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

GROUP CHAIRMAN'S FACTUAL REPORT OF INVESTIGATION

CEN16LA067

By
Bill Tuccio, Ph.D.

WARNING

The reader of this report is cautioned that the summary/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 summary/transcript or parts thereof, if taken out of context, could be misleading. The summary/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 summary/transcript as the sole source of information.

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division

July 6, 2016

Cockpit Voice Recorder

Group Chairman's Factual Report
By Bill Tuccio, Ph.D.

1. EVENT SUMMARY

Location:	Telluride, Colorado
Date:	December 23, 2015
Aircraft:	Hawker Beechcraft 400XP, Registration XA-MEX
Operator:	Aerolíneas Ejecutivas, S.A. de C.V.
NTSB Number:	CEN16LA067

On December 23, 2015, about 1415 mountain standard time (MST), a Hawker Beechcraft 400XP airplane, XA-MEX, collided with snow removal equipment while landing at the Telluride Regional Airport (KTEX) Telluride, Colorado. The pilot, co-pilot, and five passengers were not injured and the airplane was substantially damaged during the accident. The airplane was registered to and operated by Aerolíneas Ejecutivas, S.A. de C.V., Toluca, Mexico, under the provisions of 14 *Code of Federal Regulations* (CFR) Part 129 as an air taxi flight. Instrument meteorological conditions prevailed at the time. 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 May 10, 2016, and a summary of the entire accident flight was prepared, including partial transcription of pertinent segments.

2. GROUP

Chairman: Dr. Bill Tuccio
Aerospace Engineer
NTSB

Member: Craig Hatch
Investigator-in-Charge (IIC)
NTSB

Member: Dr. Robert Joslin[1]
Chief Scientific & Technical Advisor – Flight Deck Technology Integration
Federal Aviation Administration

Member: Oscar Chapa Rivera[2]
Aviation Investigator
Dirección de Investigación de Accidentes e Incidentes de Aviación (Mexico)

[1] Fluent in Spanish and English.
[2] Fluent in Mexican Spanish and English.

Member: Arturo Alcalá Galán[2]
Director of Operations
Aerolíneas Ejecutivas, S.A. de C.V.

3. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Division received the following CVR:

Recorder Manufacturer/Model: **L-3/Fairchild FA2100-1020**
Recorder Serial Number: **000283709**

3.1 CVR Carriage Requirements

Aircraft operated under 14 CFR 129 are required to follow the operating rules of their country of registry. ICAO Annex 6 Standards and Recommended Practices require that airplanes over 5700 kg, manufactured after 2003, should be equipped with a CVR that records a minimum of the last 2 hours of aircraft operation (aircraft XA-MEX was manufactured in 2004). This is accomplished by recording over the oldest audio data. When the CVR is deactivated or removed from the airplane, it retains only the most recent 2 hours of CVR operation.

3.2 Recorder Description

This model CVR, the L-3/Fairchild FA2100-1020, 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 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 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.[3] Channel number four did not contain any audio information (nor was it expected to for this installation).

Table 1: Audio Quality.

Channel Number	Content/Source	Quality	Duration
1	Captain	Excellent	30 minute
2	First Officer	Excellent	30 minute
3	None	n/a	30 minute

[3] See attached CVR Quality Rating Scale.

Channel Number	Content/Source	Quality	Duration
4	CAM	Fair	30 minute
Mixed	Mixed Audio	Excellent	2 hour
CAM	CAM	Fair	2 hour

3.5 Timing and Correlation

Timing of the transcript was established by correlating the air traffic control recording transmission time to the corresponding CVR event. Specifically, a radio transmission made by Denver Center (Sector 37R)[4] at 2037:35 UTC was recorded on the CVR at 0134:34.4 CVR Elapsed Time (time since the beginning of the 2-hour recording). Subtracting 7 hours from UTC to convert to MST, and applying the difference resulted in the following relationship:

CVR MST = CVR Elapsed Time – 1203:00.6

Accordingly, all times in the remainder of this report are expressed in MST.

3.6 Summary and Transcript Translation Methodology

Most of the intracockpit talk was in Spanish (Mexican dialect). Three bilingual members of the CVR group explained Spanish content to the English-only speakers of the CVR group. For each segment of content, the group collectively decided if the content required transcription or if the content could be summarized.

When content was summarized, the group agreed upon the English summary of the content. When the content was transcribed, the talk-as-spoken was transcribed and then idiomatically translated to English via consensus of the Spanish speakers. Transcript excerpts show the text-as-spoken and the idiomatic translation to English.[5] Spanish accent marks were added after the group effort using automated Spanish spell check.

3.7 Description of Audio Events

See the group summary attached to this report. Transcription symbols and abbreviations are described in the legend attached to this report.

As part of the Safety Board's accident investigation process, the flight crew was invited to review the CVR report and suggest corrections or additions. On June 6, 2016, the captain and co-pilot reviewed this report and agreed on the following comment:

- At 1405:09.2, the text-as-spoken was "vertical speed."

[4] See the Air Traffic Control Group Chairman's Factual Report.
[5] Liddicoat, A. J. *An Introduction to Conversation Analysis*. London, England: Continuum, 2007.

Attachment I

CVR Quality Rating Scale

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

Excellent Quality — Virtually all of the crew conversations could be accurately and easily understood. The transcript that was developed may indicate only one or two words that were not intelligible. Any loss in the transcript is usually attributed to simultaneous cockpit/radio transmissions that obscure each other.

Good Quality — Most of the crew conversations could be accurately and easily understood. The transcript that was developed may indicate several words or phrases that were not intelligible. Any loss in the transcript can be attributed to minor technical deficiencies or momentary dropouts in the recording system or to a large number of simultaneous cockpit/radio transmissions that obscure each other.

Fair Quality — The majority of the crew conversations were intelligible. The transcript that was developed may indicate passages where conversations were unintelligible or fragmented. This type of recording is usually caused by cockpit noise that obscures portions of the voice signals or by a minor electrical or mechanical failure of the CVR system that distorts or obscures the audio information.

