| 01:00:49.9 HOT-2 | it's good and we're climbing. | | |
| 01:00:51.3 HOT | [sound similar to warning chime]. | | |
| 01:00:53.2 HOT-2 | fuel wise, uh plenty of juice. | | |
| 01:00:57.9 HOT-1 | yup, we're good. | | |
| 01:00:59.1 HOT-2 | yup. | | |
| 01:01:01.6 HOT-2 | quick check of the systems page, you got the systems page up - yeah you have. | | |
| 01:01:04.6 HOT-1 | yeah. | | |
| 01:01:08.1 HOT-1 | I can turn this landing light off. I don't know you wanna leave it on? | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:01:12.6 HOT-2 | nah, turn it off. we'll get all the lights down and get our eyes adapted. | | |
| 01:01:22.9 HOT-1 | there's a layer of clouds right here. | | |
| 01:01:25.5 HOT-2 | yeah I'm not worried about that. if we- we can't get down there then we can't get down I mean it's as simple as that isn't it. | | |
| 01:01:30.2 HOT-1 | * * * down. | | |
| 01:01:33.8 HOT-2 | you what, @? | | |
| 01:01:34.6 HOT-1 | * we can get down over there. | | |
| 01:01:36.2 HOT-2 | yeah, yeah we can, the high- lowest we need to go is two hundred. we got the island on the radar- on the uh GPS. | | |
| 01:01:40.4 HOT-1 | yeah. | | |
| 01:01:42.2 HOT-1 | yeah. | | |
| 01:01:44.6 HOT-1 | we'll see (the lights). | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:01:46.4 HOT-2 | yeah. | | |
| 01:01:51.9 HOT-2 | have you been in here at night? | | |
| 01:01:54.1 HOT-1 | no. | | |
| 01:01:55.2 HOT-2 | alright, that's fine. just so we know. | | |
| 01:02:00.3 HOT-1 | never. | | |
| 01:02:20.8 HOT | [sound similar to warning chime]. | | |
| 01:02:21.7 HOT-2 | okay leveling at twenty five. | | |
| 01:02:22.8 HOT-1 | twenty five hundred. | | |
| 01:02:24.0 HOT-2 | yup. | | |
| 01:02:25.7 HOT-1 | eighty seven miles. | | |
| 01:02:28.3 HOT-2 | in the cruise. groundspeed's one forty. we got no wind at all up here, really. | | |
| 01:03:02.4 HOT-1 | can you turn 'em down lower? | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:03:04.0 HOT-2 | yeah you can turn it right down. | | |
| 01:03:08.5 HOT-1 | that looks a lot better now. | | |
| 01:03:10.0 HOT-2 | yeah um- you're just gradually adapting. | | |
| 01:03:13.7 HOT-1 | yeah I see a few boats out here. | | |
| 01:03:15.4 HOT-2 | yup. | | |
| 01:03:49.3 HOT-2 | it's coming back. [sound of laughter]. | | |
| 01:03:52.1 HOT-1 | do what? | | |
| 01:03:52.7 HOT-2 | I said it's starting to come back [sound of laughter]. it just took me a while. * * where the # everything was. [sound of laughter]. | | |
| 01:03:59.2 HOT-1 | I haven't flown this thing in over a month until today. | | |
| 01:04:02.5 HOT-2 | bloody #. | | |
| 01:04:03.4 HOT-1 | yup. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:04:05.0 HOT-1 | it's been in the # shop. | | |
| 01:04:06.7 HOT-2 | has it? what's been wrong with it? | | |
| 01:04:07.9 HOT-1 | every # thing. | | |
| 01:04:10.6 HOT-1 | I wish we'd sell this # thing. I wish we'd go get us something decent - fly something that we don't have to go to school for every # week. | | |
| 01:04:22.6 HOT | [discussion concerning other helicopters, maintenance, and FBOs]. | | |
| 01:06:07.0 HOT-2 | I think what we need to do at the island on this one here is use the rad alt, come to an altitude over the pad a hundred feet, and then once you're over the pad come down. | | |
| 01:06:14.4 HOT-1 | okay. | | |
| 01:06:15.2 HOT-2 | * * * then you know your tail is clear. | | |
| 01:06:17.3 HOT-1 | yup, that's what I thought about doing anyway. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:06:21.3 HOT-1 | (told 'em) park me some golf carts up there and turn the lights on where I can see the pad. and I - then I'll be fine. | | |
| 01:06:25.4 HOT-2 | yup. and * set yourself a minimum of two hundred feet and then come to that, hover, and come straight down nice and slow. | | |
| 01:06:36.5 HOT-1 | yeah that island should be lit up pretty # good. | | |
| 01:06:39.1 HOT-2 | yup. | | |
| 01:06:43.1 HOT-1 | I know @ will be. | | |
| 01:07:43.9 HOT-2 | alright put * decision height at two hundred feet on there, we'll call rad alt altitudes on the way in if it's dark and we'll just come in on the autopilot nice and slow at sixty knots, yeah? | | |
| 01:07:53.2 HOT-1 | yeah. | | |
| 01:07:54.1 HOT-2 | just make a descent profile to the island. nice and gentle. | | |
| 01:07:58.0 HOT-2 | I say I think you'll see it it'll stick out. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:08:07.0 HOT-2 | you can see some * lights in freeport or something over there to the right. | | |
| 01:08:10.6 HOT-1 | not yet that's * [ATC interruption] we ain't close enough to that yet. | | |
| 01:08:17.1 HOT-1 | it's hazy as # out. | | |
| 01:08:18.6 HOT-2 | yeah. | | |
| 01:08:20.6 HOT-1 | * I gotta figure out how to get back over here that's my problem #. | | |
| 01:08:25.1 HOT-2 | what, you mean back to p - * * go to Miami. | | |
