

~~CONFIDENTIAL~~

34

MICROFILMED

MAC
CONTROL NO. 115308

MAR 18 1988

(TITLE UNCLASSIFIED)

GEMINI VII VOICE COMMUNICATIONS

(AIR-TO-GROUND, GROUND-TO-AIR AND ON-BOARD TRANSCRIPTION)

VOLUME II of III

Pages 338 - 674

THIS MATERIAL CONTAINS INFORMATION AFFECTING
THE NATIONAL DEFENSE OF THE UNITED STATES
WITHIN THE MEANING OF THE ESPIONAGE LAWS.
TITLE 18, U.S.C., SECTION 793 AND 794, THE TRANS-
MISSION OR REVELATION OF WHICH IN ANY MANNER
TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW.

GROUP 4

DOWNGRADED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS

STATION-MAC

GT-7

REVS----

TYPE---Document

ACCESSION NO.

ORIGINAL-COPY--

19-6977

C. M. D. F.

COPY 1

CONFIDENTIAL

116:11:38 C Now you can see the sun. See, the edge of the sun
is just going to come up there. Right, directly - -

116:11:43 P Yes, right where we think the sun is going to come
up there's a very bright - -

116:11:45 C Orange.

116:11:47 P Orange just at the - -

116:11:49 C Now let's look at that sort of a, color of nitrous
oxide coming in there. See that haze layer? It
looks just like a brownish - -

116:11:55 P Yes! Yes!

116:11:56 C ... of oxidizer.

116:11:57 P Yes. Now the bright band is further out - -

116:11:59 P ... all the clouds.

116:12:02 C Now it is a brilliant yellow coming up.

116:12:04 P Yes, brilliant yellow and just barely - not I get -
that sun's going to peek up. ... getting yellower.

116:12:14 C There she is, right then ...

116:12:19 P Yes. There she comes. She goes from orange - -

CANTON

116:12:20 CC Gemini VII, Gemini VII, Houston CAP COM.

116:12:21 C Somebody's calling us. We better - -

116:12:22 P Yes.

116:12:23 P Okay. Someone's calling, but she's going from
orange quickly into a white - brilliant white light.

116:12:31 C What do we have after the fuel cell purge? Do we
have anything else on this pass? I think we may
have.

CONFIDENTIAL

CONFIDENTIAL

339

116:12:38 P Okay. Take that, I'll get up. I have to turn off the power.

116:12:43 C Can you get that light switch? Would you get it for me?

116:12:45 P Yes.

116:12:50 C D-4/D-7 at 112.

116:12:51 P A comment of general info: the little handy-dandy flashlights which were given to us for the flight are very handy and used quite a bit. In contrast, we still haven't used the utility lights which are resting on our sidewalls.

116:13:16 CC Gemini VII, Gemini VII, Houston CAP COM.

116:13:20 C Houston, this is Gemini VII here.

116:13:25 CC Roger. How are the communications to you through this station?

116:13:32 C You're very readable. In fact, almost unbelievable now.

116:13:38 CC Roger. We'll talk to you over the HF.

GUAYMAS

116:28:59 CC Gemini VII, Guaymas CAP COM. If you copy, place your T/M switch to the REAL-TIME and ACQ-AID position.

116:29:05 C This is VII. Roger. T/M going to REAL-TIME and ACQ.

116:29:10 CC Roger. We have it.

116:29:16 C You ready for a fuel cell purge?

116:29:17 CC Roger. We're ready at this time. Everything looks good on the ground.

116:29:20 C Are you ready for a fuel cell purge?

CONFIDENTIAL

CONFIDENTIAL

116:29:22 CC Roger. Ready for the fuel cell.

116:29:24 C Coming up.

116:29:33 C Purging.

116:29:34 CC Roger.

116:34:23 C Guaymas. Purge is complete.

116:34:25 CC Roger. We're ready for your quantity read. Would you go to the ECS O₂ position?

116:34:42 CC Okay, the FUEL CELL O₂.

116:34:59 CC FUEL CELL H₂.

116:35:15 CC Roger. You can place it in the OFF position.

116:35:23 CC Everything looks good here. Stand by for Houston's CAP COM.

116:35:54 P This is VII. Go ahead.

116:36:01 C Mark clear.

116:36:04 CC Roger. You are GO for 90-1.

116:36:10 C Understand. GO for 90-1.

116:36:13 CC Roger. And you can be getting the GO/NO-GO information ready for me. I'll take it whenever you get it.

116:36:20 C Okay, Elliot. Thank you.

116:36:26 CC The GT-VI sim flight has been completed and we're planning to - we're hoping to launch it on the eighth day, so we want to be maneuvering you today. We plan to do that in about 2 hours or so.

116:36:51 P Sound excellent.

CONFIDENTIAL

CONFIDENTIAL

341

- 116:36:52 C We'll see if we can fit it into the schedule.
- 116:36:57 CC Very good of you.
- 116:36:58 C Bucket of bolts came out on the sim flight.
- 116:37:02 CC They made it through it, somehow or other.
- 116:37:04 C We have a Cadillac here.
- 116:37:07 CC Roger. Frank, we're moving right along on this suit situation. I believe we're making progress. I would like to get specific comments from you at this time, summarizing your feelings on the suit, the comfort situation and other pertinent factors.
- 116:37:31 C Roger. Jim is very comfortable and, of course, he has much better mobility outside of the suit. No question in our minds now that the only way to fly these things is without pressure suits. Those get me down. Suits are a great idea, but should be stored on-board some way, or used as an emergency item. If we have to keep one suit on, I would prefer to keep mine on so we don't have to change and change out again, because we both want them on for the rendezvous. If it's agreeable to the people, I would like to take mine off. Now we have - the cabin suit temperature has gone down now, so I'm not as uncomfortable as I was, and I found a place to sit in the spacecraft where I take advantage of some circulations from Jim's hose and it cools me off also.
- 116:38:20 CC Roger. Do you have any additional comments regarding the feasibility or the advisability of - during the full duration - what in - why don't you discuss the configuration regarding full duration.
- 116:38:47 C I - the full duration I - I'm convinced we could run the whole works without suits. Matter of fact, that would be the most desirable way. However, I think for the rendezvous we would probably want to have the suits on. If it would be convenient with people, we would like to have the suits on in rendezvous and take them off again until, say, one day before reentry.

CONFIDENTIAL

CONFIDENTIAL

116:39:12 CC Roger. We copy.

116:39:15 C Along that line, Elliot, I think we'll need about 6 hours the day before, to get the spacecraft in reentry configuration so we can repack and get everything the way we want it for reentry.

116:39:26 CC Roger. You can stand by for a T_R update.

116:39:31 C Roger.

116:39:39 CC We didn't get a map that time. We will be transmitting it again in a minute.

116:40:05 C Okay. Received, Elliot.

116:40:08 CC Roger. We got a good map here too. We're in good shape. Would you place your T/M switch back to COMMAND if you haven't done so already?

116:40:21 C Roger. We're at COMMAND.

116:40:47 CC Stand by for Flight.

116:40:52 CC Gemini VII, Houston Flight.

116:40:54 C Go ahead, Flight.

116:40:57 CC We've talked this situation over with the experts here, and if your problem is perspiration, they agree with you with regards to turning on an additional compressor to get more airflow. If, however, the problem is really suit inlet temperature, we feel that the best way to do it is to use the Primary Pump A rather than B because this does triple the flow to the suit heat exchanger. The problem is probably due to the water boiler temperature being somewhat warm as a result of the high cabin temperature. So you can use the system as you see fit on that basis.

116:41:44 C Roger, Chris. Thank you. As I said, now things seem to be under control. If we do get warm again, I'll go to a Primary Pump A and B OFF.

116:41:52 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

343

116:41:58 C We have a GO/NO-GO for you.

116:42:01 CC Okay. Go ahead.

116:42:06 C All main batteries are okay. Fuel cell Stack 1A at 3.5; 1B at 4.0; 1C, 4.0; 2A, 3.0; 2B, 3.0; 2C, 5.0; RCS A 3,000, 80 degrees.

116:42:40 C Secondary O₂, 5300.

116:42:44 CC Roger. We missed the last Secondary O₂ pressure and we do not have the bus voltage yet.

116:42:51 C Bus voltage is 27. Last Secondary O₂, 5400.

116:42:59 CC Roger. Copied.

116:43:02 C Thank you.

116:43:04 CC Roger. We - I hope to have some word regarding the suits before too long.

116:43:12 C Okay, Elliot, no problem. Thank you very much. We don't want to cause them any trouble.

116:43:32 CC I believe we have a little time here, Gemini VII. I'll give you some of the news for the day.

116:43:39 P Sounds great.

116:43:43 CC Incidentally, are you aware that the HF is up?

116:43:49 C Roger. We turned it off with these passes so we'd be reading a lot better with it off.

116:43:54 CC Roger. There was a big demonstration in Moscow yesterday, against US policy in Vietnam. George Bundy has resigned his White House position to become president of the Ford Foundation. US Steel indicates that it might build a new steel mill in Baytown. Tommy Nobis still hasn't made up his mind whether he wants to play for Houston or Atlanta. And finally, John Unitas is out for the season. He suffered torn ligaments in their game in Chicago Sunday.

116:44:33 C Elliot.

CONFIDENTIAL

CONFIDENTIAL

116:44:35 CC Go ahead.

116:44:36 C Will you please tell Nobis to sign with Houston?

116:44:39 CC Roger. We'll tell him a voice from outer space had that message.

116:44:54 CC We'll keep you posted on the maneuver plans.

116:44:59 C Thank you.

116:45:06 CC Gemini VII, Houston. Surgeon has a question. Can you comment on the charcoal situation?

116:45:17 C I think we ought to be ... with the ...

116:45:24 P We need more charcoal and less lithium hydroxide.

116:45:29 CC Roger. We copy.

KANO

117:05:05 CC Gemini VII, Houston CAP COM. Do you read?

117:05:11 P This is VII. Roger. Read you loud and clear.

117:05:13 CC Roger. Jim, just have a few seconds to talk to you here. I'd like to suggest you might start lunch a little bit early. We may have you a little bit busy here. We plan to power-up at Carnarvon for your burn and will be giving you the burn in about - it looks about two hours from now.

117:05:32 P Roger. Understand. We'll eat lunch a little bit early. Right now we're just completing the D-4/D-7 run.

117:05:43 CC Roger.

117:05:44 C Houston, this is Gemini VII.

TANARIVE

117:12:03 CC Gemini VII, Houston. Do you read?

CONFIDENTIAL

CONFIDENTIAL

345

117:12:07 P Not clear yet. Gemini VII.

117:12:11 CC Roger. Didn't get to talk to you very long at Kano. Are you clear on our situation here? We plan to do the maneuver just about two hours from now and we plan to start powering you up at Carnarvon on this pass. Do you read?

117:12:29 P Understand. Power-up Carnarvon this pass.

117:12:32 CC Roger. And we suggest you might consider starting your lunch early just to kind of relieve the situation here. We might have you a little busy.

117:12:43 P Roger. We will do that.

117:12:45 CC Roger.

117:12:46 C ... D-12 then - will we still do that?

117:12:50 CC Stand by. Let me see where that is. Yes. You should be able to do that. That will be well ahead of time.

117:13:01 C Okay.

117:13:05 P Houston, VII.

117:13:06 CC Go ahead.

117:13:08 P We have, according to our calculations, 10 minutes and 15 seconds burst of the D-4/D-7 tape.

117:13:15 CC 10 minutes and 15 seconds. Is that correct?

117:13:20 P That is correct.

117:13:21 CC Roger.

117:13:29 C Houston, Gemini VII.

117:13:32 CC Go ahead.

117:13:34 C S-8/D-13: Lovell missed 7 and Borman missed 11 this morning.

117:13:41 CC Lovell 7 and Borman 11. Roger.