Poor Quality — Extraordinary means had to be used to make some of the crew conversations intelligible. The transcript that was developed may indicate fragmented phrases and conversations and may indicate extensive passages where conversations were missing or unintelligible. This type of recording is usually caused by a combination of a high cockpit noise level with a low voice signal (poor signal-to-noise ratio) or by a mechanical or electrical failure of the CVR system that severely distorts or obscures the audio information.

Unusable — Crew conversations may be discerned, but neither ordinary nor extraordinary means made it possible to develop a meaningful transcript of the conversations. This type of recording is usually caused by an almost total mechanical or electrical failure of the CVR system.

Transcript of a L-3/Fairchild FA2100-1020 solid-state cockpit voice recorder, serial number 000283709, installed on an Aerolíneas Ejecutivas Hawker Beechcraft 400 (XA-MEX), which struck at vehicle during landing at the Telluride Regional Airport in Telluride, Colorado.

LEGEND

CAM	Cockpit area microphone voice or sound source
HOT	Flight crew audio panel voice or sound source
RDO	Radio transmissions from XA-MEX
CTR	Radio transmission from center controller
EGPWS	Enhanced Ground Proximity Warning System
-1	Voice identified as the captain
-2	Voice identified as the co-pilot
-?	Voice unidentified
*	Unintelligible word
#	Expletive
( )	Questionable insertion
[ ]	Editorial insertion

Note 1: Times are expressed in mountain standard time (MST).

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.

Group Summary of Accident Flight

Beginning at 1223 MST, the crew used checklists and started the aircraft.

At no time on the recorded content, did the crew contact a Flight Service Station, Flight Watch, or the KTEX Unicom; however, the crew discussed these services. See this summary for times when the crew listened to AWOS and asked Denver Center for the latest weather at KTEX.

Beginning at 1226 MST, the crew entered the alternate of KMTJ (Montrose Regional Airport, Montrose, Colorado) and the routing to KTEX into the FMS. The crew then performed the before taxi checklist.

Beginning at 1231 MST, the co-pilot called El Paso Ground for taxi, was given taxi instructions to runway 22, and began to taxi.

Beginning at 1232 MST, while taxiing, the crew discussed various operational items. The following occurred, as transcribed in table 2.

Table 2. Excerpt 1232:07 to 1234:07 MST.

MST Time	Source	English Translation	As Spoken
1232:06.8	HOT-1	do you remember the frequency for, what's it called, the reports?	te acuerdas cual es la frecuencia del ...de cómo se llama, este...para los reportes.
1232:14.1	HOT-2	what reports?	reportes de?
1232:14.8	HOT-1	once we're airborne they'll give us.	arriba que nos den este ahh.
1232:16.9	HOT-2	flight watch ***.	flight watch ***.
1232:17.6	HOT-1	***.	***.
1232:17.6	HOT-2	to be honest I don't remember ** two.	la neta no me acuerdo ** dos.
1232:20.1	HOT-2	it'll be on the charts. we will check it shortly.	ahí viene en las cartas, si no ahorita lo checamos.
1232:22.9	HOT-1	because in order to check the last--	porque para checar el ultimo--
1232:24.2	HOT-2	but there's ATIS there, but if they don't...	pero hay ATIS ahí, pero si no está ahí está en corto si no...
1232:28.9	HOT-1	with the ATIS we'll go the other one dude, but we won't even try it.	con el ATIS ya no vamos al otro wey, ya ni siquiera lo intentamos.
1232:30.1	HOT-2	ah hah.	ah hah.
1232:32.8	HOT-1	even center sometimes tells you know what the airport is closed [in this context, "cerrado" means below weather minimums].	igual el Centro a veces te dice no oiga está cerrado ni pa que ***.
1232:35.2	HOT-2	ah hah. yes.	ah hah. sí.
1232:36.2	HOT-2	what are your intentions, yeah we'll go the other one.	cuáles son sus intenciones si pues nos vamos al otro.
1232:39.0	HOT-1	we'll go direct, right, if it is closed... ["cerrado" in this context means below weather minimums]. **.	nos vamos directo, no, o sea si está cerrado...**.
1232:41.0	HOT-2	*** we'll try it if not.	*** lo intentamos si no.
1232:43.4	HOT-2	we'll check the latest weather or they'll tell us the weather and we're done.	si checamos el, el ultimo weather o que nos digan el weather y ya.
1232:44.6	HOT-1	***.	***.

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1232:46.6	HOT-1	yeah the missed approach over there it's mountainous [terrain] and...	si esta. media ahí la fallida esta de tan cerros y eso pues si no...
1232:47.2	HOT-2	***.	***.
1232:51.8	HOT-2	yes, no, for what?	si no ni pa que si esta ***.
1232:53.2	HOT-1	and the worst part is they are using runway twenty seven dude, it would be visual to twenty seven.	y lo peor es que está a la veintisiete wey, seria visual a la veintisiete.
1232:56.4	HOT-2	the ILS zero nine.	el ILS cero nueve.
1232:57.4	HOT-1	no.	no.
1232:57.9	HOT-1	check the latest wind.	checa el ultimo viento.
1232:59.5	HOT-2	how many knots, well I'll check it.	pero con cuantos nudos, bueno deja y lo checo.
1233:01.5	HOT-1	two-two sixty at seventeen.	dos-dos sesenta con diecisiete.
1233:03.2	HOT-2	hey dude that sucks it's moving in. no [wind] calm. I have [wind] calm in Telluride.	aay wey no mames está entrando. no calma, yo tengo calma en Telluride.
1233:07.0	HOT-1	**.	**.
1233:08.6	HOT-2	light snow.	ligera nieve.
1233:10.5	HOT-2	or you're saying Montgoose [means Montrose]. they're both [wind] calm.	o dices Montgoose **, los dos calma.
1233:13.6	HOT-1	ah and El Paso little #.	ah y El Paso #.
1233:16.5	HOT-2	then, nine hundred feet overcast. it is pointless now.	entonces, cubierto a novecientos pies no wey ni pa que ahorita no, sale.
1233:23.4	HOT-2	okay I have the controls check *.	sale I have the controls check *.
1233:24.8	HOT-1	look there is the *** the ceiling, look Tellu-Telluride.	mira ahí esta *** el techo mira Tellu-Telluride.
1233:28.6	HOT-2	two and a half miles wind from two (sixty) at five. why do I have? eighteen minutes ago.	dos y media millas viento dos (sesenta) con cinco, yo porque tengo? hace dieciocho minutos.
1233:36.7	HOT-2	you have it from eighteen fifty five.	a ver tu lo tienes de las dieciocho cincuenta y cinco.
1233:40.0	HOT-1	if it is...	si son las...
1233:40.5	HOT-2	***.	***.
1233:40.8	HOT-1	...nineteen thirty three.	...diecinueve treinta y tres
1233:42.6	HOT-1	I have the latest.	yo tengo el ultimo.
1233:44.9	HOT-2	no I have the latest nineteen fifteen...	no yo tengo el ultimo diecinueve quince...
1233:47.0	HOT-1	ah okay.	ah okay.
1233:47.3	HOT-2	...fifteen minutes, calm and one mile.	...quince minutos, calma una milla.
1233:49.7	HOT-2	no a mile. that sucks.	no una milla no mames.
1233:50.9	HOT-1	no.	no.
1233:51.5	HOT-1	why even try it dude.	ni pa que entramos wey.
1233:51.7	HOT-2	light snow closed [context is below weather minimums] at nine hundred.	ligera snow cerrado a novecientos.
1233:54.5	HOT-1	no dude no *** we're going to go to...	no wey no*** pero bueno nos vamos a...