| 01:08:27.7 HOT-1 | yeah. | | |
| 01:08:28.8 HOT-2 | or we'll try at Fort Lauderdale again when we land but. | | |
| 01:08:35.1 HOT-2 | ForeFlight might have a phone number for customs. | | |
| 01:08:37.7 HOT-1 | they got 'em. | | |
| 01:10:31.1 HOT-1 | yeah I know how to get back in. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:10:43.7 HOT-1 | without them knowin- without Bahamians knowin', but I don't know how to keep this over here from knowin'. | | |
| 01:10:50.0 HOT-2 | well the- the Americans? | | |
| 01:10:50.9 HOT-1 | customs, *. | | |
| 01:10:51.4 HOT-2 | no way, they'll- they'll spot you on radar coming across. | | |
| 01:10:54.6 HOT-1 | yeah I know it. | | |
| 01:10:55.5 HOT-1 | well there won't be- we won't be talkin' to center. | | |
| 01:10:57.6 HOT-2 | yeah. | | |
| 01:10:58.4 HOT-1 | we're gonna be on center. | | |
| 01:11:00.0 HOT-2 | yeah. | | |
| 01:11:00.4 HOT-1 | as soon as we get up we're gonna get on with center and get 'em to. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:11:04.2 HOT-2 | you might get them to coordinate with Fort Lauderdale to give the arrival bearing in mind it's an emergency. I dunno. | | |
| 01:11:11.9 HOT-1 | well we can talk to them I guess. | | |
| 01:11:28.0 HOT | [discussion regarding status of passenger on island]. | | |
| 01:14:33.6 HOT-1 | aw # you think we oughta file an IFR comin' out of here? | | |
| 01:14:37.7 HOT-2 | yeah I do. | | |
| 01:14:41.6 HOT-2 | yeah 'cause you can't cross the ADIZ after sunset unless you're IFR. | | |
| 01:14:46.2 HOT-2 | not legally anyway. | | |
| 01:14:54.0 HOT-1 | yeah then we have to open it up - well we have to file- we could get a - yeah we could get it from up there yeah. | | |
| 01:15:01.2 HOT-2 | yup. | | |
| 01:15:01.8 HOT-1 | that's what we'll do. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:15:22.0 HOT-1 | alright, we're goin' to depart. we're goin' into- [pause] uh- F-L-L? | | |
| 01:15:32.2 HOT-2 | yeah we'll try and get a hold of them. | | |
| 01:15:34.6 HOT-2 | you- I almost got a mind just to rock up there and say we tried you. and they can- uh I don't know about that. | | |
| 01:15:50.8 HOT-1 | yeah we can just show up there too. [sound of ATC chatter] that's what I'll do. I'll just show up there, # it. | | |
| 01:15:58.1 HOT-2 | well the worst they can do is fine you five grand @. | | |
| 01:16:00.2 HOT-1 | that's all they can do. | | |
| 01:16:01.2 HOT-2 | yup. | | |
| 01:16:02.4 HOT-2 | for not reporting an arrival. that's worst case scenario. and that's where the ambulance meets - they'll be coming with uh- we want an ambulance to meet us. | | |
| 01:16:09.0 HOT-1 | what time do you think we'll be leaving over here. [sound of ATC chatter]. it's one *. | | |
| 01:16:14.0 HOT-2 | two o'clock? three o'clock into. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:16:16.8 HOT-1 | it's- yeah we'll be there by. let's see we're -. | | |
| 01:16:20.8 HOT-2 | we're on the ground in * *. | | |
| 01:16:21.4 HOT-1 | we're twenty three back so. | | |
| 01:16:24.3 HOT-1 | that's- that's one forty two. we'll be *. yeah okay we'll leave over here at two. we'll put two, you can always change. | | |
| 01:16:39.4 HOT-2 | yup. | | |
| 01:16:41.3 HOT-2 | file direct see what they do. [pause] * a IFR. | | |
| 01:16:46.1 HOT-1 | yeah (that'll/they'll) * give us a route. | | |
| 01:16:47.8 HOT-2 | yeah. | | |
| 01:17:10.6 HOT-1 | what altitude you think. let's see going east at thirty five hundred be alright won't it? | | |
| 01:17:15.9 HOT-2 | yeah it's a IFR for uh- three thousand. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:17:18.2 HOT-1 | yeah that's what I said thirty five. they'll give us higher but- [pause] we'll file at- [pause] we'll file at thirty five. yeah they'll make us go higher. | | |
| 01:17:34.5 HOT-1 | one, two, three, four, five, count [pause] cargo. | | |
| 01:18:32.2 HOT-1 | that's got me goin' to FLL, okay. | | |
| 01:19:10.7 HOT-2 | there's a fix there, ZAPPER. and then uh- * * * * * too high. | | |
| 01:19:37.1 HOT-2 | I guess we come direct to MERLIN [waypoint], and then we -. | | |
| 01:19:40.2 HOT-1 | they'll give it to us when we get up there. | | |
| 01:19:41.2 HOT-2 | yup, MERLIN and then down to * * that's the one there, alright. | | |
| 01:19:47.5 HOT-1 | alright. | | |
| 01:20:30.4 HOT-1 | goin' get us good, ain't they. | | |
| 01:20:32.6 HOT-2 | yup. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:20:40.8 HOT-2 | we're being squawked, we're being pinged by uh- radar somewhere. i've got um- i've got Freeport approach on frequency. they're not saying anything. twenty six five. | | |
| 01:20:55.0 HOT-1 | they won't, they won't know we're here. | | |
| 01:20:56.9 HOT-2 | no. something's getting' us. something's pinging us. | | |
| 01:20:59.6 HOT-1 | that keeps, goes off all the time. I just don't know if that's somebody pingin' us or. | | |