CONFIDENTIAL

CONFIDENTIAL

CARNARVON

117:26:22 CC Gemini VII, Carnarvon CAP COM.

117:26:25 P Go ahead, Carnarvon. Gemini VII.

117:26:27 CC Roger. Flight plan undate for you.

117:26:33 P Stand by. Go ahead.

117:26:39 CC Roger. You can start your normal power-up to align with the sheet here at the present time. There is one exception to that; we want the A Pumps on in both loops prior to switching the platform on.

117:26:54 C ... Roger. A Pumps on in both loops prior to switching the platform on.

117:26:57 CC Roger. You can start that one now.

117:27:00 C Thank you.

117:27:05 CC Okay, Gemini VII. We'd like the MSC-2 and -3 on at the present time.

117:27:20 C Is that an update too?

117:27:22 CC That's affirmative.

117:27:23 C Okay. Thank you.

117:27:36 C You want me to power-up check list now, Carnarvon?

117:27:40 CC Roger. We'll stand by for a while.

117:28:46 C Okay. Go ahead, Carnarvon.

117:28:47 CC All right. We're at MSC-2 and -3; will be off at 136:00:00.

117:28:59 C Will you say it again? Your burn.

117:29:02 CC Roger. MSC-2 and -3 will be off at 136:00:00.

117:29:14 C Roger.

CONFIDENTIAL

CONFIDENTIAL

347

117:29:15 CC Okay. At 118:07:00; power-up the computer.
117:29:31 C Roger.
117:29:33 CC 118:55:00: UHF test; delete.
117:29:42 C Say again the time.
117:29:44 CC 118:55:00; delete the UHF test.
117:29:55 C Roger.
117:29:57 CC Okay. 119:00:00: BIO MED Recorder Number 1 on.
117:30:12 C Roger.
117:30:15 CC MSC-12 at 119:48:23; delete.
117:30:25 C Roger.
117:30:28 CC MSC-2 and -3: 120:00:00; delete.
117:30:40 C Roger.
117:30:42 CC Okay. That's all on the flight plan update for
the present. You're looking good here on the
ground. We're standing by.
117:30:49 C Thank you very much. Everything looks good up
here now, too.
117:30:52 CC Roger.
117:31:35 C Say, my flight plan update is printing out.
117:31:41 CC Very good.
117:31:52 C Did I miss anything on that?
117:31:54 CC Negative.
117:31:56 C Roger.
117:32:45 C Flight, we've shown a 4-degree drop in the suit heat
exchanger temperature since Canary Islands summary
message.

CONFIDENTIAL

CONFIDENTIAL

117:32:54 CC Roger. 4-degree drop.

117:32:57 P That's affirmative.

117:34:42 CC Carnarvon, Gemini VII.

117:34:44 P Roger. VII.

117:34:46 CC Do you have anything on the MSC in the experiment coming up at 118:12:52?

117:42:08 C Carnarvon, Gemini VII.

117:42:11 CC Roger, VII.

117:42:14 C Is there anything on the MSC experiment coming up at 118?

117:42:21 C 12:52.

117:42:32 CC Negative, Gemini VII on that - -

117:42:39 C They did not delete that one. Is that right?

117:42:44 CC That's affirmative - that's affirmative, Gemini VII.

117:42:48 C Okay. Thank you.

117:47:49 C Serial Number 95573-485-3 just came to pieces in my hand. Thanks a lot, Doctor ...

117:47:58 P 118:12:52: recorder going on, IR Experiment 417 ...

CANTON

117:48:56 CC Gemini VII, Houston CAP COM. How do you read?

117:48:59 C Go ahead, Gemini VII.

117:49:01 CC Roger. Do you have pretty good contact at this point?

117:49:04 C Roger.

117:49:07 CC Roger. Mr. Haney passed along your message to Tommy

CONFIDENTIAL

CONFIDENTIAL

349

Nobis at Austin and he was genuinely impressed over your interest. He said, quote: "It means a lot to have a man of his stature taking an interest in the decision" - unquote. Unfortunately, he said he was still undecided and at this point he couldn't tell which way he would go, but he asked us to thank you for your interest.

117:49:41 C Thank you Elliot. Did you happen to see Dr. La ... to determine all ... when we get back.

117:49:49 CC Roger. He ... has subject ...

117:49:53 C Yes. One of his urine samples just came to pieces in my hand.

117:49:58 CC Just came to pieces?

117:50:02 C That's affirmative.

117:50:03 CC Before or after?

117:50:05 C After.

117:50:06 CC Very good. You just struck a blow.

117:50:10 P Help!

117:52:47 CC Gemini VII, Houston.

117:52:49 P Yes.

117:52:51 CC Flight Surgeon's message is, "Sorry about that, Chief".

117:53:13 P This is Gemini VII. Our platform is off. We are going to the right now.

117:53:15 CC Roger, VII.

HAWAII

117:54:39 CC Gemini VII, Hawaii CAP COM.

117:54:40 C Go ahead, Hawaii. Gemini VII.

CONFIDENTIAL

CONFIDENTIAL

117:54:42 CC Roger. We show you GO on the ground this morning.
How is everything in your spacecraft?

117:54:46 C Very good.

117:54:47 CC Roger. Would like to have an on - an OAMS prop
quantity reading, if I could.

117:54:53 C Roger, they're reading 50 percent.

117:54:55 CC Roger. Understand 50 percent.

117:55:01 CC Standing by. You need not acknowledge.

117:55:32 CC Gemini VII. Would you turn your D-4/D-7 off, please?

CALIFORNIA

118:03:24 CC Gemini VII, Gemini VII, Houston CAP COM.

118:03:31 P This is VII. You're coming in weak.

118:03:34 CC Roger, we're just starting to pick you up at
California. Like to advise this will be a UHF 6
pass.

118:03:44 P Roger, UHF 6.

118:03:54 CC We will be giving you a fairly lengthy flight plan
update here, Gemini. You can get your book out,
and also toward the end of the pass we'd expect to
have the maneuver updates for you.

118:04:19 P I'm all set to take the update, Elliot.

118:04:23 CC Roger. Before we start that, Flight Surgeon has
a question. Did you get another sample for the
one that was lost?

118:04:36 P We're still trying to get it.

118:04:39 CC Very good. Okay. First item, Node: Time 119:21:28;
Rev 75; 169.5 degrees east; right ascension,
11:22:29. Time: 120:36:00; purge fuel cells at
Carnarvon. Time: 121:00:00; BIO MED Recorder Number
1 off. Do you copy?

CONFIDENTIAL

CONFIDENTIAL

351

118:05:40 P Roger. Copy.

118:05:42 CC S-6: 121:15:15; Sequence 10; pitch 30 degrees down, yaw 8 degrees right. S-6: 122:32:21; Sequence 10; pitch 30 degrees down, yaw 37 degrees right. Time: 122:52:00; crew status report on the Command Pilot at Texas. MSC-2 and -3: 123:13:00; Sequences 04; stop at 123:23:00. D-4/D-7: 123:31:30; Sequences 415 and 416; Mode 02. Do you copy?

118:07:19 P Have copied.

118:07:20 C Elliot, do you want us to turn the computer on now?

118:07:23 CC Roger. Go ahead.

TEXAS

118:07:48 C Computer on PRELAUNCH. ... The running light is GREEN.

118:07:51 CC Understand computer on PRELAUNCH. Say again the rest.

118:07:55 C The running light is GREEN.

118:07:58 CC Roger. Ready to copy the rest of the update?

118:08:01 P Roger.

118:08:03 CC Time: 124:13:00; crew status report on the Pilot at Hawaii. 124:45:00: PLA update at the RKV. 125:30:00: purge fuel cells at the CSQ. 125:30:00: flight plan report. 126:00:00: BIO MED Recorder Number 2 CONTINUOUS off at 136:00:00. Do you copy?

118:09:12 P Roger. Copied.

118:09:18 CC Okay, I'm ready to give you the maneuver updates for the two burns. We'll be doing this in two burns. Let me know when you're ready to copy.

118:09:25 C Ready to read.

118:09:31 CC Okay. The first burn: GET of the burn, 119:11:55; Delta-V, 61.2; burn time 1 plus 18; yaw 0, pitch 0; thrusters, aft; maneuver, Posigrade. Did you copy?

CONFIDENTIAL

CONFIDENTIAL

118:10:11 P We've copied.

118:10:13 CC Would you read that maneuver update back again, please?

118:10:16 C Burn at GET, 119:11:55; Delta-V, 61.2; Delta-P, 1 plus 18; yaw 0, pitch 0; aft thrusters, Posigrade.

118:10:31 CC Roger. Second maneuver: GET of the burn, 119:55:01; Delta-V, 12.1; burn time, 15 seconds; yaw 180, pitch 0; thrusters, aft; maneuver, Retrograde. Read back, please.

118:11:11 C Roger. GET, 119:55:01: Delta-V, 12.1; Delta-P, 15 seconds; yaw 180, pitch 0: thrusters, aft; Retrograde.

118:11:38 CC This is correct, Gemini VII.

118:11:41 C Elliot, will you give me an update for my - for our digital clock?

118:11:47 CC Roger. I'll give you a Mark at 118 hours and 12 minutes, about 5 seconds from now. 3, 2, 1.

118:12:00 CC MARK. 118:12:00.

118:12:08 C Roger. We're exactly in sync.

118:12:11 CC Roger. I have a star reference for your Perigee-Adjust. That is your first maneuver.

118:12:23 P Go ahead, Elliot.

118:12:27 CC This is for an SEF alignment. You will pass between Denebola and Spica. Arcturus will rise at 119:06:04. You should align 12.4 degrees below and 1.3 degrees left of Arcturus. And you have the burn time of 1 plus 18.

118:13:08 P Roger.

118:13:14 C Houston, Gemini VII.

118:13:15 CC Go ahead.

118:13:16 C We'd like to delete this MSC-12 at 118:12:52, please.

CONFIDENTIAL

CONFIDENTIAL

353

118:13:20 CC Roger. We have that.

118:13:22 C Thank you.

118:14:55 C Houston, Gemini VII. Do you have anything further for us?

118:14:58 CC That's all we have at this time. Were you able to get your lunch taken care of there? We kept you pretty busy in this area.

118:15:05 C No, we have not eaten yet.

118:15:08 CC Roger.

118:15:10 C We'll go ahead and put the updates in and eat and make the burns.

118:15:14 CC Roger. Did you understand that the UHF check and all the procedures with it will be deleted on this pass?

118:15:22 C Yes, thank you.

118:15:23 CC Roger.

118:15:29 CC You have a Tx coming up.

118:15:31 C Roger. We noticed the tape dump over Houston, also.

118:15:35 CC Roger.

118:16:20 CC Gemini VII, Houston. Did you receive the Tx?

118:16:24 P Negative.

118:16:32 CC VII, we're sending the Tx again.

118:16:35 P Roger. Standing by.

118:17:06 C Still no Tx here, Elliot.

118:17:09 CC Roger.

118:18:03 P We received the Tx, Elliot.

CONFIDENTIAL

CONFIDENTIAL

118:18:10 CC Roger, VII. Understand you received the Tx.

118:18:26 CC Gemini VII, Houston. We note that the suit inlet temperature has gone down about 10 degrees now. Is it cooled off satisfactorily?

118:18:39 P It's very comfortable here now, Houston, very comfortable.

118:18:42 CC Roger.

118:21:12 CC Gemini VII, Houston. Are you still reading us?

118:21:15 P Loud and clear, Houston.

118:21:17 CC Roger. We show a change in the temperature drop from the control valve outlet to the heat exchanger inlet from a previous value of 15 degrees to a present value of 5 degrees. We feel that that's the difference that this higher flow is making.

118:21:37 P You're probably correct. I believe you're right.

118:41:3⁴ P For information, the moon is about 30 degrees from the sky, directly ahead of us.