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1233:57.2	HOT-2	we're going to the other one but I don't think from here to there in an hour it'll get any better.	nos vamos al otro pero , bueno no creo que de aquí a allá en una hora mejore.
1234:01.7	HOT-1	no now we'll ask the first center. I'm not sure who it is. Denver or Colorado?	no pues ahorita les preguntamos al primer centro, no se quién es , con con Denver o Colorado?
1234:05.8	HOT-2	yeah.	yeah.
1234:06.2	HOT-1	okay straight ahead right?	okay todo derecho verdad?

The aircraft continued to taxi.

Beginning at 1236 MST, the crew discussed that the weather at Montrose (MTJ) was clear. Then they discussed the weather and operations at Telluride, including that it was a regional airport with no scheduled service and it was generally used by corporate aircraft. The captain asked the co-pilot questions about the Telluride airport and surrounding area.

Beginning at 1238 MST, the aircraft continued to taxi, performed checklists, departed El Paso, and was cleared to 30,000 feet. Shortly after passing 18,000 feet, the crew began to discuss the localizer approach at Telluride.

At 1251 MST, the crew noted the winds were calm at Telluride and put in the localizer for runway 9. An automated weather forecast, from Socorro, NM (KONM) (KONM's automated weather shared the same frequency as the AWOS at Telluride, 118.32)[6], was recorded on the CVR. Shortly after the airport was announced, the automated weather stopped, consistent with the crew turning off the audio selection for that radio.

The Socorro automated weather broadcast recording occurred a number of times on the CVR for the remainder of the flight, until the Telluride AWOS was recorded on the CVR.

At 1252 MST, the crew discussed the planned flight, including the Telluride approach, weather, and the alternate. The following occurred, as transcribed in table 3.

Table 3. Excerpt 1252:30 to 1253:34 MST.

MST Time	Source	English Translation	As Spoken
1252:29.7	HOT-2	...hey look the minimums, are eleven thousand three hundred forty.	...fíjate los mínimos, son, once mil trescientos cuarenta...
1252:32.4	HOT-1	***.	***.
1252:33.0	HOT-2	*** two thousand three hundred feet dude.	*** dos mil tres cientos pies, wey,
1252:35.6	HOT-1	no, we needed ***.	no, nosotros necesitábamos ***.

[6] See the U.S. Chart Supplement, SW, March 31, 2016 for KONM and KTEX.

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1252:35.7	HOT-2	it was at nine hundred feet.	estaba a novecientos pies.
1252:38.3	HOT-1	we're out of [minimums] dude.	estamos fuera wey.
1252:39.2	HOT-2	so, but of course a little bit closer we'll check. but anyway program this and we'll leave the alternate the other airport, if not plan b.	y ya ni pa que le, pero claro vamos a, más cerca le checamos como quiera prográmate el. este y dejamos en el alterno. el. el otro aeropuerto, wey y ya pa sí no pues plan b.
1252:42.0	HOT-1	** yes yes **.	** sí sí **.
1252:50.0	HOT-1	we're in agreement, right? if it's...or if it's at minimums, that is, we'll go direct to the alternate. why get in there, what I don't want to do, dude, is go airborne in that area [airborne in this context, means missed approach].	estamos en el mismo no? si esta...o si está en mínimos o sea nos vamos directo al alterno, ni para que meter, lo que no quiero hacer esto wey o sea no me quiero ir al aire en esta área.
1252:52.6	HOT-2	yes. yes.	sí. sí.
1252:59.3	HOT-2	yes.	sí.
1252:59.8	HOT-1	you agree?	te late?
1253:00.5	HOT-2	yes. *	sí. *
1253:00.8	HOT-1	do you like it?	te parece?
1253:02.3	HOT-2	I don't think, I don't think that...	no creo, no creo que...
1253:03.9	HOT-1	yes dude, I don't want to, that is, I don't feel like doing that.	sí wey, no quiero o sea no no tengo ganas de hacer esto.
1253:05.9	HOT-2	look it's a mile. and we need one and three-- one and a quarter to begin-- okay, we are bravo [referring to the approach category on the approach chart], one and a half.	mira son...una milla y requerimos una tres una un cuarto, pa empeza-- , bueno, somos bravo, una y media.
1253:13.6	HOT-1	thirteeeeen fooourr.	treccceee, cuatrooo.
1253:14.1	HOT-2	*** the visibility...and the overcast at nine hundred, no way. you think in an hour it will clear to a thousand, two thousand, what?	*** la visibilidad...y el cerrado a novecientos pus no. tú crees que en una hora se abra hasta los mil, dos mil, que?
1253:22.4	HOT-2	two thousand three hundred, two thousand five hundred, I don't think so.	dos mil trescientos, dos mil quinientos, no creo.
1253:24.4	HOT-1	ah hah.	ah hah.
1253:25.7	HOT-2	it's moving in there. it's like the front, I don't know.	es que va entrando ahí , como que el frente no sé.