| 01:21:06.1 HOT-2 | well there is stuff above us. | | |
| 01:21:07.8 HOT-1 | yeah. | | |
| 01:21:08.4 HOT-2 | uh- the- the DOD stuff above us. [pause] it's probably that. | | |
| 01:21:37.6 HOT-1 | okay, we're -. | | |
| 01:21:39.7 HOT-2 | eighteen minutes out, twenty five hundred feet. | | |
| 01:21:42.0 HOT-1 | forty more miles though. | | |
| 01:21:51.3 HOT-2 | we know we're safe at five hundred. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:21:53.4 HOT-1 | oh we're safe at three hundred, easy. | | |
| 01:21:55.1 HOT-2 | yup. | | |
| 01:21:55.6 HOT-1 | * five hundred *. we'll go down to a thousand. | | |
| 01:21:58.4 HOT-2 | yup okay. | | |
| 01:21:59.0 HOT-1 | and we'll find the island. | | |
| 01:22:00.4 HOT-2 | alright I'll set fiv- a thousand on the uh alt set. | | |
| 01:22:07.0 HOT-1 | yeah there's a light right out there. | | |
| 01:22:11.0 HOT-2 | yup. | | |
| 01:22:13.3 HOT-1 | yeah we'll - we'll pick it up here in a little bit. | | |
| 01:22:32.1 HOT-2 | and we get there we turn every # light we've got on. | | |
| 01:22:36.3 HOT-1 | I got 'em all on. | | |
| 01:22:37.4 HOT-2 | yeah. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:22:37.6 HOT-1 | * them on. only thing we got the landing light. | | |
| 01:22:39.9 HOT-2 | yup. | | |
| 01:22:40.9 HOT-2 | we got the landing and taxi lights haven't we? | | |
| 01:22:42.8 HOT-1 | I got landing. I don't know where the taxi is. | | |
| 01:22:45.8 HOT-2 | neither do I. * second. | | |
| 01:22:50.7 HOT-2 | they must be on the collective. | | |
| 01:22:52.9 HOT-1 | I don't know where it's at. | | |
| 01:22:55.2 HOT-1 | no, it's wiper and trim. | | |
| 01:23:04.7 HOT-2 | landing lights should do it. | | |
| 01:23:06.9 HOT-1 | it will. | | |
| 01:23:42.4 HOT | [sound similar to exhalation]. | | |
| 01:23:44.1 HOT-1 | you stupid #. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:23:46.8 HOT-1 | there's Freeport. | | |
| 01:23:50.2 HOT-1 | oh god # I can see that. | | |
| 01:23:53.7 HOT-2 | oh yeah. | | |
| 01:24:07.9 HOT-1 | (our island) * 'll look just like that whenever we get to it. | | |
| 01:24:10.8 HOT-2 | yup. | | |
| 01:24:12.9 HOT-2 | you just gotta be careful you don't fixate on one light and start to go spa - oh well there's two of us on board anyway it doesn't matter. | | |
| 01:24:17.3 HOT-1 | yeah. | | |
| 01:24:17.7 HOT-2 | that's alright. well * you won't get spatially disoriented with two of us on board. | | |
| 01:24:26.6 HOT-2 | night landing in a black hole can be c - can be tricky. | | |
| 01:24:29.2 HOT-1 | yeah. | | |
| 01:24:34.1 HOT-1 | as long as I see them trees in front of me I'll be fine, *. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:24:37.0 HOT-2 | yup. | | |
| 01:24:37.6 HOT-1 | and I'll have my landing light for it. | | |
| 01:24:42.5 HOT-1 | the winds * comin out of the north a little bit. | | |
| 01:24:47.3 HOT-2 | yeah I don't think it's very strong down there though. | | |
| 01:24:48.8 HOT-1 | yeah, it ain't. | | |
| 01:24:49.6 HOT-2 | we're light uh- i'd just take the safest route in. | | |
| 01:25:24.1 HOT-2 | yeah Freeport's asleep. there's nothin' going on there. | | |
| 01:25:44.3 HOT-2 | I got ten minutes to run, do you want to cruise down to a thousand? | | |
| 01:25:49.7 HOT-1 | and thirteen to go, yeah. drop her on down. | | |
| 01:25:52.9 HOT-2 | alright. | | |
| 01:25:53.7 HOT-1 | we'll get an eye on it. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:25:54.6 HOT-2 | okay so altitude select, done that. alt a, and then click the collective. | | |
| 01:26:00.5 HOT | [sound similar to warning chime]. | | |
| 01:26:12.0 HOT-1 | * you stop it at two hundred? | | |
| 01:26:13.4 HOT-2 | thereabouts, yeah. yeah, two hundred bang on. | | |
| 01:26:15.8 HOT-1 | ok, well I just- I was askin' if that's what you did *. | | |
| 01:26:20.4 HOT-2 | yup. | | |
| 01:26:22.7 HOT-2 | * make sure I can still fly this # thing. | | |
| 01:26:24.6 HOT-1 | yeah you would prolly need to drop it down about - probably three anyway, maybe four. | | |
| 01:26:31.5 HOT-1 | we got a long way to go down. | | |
| 01:26:34.7 HOT-1 | there's three hundred. | | |
| 01:26:35.8 HOT-1 | alright. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:26:45.5 HOT-2 | now we need to set up uh - we need to program an approach in here. with a descent profile. a V-G-P. so you don't have to worry about coming in on your angles in the future. | | |
| 01:26:55.4 HOT-2 | set yourself some waypoints up. * give yourself a descent profile. | | |
| 01:26:59.3 HOT-1 | you could do that with this here, if you wanted to. | | |
| 01:27:01.9 HOT-2 | you can yeah, I know you can. | | |
| 01:27:03.3 HOT-1 | I ain't doin' it though. | | |
| 01:27:05.3 HOT-2 | no- not cold, no. | | |