118:41:39 P There's a little cloud cover down below.

118:41:46 P Yes.

118:42:39 P 35 seconds left to go.

118:42:58 P 15 seconds

118:43:08 P 5, 4, 3, 2, 1.

118:43:15 P Well, we have other things to do.

118:43:17 C Right there. Okay.

118:43:22 P 2 minutes and 5 seconds, actually.

TANANARIVE

118:45:46 CC Gemini VII, Gemini VII, Houston CAP COM. How do you read?

CONFIDENTIAL

CONFIDENTIAL

355

118:45:51 P This is VII. We read you loud and clear.

118:45:54 CC Roger. Jim, we did not give you the core load on those two maneuvers. We would like to double-check you on those. Core 25, on the first maneuver, would be 00612 and on the second maneuver, Core 25, 90121. Cores 26 and 27 all zeros on both loads.

118:46:05 C 121. No, 150.

118:46:22 P Let's scrub this.

118:46:23 P This Delta-V is 15 seconds.

118:46:29 P Roger, Houston. Understand the cores for Address 25: first burn here is going to be 612 and the Delta-V for the second burn will be 12.1.

118:46:37 P Roger. First one, they're going to be 612, and the Delta-V for the second burn will be 121.

118:46:48 P That's right, 12.1 feet per second.

118:46:49 P Yes.

118:46:52 CC Roger.

118:46:56 P Okay, lets see last day SEF.

118:48:08 P We're going to stop at 119:13:13.

118:48:12 P Okay.

118:48:51 P That's going to be a minus 12.1.

118:48:56 C Right. 99.

118:48:58 P 90.

118:49:27 C ... what did it say about ...

118:49:29 P Arcturus ... little bit left.

118:49:39 C 9:06:04 ...

118:49:40 P Does it look good?

CONFIDENTIAL

CONFIDENTIAL

118:49:44 C It should be ...

118:49:46 P Okay. We're in position. There's the old stars.
There's ... over there.

118:50:15 C I don't see ...

118:52:12 C You don't like the strawberry cubes?

118:52:13 P No. Too sweet.

118:52:15 C I like them.

118:52:41 P I got a burn-rate command.

118:52:44 C Yes. Don't you think?

118:52:46 P Probably the best, because it keeps you right in
there anyway. That's exactly where you want to go.
Be doing that anyway.

118:53:15 P This is Parachute Adjustment we want to make right
now, the long one.

118:53:17 C Right.

118:53:20 P The other one is going to be an Apogee-Drop Maneuver.

118:53:24 C Right.

118:53:39 P Okay. You're going to need the burn on the IVI's.

118:53:41 C Right.

118:53:44 P I'll double-check you on the time.

118:53:45 C Right.

118:53:46 P I'll just tell you when we get to that time. I'll
double-check it on my clock here. 1 minute and 18
seconds.

118:53:51 C Okay.

118:53:56 P I have all zeros in now. You want me to put in
... ?

CONFIDENTIAL

CONFIDENTIAL

357

118:53:58 P Okay.

118:54:24 P Do you have it now?

118:54:27 P I'll read out the ... to make sure it reads out the correct way.

118:54:34 P It's in there. I'll read out 27 for you.

118:54:36 C Yes. Read out 26 to me? ...

118:54:39 P Yes.

118:54:40 P It's in there.

118:54:46 P Read out 27. It's all in there. All you have to do is go to CATCH-UP and push the Start Count button.

118:54:56 C Right.

118:55:00 P You'll get it.

118:55:05 P Why don't you let me have that while you do the burn?

118:55:17 C Very well ... and see what we ...

118:55:22 P 80.

118:55:29 P Okay, ... have gone up.

118:55:32 C Okay.

118:55:36 P ..., it's sure a lot bigger up here.

118:55:39 C Yes, I thought so, too. That's funny, I was just thinking that.

118:55:53 P Our next burn is 40 minutes after this one. Right?

118:55:56 C Right. 119:55:44 minutes.

118:56:00 P Okay.

118:56:08 C Let's see, we have something on BIO MED recorder.

CONFIDENTIAL

CONFIDENTIAL

118:56:10 P At 1900. BIO MED Recorder Number 1?
118:56:12 C Yes, Number 1 on.
118:56:17 P BIO MED Recorder Number 1, on at 1900.

CARNARVON

119:01:08 CC Gemini VII, Carnarvon. We have nothing for you at this time. We are standing by.
119:02:06 P Roger, Carnarvon. We're standing by to burn.
119:02:10 CC Roger.
119:07:04 CC Gemini VII, Carnarvon. Please do not acknowledge, but we would like to have you raise the hydrogen pressure up after you complete the burn.
119:07:14 P We've got the heater on now.
119:07:16 CC Roger.
119:08:11 C Carnarvon, Gemini VII.
119:08:12 CC Roger. Go ahead.
119:08:13 C We've got Arcturus going right on the money.
119:08:16 CC Roger. We were remarking on the ground, you look real good.
119:10:07 C And we just had our first ... Arcturus was just right in yaw but it looks to me that it might have been a little bit off as far as the pitch goes. I don't think we're going to be that far below it.
119:10:17 CC Roger.

CANTON

119:22:38 CC Gemini VII, Gemini VII, Houston CAP COM.

CONFIDENTIAL

CONFIDENTIAL

359

119:22:43 C This is VII. Go ahead.
119:22:46 CC Roger. How did the burn go?
119:22:49 C Right along; we burned our Delta-V. ... on Delta-V.
We're $4\frac{1}{2}$ seconds ... on Delta-V.
119:23:00 CC Roger.
119:23:02 CC How is the star reference? It was calculated for
the time of the middle of your burn.
119:23:12 C Roger. We ... ideas.
119:23:18 CC Roger.
119:23:22 CC We will be updating your computer on the next pass
over the US with a 90-1 load.
119:23:34 C Understand. Computer update over the US with 90-1
load. Thank you.
119:23:40 CC Roger. And we would like to pass up our congratula-
tions on your passing the Soviet duration record.
119:23:50 C That's very interesting, but we're interested in
Peter's and Gordo's record.
119:23:57 CC Roger. You're bearing down on that one.
119:24:11 CC Gemini VII, could you tell us how soon before the
burn you pushed the Start Comp?
119:24:29 C This is Gemini here ... We placed the Start Comp
on about 4 to 5 minutes before the burn.
119:24:40 CC 4 or 5 minutes before the burn. Roger.
119:24:47 CC We want you to power-down after the next burn but
leave the A Pumps on for about 1 hour after that.
119:25:06 P Do you want us to bring the computer down or leave
it up there, Red?
119:25:10 CC You can bring it down after the burn, when you power-
down.

CONFIDENTIAL

CONFIDENTIAL

119:25:21 P Roger. And we can bring the computer down also?
119:25:25 CC That is correct, and we'd like to advise that all retros from now on are based on a 20-degree nose-down attitude.
119:25:38 C Roger. Thank you. Another ...
119:25:41 CC Roger.

HAWAII

119:27:54 CC Gemini VII, Hawaii CAP COM. We show you GO on the ground. We're standing by ...
119:28:48 P General comment on food again: the disinfectant pills for the food are crumbling and boy, if you get those in your eyes, it really stings. Potential hazard in space flight, and I guess we ought to get something else for disinfectant. It is a very poor design.
119:29:26 P ... (Laugh)
119:30:00 P 30, 25 minutes yet to go.
119:30:02 C Okay.
119:30:48 P Okay, ... just stick it in.
119:31:05 P Oh! Oh!
119:31:10 C What's wrong?
119:31:31 P A big one right here.
119:31:35 C What?
119:31:40 P Right.
119:31:42 C ... one at a time.
119:32:18 C How are you feeling?
119:32:19 P Pretty good.

CONFIDENTIAL

CONFIDENTIAL

361

119:32:29 P Yes.

119:32:38 P Look at that ...

119:33:07 P Where's this one on the burn?

119:33:12 C It was on the same page as the other one.

119:33:19 P 533, 22 minutes.

119:33:26 P I can enter this at 25.

119:33:29 P You can check it out then, if you want to.

119:33:31 C All right.

119:34:00 P Okay, we're BEF. I'll check her out.

119:34:05 C Go ahead.

119:34:07 P Yes ...

119:34:12 P How's that, sports fan?

119:34:24 C Very good.

119:34:25 C No other trash, Jim?

119:34:26 P No. Not right now.

119:34:34 C How's that?

119:36:05 P It's looking good.

119:36:14 C I'll take this out now and then you can zero it and put it in again. Okay?

119:36:19 P Okay.

119:36:34 P Do what?

119:36:46 P Do you want to go to CATCH-UP again? ...

119:36:53 C No ... it should go to ...

119:38:07 C We have a Sequence 423 on D-4/D-7 ...

CONFIDENTIAL

CONFIDENTIAL

119:38:24 C Purging the fuel cell. I thought you were supposed to be doing some fuel cells.

119:38:29 P You better check that.

119:38:31 C Is that what your understanding was?

119:38:32 P Yes.

119:38:36 P Ask them about purging the fuel cells before powering down.

119:38:41 C Yes.

119:38:48 C We'll be over Texas before ... we'll ask them then. Okay?

119:38:53 P Yes.

119:38:54 C Did you steal my ...?

119:38:55 P What?

119:38:56 C Did you steal my ...?

GUAYMAS

119:39:01 CC Gemini VII, Guaymas CAP COM.

119:39:02 P No.

119:39:03 P Guaymas, this is Gemini VII. Go ahead.

119:39:07 CC Roger. Everything looks real good here on the ground. The Hawaii radar data show that your burn was real good.

119:39:10 P Very good.

119:39:17 P They have us burning after we power-down, right?

119:39:19 C Purging after power-down, yes.

119:39:24 C I thought you were supposed to wait 2 hours, weren't you?

CONFIDENTIAL

CONFIDENTIAL

363

119:39:29 P Yes.

119:39:40 C Guaymas, Gemini VII.

119:39:42 CC Roger.

119:39:43 C My flight plan calls for a purge at 123.7, probably after we power-down. As we understand it, we should - purge before powering down or wait at least 2 hours after power-down to purge. Could you check that out with Flight, please?

119:39:59 CC Roger. Will do.

119:40:15 CC Gemini VII, Guaymas.

119:40:17 C Go ahead.

119:40:18 CC They would like to wait until 2 hours after you power-down.

119:40:22 C Roger. That's fine with us.

TEXAS

119:44:35 CC Gemini VII, Houston.

119:44:39 C This is VII. Go ahead.

119:44:41 CC Roger. Are you ready for your updates? Computer in PRELAUNCH?

119:44:47 C Roger.

119:44:49 CC Roger. Stand by.

119:45:04 C Update received.

119:45:06 CC Roger. We got a good map, too.

119:45:15 CC Gemini VII, I would like to discuss briefly with you the IVI's before your burn. If you - since you pushed that Comp 5 minutes before the burn, did you notice any change in the IVI's? Sure you didn't?

CONFIDENTIAL

CONFIDENTIAL

119:45:33 P Negative, Elliot. You're right. We did not see any change.

119:45:37 CC Roger. We'd like to suggest that you wait until 1 minute before the burn till you push that Comp key. Minimizes possibility of it's accelerometer bias building up. If you want to, you could set them up ahead of time and check them out once, but we'd like you to wait till about 1 minute before, for the final one.

119:45:57 P Roger. Will do.

119:47:12 CC Gemini VII, we observe you BEF and we have verified that your 91-l load is correct.

119:47:19 P Roger.

119:48:21 CC Gemini VII, you have a TX coming up in about a half minute.

119:48:32 CC Gemini VII, would you give us a propellant quantity readout?

119:48:38 P We're reading 35 percent on board.

119:48:41 CC 35 percent. Roger.

119:49:26 P Houston, VII.

119:49:27 CC Go ahead.

119:49:29 P Excellent selection of music.