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1253:27.8	HOT-1	no, no it's not going to open up ***.	no, no se va a abrir ***.
1253:29.5	HOT-2	yes.	sí.
1253:30.7	HOT-1	so whatever the ATIS says, we'll go with the damn ATIS and that's it.	pues lo que diga el ATIS wey, nos vamos con el pinche ATIS y ya.
1253:32.7	HOT-2	yes yes. okay.	sí sí. ya.
1253:33.6	HOT-2	yeah whatever the ATIS says, ah, and we're not screwing around.	sí lo que diga el ATIS y ya no, ya ni pa que le pendejeamos... al pendejo.

The crew then loaded a secondary flight plan into the FMS from El Paso to KMTJ. Again, the automated weather at Socorro Municipal Airport was recorded for a short time. Center cleared the aircraft to FL 380 and the crew acknowledged the clearance.

At 1255 MST, the crew discussed the alternate airport (KMTJ), the weather, approach capabilities, and runways at KMTJ. Then the crew discussed that if Telluride had an ILS, it would be better and would support a 200-foot overcast. They also discussed the short runway at Telluride and they would be more relaxed with an ILS and a longer runway.

At 1256 MST, a c-chord tone, similar to an altitude alert, was recorded, and the crew then noted they were approaching RVSM airspace.

Beginning at 1257 MST, the captain led an approach briefing for the LOC DME Runway 9 approach into KTEX and the co-pilot interjected and acknowledged points of the briefing as the captain spoke. The approach briefing included the following: LOC DME frequency 109.3, 118.32, 125.35, 122.15, the existence of a CTAF/Unicom, the missed approach, fixes, V-NAV mode, approach speed of 120 to 130 knots, and 2,300 (likely a reference to the AGL minimums).

Beginning at 1259 MST, the crew discussed the low probability that they were going to get into KTEX.

Beginning at 1301 MST, the crew briefed an approach at the alternate airport, KMTJ.

At 1303 MST, a c-chord tone, similar to altitude alert, was recorded, and the crew noted 1,000 feet to go for flight level 380. The co-pilot talked about a prior experience going into Telluride and an unsafe gear indication during that experience.

At 1305 MST, the crew was given a frequency change to Albuquerque Center, acknowledged the change, and checked in with Albuquerque Center.

At 1306 MST, the co-pilot continued to talk about his prior gear related issue at Telluride.

At 1307 MST, automated weather at Socorro Municipal Airport was recorded for a short time. The crew noted it was not the Telluride weather, and that they were too far away to receive Telluride weather.

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At 1308 MST, the co-pilot continued to talk about his prior gear related issue at Telluride.

Beginning at 1309 MST, the crew discussed using a GoPro-like device to record the approach into Telluride. The crew then tested the device, including noting the image was upside down, rotating the image right-side up, placement of the camera to avoid glare, prior usage, getting cables, and then finally that they broke the device (the nature and context of "broken" was not clear).

Beginning at 1312 MST, the crew engaged in a social, non-pertinent conversation.

Beginning at 1316 MST, the crew discussed the GoPro-like device, including: vantage point to see the runway, downloading the audio/video content to a phone, and, finally, turning the GoPro-like device off to save the battery. The crew then continued a social, non-pertinent conversation.

At 1319 MST, the captain mentioned he missed having ACARS[7] so he could check the weather ahead.

At 1320 MST, automated weather at Socorro Municipal Airport was recorded for a short time. Albuquerque center assigned the aircraft a frequency change to another Albuquerque Center sector. The crew acknowledged the frequency change, while at flight level 380.

Beginning at 1321 MST, automated weather at Socorro Municipal Airport was recorded for a short time. The crew updated the FMS routing to include the CONES initial approach fix. They also discussed the routing of their flight plan.

Beginning at 1323 MST, the crew engaged in a social, non-pertinent conversation.

Beginning at 1327 MST, the crew further discussed their flight plan routing, distances, and the FMS. The crew engaged in a social, non-pertinent conversation, including they would eat at Telluride and then depart Telluride (that is, fly the aircraft out of Telluride).

At 1329 MST, the crew engaged in a social, non-pertinent conversation. Automated weather at Socorro Municipal Airport was recorded for a short time. The quality of this reception was worse (e.g., weaker and with more static) than prior occurrences.

At 1330 MST, the crew discussed Flight Watch, Flight Service Stations (FSS), including: the name of the service, frequencies, where to find frequencies on enroute charts, and services offered by Flight Watch versus FSS.

At 1331 MST, Albuquerque Center handed the aircraft off to Denver Center (frequency 125.67). The captain directed the co-pilot to ask Denver Center for information on the conditions at Telluride. The co-pilot then checked in with Denver Center at flight level 380 and was told to expect lower in five minutes. The co-pilot asked for the "last weather report from Telluride." Denver replied, "Standby and I'll get that for you sir." The crew continued their discussion about Flight Watch and FSS, including services offered by each and that frequencies were located on other charts; however, the captain said he was never able to find those frequencies on the chart.

Denver Center then resumed talking to the aircraft. The following occurred, as transcribed in table 4.

[7] ACARS means aircraft communications addressing and reporting system.

Group Summary of Accident Flight

Table 4. Excerpt 1332:34 to 1333:27 MST.