| 01:27:07.1 HOT-2 | if you set yourself up a descent profile in here, ever need to do it again you can just load that in and it'll do it. | | |
| 01:27:13.1 HOT-1 | yeah. | | |
| 01:27:15.8 HOT-2 | yeah * after tonight I'll do- we'll do a plan of action for future stuff like this. so you got- you got a list of phone numbers all the # you need to do and then you just bang, you just pull the trigger and go. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:27:25.2 HOT-1 | yeah. | | |
| 01:27:26.7 HOT-1 | we gotta get these customs people where we can get a hold of 'em to come out. | | |
| 01:27:30.3 HOT-2 | they did say to us when we asked them last time -. | | |
| 01:27:32.1 HOT-1 | they said they'd come out, but I don't have a # phone number for, for nobody. no way to talk. I thought you can call them up 'cause it says extended hours ya know. I never did try it before. | | |
| 01:27:37.6 HOT-2 | so did I. | | |
| 01:27:42.0 HOT-2 | nope. | | |
| 01:27:46.3 HOT-2 | so you tried uh - * * * and they said no? | | |
| 01:27:49.9 HOT-1 | yeah I asked them. they said no they cannot send nobody up there, they ain't callin' nobody up there. | | |
| 01:28:02.4 HOT-2 | have you spoken to the hospital at all? uh not n -. | | |
| 01:28:04.9 HOT-1 | I've not. they have over here that doctor has. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:28:07.8 HOT-2 | yeah. | | |
| 01:28:09.0 HOT-1 | yeah. | | |
| 01:28:28.8 HOT-2 | uh eighteen hundred for a thousand and we are twenty five miles out. | | |
| 01:28:32.1 HOT-1 | we should be at *. you see it? | | |
| 01:28:34.0 HOT-2 | no, not yet. we should be seein' it in about twenty miles. | | |
| 01:28:37.3 HOT-1 | nah, you'll see it it's just the - clouds we ain't under this cloud layer yet. | | |
| 01:28:40.1 HOT-2 | yup, we aren't. you can see that it's actually black underneath us. | | |
| 01:28:44.1 HOT-1 | I can see parts of it up there. | | |
| 01:28:46.5 HOT-2 | yup, just breaking out on the horizon. | | |
| 01:28:48.3 HOT-1 | yeah. | | |
| 01:28:49.7 HOT-1 | as soon as we get underneath this cloud layer we'll see it good. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:29:17.4 HOT-2 | I'll call altitudes * do the approach @. | | |
| 01:29:19.6 HOT-1 | okay. | | |
| 01:29:22.2 HOT-2 | I'm pretty night current as well. i've done a lot of night flying recently, so. | | |
| 01:29:31.9 HOT-2 | I've been landing off airport at night as well so I'm used to doing this #. | | |
| 01:29:35.4 HOT-1 | yeah I can (see I'm) pretty good now though. | | |
| 01:29:37.0 HOT-2 | yup. | | |
| 01:29:59.5 HOT-2 | do you wanna come round the island or do you wanna come into the island? do you want to fly over **town or not? | | |
| 01:30:03.5 HOT-1 | no I don't wanna fly over it. | | |
| 01:30:05.4 HOT-2 | * we're gonna have to come around the north side are we? or the south side I should say. | | |
| 01:30:08.1 HOT-1 | I'll come straight where we're goin' right now. it'll run us right dead into the # *. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:30:13.0 HOT-2 | and away from the town, yeah. | | |
| 01:30:16.7 HOT-2 | yeah * * you don't wanna wake the town up do ya? | | |
| 01:30:20.3 HOT-1 | I don't want to, but I am comin' in on the - I guess I could come in a little more to the south, but - | | |
| 01:30:26.9 HOT-2 | nah, don't worry about it. that was just consideration, that was all. | | |
| 01:30:30.0 HOT-2 | alright we're approaching a thousand foot level attitude. | | |
| 01:30:44.3 HOT-2 | yeah, you got plenty of light over there. you can see it well now. | | |
| 01:30:46.3 HOT-1 | yeah. | | |
| 01:30:57.5 HOT-2 | okay, should be leveling. | | |
| 01:31:04.9 HOT | [sound similar to warning chime]. | | |
| 01:31:05.5 HOT-2 | yup. | | |
| 01:31:09.6 HOT-2 | * set next target altitude at five hundred * we get closer. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:31:17.6 HOT-1 | yeah that's fine. | | |
| 01:31:18.9 HOT-2 | alright coming down. setting five hundred now. not coming down yet though. | | |
| 01:31:22.2 HOT-1 | ah, let's wait 'til we get up 'ere. | | |
| 01:31:24.0 HOT-2 | yup. | | |
| 01:31:30.0 HOT-1 | still got a little bit of clouds in here. | | |
| 01:31:32.2 HOT-2 | yup. | | |
| 01:32:21.2 HOT-2 | that tower's at two hundred feet is it? | | |
| 01:32:24.4 HOT-1 | at least two, ya know it's -. | | |
| 01:32:27.0 HOT-2 | it will be lit. | | |
| 01:32:28.3 HOT-2 | no, we won't have to worry about it. it'll be up on the- it's on the north end of the main island. | | |
| 01:32:39.9 HOT-1 | we won't even start down there 'til three, 'til we pass that island we'll give three, we'll just slow it down. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:32:46.3 HOT-2 | yup. | | |
| 01:32:51.8 HOT-2 | so what's V-minl in this thing, it's fifty- fifty knots isn't it in this one? | | |
| 01:32:55.8 HOT-1 | huh? | | |