119:49:31 CC Roger. We'll pass along your compliments to the chef.

119:49:56 CC Jim, I know what I'm going to have to talk about at the press conference today, after you said that.

119:50:01 P Please don't!

119:50:26 CC CN3 asked if you like that classical music.

119:50:32 P Our favorite. Yes sir.

119:50:57 CC Gemini VII. We have you coming up on 4 minutes to the burn.

CONFIDENTIAL

CONFIDENTIAL

365

119:51:01 CC MARK. 4 minutes to burn.

119:51:04 C VII concurs.

119:52:46 C Elliot, VII.

119:52:48 CC Go ahead.

119:52:49 C We picked up that lightning for you.

119:52:51 CC Very good.

119:53:59 CC Gemini VII, coming up on 1 minute to burn.

119:54:02 CC MARK.

119:54:07 C VII concurs.

119:54:11 CC Roger.

119:55:19 P Burn complete.

119:55:20 CC Roger, Gemini VII.

119:55:29 P Proceeding to power-down.

119:55:32 CC Roger, VII.

119:55:35 P I understand now you don't want us to purge until 2 hours from now.

119:55:39 CC That is correct. We'll get you an update on that, and did you copy we want you to leave the A Pumps on for 1 hour?

119:55:46 C That's affirmative. We will.

119:55:48 CC Roger.

119:56:42 C Leaving the computer in COMMAND PRELAUNCH for 48 seconds, for you, Elliot.

119:56:46 CC Roger, VII. And we'd like an OAMS quantity readout.

119:56:52 C Roger. Now reading 33 percent.

CONFIDENTIAL

CONFIDENTIAL

119:56:55 CC Roger. 33 percent.

119:56:57 C When can you give us an update on how we came out?

119:57:01 CC Soon as I get some tracking.

119:57:04 C Okay.

119:57:06 CC That is as soon as we can run a trajectory on it.

119:57:09 C I don't think we were in PRELAUNCH - or in CATCH-UP 5 minutes before the thing burned. It was more like 3 minutes. We had gone to zero, but then we switched back out just to check it.

119:57:21 CC Roger, VII.

119:57:46 CC Now you can go back to being stingy with your fuel again.

119:57:51 P After that we'll have to.

119:57:53 CC Roger.

119:58:47 CC Gemini VII, Houston. Looks like the lift-off time for VI will be about 9:54 Cape time.

119:58:56 C ... understand that. ... lift-off time for VI
... Hoping.

119:59:01 CC That's on Sunday.

120:06:59 CC Gemini VII, Houston.

120:07:02 C Go ahead, Houston.

120:07:05 CC I'd like to report that it appears, from all indications, that your burn was exactly what we wanted. We feel that we're in excellent shape for the launch.

120:07:20 C Hawaii, we're going to have to be awfully scarce on the fuel. We're down to 31 percent now.

120:07:26 CC Understand, your ... quantity gage has gone to 31 percent. Is that correct?

CONFIDENTIAL

CONFIDENTIAL

367

- 120:07:31 C Yes, Flight, as I was looking at it. Say about 33 percent.
- 120:07:36 CC 33 percent. Roger. We are working on a very accurate remaining quantity, remaining figure and we will give that to you at Carnarvon.
- 120:08:24 C Wowee! That sun is bad!
- 120:08:31 P D-4/D-7.
- 120:08:36 P We're doing 423: sextant calibration at 120:08. One swing from horizon to the earth.
- 120:08:46 CC Gemini VII, Houston. I'd like to advise the 33 percent OAMS quantity indication is exactly what we expected you to end with.
- 120:08:55 P Roger. Good planning.
- 120:08:57 C Okay. The sun's so bad on this - on this sequence - -
- 120:08:58 C ... a good burn then.
- 120:09:03 CC Ready to update you on the fuel cell purge times, when you can copy.
- 120:09:07 P Stand by.
- 120:09:09 C Is there anything else after - just swing through the ...?
- 120:09:12 P 35 degrees, right?
- 120:09:13 P Right. 35 degrees from the earth.
- 120:09:14 C Okay. One thing we ought to mention on this is the sun is so bad I can't even see the reticle. I'm not exactly sure where I'm going; we're ...
- 120:09:33 C This is for Sweet Sue ...
- 120:09:38 P Okay, Houston. Go ahead.
- 120:09:40 CC Roger. You can delete the purge at 120:36:00. The new time for that one is 122:14:00 and that will be at Carnarvon. You can delete the purge at 125:30:00.

CONFIDENTIAL

CONFIDENTIAL

The new time for that one will be 126:21:00 at RKV.
Do you copy?

120:10:00 C Going back to Horizon now. It's very, very difficult to determine attitude ... nothing is down there because of the extreme brightness of the sun.

120:10:25 P This is VII. Delete purge at 120:36:00 and add at 122:14:00. Delete purge at 125:30:00 and add 126:21:00 purge. Is that correct?

120:10:43 CC That's correct.

120:12:04 C I'm not even sure we're exactly ... now then. The situation here is very, very poor with regard to this, Flight.

120:14:31 CC Gemini VII, this is ... at LOS. Stand by for time, please.

CARNARVON

120:37:29 CC Gemini VII, Carnarvon CAP COM.

120:37:37 P Go ahead.

120:37:39 CC Roger. I have some revised PLA information for you when you're ready to copy.

120:38:04 P Ready to copy.

120:38:06 CC Roger. Area 77-4; 122:17:29; 21 plus 59. Area 78-4: 123:52:22, 22 plus 00. Area 79-3: 125:10:12, 21 plus 49. Area 80-3: 126:45:53; 21 plus 56. The weather is good in all areas. This is based on the 20-degree pitch attitude.

120:39:08 P Roger. And do you have any idea what our new orbit is?

120:39:15 CC It's pretty close to circular. Stand by here and we'll see what they have. We'll need a little more tracking data to get an exact fix on it.

120:39:22 P Roger.

CONFIDENTIAL

CONFIDENTIAL

369

120:40:58 CC Gemini VII, Carnarvon CAP COM.
120:41:01 P Sound off.
120:41:02 CC Roger. Present tracking indicates that you are 163.2 by 161.7. We're estimating that by GT-VI launch date you'll be in the 161 by 161.5.
120:41:23 P Roger. Thank you.
120:41:25 CC All right. And our best available information at the present is that there are 60 pounds of MMH left.
120:41:38 C Okay.
120:41:40 CC And 128 pounds of usable propellant.
120:41:44 C Thank you.
120:41:45 CC Right.
120:41:53 CC Okay, and gage reading is 3⁴ percent, which corrects to 31.
120:42:03 C Thank you.
120:42:08 CC 3⁴ actual, 31 gage.
120:42:11 CC Okay, I gave that to you backwards. It's 31 gage, with your actual, 3⁴ percent.
120:42:19 C Roger. Stand by, let me check my gage and turn on the light.
120:42:22 CC Right.
120:42:30 C Roger. ... is reading between 33 and 3⁴ percent.
120:42:34 CC Roger.
120:44:07 CC Flight says he thinks you do very good work up there.
120:44:14 P Say again, please.
120:44:16 CC Roger. Flight just said he thinks you do very good work.

CONFIDENTIAL

CONFIDENTIAL

120:44:19 P Thank you.

120:44:22 C We get a lot of good help going on Flight believes, obviously.

120:44:27 CC Right.

120:45:01 CC Gemini VII, Carnarvon. Our Surgeons would like to know if you have been doing any exercises.

120:45:07 C We're doing right now our exercise period that we missed just now.

120:45:10 CC Roger.

120:45:12 P That's because you can't read it out on the T/M.

120:45:18 C We're really vibrating around in the cockpit up here.

120:45:22 CC Right.

HAWAII

121:03:51 CC Gemini VII, Hawaii CAP COM. We show you GO on the ground. You need not answer.

121:03:55 C I will anyway. Hi, Hawaii. Thank you.

121:07:38 CC Gemini VII, Hawaii CAP COM. We'd like your appraisal of the weather over Hawaii at this time.

121:07:44 C We're in drifting flight, Hawaii, and we can't see you.

121:07:48 CC Roger. We'll pass back.

121:07:51 C Thank you.

121:08:11 CC We'd like to have your appraisal of the weather on the next pass, if it could be arranged to be in the proper position so they can possibly schedule the laser for later on.

121:08:22 C Very good. We'd like to do that. We'll give you the word for it.

CONFIDENTIAL

CONFIDENTIAL

371

121:13:10 P Lovell dumping urine at 121:13.

121:14:25 C Thank you.

121:14:41 C Okay now ... S-6 at 121:15:50; Sequence 10 ... Magazine M, S-11 ... starting at ...

121:16:05 C ... first shot of Sequence ...

121:17:35 CC Gemini VII, this is Texas CAP COM.

121:17:43 CC Gemini VII, this is Texas CAP COM.

121:17:47 C This is VII. Go ahead.

121:17:49 CC We've got you GO on the ground here. Stand by for flight plan update.

121:17:57 C Roger.

121:17:59 CC MSC-4: 125:53:23; Sequence 01; Mode 01; P-30-D, Y-06-R.

121:18:21 CC That's pitch and yaw, Texas.

121:18:26 CC That's pitch 30 down, and yaw 06 right.

121:18:31 CC Pitch 30 down, yaw 06 right. Use 16mm camera for this run, one frame per second, 75mm lens nominal setting. Node: 125:22:38; Rev 79; 77.0 degrees east; right ascension, 11:14:52.

121:19:18 C We didn't get the first update. Would you repeat, please, Texas?

121:19:22 CC The first one?

121:19:23 C Yes.

121:19:24 CC Roger. An MSC-4: 125:53:23; Sequence 01; Mode 01; pitch 30 degrees down, yaw 06 degrees right. Use 16mm camera for this run, 01 frame per second, 75mm lens nominal setting. Copy, VII?

121:20:12 C Roger.

121:20:14 CC We have nothing further and we're standing by.

CONFIDENTIAL

CONFIDENTIAL

121:20:17 C Okay. We're going over Mexico here now and 121:20 - see if we can take sequence of pictures here just to finish out this magazine. Very interesting terrain
...

HOUSTON

121:23:37 CC Gemini VII, Houston.

121:23:43 C This is VII. Go ahead.

121:23:45 CC I would like to advise you of the laser status. We've got the one scheduled for Hawaii, as you know. There is some question, however, about the weather holding up there. It's apparently worsening, so there may be a problem by the time that revolution comes up. The status of the equipment is that White Sands and Hawaii are both up. Ascension is expected up at 6:00 Eastern Standard Time tomorrow. At present, the weather is good in both Hawaii and Ascension, but bad at White Sands. We're still hoping to get one of those experiments just as soon as we can.

121:24:34 C Roger. We are in position ... Gemini VII.

121:24:40 CC We'd like to report to you that the tracking confirms your orbit at all stations. Looks real good. We contacted Wally at the Cape, and he's very happy about the orbit. Looking forward to his launch. We'd like to change your fuel cell purge. We had given it to you for Carnarvon. We want to change that to Hawaii.

121:25:08 C Roger. You want to change fuel cell purge to Hawaii. Do you have a time for us?

121:25:11 CC Roger. That time should be about 122:40.

121:25:20 C Roger. 122:40.

121:25:25 CC And we'd like to advise you we are still working on the suit situation.

121:25:33 C Roger. Do you expect an answer by separation?

CONFIDENTIAL

CONFIDENTIAL

373

121:25:39 CC Roger, VII.

ROST KNOT VICTOR

121:38:04 CC Gemini VII, RKV CAP COM. You need not acknowledge.
All systems are GO. We're standing by.

122:20:15 P Okay. A shot of unusual cloud formations and ...
horizon. ... that was Magazine C and Frame 1.

122:31:26 P A shot taken over the Pacific at 122:31:26 of the
cumulus clouds in a straight line over Hawaii.