MST Time	Source	English Translation	As Spoken
1332:34.2	CTR	x-ray alpha mike echo x-ray you ready for the weather?	x-ray alpha mike echo x-ray you ready for the weather?
1332:37.3	RDO-2	ready mike echo x-ray.	ready mike echo x-ray.
1332:38.8	CTR	x-ray alpha mike echo x-ray. Telluride automated weather observation two zero one five. wind one one zero at three. visibility seven. [in the background one of the crewmembers said "seven *"] sky condition scattered at one five thousand. scattered one niner thousand overcast. [the controller paused after the word overcast and then continued] three thousand eight hundred. temperature five. correction temperature minus five. dewpoint minus eight. altimeter two niner five two.	x-ray alpha mike echo x-ray. Telluride automated weather observation two zero one five. wind one one zero at three. visibility seven. [in the background one of the crewmembers said "seven *"] sky condition scattered at one five thousand. scattered one niner thousand overcast. [the controller paused after the word overcast and then continued] three thousand eight hundred. temperature five. correction temperature minus five. dewpoint minus eight. altimeter two niner five two.
1333:01.0	HOT-2	five two, it improved.	five two, pus ya mejoro.
1333:02.3	RDO-2	roger. I got it. x-ray alpha mike echo (x). thank you.	roger. I got it. x-ray alpha mike echo (x). thank you.
1333:04.7	HOT-2	but we don't have the--	pero no tenemos los--
1333:04.8	CTR	now lower in four minutes.	now lower in four minutes.
1333:08.0	RDO-2	mike echo x-ray.	mike echo x-ray.
1333:09.3	HOT-2	scattered one thousand five hundred.	medio nublado mil quinientos.
1333:12.0	HOT-2	scattered. one thousand nine hundred and overcast at three thousand eight hundred.	medio nublado. mil novecientos y cerrado a tres mil ochocientos.
1333:16.1	HOT-1	we are at theeeee...	estamos en elllll....
1333:17.7	HOT-2	no, we're, we're good now dude.	no, son 'tamos, no ya estamos bien wey.
1333:19.2	HOT-1	yes. okay.	si ya.
1333:19.6	HOT-2	because the other one was three thousand, it was, it is two four hundred dude.	porque el otro era tres mil, era, es dos cuatrocientos wey.
1333:23.1	HOT-1	okay.	'kay.
1333:23.3	HOT-2	then we'll continue--	'tonces, seguimos--

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1333:24.2	HOT-1	if not we'll go into the air [this context, go around] at the minimums. if not, screw it, okay?	si no pus nos vamos al aire, o sea al mínimo, si no a la chingada. no?
1333:26.7	HOT-2	sure.	claro.

The crew discussed that the visibility had improved to seven miles. They then discussed they would fly the approach at 130 knots, full flaps, and VGP [Vertical Glide Path].

At 1334 MST, the crew set the minimums and the inbound course of 093 for the approach into their avionics. The co-pilot then said, "tons' mejoro que raro wey 'tuvo, un rato se cerró y***" (in English, then it improved, that is strange dude. it was closed for a while and then ***) (in this context, "closed" refers to below weather minimums). Automated weather with static was briefly recorded (mostly unintelligible). The crew discussed the approach, including fixes and the airport identifier.

At 1335 MST, the crew discussed how current the Center-provided weather was and the present time; concluding that they would attempt the approach and if the weather had not improved they would execute the missed the approach.

At 1336 MST, the crew informed the passengers they would attempt the approach into Telluride. The crew then discussed the small size of the taxiways and ramp related to the FBO, and then engaged in a social, non-pertinent conversation.

At 1337 MST, Denver Center cleared the aircraft to descend to flight level 270. The co-pilot read back the clearance and requested direct CONES. Center cleared the aircraft direct CONES and direct Telluride. The crew then updated the FMS related to the clearance.

At 1338 MST, the crew noted the outside air temperature and that they would need to use anti-ice. The crew then discussed setting up the pressurization system for landing at Telluride and related considerations.

At 1339 MST, the crew performed the descent checklist including various numbers for the landing stated as 115, 110, 132, and another number that was unintelligible. After the checklist was completed, the captain told the co-pilot if he saw anything unusual, then say “my controls” and take the aircraft. The co-pilot agreed.

At 1340 MST, the crew engaged in a social, non-pertinent conversation (related to eating at Telluride). Denver Center handed the aircraft off to another Denver Center sector. The aircraft checked in with the next sector descending through flight level 344 and was then cleared to flight level 220.

At 1341:29.5 MST, the Telluride AWOS was recorded as follows,

> * two thousand three hundred scattered. ceiling three thousand three hundred overcast. temperature minus six Celsius. dewpoint minus niner. altimeter two niner five zero. please be a good neighbor and follow all noise abatement procedures. Telluride Regional Airport automated weather observation two zero four three zulu. weather wind one six zero at five.

> visibility one zero. one thousand niner hundred scattered. two thousand three hundred scattered. ceiling three thousand three hundred overcast. temperature minus six Celsius. dewpoint minus niner. altimeter two niner five zero. please be a good neighbor and follow all noise abatement procedures. Telluride Regional Airport automated weather observation two zero four three zulu. weather wind one six zero at four. visibility one zero. one thousand niner hundred scattered. two thousand three hundred scattered. ceiling three thousand three hundred overcast. temperature minus six Celsius. dewpoint minus niner (repeats)

While the AWOS was being recorded, the crew commented on a few items in the AWOS, including the altimeter, winds, and noise abatement procedures.

At 1344 MST, the crew discussed that they did not take the engine readings while in cruise flight (as per standard operating procedures).

At 1345 MST, the crew mentioned outside air temperatures and anti-ice. Then the crew engaged in a social conversation about anti-ice systems on different aircraft.

At 1346 MST, Denver Center cleared the aircraft to flight level 200; the crew read back the clearance.

At 1347 MST, the crew discussed the flight profile, configuration, and descent. Then the crew engaged in a social, non-pertinent conversation about food at Telluride. Thereafter, the crew discussed turning on all anti-ice systems and the CAM recorded sounds of clicks, similar to switches.

At 1348 MST, Denver Center handed the aircraft off to the next Denver Center sector, frequency 125.35. The co-pilot acknowledged the frequency change, and then the following occurred, as transcribed in table 5.

Table 5. Excerpt 1348:53 to 1350:00 MST.