| 01:32:56.0 HOT-2 | uh - the minimum airspeed for the autopilot's fifty knots, five zero knots I think. so if (cruise at) sixty we'll be good. as we're coming in. | | |
| 01:33:05.7 HOT-1 | yeah, sixty five. | | |
| 01:33:07.4 HOT-2 | yup. | | |
| 01:33:22.2 HOT-2 | and if you abort the - the approach for whatever reason, the go-around [pause] um climb power [pause] um, and then um we'll set an altitude [pause] to go to on uh, as soon as you commit yourself to landing I'll- I'll set a new altitude back in here at five hundred feet for the go-around if we need to. | | |
| 01:33:43.4 HOT-1 | ah. | | |
| 01:33:43.7 HOT-2 | don't think you'll need to go-around but just in case. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:34:04.8 HOT-2 | alright five minutes to run twelve miles. | | |
| 01:34:11.4 HOT-2 | you can see the tower it's lit. got a red light on it. | | |
| 01:34:16.4 HOT-1 | oh that's pretty cool. | | |
| 01:34:17.4 HOT-2 | it is. | | |
| 01:34:22.1 HOT-2 | that surprised me. | | |
| 01:34:45.1 HOT-1 | well I can still don't see it. I seen it a minute ago but I don't see 'em now. | | |
| 01:34:49.4 HOT-1 | I got two a red two red lights. on the north end of * * town. | | |
| 01:34:53.6 HOT-1 | * don't look like it would be. | | |
| 01:34:56.3 HOT-2 | nah you know it better than I do. | | |
| 01:34:58.8 HOT-2 | I can see two red lights on the -. | | |
| 01:35:00.0 HOT-1 | I see it there. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:35:00.9 HOT-2 | yeah I don't know if that's tower. | | |
| 01:35:02.2 HOT-1 | I don't know neither, but it probably is. | | |
| 01:35:04.4 HOT-2 | yeah. | | |
| 01:35:10.4 HOT-2 | alright we're four minutes * should we just go down to five hundred feet? | | |
| 01:35:13.1 HOT-1 | yeah. | | |
| 01:35:13.7 HOT-2 | alright. | | |
| 01:35:14.4 HOT-2 | (L-Z). | | |
| 01:35:15.5 HOT-2 | * * * coming down. | | |
| 01:35:16.9 HOT | [sound similar to warning chime]. | | |
| 01:35:17.8 HOT-1 | we'll slow her down some so we can *. | | |
| 01:35:19.6 HOT-2 | yeah. | | |
| 01:35:21.2 HOT-2 | get a grasp on everything. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:35:27.0 HOT-2 | speed's coming down. | | |
| 01:35:27.7 HOT-1 | oh where you goin' now that's far enough. we're a long way out yet. | | |
| 01:35:39.6 HOT-1 | that has to be a tower. * *. | | |
| 01:35:41.0 HOT-2 | yeah. | | |
| 01:35:57.4 HOT-2 | okay nine hundred coming down. | | |
| 01:36:10.0 HOT-1 | that's definitely a tower. | | |
| 01:36:11.3 HOT-2 | yeah. | | |
| 01:36:13.7 HOT-2 | seven and a half miles to run, going through eight hundred feet for five hundred. | | |
| 01:36:17.1 HOT-1 | I woulda thought our # big pool pavilion would be lit up a lot better than what it is. | | |
| 01:36:21.6 HOT-2 | I think it is, I think it's behind the town because of the way we're coming in. | | |
| 01:36:24.7 HOT-2 | we're almost coming in due east, ah due, due east. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:36:27.9 HOT-2 | * normally come in from the ah north * * * . | | |
| 01:36:29.5 HOT-2 | * * * . | | |
| 01:36:29.5 HOT-1 | * * * . | | |
| 01:36:32.3 HOT-1 | yeah this is it zero eight zero. heading. | | |
| 01:36:34.6 HOT-2 | yup. | | |
| 01:36:39.2 HOT-2 | seven miles to run seven eighty for five hundred. | | |
| 01:36:48.5 HOT-1 | radalt's off a little bit. | | |
| 01:37:00.3 HOT-2 | think I'd trust the rad alt on landing. | | |
| 01:37:06.4 HOT-1 | yeah could be just our pressure over here. | | |
| 01:37:08.3 HOT-2 | yeah. | | |
| 01:37:38.2 HOT-1 | that has to be (that) # tower right there. | | |
| 01:37:40.1 HOT-2 | yeah 'ats # high whatever it is. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:37:43.1 HOT-2 | it's gotta be. | | |
| 01:37:44.5 HOT-1 | yeah. | | |
| 01:37:46.3 HOT-2 | alright approaching five hundred feet. | | |
| 01:37:49.9 HOT-2 | speed's a hundred and twelve and * five miles out. yeah. | | |
| 01:37:52.1 HOT-1 | * * . | | |
| 01:37:57.5 HOT | [sound similar to warning chime]. | | |
| 01:37:58.5 HOT-2 | * target altitude. | | |
| 01:38:20.3 HOT-1 | ah, I hope they don't lose their generator. | | |
| 01:38:23.9 HOT-2 | yeah. | | |
| 01:38:24.4 HOT-2 | I don't see # over there hardly. we're goin' right at *. | | |
| 01:38:27.6 HOT-2 | we're good on the house I can see the house. | | |
| 01:38:31.1 HOT-2 | *. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:38:32.2 HOT-2 | yeah we're good that is our tower. | | |
| 01:38:41.5 HOT-2 | alright, three and a half miles out. five hundred feet. I'll bring the speed back a little bit @, just preparing us. | | |
| 01:38:48.4 HOT-1 | alright. | | |
| 01:38:49.6 HOT-2 | * to ninety knots. | | |
| 01:38:53.6 HOT-1 | * | | |
| 01:38:54.0 HOT-2 | get ready for the gear comin' down, yep. | | |
| 01:38:55.2 HOT-1 | (I'll) turn the landing light on. | | |
| 01:38:56.7 HOT-2 | yep and uh, you might as well select gear. | | |