122:36:46 C Last picture taken at ... that is Magazine C picture
...

122:38:45 C Shot taken over Africa at 122:31:28. Coral reefs
... Magazine C ... exposure.

122:39:02 P Look, Frank. Look at the old volcano.

HAWAII

122:39:36 CC Gemini VII, Hawaii CAP COM.

122:39:40 P Hawaii, VII here.

122:39:42 CC Okay. How you doing?

122:39:44 P Great place for scenery. The Pacific is beautiful
today.

122:39:47 CC Okay. We're ready for your purge. We're showing
you GO down here on the ground.

122:39:51 P Roger. Coming up with the purge.

122:39:53 CC All right.

122:40:11 CC Command Pilot, they want to do a crew status report
on you over Guaymas and the GET of that is 122:50,
122 plus 50.

CONFIDENTIAL

CONFIDENTIAL

122:40:21 C Roger.

122:40:54 C Hawaii, VII here. You haven't had any signs that any of my tanks are venting, have you?

122:40:59 CC Say again.

122:41:01 C You haven't had signs that any of our Cryo tanks are venting, have they, Ground?

122:41:12 CC We'll give you a readout on that here on the ground. Will you put your ECS - correction - your Quantity Read to the ECS O₂ position?

122:41:20 CC Thank you.

122:43:57 CC Command Pilot, Hawaii.

122:43:59 C Go ahead.

122:44:00 CC Did you have a chance to take a look at the weather over our area?

122:44:03 C We can't even find the island.

122:44:06 CC That figures.

122:44:10 C Nothing but clouds.

122:44:12 CC Roger.

122:44:42 CC Okay. Quantity Read for the FUEL CELL O₂ position, please.

122:44:49 CC Okay, just leave it there a bit.

122:45:14 CC Okay. Quantity Read for the FUEL CELL H₂ position.

122:45:19 CC Okay. Just hold it.

122:45:48 CC Okay. Put your Quantity Read switch to OFF.

122:46:06 CC They'll be updating you on the percents remaining here. They'll give you a complete summary on your fuel cell prior to your going to sleep.

122:46:14 C Thank you.

CONFIDENTIAL

CONFIDENTIAL

375

GUAYMAS

122:50:12 CC Gemini VII, Guaymas CAP COM.

122:50:14 P Gemini VII.

122:50:15 CC Roger. We have a valid oral temperature. Stand by for Surgeon.

122:50:21 P Roger. Give me a go-ahead to do blood pressure.

122:50:37 CC Gemini VII, your blood pressure cuff is at full-scale.

122:51:22 CC We have a valid blood pressure. Give us a Mark on your exercise.

122:51:38 P MARK.

122:52:03 P MARK.

122:52:10 CC The cuff is full-scale.

122:52:55 CC We have a valid blood pressure. Standing by for your food and water report.

122:53:00 P Roger. The Command Pilot's had a total to 578 ounces of water - -

122:53:05 CC Roger.

122:53:06 P - - and his last meal was Meal 5, Meal B.

122:53:10 CC Roger.

122:53:12 P Total for Column 5 for the Command Pilot is 12, Column 6 is 2. The Pilot's had 388 ounces of water and the total for Column 5 is 13 and for Column 6 is a great big fat zero.

122:53:35 CC Roger.

122:53:40 CC Now you both had the same meal, right?

122:53:42 C Roger. We - I gave it to ... but he didn't eat any of his gingerbread and I only ate two of the pieces of it.

122:53:50 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

122:53:56 CC Okay. Stand by for CAP COM.
122:53:57 C ... strawberry cubes this noon.
122:54:05 CC Say again?
122:54:07 C The Pilot did not eat strawberry cubes this noon,
either.
122:54:09 CC Roger.
122:54:22 CC Gemini VII, Guaymas CAP COM. We have nothing else
for you this pass. We'll be standing by.
122:54:26 C Thank you, Guaymas.

TEXAS

122:54:50 CC Gemini VII, Gemini VII, Houston CAP COM. Over.
122:54:53 C Come in Houston. Gemini VII.
122:54:56 CC Roger. Good to talk to you again, Frank. I have
a cancellation on your flight plan D-4/D-7.
122:55:02 C Roger.
122:55:03 CC At Time 123:31:30: Sequences 415 and 416, Mode 02,
are deleted because of weather.
122:55:14 C Very good.
122:55:16 CC Okay, and can you give us your interpretation of the
Hawaii weather? Do you think we can attempt a
laser experiment at that time?
122:55:26 C We'd like to try. I don't think we came close
enough to the Islands to make a good evaluation this
time.
122:55:31 CC Okay. Well, we'll go ahead and look at it further
and still keep it in the flight plan.
122:55:36 C One problem, Gene, is we're really "skosh" of fuel
now.

CONFIDENTIAL

CONFIDENTIAL

377

- 122:55:40 CC I understand you feel you're really close on fuel.
- 122:55:43 C Roger, ... It's reading 32 percent now. 31 to 32 percent.
- 122:55:49 CC Okay. 32 percent on the fuel. We'll watch it pretty close down here, Frank, and we've got a pretty good handle on it. Scheduling experiments to cope with it.
- 122:56:00 C Roger.
- 122:56:02 CC I'd like to pass on to Jim that that request from his 12-year-old daughter that we mentioned last night will be played remote over Tananarive on UHF on Rev 79. That's not this time up Tananarive, but next time. We'll give you a call and then play it for him.
- 122:56:21 P Thank you.
- 122:56:23 CC And also, Jim, after looking into the annals, we figure that that Column 6, that big fat zero, is another space first.
- 122:56:31 P Well, that's the way it goes.
- 122:56:37 P I hope it isn't a 15-day first.
- 122:56:49 CC I just won't comment any further on that one.
- 122:57:55 CC Gemini VII, Gemini VII, Houston. We don't have anything else at this time. Probably won't be talking to you again until Tananarive in a couple of hours.
- 122:58:07 C Thank you, Gene.
- 122:58:08 CC Okay. Thank you and you made Charlie very, very happy. It's the first time he's ever talked to a spacecraft in flight.
- 122:58:15 C ... read him this morning. He was a cheery little voice at breakfast time.
- 122:58:20 CC Yes, his shift is getting better. You'll see him more and more.

CONFIDENTIAL

CONFIDENTIAL

122:58:31 C Hey, Gene, we have one question.

122:58:33 CC Shoot.

122:58:34 C How long did you say this flight was?

122:58:37 CC How long did we say this flight was?

122:58:40 C Flight told me three days when we took off.

122:58:44 CC Say that one again, Frank.

122:58:45 C (chuckle).

122:59:05 CC You're doing so well up there that we're just going to keep you going for a while.

122:59:09 C We're in real good shape. We've - everybody feels fine. The spacecraft is neat and clean and it's performing perfectly.

122:59:16 CC It looks real clean and real fine down here. And by the way, after talking last night to Sue and Marilyn, they both said if I do have a chance to tell you, they're fine and they just want to say "hello".

122:59:29 C Pretty good, pretty smart, Gene.

122:59:33 P Thanks, Gene.

122:59:53 CC Gemini VII, Houston. And to let you know what we're really thinking about down here, we'll have a total lifetime for you in about a revolution or two, to give you an idea how long you could really be up there if you wanted to.

123:00:03 C No thank you. Don't do that!

ROSE KNOT VICTOR

123:12:28 CC Gemini VII, RKV CAP COM. You do not need to acknowledge. All systems are GO. We are standing by.

123:18:28 C Stand by for urine dump. Borman dumping urine at 123:18. Dumping now.

CONFIDENTIAL

CONFIDENTIAL

379

123:20:45 C This urine doesn't seem to be taking any longer to dump, than the ...

123:29:43 C ... Using the reticle the measurement from the earth to the top of the visible airglow is 2.5 degrees.

123:33:02 C Another note here. Most of the stars are ...

123:45:35 P Comments on... attempts. Jupiter to ... appeared to be okay. One big problem with this section of the spacecraft is that unless you measure things vertically like stars to horizon the window - head arrangement and the ... just are not compatible with each other. Go harder ... other than a vertical position. It's hard to shoot shots other than in a vertical position.

123:46:10 P That Jupiter shot was taken at 123:36:08.

COASTAL SENTRY QUEBEC

123:58:17 CC Gemini VII, CSQ. We have you GO on the ground. We have nothing for you this pass. You need not acknowledge this transmission.

123:58:33 P Hello, Roger.

HAWAII

124:14:43 CC Gemini VII, Hawaii CAP COM.

124:14:46 P Go ahead, Hawaii. Gemini VII.

124:14:48 CC Roger. We have a valid temperature. We're standing by for your blood pressure.

124:14:54 P Roger.

124:15:13 CC Gemini VII, Hawaii Surgeon.

124:15:17 P Go ahead.

124:15:19 CC We have a PCM dropout. Will you stand by on the blood pressure, please?

CONFIDENTIAL

CONFIDENTIAL

124:15:24 P Roger.

124:15:37 CC Gemini VII, Hawaii Surgeon. We have T/M solid now.

124:15:41 P Coming through.

124:15:59 CC Your cuff is full-scale.

124:16:50 CC We have a good blood pressure. Standing by for your exercise.

124:17:01 P Right.

124:17:27 P Blood pressure coming down.

124:17:42 CC Your cuff is full-scale.

124:18:23 CC We have a good blood pressure. Standing by for food, water and sleep report.

124:18:31 P We have nothing further to report since our last status report.

124:18:36 CC Roger, Gemini VII.

124:18:39 P The blood pressure was sent down by courtesy of in-flight maintenance.

124:18:44 CC Thank you, sir.

124:18:59 CC We have nothing further for you at this time. We're standing by.

124:19:04 P VII. Roger.

ROSE KNOW VICTOR

124:48:31 CC Gemini VII, RKV CAP COM.

124:48:48 C Gemini VII.

124:48:50 CC We have a block update for you when you're ready.

124:48:53 C Roger. Before you do that, we're concerned by OAMS propellant quantity on the ECS O₂. It's gone down about 3 percent here in the last 2 hours ...

CONFIDENTIAL

CONFIDENTIAL

381

124:49:07 CC Okay. Stand by.

124:49:56 CC Gemini VII, RKV.

124:49:58 C Go ahead, please.

124:49:59 CC Your OAMS pressure has been steady. We feel that the gage is probably reading higher than it should. We'll brief you in detail over the CSQ.

124:50:07 C I'm reading about 29 percent now.

124:50:11 CC Roger.

124:50:12 C I'm ready for your update.

124:50:17 CC Area 81-3: 128:21:42; 21 plus 54. Area 82-3 Charlie: 129:57:45; 21 plus 52. Area 83-Bravo: 131:51:30; 21 plus 35. Area 84-Bravo: 132:30:32; 21 plus 39. Area 85-2: 134:06:54; 21 plus 39. Area 86-2: 135:43:22; 21 plus 44. Area 87-2 Charlie: 137:17:53; 21 plus 49. Area 88-2 Charlie: 138:44:28; 21 plus 45. The weather in Area 85-2 is marginal. All other weather is good.

124:52:05 C Thanks very much, RKV.

124:52:07 CC Roger.

124:52:59 C ... We'll update that later ...

124:54:30 CC Gemini VII, RKV.

124:54:32 C Go ahead, please.

124:54:33 CC On this revolution you'll have a UHF 6 over the CSQ.

124:54:38 C Thank you.

124:55:15 CC There will also be a UHF 6 over Tananarive this revolution, Gemini VII.

124:55:20 C Very well.

124:59:40 P We're now in the process of trying to eat chicken salad. Serial number SC-495. The food is so small that it takes all my force just to squeeze a little

CONFIDENTIAL

CONFIDENTIAL

bit of chicken salad out. It's ridiculous.

TANANARIVE

125:09:09 CC Gemini VII, Gemini VII, Houston CAP COM. Over.