MST Time	Source	English Translation	As Spoken
1348:53.4	RDO-2	good afternoon Beechjet x-ray alpha mike echo x-ray two three two for two zero zero.	good afternoon Beechjet x-ray alpha mike echo x-ray two three two for two zero zero.
1348:58.0	HOT-1	I think it's good, let's take it to ***.	yo creo que está bien, vamos a llevarlo a eso***
1348:59.3	CTR	x-ray alpha mike echo x-ray Denver Center. good afternoon. advise when you have weather and NOTAMs for Telluride. I just had one try it and he went missed approach.	x-ray alpha mike echo x-ray Denver Center. good afternoon. advise when you have weather and NOTAMs for Telluride. I just had one try it and he went missed approach.
1349:08.2	RDO-2	roger we have the weather on board and we wanna' try it [stammers]. x-ray alpha mike echo x-ray.	roger we have the weather on board and we wanna' try it [stammers]. x-ray alpha mike echo x-ray.
1349:13.4	CTR	okay x-a-m-e-x what approach would you like?	okay x-a-m-e-x what approach would you like?
1349:16.2	HOT-2	ahh dude what was it the localizer, which one was it?	ahhh wey cual fue el localizer, cuál era?
1349:19.0	HOT-1	the localizer right? the localizer to nine?	el localizador no? el localizador de la nueve?

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1349:22.0	RDO-2	eh we're gonna make the localizer runway nine approach. mike echo x-ray.	eh we're gonna make the localizer runway nine approach. mike echo x-ray.
1349:29.4	HOT-1	it is a crosswind dude.	esta cruzado el viento wey.
1349:31.5	CTR	x-a-m-e-x. Denver Center roger. turn ah fifteen degrees left that'll be a vector for your descent and sequence into Telluride.	x-a-m-e-x. Denver Center roger. turn ah fifteen degrees left that'll be a vector for your descent and sequence into Telluride.
1349:38.5	HOT-1	fifteen degrees left.	fifteen degrees left.
1349:39.1	RDO-2	roger. fifteen degrees to the left x-ray alpha mike echo x-ray.	roger. fifteen degrees to the left x-ray alpha mike echo x-ray.
1349:42.1	CTR	and x-a-m-e-x descend and maintain one seven thousand. Telluride altimeter two niner five zero.	and x-a-m-e-x descend and maintain one seven thousand. Telluride altimeter two niner five zero.
1349:50.3	RDO-2	descend and maintain one seven thousand and two niner five zero. x-ray alpha mike echo x-ray.	descend and maintain one seven thousand and two niner five zero. x-ray alpha mike echo x-ray.
1349:54.3	HOT-1	okay one seven thousand.	okay uno siete mil.
1349:54.5	HOT-2	one seven thousand and twenty nine fifty.	uno siete mil y veintinueve cincuenta.
1349:56.5	CTR	okay sir.	okay sir.
1349:59.9	HOT-2	okay, he's going to stick us in, in sequence.	okay, ya nos va a meter para sequence.

The crew discussed the winds relative to runway 27 and the approach in general.

At 1351 MST, the sound of repeating tones, similar to throttles at low power based on configuration, were recorded. The crew then mentioned anti-ice equipment/operation.

At 1352 MST, the crew completed the approach checklist. Denver Center cleared the aircraft to 15,000 feet, provided the altimeter of 29.50, and advised the aircraft to expect a turn in about 2 minutes. The co-pilot acknowledged the clearance.

At 1353 MST, one crewmember asked the other if he was going to record the approach. Then there was the sound of a c-chord, similar to the altitude alert, followed by the co-pilot announcing one thousand to 15,000.

At 1354 MST, the crew noted the localizer was set and the frequencies matched. Then the co-pilot said he was going to turn off V-NAV because it was not needed anymore; however, the co-pilot corrected himself and said V-NAV would be needed. The crew discussed aircraft configuration for the approach and then the captain asked the co-pilot if he was recording (referring to the GoPro-like device), and the co-pilot responded that he was not yet recording. The captain acknowledged the response, and the crew continued to discuss the aircraft configuration for the approach.

Group Summary of Accident Flight

At 1355 MST, Denver Center was breaking up on the radio (while talking to other aircraft). The co-pilot told the captain he was concerned about losing communications with Denver Center. The co-pilot then reported 15,000 feet to Denver Center. Denver Center continued to break up on the radio while working multiple aircraft. The crew discussed the controller was working a lot of traffic and they needed to get lower. The following occurred, as transcribed in table 6.

Table 6. Excerpt 1357:06 to 1357:10 MST.

MST Time	Source	English Translation	As Spoken
1357:06.5	RDO-2	mike echo x-ray one five thousand.	mike echo x-ray one five thousand.
1357:07.9	CTR	right turn direct CONES.	right turn direct CONES.
1357:09.1	HOT-1	direct CONES.	direct CONES.
1357:09.9	RDO-2	direct CONES mike echo x-ray.	direct CONES mike echo x-ray.

The crew then activated direct CONES on the FMS as per the captain's request. Then the crew discussed elements of the upcoming approach, configuration, and reducing to gear speed (195 knots mentioned) to be prepared for the approach.

Beginning at 1357:41 MST, the aircraft was cleared for the approach, and then the following occurred, as transcribed in table 7.

Table 7. Excerpt 1357:41 to 1358:58 MST.

MST Time	Source	English Translation	As Spoken
1358:41.9	HOT-?	five miles.	cinco millas.
1358:42.0	CTR	x-ray alpha mike echo zulu [controller misspoke] cross CONES at or above one three thousand and cleared localizer ah d-m-e approach Telluride.	x-ray alpha mike echo zulu [controller misspoke] cross CONES at or above one three thousand and cleared localizer ah d-m-e approach Telluride.
1358:44.4	HOT-?	***.	***.
1358:50.2	RDO-2	one (two) thousand and cleared localizer d-m-e runway nine. x-ray alpha mike echo x-ray.	one (two) thousand and cleared localizer d-m-e runway nine. x-ray alpha mike echo x-ray.
1358:54.9	HOT-2	one three thousand and clear localizer to nine.	one three thousand y clear localizer a la nueve.
1358:55.0	HOT-1	**.	**.
1358:58.2	HOT-2	he made a mistake with the call sign but ***.	se equivocó en la matricula, pero ***

Group Summary of Accident Flight

The sound of repeating tones, similar to throttles at low power based on configuration, were recorded. The crew discussed a 500 foot step down over a distance of 5 miles on the approach and an altitude of 13,000 feet to CONES.