| 01:39:04.8 HOT-1 | about foggy out here ain't it. | | |
| 01:39:06.4 HOT-2 | yeah it is. | | |
| 01:39:09.6 HOT-2 | that is definitely that # tower, you can see the pool area. | | |
| 01:39:12.4 HOT-1 | yeah I see it. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:39:13.3 HOT-2 | you can see * * those crew houses down there on the south end of the island. we're gonna be coming in from the south of there anyway. | | |
| 01:39:27.0 HOT-1 | got me slowed way down, don't ya. | | |
| 01:39:29.0 HOT-2 | yeah I'm * * too # quick today, in this environment. | | |
| 01:39:34.8 HOT-1 | don't let it go no farther down. | | |
| 01:39:37.4 HOT-2 | it's not. | | |
| 01:39:44.4 HOT-2 | I'm presuming you're gonna' come in and kick it off to the left so you can see the spot. | | |
| 01:39:47.8 HOT-1 | yep. | | |
| 01:39:51.2 HOT-2 | try and stay coupled as long as you can. | | |
| 01:39:55.1 HOT-2 | I would * bringing the speed back now cause you're about a mile and half out. and uh descending. | | |
| 01:40:05.9 HOT-2 | down to three hundred. | | |
| 01:40:08.2 HOT-1 | alright. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:40:09.8 HOT-2 | alt-A, coming down, now get our speed back. | | |
| 01:40:11.6 HOT | [sound similar to warning chime]. | | |
| 01:40:15.0 HOT-2 | stay at sixty if you can. | | |
| 01:40:16.3 HOT-1 | oh no, I'm good right here. | | |
| 01:40:19.7 HOT-2 | alright. | | |
| 01:40:20.3 HOT-1 | I promise I'm good right here. | | |
| 01:40:22.0 HOT-2 | alright definitely that tower, and there's the ol' shuffle. | | |
| 01:40:25.5 HOT | [sound similar to warning chime]. | | |
| 01:40:26.7 HOT-2 | alright, rad-alt is showing three thirty. | | |
| 01:40:32.1 HOT-2 | three fifty on the rad-alt, three forty. | | |
| 01:40:36.2 HOT-1 | alright. | | |
| 01:40:36.9 HOT-2 | it's looking pretty good actually, yeah. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:40:37.7 HOT-1 | * * . | | |
| 01:40:39.6 HOT-1 | okay, * * . | | |
| 01:40:40.3 HOT | [sound similar to warning chime]. | | |
| 01:40:42.4 HOT-2 | I'm ready to come back on if we need to and I'm going to set an altitude. | | |
| 01:40:48.8 HOT-2 | this is the go-around altitude and I'll *- I'll cover if I need you to come back on again. | | |
| 01:40:55.1 HOT | caution terrain [electronic voice]. | | |
| 01:40:56.8 HOT-2 | yeah we know. | | |
| 01:40:57.2 HOT | caution terrain [electronic voice]. | | |
| 01:41:02.1 HOT | [sound of 500 Hz warning tone]. | | |
| 01:41:02.7 HOT | one fifty feet [electronic voice]. | | |
| 01:41:05.3 HOT-1 | * * , right there we are. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:41:05.5 HOT | [sound of 500 Hz warning tone]. | | |
| 01:41:06.1 HOT | one fifty feet [electronic voice]. | | |
| 01:41:18.6 HOT-1 | * * . | | |
| 01:41:20.2 HOT-2 | nicely done actually @. | | |
| 01:41:21.5 HOT-1 | huh? | | |
| 01:41:21.9 HOT-2 | that was nicely done. | | |
| 01:41:23.3 HOT-1 | yeah. | | |
| 01:41:24.2 HOT-2 | really nicely done. | | |
| 01:41:40.1 HOT-2 | I'll call tail clear once you get over it. | | |
| 01:41:56.6 HOT-2 | not quite over yet, forward. | | |
| 01:42:04.3 HOT | a bit more. | | |
| 01:42:04.8 HOT-2 | uh, you're almost over the pad now. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:42:06.3 HOT-2 | now you're over the pad. | | |
| 01:42:07.8 HOT-2 | we've got rain in the air. | | |
| 01:42:11.3 HOT-2 | yeah it's raining. | | |
| 01:42:13.0 HOT-1 | is that what that- that was? rain? | | |
| 01:42:15.3 HOT-2 | I think so, it was water. | | |
| 01:42:21.7 HOT-2 | looking good. they can turn those # lights off now. | | |
| 01:42:32.5 HOT-1 | okay now we gotta' sit and figure out what the # to do. | | |
| 01:42:39.4 HOT-1 | just go to Fort Lauderdale, can we? | | |
| 01:42:40.8 HOT-2 | yeah. | | |
| 01:42:41.3 HOT | rotor low, rotor low [electronic voice]. | | |
| 01:42:42.1 HOT-2 | try call them again * * *. | | |
| 01:42:54.6 HOT-1 | they're loadin' her up. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:43:05.3 HOT-2 | we're going to have to file then, aren't we? | | |
| 01:43:07.5 HOT-1 | yup. | | |
| 01:43:15.4 HOT-1 | go ahead and file? | | |
| 01:43:16.3 HOT-2 | yeah. | | |
| 01:43:26.8 HOT-1 | uh oh, error. | | |
| 01:43:28.8 HOT-1 | * * R flight rules, okay. | | |
| 01:43:31.0 HOT-2 | has she got something to puke in, I wonder? | | |
| 01:43:34.7 HOT-2 | there's two of them coming in here that are sick. | | |
| 01:43:47.7 HOT-2 | we've got an aircraft full, @. | | |
| 01:43:49.7 HOT-1 | uh oh. | | |
| 01:44:15.5 HOT-1 | k it's filed. | | |
| 01:44:16.7 HOT-2 | alright, cool. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:44:27.6 HOT-1 | how many we got? | | |
| 01:44:28.5 HOT-2 | uh you're gonna have- I think you're gonna have three, four plus @. | | |
| 01:44:38.4 HOT-2 | @ is in the back left- back right seat. | | |