125:09:14 P This is VII. Go ahead.

125:09:16 CC Roger. Jim, here's that request from your 12-year old daughter. Request was made in the hopes that it might stimulate her Daddy to have him come home in a hurry, and here it comes in about 10 or 12 seconds.

125:09:35 (Music: "I saw Mommie Kissing Santa Claus")

125:12:08 P Oh, Houston, this is Gemini VII.

125:12:11 CC Gemini VII, Gemini VII. That concludes the serenade. Any comment?

125:12:16 P Roger. That's ... when I leave town. That's okay. Tell Barbara I saw Santa Claus before I came down there.

125:12:30 CC Okay. I'm not sure that wasn't stimulated from that "Bah-Humbug" that Marilyn heard the other day.

125:12:41 P ... I didn't hear you, Houston.

125:12:43 CC Roger. I said I'm not so sure that Marilyn might not have originated that from that "Bah-Humbug" she heard the other day.

125:12:50 P Oh that's it, that's it. Tell her we've all got a Santa Claus up here, too.

125:12:59 CC Roger. I think she's listening in at home right now, and she wanted me to pass on that household crew still remains at about 3.9.

125:13:12 P Roger. Understand no luck yet, right?

125:13:15 CC No. Nothing yet.

CONFIDENTIAL

CONFIDENTIAL

383

125:13:18 P Well, tell her to do her best.

125:13:19 CC Okay. Listen, it's a point of interest. There's a tropical storm west of Burma in the Bay of Bengal. We don't advocate any fuel but we just want to let you know that it's there and if you do have a chance to take a look at it, fine; if not, okay.

125:13:37 P Roger, I have it south of Burma.

125:13:57 CC Gemini VII, this is Houston.

125:13:59 P This is VII. Go ahead.

125:14:01 CC Roger. We found out that you can probably stay up there for 3 1/2 or 4 months if you really want to.

125:14:10 P You didn't have to say that now, did you?

125:14:16 P December 18.

125:14:17 CC Say again.

125:14:19 C 3 days flight leave. Will you cut that out!

125:14:21 CC Okay.

125:14:59 CC Gemini VII, this is Houston CAP COM.

125:15:02 C This is VII. Go.

125:15:03 CC Okay. The weather in Hawaii has gone up and down pretty rapidly from clear to overcast, back to clear and overcast. We're watching it pretty closely and if there is any question about it we'll probably scrub the MSC-4.

125:15:23 CC We'll pass that latest information on up to you prior to Hawaii.

COASTAL SENTRY QUEBEC

125:32:09 CC Gemini VII, CSQ.

CONFIDENTIAL

CONFIDENTIAL

125:32:14 P This is VII. Go ahead.

125:32:16 CC Roger. We're standing by for your flight plan report.

125:32:18 CC Roger.

125:32:35 C CSQ, Gemini VII. We - I'm giving you a report today to date ...

125:32:42 CC Roger, copy.

125:32:44 C Two magazines of Hasselblad S0217, 10 magazines of 16mm color film, four exposures of dim light/night film, seven films of color-shifted IR terrain film, high-contrast black and white film - two frames. We've also used six tape recordings, and today we completed everything in the flight plan except for those things, of course, which were deleted.

125:33:17 CC Roger, Gemini VII. We copied.

125:33:38 CC Gemini VII, CSQ. We have your fuel cell power configuration for the sleep period. ECS O₂ is okay. No heat required. Fuel Cell O₂, AUTO. Fuel Cell H₂, want you to pump the on-board up to 490 ... that should be good for 16 hours.

125:34:07 P Roger. Understand ECS O₂ is okay. Leave the FC O₂ in AUTO, and we'll pump up the FC H₂ to 490 and that should be good.

125:34:19 CC Roger. The on-board minimum of Fuel Cell H₂ is 365 psi. ... rate 4 psi per hour.

125:34:28 P Roger. Minimum is 365. Thank you.

125:34:30 CC Roger.

125:34:57 CC Gemini VII, CSQ. We can give you a GO on MSC-4 experiment over Hawaii.

125:35:03 C Roger. Understand we're GO. Thank you.

125:35:13 CC Gemini VII, we have your system status update when you're ready to copy.

CONFIDENTIAL

CONFIDENTIAL

385

- 125:35:16 C Ready to copy.
- 125:35:19 CC Ground equations based on T/M equations indicate the remaining fuel is 59 pounds. This represents 33 percent actual remaining propellant used - -
- 125:35:32 CC Stand by one.
- 125:35:33 CC This represents 33 percent actual remaining propellant which is 29 percent indicated on-board. That's the number you're asking for?
- 125:35:39 C That's affirmative, 29 percent. That's right.
- 125:35:44 CC Roger. This puts us about 6 pounds of fuel above the preflight curve.
- 125:35:49 C Very good, thank you. I was a little worried about that.
- 125:35:52 CC Roger.
- 125:35:55 CC We're very satisfied with our platform performance ...
- 125:36:04 C Excellent. Thank you.
- 125:36:06 CC Computer status is 90-1. Preretro load was right out of memory and verified to be correct.
- 125:36:13 C Wonderful.
- 125:36:24 CC The firing-up today of the fuel cells indicated that regulation is very negligible ... beginning of the mission.
- 125:36:33 C Roger.
- 125:36:38 CC Ground status. Fuel cell H₂ tank is not expected to vent until up to 300 hours elapse time, if any. Fuel cell O₂ is not expected to vent at any time during the mission. ECS O₂ tank is predicted to vent sometime - -
- 125:37:01 C All good news tonight ...
- 125:37:03 CC Say again, CSQ.

CONFIDENTIAL

CONFIDENTIAL

125:37:04 C ... all good news tonight.

125:37:06 CC Roger.

125:37:10 CC Depends on his fuel cell H₂ and O₂ construction. Temperature is below normal on O₂ by 3.5 percent and below normal on H₂ by 6.5 percent. Fuel cell appears to be more efficient than expected.

125:37:27 CC Very good.

125:37:33 C CSQ, we really appreciate all this information. Thank you and thank everybody for it.

125:38:03 CC Gemini VII, CSQ.

125:38:08 C Gemini VII.

125:38:11 CC Okay. I might have made a mistake there. The fuel usage is 6 pounds below the expected usage.

125:38:20 C We're 6 pounds better off than we thought we'd be.

125:38:24 CC That's affirmative.

125:38:25 C Roger. Thank you.

125:38:46 CC Gemini VII, you're over us now. 162.8 by 161.6. We expect to be 161 by 162 by the GT-VI flight.

COASTAL SENTRY QUEBEC

125:39:04 CC 182:24 GET.

125:39:05 CC 187:24 GET.

125:39:11 P That sounds great! There's a lot of confidence there! Really!

125:39:14 CC Thank you.

125:39:16 CC Second run number is 95 minutes after the first.

125:39:20 C Roger.

CONFIDENTIAL

CONFIDENTIAL

387

125:39:23 CC We estimate 50 seconds past TPA at time of VI lift-off. .. we'll supply the exact data ... a lot later.

125:39:46 CC ... the pre-count on VI has been completed and is GO at the Cape.

125:39:51 C Roger.

125:40:01 CC I'll give PLA update over the RKV Area 85-Bravo. The pass GET - R3 should be 131:44:37, with an area ... 21 plus 35. Do you copy?

125:40:27 P Could you give us the time again, please?

125:40:30 CC Roger. Area 83-Bravo: 131:44:37; 21 plus 35.

125:40:42 P Thank you.

125:40:47 CC Your Area 84-Delta should be 84-Bravo. Do you copy?

125:40:58 C Roger.

HAWAII

125:50:18 CC Gemini VII, Hawaii CAP COM.

125:50:21 P This is VII. Go.

125:50:23 CC How are you doing up there?

125:50:25 P Great! We just passed over the atolls leading into Hawaii. We should be picking it up pretty soon.

125:50:29 CC Roger. The weather looks like you should have a good-size hole as you come up over the top of us, and if you can hold your attitude fairly well, you may get a good look.

125:50:38 P Roger. You want our ... C-Band CONTINUOUS.

125:50:41 CC Negative. I've got C-Band track at this time by command. Just leave it in the position it's in.

125:51:44 CC Gemini VII, Hawaii. Let me know if you see anything.

CONFIDENTIAL

CONFIDENTIAL

125:51:48 P VII. Roger.

125:53:46 CC Do you see the Islands at all, Gemini VII?

125:53:48 P This is VII. Not yet. We're almost clear ... time.

125:53:51 CC Roger, I'll give you a Mark when you're at my TCA.

125:53:54 P Roger.

125:53:56 P We've got one of them down here.

125:53:58 CC Roger.

125:54:49 CC You are going by TCA.

125:54:50 CC MARK.

125:54:52 P Roger. What island are you on, Hawaii?

125:54:54 CC Say again.

125:54:56 P You're - what island are you on, Hawaii?

125:54:57 CC Kauai, Kauai.

125:54:58 P Roger. We picked them up but we couldn't see the light.

125:55:04 CC Say again.

125:55:06 P We picked up the Islands but could not see the light.

125:55:08 CC Roger. You may still be able to see a little bit behind you.

125:55:14 C We knew what island the laser was on. There was some question about where your radar was.

125:55:31 CC You saw nothing of the light at all. Is that affirm?

125:55:34 P That's affirm.

125:55:49 CC Gemini VII, Hawaii CAP COM. Let's break it off.

125:55:54 P Roger, Hawaii.

CONFIDENTIAL

CONFIDENTIAL

389

125:56:29 CC Gemini VII, Hawaii. We have nothing further. We'll be standing by.

125:56:34 P Attempted ...

125:56:36 P Roger. Thank you.

125:56:46 P Attempted MSC-4. We attempted ...

125:56:49 CC Say again.

125:56:51 P This is VII. Negative. Thank you.

125:56:53 CC Okay.

125:56:58 P Attempted MSC-4 at 125:57. Picked up the Islands just before we went over but we were too far into the ... to get Kauai. We got Oahu and Molokai - other part of the chain. We did not pick up Kauai. At the time we got acquisition on the islands that we could see through the clouds we were past Kauai. We could not see the light.

ROSE KNOT VICTOR

126:24:52 CC Gemini VII, RKV CAP COM.

126:24:57 C VII. Go ahead.

126:24:59 CC Roger. We're standing by for your purge.

126:25:14 CC Would you place your Quantity Read switch to ECS O₂?

126:26:10 CC FUEL CELL O₂.

126:26:32 CC FUEL CELL H₂.

126:26:41 C Will you say again the minimum ...

126:26:47 CC Minimum for Fuel Cell H₂ for tonight is 490, 490.

126:26:54 C Give me the minimum.

126:26:56 CC Your minimum is 265.

CONFIDENTIAL

CONFIDENTIAL

126:26:58 C Roger. Thank you.

126:27:03 CC You can place the Quantity Read switch to OFF.

126:27:08 CC Would you give us a propellant quantity and pressure?

126:27:11 C Say again, please.

126:27:13 CC Propellant quantity and pressure.

126:27:15 C My propellant quantity is about 26 percent.

126:27:24 C ... propellant quantity about 26 percent, OAMS pressure above 1500.

126:27:31 CC Roger.

126:27:35 CC I have a map update for you when you're ready to copy.

126:27:39 C Stand by one.

126:28:01 C Ready.

126:28:03 CC Node: 132:54:03; Rev 84; 38.5 degrees west; right ascension; Time, 11:05:31.

126:28:26 C Roger.

126:28:28 CC Also, I have a correction for the last block update you got. Area 84-Bravo should be Area 84-Delta. The times are good.

126:28:40 C 84-Bravo should be 84-Delta.

126:28:42 CC Roger. Also, on your propellant quantity usage, you are actually 6 pounds below normal. That means 6 pounds too much we've used.

126:28:57 C Oh, okay. They told me the other way over CSQ.

126:29:00 CC Roger.