At 1400 MST, the sound of repeating tones, similar to throttles at low power based on configuration, were recorded. The crew discussed they were 4 miles from CONES and set the altitude to 12,000 feet; during this time two c-chords, similar to the top-of-descent alert, were recorded. The sound of repeating tones, similar to throttles at low power based on configuration, were recorded, followed by the sound of c-chord, similar to altitude alert, then followed by a crewmember calling out one thousand for one two thousand. Shortly thereafter the following occurred, as transcribed in table 8.

Table 8. Excerpt 1401:09 to 1401:29 MST.

MST Time	Source	English Translation	As Spoken
1401:08.8	CTR	x-ray alpha mike echo z- x-ray. change to advisory or report the cancellation of your i-f-r on this frequency if unable ah you're gonna have to go through flight service. the lowest I can talk to you is about ten.	x-ray alpha mike echo z- x-ray. change to advisory or report the cancellation of your i-f-r on this frequency if unable ah you're gonna have to go through flight service. the lowest I can talk to you is about ten.
1401:19.7	RDO-2	roger. mike echo x-ray.	roger. mike echo x-ray.
1401:22.1	HOT-1	alts cap. [referring to autopilot annunciation]	alts cap.
1401:22.5	HOT-2	we are going to cancel it before once we have it in sight.	o sea que lo cancelemos antes ya viendo.
1401:24.4	HOT-1	ah hah.	ah hah.
1401:24.7	HOT-2	if not we'll call. I don't know where, but if not we will call on the ground. this is something I'm not worried about.	si no que hablemos no sé dónde, pero si no ya hablamos en tierra eso ya es algo que no me preocupa.
1401:28.6	HOT-1	of course you're correct dude.	claro, no si es correcto wey.

Thereafter, the crew noted they were leaving 12,000. The Captain then requested flaps 10 and the co-pilot verified the speeds and selected flaps 10. Then the crew noted the next altitude was 11,500 after HODLO and the speed was set at 140 knots. During this time, the sound of repeating tones, similar to throttles at low power based on configuration, were recorded. Then the captain asked for flaps 20. The co-pilot acknowledged and set flaps 20.

At 1402 MST, the crew attempted to turn on the GoPro-like device, but they said it was not working. A crewmember commented it looked pretty outside. During this time, communications continued to be recorded on both CVR channels from Denver Center. Then the captain said, "ZABGU," and noted the airplane was not descending. The co-pilot said this was because the top of descent was a little bit further.

Group Summary of Accident Flight

At 1403 MST, the captain requested gear down, the co-pilot acknowledged, followed by a click sound, and the sound of increased background noise, similar to gear extension. Then the captain asked for flaps 30 and the before landing checklist, and then the crew performed the before landing checklist.

At 1404 MST, communications continued to be recorded on both CVR channels from Denver Center. The sound of two c-chords, similar to top of descent, was recorded, followed by the Captain saying, "T-O-D," and the co-pilot acknowledged. The following occurred, as transcribed in table 9.

Table 9. Excerpt 1404:20 to 1404:27 MST.

MST Time	Source	English Translation	As Spoken
1404:20.3	HOT-1	v path.	v path.
1404:20.8	HOT-2	v path capture.	v path capture.
1404:22.8	HOT-2	we'll see it soon. you fly and I'll look for it. there is the runway. look. it's over there.	ahorita la vamos a ver, tu vuélale yo te lo busco, ahí está la pista, mira allá se ve.
1404:23.5	HOT-1	yes *.	si *.
1404:26.3	HOT-1	do you have it? good.	ahí la tienes? bueno
1404:27.0	HOT-2	yes.	sí.
1404:27.3	HOT-1	I'll fly it.	yo vuelo.

Thereafter, the co-pilot advised the captain to let the autopilot fly the aircraft. The crew noted the radio altimeter was alive, said "D-H," and then the following occurred until the end of the recording, as transcribed in table 10.

Table 10. Excerpt 1404:41 MST to end of recording.

MST Time	Source	English Translation	As Spoken
1404:41.2	CTR	x-ray alpha mike echo x-ray Denver Center did you call?	x-ray alpha mike echo x-ray Denver Center did you call?
1404:45.5	HOT-2	what did he say?	que dijo?
1404:46.2	HOT-1	if you have the runway in sight.	que si tienes la pista a la vista.
1404:48.2	RDO-2	we have the ah runway in sight. mike echo x-ray cancellating [this is how the co-pilot said the word] i-f-r.	we have the ah runway in sight. mike echo x-ray cancellating [this is how the co-pilot said the word] i-f-r.
1404:52.0	HOT-2	alts cap.	alts cap.
1404:53.1	HOT-1	I don't have it. do you have it?	yo no la tengo...tú la tienes?

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1404:54.5	CTR	x-ray alpha mike echo x-ray i-f-r cancellation received. squawk v-f-r. good day.	x-ray alpha mike echo x-ray i-f-r cancellation received. squawk v-f-r. good day.
1404:59.3	RDO-2	good day mike echo x-ray.	good day mike echo x-ray.
1405:00.3	HOT-2	give it approach mode.	dale approach mode.
1405:01.2	HOT-1	approach mode.	approach mode.
1405:02.4	HOT-2	continue. if not it is going to level off.	continue. si no se va a nivelar.
1405:05.4	HOT-2	v alt. localizer.	v alt. localizer.
1405:06.5	HOT-1	localizer.	localizer.
1405:07.8	HOT-2	ah, hit it to go down.	ah, dale no pa bajo.
1405:09.2	HOT-1	* speed.	* speed.
1405:10.6	HOT-2	minus. chhh.	menos. chhh.
1405:13.1	HOT-2	v pitch.	v pitch.
1405:14.0	HOT-1	put in twelve hundred feet per minute.	ponele unos mil dos cientos pies por minuto.
1405:16.4	HOT-2	we lost v-nav. oohf. vertical speed.	se va vnav ooohf, vertical speed
1405:18.8	HOT-2	fifteen thousand two hundred #. check speed.	fifteen thousand two hundred #. check speed.
1405:23.0	HOT-1	there it is down there. the damned airplane won't descend dude.	ahí está pa bajo, no baja el pinche avión wey.
1405:25.6	HOT-?	alright.	vale.
1405:26.2	HOT	[sound of warbling tone, similar to autopilot disconnect]	
1405:26.8	HOT-2	get it down. get it down. get it down. get it down.	bájalo bájalo bájalo bájalo.
1405:28.4	CTR	[Communications continued to be recorded on both CVR channels from Denver Center frequency.]	
1405:31.0	HOT-?	there it is dude.	ahí esta wey.