| 01:44:45.7 HOT | the doctor wants- the doctor wants to know what hospital you're going to. | | |
| 01:44:50.0 HOT-1 | we're gonna call- we're gonna get uh- we're gonna get an ambulance there in Fort Lauderdale. we're not goin' to *. | | |
| 01:45:00.4 HOT-2 | yeah I got that. | | |
| 01:45:01.4 HOT-1 | we gotta get an ambulance somehow or another. | | |
| 01:45:03.8 HOT-2 | well in that case then an ambulance means uh uh- customs then. | | |
| 01:45:06.9 HOT-1 | huh? | | |
| 01:45:07.6 HOT-2 | either, either an ambulance meets us in Palm Beach. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:45:09.7 HOT-1 | * customs. | | |
| 01:45:11.2 HOT-1 | at Fort Lauderdale. | | |
| 01:45:12.6 HOT-2 | yeah you * * organize that which- which one's the doctor? | | |
| 01:45:17.6 HOT-1 | I don't know. | | |
| 01:45:19.4 HOT-2 | um, yeah. | | |
| 01:45:21.7 HOT-1 | so what do we- how do we get an ambulance there? | | |
| 01:45:24.4 HOT-2 | um doctor's gonna have to call. | | |
| 01:45:26.1 HOT-1 | who? | | |
| 01:45:26.8 HOT-2 | the doctor's gonna have to call. you have to get them to call ahead. | | |
| 01:45:31.7 HOT-2 | let me see if I can call customs as well. | | |
| 01:45:36.2 HOT | hey @, hey @. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:45:41.2 HOT-1 | can you have that doctor call and have an ambulance down in Fort Lauderdale? | | |
| 01:45:45.3 HOT-? | * * * . | | |
| 01:45:46.5 HOT-1 | well can somebody, 'cause we can't call. can you call? 'cause I can't call customs, they're not talkin' to me. I'm goin' into Fort Lauderdale cause they're open. | | |
| 01:45:55.3 HOT-? | alright. | | |
| 01:46:00.1 HOT-1 | alright he's gonna try to call 'em. | | |
| 01:46:02.3 HOT-2 | yeah I'm just tryin' to call customs. | | |
| 01:46:03.7 HOT-1 | and maybe we can have, uh. | | |
| 01:46:09.4 HOT-1 | flightplan's acknowledged. if we get a hold of customs. | | |
| 01:46:12.6 HOT-2 | I'm trying. | | |
| 01:46:13.5 HOT-1 | will you tell 'em to see if they can have an ambulance there. | | |
| 01:46:15.8 HOT-2 | yeah, um. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--------------------------------------|-----------------|----------------------------|
| 01:46:19.2 HOT-1 | we'll talk to tower. | | |
| 01:46:20.7 HOT-2 | uh approach. | | |
| 01:46:21.9 HOT-1 | approach. | | |
| 01:46:22.6 HOT-2 | yup. | | |
| 01:46:25.3 HOT-1 | uh *? | | |
| 01:46:27.3 HOT-? | mr. @ is getting his *. | | |
| 01:46:33.0 HOT-2 | I need a bucket of some description. | | |
| 01:46:46.8 HOT-2 | * * just bringing out @. | | |
| 01:46:58.3 HOT-? | #. | | |
| 01:47:11.1 HOT-1 | okay, who all's in here? | | |
| 01:47:15.0 HOT-2 | @ is out again. | | |
| 01:47:15.8 CAM-1 | who alls goin' over there? | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:47:17.4 CAM-3 | what? | | |
| 01:47:17.8 CAM-1 | * you goin'? | | |
| 01:47:19.5 CAM-3 | yeah. | | |
| 01:47:19.9 CAM-1 | (nobodys told me) who's goin', who else is goin'? | | |
| 01:47:22.3 CAM-3 | @ *. | | |
| 01:47:23.7 CAM-1 | @ *? | | |
| 01:47:24.5 CAM-3 | * * '. | | |
| 01:47:29.9 CAM-4 | * * *. | | |
| 01:47:43.7 CAM-1 | hang on, we workin' on it. | | |
| 01:49:02.1 CAM-1 | what time is it? | | |
| 01:49:05.6 HOT-2 | one forty five. | | |
| 01:49:09.6 HOT-2 | one fifty. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:49:12.6 HOT-1 | what time? | | |
| 01:49:13.3 HOT-2 | one fifty it is. | | |
| 01:49:14.3 HOT-1 | okay, one fifty. | | |
| 01:49:16.1 HOT-1 | so we're gonna depart at. | | |
| 01:49:33.1 HOT-1 | we're goin[' into Fort Lauderdale, right? | | |
| 01:49:34.7 HOT-2 | yeah, we're gonna have to. | | |
| 01:49:36.3 HOT-1 | okay. | | |
| 01:49:37.2 HOT-2 | and then they're gonna * * * * * so you're gonna call ahead. | | |
| 01:49:41.1 HOT-2 | he said he would. | | |
| 01:49:42.3 HOT-2 | yeah, okay. | | |
| 01:49:54.0 HOT-1 | uh, alright. | | |
| 01:49:56.2 HOT-2 | you alright? | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:49:58.8 HOT-2 | i've got an initial altitude of a thousand and a heading of one eight zero once we get airborne. | | |
| 01:50:13.8 HOT-1 | okay we gotta put a flightplan in. | | |
| 01:50:17.2 HOT-2 | yup, sorry. my mistake. | | |
| 01:50:21.3 HOT-1 | you want me do it? | | |
| 01:50:22.7 HOT-2 | yeup. | | |
| 01:50:23.2 HOT-1 | I will. | | |
| 01:50:25.1 HOT-1 | this is a flightplan - clear flightplan - okay. | | |
| 01:50:40.9 HOT-1 | walkers. | | |
| 01:50:45.7 HOT-1 | mike, yankee, alpha, whiskey. | | |
| 01:50:53.2 HOT-1 | destination K-F-L-L. | | |
| 01:51:08.6 HOT-1 | okay. | | |
| 01:51:15.0 HOT-1 | what ya think, thirty five? | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:51:17.2 HOT-2 | yup. | | |
| 01:51:20.2 HOT-1 | * you're puttin' it in, the thousand, you put it in? are you- what are you doin' over there? | | |
| 01:51:23.7 HOT-2 | I'm just settin' the performance initialization. | | |