126:29:03 CC Our last water report indicated that you had - the Command Pilot had consumed 6.6 pounds in the last 9 hours. We don't think that's quite right. Could you give us a correction on that?

CONFIDENTIAL

CONFIDENTIAL

391

126:29:16 C Roger.

126:30:00 C According to my figures, I had 55 ounces the last 9 hours.

126:30:03 CC That's 55 ounces.

126:30:05 C Right.

126:30:07 CC We'd also like a total count on the water gun.

126:30:11 C Stand by.

126:30:21 C 02138.

126:30:27 CC Roger.

126:30:31 CC They'd like you to use ointment in your noses tonight.

126:30:39 CC Also, if you become too warm, you can go ahead and use Pump A.

126:30:44 C If we become too warm we can use both Pump A's, or just Pump A in the primary loop?

126:30:51 CC Pump A in the primary loop.

126:30:53 C Thank you.

126:30:56 CC We also have an addition to that block update, when you're ready to copy.

126:31:14 C Go ahead.

126:31:16 CC That's Area 86-2: 135:41:22; 21 plus 44.

126:31:29 C Could you give us the time again, please?

126:31:31 CC 135:41:22.

CANARY ISLANDS

136:09:21 CC Gemini VII, Canary CAP COM. Contact. How do you read? Over.

CONFIDENTIAL

CONFIDENTIAL

136:09:31 P This is VII. Good morning; loud and clear.

136:09:34 CC And good morning to you also. Have you done a fuel cell purge yet?

136:09:38 P Negative.

136:09:40 CC Okay. We have a fuel cell purge with you and also we have a little bit of a flight plan update and also some on-board readouts.

136:09:51 P Roger. We're doing the fuel cell purge now.

136:09:54 CC Okay.

136:09:59 CC Can you copy this flight plan update while you're purging?

136:10:02 P Roger. You can start.

136:10:05 CC Okay. Node: 138:55:11; Rev 87; 130.8 degrees west; 11 hours 4 minutes 63 seconds; right ascension. We have a flight plan time line update for you. Change 136:00:00 to 136:17:00. 137:45:00: PLA update at Canary. 138:20:35: crew status report, Command Pilot, Carnarvon. 139:02:16: crew status report, Pilot, over Texas. And that's the flight plan update. Do you copy?

136:11:47 C Roger. Thank you.

136:11:49 CC Okay.

136:11:52 CC I'd like to get an OAMS propellant quantity readout from you.

136:11:56 C Roger. It's increased during the night. It now reads about 30 percent.

136:12:03 CC Okay, copy.

136:12:13 C We're noticing a little imbalance in our buses this morning. Number 1 reads 10 and Number 2 - what is that, Jimmy, 7.5?

136:12:25 CC 10 and 7.5.

CONFIDENTIAL

CONFIDENTIAL

393

136:12:36 CC Could you place your Quantity Read switch to ECS O₂, please?

136:12:38 C ECS O₂?

136:12:39 CC Roger.

136:13:01 CC Can I get a quantity impression from you, please?

136:13:08 C Roger. Quantity is about 82 percent, pressure 640.

136:13:16 CC Have copied. Would you place Quantity Read switch to FUEL CELL O₂?

136:13:33 C Roger. I read 72 percent quantity and pressure 750.

136:13:39 CC Copy.

136:13:45 CC FUEL CELL H₂, please?

136:13:51 C 77 percent and 410.

136:13:57 CC Okay. Quantity Read switch to OFF.

136:14:01 C It's off.

136:14:02 CC Okay. We'd like an OAMS source fuel and pressure and temperature.

136:14:09 C 1400, 81.

136:14:15 CC Okay, OAMS fuel temp?

136:14:20 C 81

136:14:22 CC OAMS oxidizer temp?

136:14:30 C Stand by on those readings. That's 51 for both OAMS and fuel and oxidizer is 50.

136:14:41 CC 51 on OAMS fuel temp and 50 on OAMS oxidizer temp.

136:14:45 C Right.

136:14:47 CC Okay. Temperature on the OAMS source was 81.

136:14:52 C No, that was wrong. It's about 52.

CONFIDENTIAL

CONFIDENTIAL

136:14:57 CC Okay, copy. Thank you.

136:15:17 CC VII, Canary. Can you give us an idea of what kind of rate you're building up? That you're drifting at the present time?

136:15:24 C Wait until we look outside.

136:15:26 CC Okay. Can you see Canary?

136:15:31 C It's about the same as it has been. I guess we haven't vented much during the night. We're very slowly coming.

136:15:38 CC All right. Roger. I copy.

CARNARVON

136:45:24 CC Gemini VII, Carnarvon CAP COM.

136:46:34 P Go ahead, Carnarvon. Gemini VII.

136:46:37 CC Roger. Good morning and how's with you?

136:46:39 P Good morning.

136:46:41 CC I've got the correction to the nodal update at 138:55:00, if you're ready to copy.

136:46:49 P One minute, please.

136:46:52 CC Roger.

136:47:05 P Go ahead.

136:47:07 CC Roger. On the remarks that they gave you on Rev 87 - they gave you 11 hours 04 minutes 63 seconds; 04 minutes 63 seconds comes out to be 05:03.

136:47:23 P Roger. That's right.

136:47:26 CC Okay, big correction.

CONFIDENTIAL

CONFIDENTIAL

395

- 136:47:28 P Thank you.
- 136:47:29 CC Right. We also have some information on your OAMS status.
- 136:47:35 P Go ahead, please.
- 136:47:36 CC Okay. Telemetry after OAMS systems stabilization shows you have 63 pounds of fuel, 122 pounds of oxidizer remaining. This is 36 percent actual, 31 percent on your gage. OAMS usage is right on the flight plan.
- 136:48:00 C We gained 6 percent over the night. I'm going to go back to sleep now and get more tonight.
- 136:48:05 CC Roger. This was waiting for temperature stabilization but did not stabilize as fast as we had originally anticipated.
- 136:48:13 C I noticed that also, up here. Remember, it went down without any usage at all and then it came back up, so I guess we're in pretty good shape.
- 136:48:20 CC Right. Real good shape on that. And also, on your fuel cell cryogenics, it indicates a pad of approximately 2000 ampere hours above the normal 14-day flight plan. Feel free to use A pump in one or both loops, for your comfort.
- 136:48:42 P Is that two or three zeros?
- 136:48:45 CC That's two thousand.
- 136:48:47 P Wowee!!
- 136:48:49 CC That's looking real fine.
- 136:48:51 C Thank you.
- 137:05:56 C This is Borman about to dump urine at 136:06. Stand by.
- 137:06:07 C Dumping.
- 137:13:50 P Suggestion to the Master Chef ... Why for morning

CONFIDENTIAL

CONFIDENTIAL

breakfast meal, do you serve bacon squares and beef pot roast together?

CANARY ISLANDS

- 137:45:20 CC Gemini VII, Canary CAP COM contact. How do you read?
- 137:45:24 C Loud and clear, Canary.
- 137:45:26 CC Okay. We have a PLA update for you, whenever you're ready to copy.
- 137:45:44 C Ready to copy.
- 137:45:46 CC Okay, for this, the RAC 400K beat is constant at 21 plus 50. 89-1: 140:20:06. 90-1: 141:55:58. 91-4: 144:48:01. 92-4: 146:23:41. 93-4: 147:59:16. 94-3: 149:17:18. The weather is good in all the areas.
- 137:47:13 C Roger, thank you.
- 137:47:15 CC Okay. I have a flight plan update for you also. Two items.
- 137:47:28 C Go ahead, CAP.
- 137:47:30 CC S-5: 139:31:50; Sequence 21; Mode 02; pitch 30 degrees down, yaw 1 degree left. D-4/D-7: 139:31:50; Sequence 418; Mode 02.
- 137:48:36 C Canary, this is Gemini VII. I don't read you anymore.
- 137:48:38 CC How do you copy now?
- 137:48:40 C Loud and clear now. I missed - the last thing I got was Mode 02, on D-4/D-7.
- 137:48:44 CC Okay, that was it. Just those two items.
- 137:49:00 CC VII, Canary.
- 137:49:02 C Go ahead.

CONFIDENTIAL

CONFIDENTIAL

397

137:49:04 CC We'd like an open-circuit voltage on Stack 2C,
please.

137:49:13 C Roger, open-circuit voltage.

137:49:47 C Canary, Gemini VII. 2C is off-scale, high on our
meter; it's over 31 volts.

137:49:54 CC Roger. Copy.

137:50:15 CC VII, Canary. We'd like closed-circuit voltages of
all the stack voltages right now.

137:50:21 C Roger.

137:50:27 P Canary, 1A coming up - 27.9; 1B, 27.8; 2A, 27.8;
2B, 27.8; 2C, 27.8.

137:50:52 CC Roger. Copy.

137:51:46 CC Okay, VII. We have nothing else for you. We'll be
standing by. All those voltages looked real good.

137:51:51 C Fine. Thank you.

CARNARVON

138:20:58 CC Gemini VII, Carnarvon CAP COM. We have a valid
blood pressure. We're standing by.

138:21:08 CC Gemini VII, this is Carnarvon Surgeon. We're
standing by for your blood pressure.

138:21:14 P This is VII. Roger. It's going to come down in a
second.

138:21:27 CC Your cuff is full-scale.

138:22:24 CC Gemini VII, we have a valid blood pressure. Would
you give us a Mark when you begin your exercise?

138:22:29 C MARK.

138:22:58 C MARK.

138:23:07 CC Gemini VII, your cuff is full-scale.

CONFIDENTIAL

CONFIDENTIAL

138:24:01 CC Gemini VII, we have a valid blood pressure. Would you give us your food and water report now, please?

138:24:10 C Roger.

138:24:19 C Okay, to date Command Pilot's had 624 ounces of water; we just finished Day 8, Meal A.

138:24:33 CC Roger. That was for breakfast?

138:24:35 C Roger, breakfast.

138:24:37 CC Roger.

138:24:38 C And the Pilot also had breakfast, main meal, and he's had 422 ounces of water.

138:24:47 CC Roger. Thank you, Gemini VII. Carnarvon Surgeon out.

138:24:51 C Roger, Carnarvon.

138:24:59 CC Gemini VII, Carnarvon CAP COM. We have roughly 5 minutes left to go. We'll be standing by. Everything looks good from the ground.

138:25:06 C Very good. Everything looks good up here also.

138:25:09 CC Roger.

138:26:15 CC Gemini VII, Carnarvon CAP COM. We are picking up the HF here on the ground. Are you getting it up there?

138:26:22 C Stand by and we'll try it.

138:26:23 CC Roger.

138:26:47 C Carnarvon, this is Gemini VII. Negative, we're not receiving it up here.

138:26:50 CC Okay, mighty fine. Thank you.

139:04:08 CC Gemini VII, Houston.

139:04:10 C Go ahead, Houston. Gemini VII.

CONFIDENTIAL

CONFIDENTIAL

399

139:04:13 CC Roger. Good morning. We have a valid temp on you. Give us a blood pressure and stand by for the Surgeon.

139:04:20 C Roger.

139:04:38 CC Cuff is full-scale.

139:04:41 C Roger.

139:04:44 C You sound sleepy.

139:04:46 CC You're right.

139:04:49 CC Don't you think his voice sounds kind of hoarse up there, Gemini VII?

139:04:53 C Roger.

139:04:54 P How much sleep did you get?

139:04:55 CC Could we have a water report on you, please, Flight Surgeon?

139:05:00 C Water only. Roger.

139:05:08 CC This is Houston Flight. How long have you been up there, now?

139:05:11 C Let's see - it's 139 hours, 5 minutes, 14 1/2 seconds.

139:05:16 CC Roger. Good check.

139:05:20 CC Frank, while we're waiting for this pressure -

139:05:22 CC That's days or hours?

139:05:24 C Those are hours. I feel like I was born up here.