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1405:37.8	HOT-2	one thousand two hundred, (more) **.	mil doscientos, mas **.
1405:39.0	HOT	[sound of c-chord, similar to altitude alert]	
1405:39.2	HOT-1	too much speed sucker.	mucha velocidad cabrón.
1405:40.5	HOT-2	yes.	sí.
1405:41.1	HOT-2	there. hold it.	ahí mantenla.
1405:42.4	HOT-2	okay, you have controls.	sale, you have controls.
1405:43.2	HOT-1	I have control now.	I have control ya.
1405:44.2	HOT-1	there it is look. I got rid of the problems.	ahí está mira me quito de pedos.
1405:45.3	HOT-2	okay I give you approach.	deja le doy approach ***.
1405:47.5	HOT-2	it didn't capture the v-g-p, give it one thousand two hundred, one thousand three hundred.	no capturo el v-g-p, dale mil doscientos mil trescientos.
1405:55.2	HOT	[sound of c-chord, similar to altitude alert]	
1405:56.2	HOT-2	a thousand. eleven.	a thousand. eleven.
1405:57.2	CTR	[Communications continued to be recorded on both CVR channels from Denver Center frequency.]	
1405:57.9	HOT-?	***.	***.
1406:00.7	HOT-?	sucker.	cabrón.
1406:02.9	HOT-2	okay.	sale.
1406:08.0	HOT-1	I don't see # dude.	ya no veo ni # wey.
1406:10.3	HOT-2	continue.	continue.
1406:13.5	HOT-2	one thousand four.	mil cuatro.
1406:17.4	HOT-2	oooh damn fields. we had the damn runway in site. *** here are the mountains we are going visual. the mountains are here and there.	oooh pinches campos, ahorita estaba la pinche pista son ahí, *** aquí están los cerros vamos visual los cerros, están aquí y están acá.

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1406:23.7	HOT-1	you're going outside ***.	tú vas afuera wey ***.
1406:23.9	HOT-2	***.	***.
1406:29.1	HOT-2	let's go, faster keep the descent going.	vale, mas rápido, síguele el descenso.
1406:31.4	HOT-2	** thousand.	** mil.
1406:32.0	HOT-1	I'm carrying a lot of # speed.	traigo un # de velocidad.
1406:34.4	HOT-1	we're at full [i.e., configuration, flaps]	vamos full.
1406:35.8	HOT-?	***.	***.
1406:40.8	HOT-1	holy #.	ay #.
1406:42.7	HOT-2	keep going.	síguele.
1406:47.6	HOT	[sound of warbling tone, similar to autopilot disconnect]	
1406:47.7	HOT-2	reduce power.	quítale power *.
1406:48.0	HOT-1	holy #, there it is.	ay # *, ahí esta.
1406:51.3	HOT-?	***.	***.
1406:52.4	HOT-1	***.	***.
1406:52.6	HOT-2	***.	***.
1406:53.7	HOT-1	I don't see it dude, do you have it?	no la veo wey, tú la tienes?
1406:54.6	HOT-2	there it is, look four whites.	ahí está mira, cuatro blancas.
1406:56.0	HOT-1	I don't have it, do you have it?	no la tengo, tú la tienes?
1406:56.6	HOT-2	***.	***.
1406:56.9	HOT-1	I don't see it dude.	yo no la veo wey.

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1406:57.7	HOT-1	* you take it if you want it *.	* llévalo tu si quieres *.
1406:58.8	EGPWS	one thousand.	one thousand.
1407:00.4	HOT-1	ah, I got it [the runway]. you take it [the flight controls] dude. I saw it.	ah, ya lo tengo, bueno llévalo tu wey, ya lo vi.
1407:04.5	HOT-1	master caution.	master caution.
1407:05.5	HOT-2	turn off the anti-ice.	quítame los anti-hielos.
1407:07.4	HOT-1	(ahhh.)	(ahhh.)
1407:07.6	CAM	[sound of buzz for .4 seconds, followed by sound of switch]	
1407:09.1	EGPWS	one thousand.	one thousand.
1407:09.6	HOT-?	checks.	checks.
1407:10.9	EGPWS	sink rate.	sink rate.
1407:11.3	HOT-1	* sink rate.	* sink rate.
1407:12.3	EGPWS	sink rate.	sink rate.
1407:12.9	HOT-1	go around. you're okay. [by context and inflection, the captain said go around, then said you're okay, i.e. continue to land]	vete al aire, o estas bien.
1407:14.3	EGPWS	sink rate.	sink rate.
1407:14.9	HOT-(1)	checks.	checks.
1407:15.5	HOT-(2)	checks.	checks.
1407:15.7	EGPWS	sink rate.	sink rate.
1407:18.9	HOT-1	* ten zero. zero zero.	* ten zero. zero zero.
1407:23.8	CAM	[sound of rumbling, similar to touchdown]	
1407:24.3	HOT-?	there you go.	ahí estas.

Group Summary of Accident Flight

MST Time	Source	English Translation	As Spoken
1407:26.4	CAM	[sound of increased background noise, similar to thrust reversers]	
1407:27.2	HOT-1	you have the brakes dude.	tú te paras wey.
1407:29.2	HOT-1	there you are *.	ahí estas *.
1407:29.9	HOT-2	easy. easy.	suave suave.
1407:33.3	HOT-2	#.	no #.
1407:34.4	HOT-2	#.	#.
1407:35.0	CAM	[sound of rumbling, similar to impact]	
1407:35.		[end of recording]	