| 01:51:24.9 HOT-1 | oh. | | |
| 01:51:25.4 HOT-2 | just completing the initialization to get it done. | | |
| 01:51:27.3 HOT-1 | okay well it's done this. | | |
| 01:51:28.3 HOT-2 | yeah so we can then- so if we do get an IFR clearance or whatever at least we got a flightplan then we can do it. | | |
| 01:51:36.0 HOT-2 | okay you do the flightplan I'm just doing the initialization on it. | | |
| 01:51:38.0 HOT-1 | that's what I was tryin' to do too. | | |
| 01:51:50.4 HOT-1 | alright. | | |
| 01:51:52.1 HOT-1 | we're good. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:51:53.8 HOT-1 | now okay one, three, two, nine, five is what we can pick up. | | |
| 01:51:57.8 HOT-2 | alright, radio I'll do that. | | |
| 01:51:59.3 HOT-1 | okay, LNAV we're hooked in here. | | |
| 01:52:04.3 HOT-2 | okay you good? | | |
| 01:52:05.4 HOT-2 | yup, put in one thirty two nine five in primary frequency. good, coming up and I'm going to be monitoring uh. | | |
| 01:52:13.4 HOT-2 | our initial heading is going to be one eight zero and then I'll tell you on course after that once we get it set up. | | |
| 01:52:18.2 HOT-2 | altitudes one thousand. | | |
| 01:52:20.2 HOT-2 | so come vertical and then transition forward with the trim hat. | | |
| 01:52:22.6 HOT-1 | I'm goin'. | | |
| 01:52:24.0 HOT-1 | I'm * with the trim hat *. | | |
| 01:52:26.1 HOT-2 | sorry? | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:52:27.0 HOT-1 | I said I don't- I don't know if I can do it with the trim hat. | | |
| 01:52:29.3 HOT-2 | okay, that's fine. | | |
| 01:52:31.4 HOT-2 | alright airspeed coming up- no it's not coming up so push that nose forward get some airspeed. | | |
| 01:52:34.8 HOT-1 | I'm goin'. | | |
| 01:52:38.6 HOT-1 | I'll * * the power. | | |
| 01:52:42.0 HOT-2 | watch your altitude. | | |
| 01:52:46.1 HOT-2 | okay. | | |
| 01:52:47.5 HOT-? | * * * . | | |
| 01:52:48.0 HOT | sink [electronic voice]. | | |
| 01:52:48.6 HOT | [sound similar to warning tone]. | | |
| 01:52:49.0 HOT | don't s - [electronic voice]. | | |
| 01:52:49.4 HOT | warning terrain [electronic voice]. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|-------------------------------------|-----------------|----------------------------|
| 01:52:49.5 HOT | one fifty feet [electronic voice]. | | |
| 01:52:50.8 HOT-? | * * * . | | |
| 01:52:51.3 HOT | warning terrain [electronic voice]. | | |
| 01:52:53.1 HOT-? | * * * . | | |
| 01:52:53.2 HOT | warning terrain [electronic voice]. | | |
| 01:52:54.5 HOT-1 | do you * . | | |
| 01:52:55.2 HOT | warning terrain [electronic voice]. | | |
| 01:52:56.4 HOT-1 | how high are you * * . | | |
| 01:52:57.2 HOT | warning terrain [electronic voice]. | | |
| 01:52:59.1 HOT | warning terrain [electronic voice]. | | |
| 01:52:59.5 HOT-1 | * * three hundred feet. | | |
| 01:53:01.1 HOT | warning terrain [electronic voice]. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|---|-----------------|----------------------------|
| 01:53:01.9 HOT-2 | we're not. | | |
| 01:53:03.0 HOT-1 | that's what it says over here, * *. | | |
| 01:53:03.1 HOT | warning terrain [electronic voice]. | | |
| 01:53:04.9 HOT | warning terrain [electronic voice]. | | |
| 01:53:05.9 HOT-2 | yeah we were diving. | | |
| 01:53:08.1 HOT-2 | (sorry @). | | |
| 01:53:09.8 HOT | [sound similar to exhale]. | | |
| 01:53:11.6 HOT-1 | ##. | | |
| 01:53:11.7 HOT | warning terrain [electronic voice]. | | |
| 01:53:13.2 HOT-2 | there was a fatal accident in the UK and this is exactly what happened there. | | |
| 01:53:13.7 HOT | warning terrain [electronic voice]. | | |
| 01:53:15.6 HOT | warning terrain [electronic voice]. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|----------------------------|--|-----------------|----------------------------|
| 01:53:16.3 HOT-1 | * give us a heading. | | |
| 01:53:17.5 HOT | warning terrain [electronic voice]. | | |
| 01:53:18.5 HOT | [sound similar to warning tone]. | | |
| 01:53:18.9 HOT-1 | give us a heading. | | |
| 01:53:19.5 HOT | warning terrain [electronic voice]. | | |
| 01:53:20.6 HOT-1 | give us a heading and altitude. | | |
| 01:53:21.5 HOT | warning terrain [electronic voice]. | | |
| 01:53:21.8 HOT | [sound similar to warning tone]. | | |
| 01:53:22.7 HOT | [sound of impulsive noise]. | | |
| 01:53:23.4 HOT | warning terrain [electronic voice]. | | |
| 01:53:24.1 HOT | * [sound similar to grunt]. | | |
| 01:53:25.6 HOT | bank angle, bank angle [electronic voice]. | | |

| Time and Source | Intra-Aircraft Communication | Time and Source | Over-the-Air Communication |
|---|-------------------------------|-----------------|----------------------------|
| 01:53:26.9 HOT | rotor low [electronic voice]. | | |
| 01:53:27.2 HOT | [sound of impulsive noise]. | | |
| 01:53:28.3 HOT | rotor - [electronic voice]. | | |
| 01:53:28.9 END OF TRANSCRIPT END OF RECORDING | | | |