139:05:29 C Go ahead, Chuck.

139:05:31 CC Frank, could you do a check on the total counts on your water gun and read them to me while we're getting these blood pressures on Jim, and then I'll tell you why in just a minute.

CONFIDENTIAL

CONFIDENTIAL

139:05:42 C 2258.

139:05:48 CC ... exercise.

139:05:51 P MARK.

139:05:53 CC That was 2258.

139:05:55 C Roger.

139:06:01 CC Frank, we apparently have an error in the counts. When we compute the water from your counts and compare it to the ounces that we've been reading, they don't add up and there's about a - looks to be about a 10-pound error. And sometime during the day I wish you could go through and recalculate your log and see if we can find that error.

139:06:25 C We will, Chuck.

139:06:34 CC Cuff is full-scale.

139:06:57 CC Frank, there's one other item we missed on that report that you gave a while ago. We didn't get the dinner meal. We need the meal eaten last night.

139:07:05 C Okay.

139:07:17 CC Gemini VII, Houston. We would like you to place the Stack 2C on open-circuit voltage for about 5 minutes and give us a reading on it every minute.

139:07:32 C You're starting to play games with us now.

139:07:38 C Are you serious?

139:07:39 CC Yes, we're serious, Frank.

139:07:41 CC I'm serious.

139:07:42 CC The current on Stack 2C has been coming down for about the last hour and a half or 2 hours, and we want to take a look at what the voltage is doing.

139:07:53 CC We have a valid blood pressure.

139:07:56 C ... Let's see, D-4 - Day 4, Meal C, last night,

CONFIDENTIAL

CONFIDENTIAL

401

Chuck, and we'll open-circuit - this for 5 minutes now.

- 139:08:04 CC Okay, Frank. We also need a report on your sleep. We need some hours from each of you and something about the type. We noticed that your sleep didn't appear to be very good last night.
- 139:08:17 C It was better last night than the night before. Jim slept very soundly for about 7 hours. I'd say I slept pretty good for about 6 hours.
- 139:08:26 P Chuck, is the blood pressure okay?
- 139:08:27 CC Yes sir.
- 139:08:30 P Good show.
- 139:08:32 CC Could we get a reading from Column 5 and 6 on the log?
- 139:08:38 C Lovell finally made the Column 6.
- 139:08:41 CC Very good.
- 139:08:43 P Hallelujah!
- 139:08:47 CC Excellent!
- 139:08:49 P Opening Stack 2C at this time.
- 139:08:52 CC Roger, Jim.
- 139:09:03 C Command Pilot's got 13 in Column 5.
- 139:09:06 CC Roger. 13, Column 5.
- 139:09:11 CC Jim, would you keep me posted on how that open-circuit voltage looks? That is, whether it's fairly steady.
- 139:09:17 P Roger. Right now it just stabilized and it's just a bit above 31 volts, way at the top of the scale.
- 139:09:26 CC Roger. Keep us posted.
- 139:09:32 CC Frank, you have the Pilot's reading in Column 5?

CONFIDENTIAL

CONFIDENTIAL

139:09:35 C Roger. 14.

139:09:38 CC And your reading in Column 6?

139:09:42 C 1 in Column 6.

139:09:50 CC Frank, can you give me a statement about your general condition this morning? Each of you. Jim sounds pretty hoarse there this morning. How do you both feel?

139:09:58 C We both feel all right. I feel fine. I'm a little sleepy, but Lovell is bouncing all over the place here.

139:10:08 P I think, Chuck, our noses are all stuffed up. That's why I feel hoarse, or sound hoarse to you.

139:10:14 CC Roger.

139:10:25 CC Frank, can you tell me a little bit about that urine bag - where it broke yesterday? Did it break around the neck seal?

139:10:33 C The neck, right.

139:10:35 CC Right at the neck seal. Okay.

139:10:39 CC Did you get it - did it go all out into the cabin, or were you able to get it contained pretty well?

139:10:45 C I caught most of it in my face and hands.

139:10:51 CC Come on!

139:10:53 C Say, after all, we're being conservation-minded on water too, here.

139:10:58 CC That's going too far.

139:11:01 C ... not all over, but I caught it with some tissues and we just threw it in the back. There may be some yet left in it, as a matter of fact.

139:11:08 CC Okay. Fine.

139:11:10 CC Frank, we had an oral temperature reading that came

CONFIDENTIAL

CONFIDENTIAL

403

up to 97.7 on your oral temperature probe over CSQ and RKV in Revs 81 and 82. Was there any reason for this, do you know? Did you have the probe in some position that it would pick up temperature?

- 139:11:35 CC Do you have any of those open-circuit voltage readings?
- 139:11:37 C Yes. He just gave me - 32.
- 139:11:38 P Yes, ... stabilizes about 32 now. It's just right at the top of the indicator, and it's just at the top now - 32 volts.
- 139:11:45 CC Roger.
- 139:11:50 C Elliot, we're not going to use any fuel at all except to pursue the experiments.
- 139:11:57 CC Very good, Frank. I was going to comment on that. We are actually running okay per day on fuel usage, but we're slightly behind on our experiments because of weather conditions, so we want you to keep being very stingy on the fuel.
- 139:12:13 C Roger. We're not going to try to pick up anything, or do anything in targets of opportunity unless you call them up, because you have to maneuver even then.
- 139:12:20 CC Roger.
- 139:12:23 CC How about another voltage reading?
- 139:12:30 CC Jim, do you think that it would help if we used one of these shrinking agents that we have aboard there for your nose? Have you been able to clear it or would you like to try that?
- 139:12:42 P The nose is too dry already, Chuck. ... don't need any of those other things.
- 139:12:47 CC It's just dry. It's not swollen. It's just dry. Is that right?
- 139:12:51 P What I need is Vicks.
- 139:13:01 CC Okay, VII. Could you give me another voltage reading, and stand by to start your flight plan update?

CONFIDENTIAL

CONFIDENTIAL

139:13:06 P Roger. The voltage is still up there at 32 or above.

139:13:11 CC Roger.

139:13:14 CC Ready to start copying?

139:13:17 P Stand by a second.

139:13:26 P Okay. Go ahead, Houston.

139:13:31 CC Roger. The first item is D-5 at Time 140:10:00. This will be a Test Number 4. For your information, a ground test showed that radio frequency interference can saturate this photometer, so we're interested in a test where we turn off all RF sources. Are you ready to copy the test?

139:14:04 P Roger. Go ahead.

139:14:06 CC All transmitters and beacons off. You can give me another voltage reading and get the Stack 2C back on the line.

139:14:20 P Roger. She's still running above 32 and I'll put Stack 2C back on the line.

139:14:24 CC Roger.

139:14:27 CC Jim, that thing looks very good to us. We'll keep an eye on what the current does.

139:14:31 P Roger. Thank you. The only thing we noticed was a drop in the amps on the indicator.

139:14:36 CC That's the same thing we're seeing.

139:14:38 C Looks like it's just joining 2A and 2B, Chris.

139:14:41 CC Yes, I guess that's the thing they don't understand. It's been up so high and now it's down - coming down.

139:14:46 C Roger.

139:14:48 CC You would normally expect it to run a little higher because it does run hotter.

CONFIDENTIAL

CONFIDENTIAL

405

139:14:51 C Right.

139:14:53 CC Okay. Next step in the test is: make normal calibration on Jupiter. We may lose you somewhere in here, but I'll keep going as long as I can.

139:15:08 C Elliot, Jupiter is right next to the moon and that's going to be tough to do.

139:15:13 CC All right, just pick out another bright star.

BERMUDA

139:15:21 C All right. Will do.

139:15:23 CC Make second calibration without depressing Cal button, and count turns from CAL setting to MAX. Turn Gain Wheel to MIN setting. Turn each transmitter and beacon on, one at a time, and look for reticle color change. Report turn to MAXIMUM and color change versus equipment activated. That is, as you turn those items on. Do you copy?

139:16:40 P Go ...

139:16:45 CC Gemini VII, it sounds like we're about ready to lose you here. We'll continue passing this up at Canary.

139:16:54 P Roger. We'll see you over Canaries. We're going to do an S-5 now.

139:17:00 CC Roger.

139:17:31 CC Gemini VII, do you copy?

139:17:35 CC Gemini VII, do you read Houston?

139:17:38 C Loud and clear. Go ahead.

139:17:41 CC At Time 140:30:00: transponder on. That's in preparation for a later test.

139:17:58 P Roger.

139:17:59 CC Did you get all of the D-5 test?

CONFIDENTIAL

CONFIDENTIAL

139:18:03 P No. We missed part of that D-5 test.

139:18:06 CC Roger. We'll get to you at Canary.

CANARY ISLANDS

139:20:57 CC Gemini VII, Canary CAP COM. Com check. How do you read?

139:20:59 P This is VII. Loud and clear.

139:21:01 CC Okay. We can continue with this flight plan update. First of all, we'd like your evaluation of the weather over Africa. We have an Apollo Landmark scheduled on the next revolution and we'd like your evaluation on that. Okay?

139:21:19 P Roger. We'll give it to you. On our last pass, from what we could see it looked pretty good. We'll give it to you on this pass.

139:21:23 CC Okay. That's around the coast.

139:21:26 P Around the coast, Roger.

139:21:32 CC What part did you miss on this Test 4?

139:21:36 P Canaries, we're trying to get an S-5 now. I wonder if we could hold off on the update.

139:21:42 CC Okay. Give me a call back.

139:21:44 P Roger.

139:22:26 P Canaries, VII.

139:22:28 CC Go ahead.

139:22:30 P While Frank's doing SEF I can copy the D-5.

139:22:33 CC Okay. Where do you want me to start? How far have you gotten?

139:22:39 P Why don't you start at the beginning?

CONFIDENTIAL

CONFIDENTIAL

407

- 139:22:41 CC Okay. This is the Equipment Test 4. Number one: all transmitters and beacons off. Now make a normal calibration on a bright star of some sort. Three: make a second calibration without depressing Cal button and count turns from CAL setting to MAX. Got that?
- 139:23:26 P Roger. I should have taken shorthand. Go ahead.
- 139:23:29 CC Okay. Turn Gain Wheel to MINIMUM setting.
- 139:23:40 CC Turn each transmitter and beacon on, one at a time, and look for reticle color change.
- 139:23:56 CC Report turns to MAXIMUM and color change versus equipment activated. Use any bright star as long as it's not red. Do you copy? This is for the calibration.
- 139:24:17 P Roger. In the last part, turn each transmitter and beacon on, one at a time. Look for the color change and then report what equipment makes the color change and the gain wheel settings. Is that correct?
- 139:24:29 CC Roger. Turn to - turn to MAXIMUM and report color change versus equipment activated.
- 139:24:33 P Roger. Understand. Any bright star as long as it's not a red one.
- 139:24:37 CC That's affirmative.
- 139:24:39 P We're coming over the coast of Africa right now and the coastline, I'd say, was mostly fair with upstairs QQ hanging on the inside. The desert area is clear.
- 139:24:50 CC We copy.
- 139:24:56 CC I have more of the flight plan update if you're ready to copy.
- 139:25:06 P Go ahead.
- 139:25:07 CC 140:34:00: fuel cell purge at Guaymas. 140:37:00: GO/NO-GO at Texas. Transponder test: 140:44:08;

CONFIDENTIAL

CONFIDENTIAL

Sequence 02; pitch 30 degrees down, yaw 4 degrees right. 141:00:00: BIO MED Recorder 1, CONTINUOUS; off at 143:00:00. Apollo: 141:00:10; Sequence 85; Mode 01; pitch 30 degrees down, yaw 24 degrees left. D-4/D-7: 141:20:00; Sequence 413; Mode 02; use Venus. 142:00:00: exercise period. 142:10:00: eat period. UHF test: 143:02:56; use horizon scanner to control spacecraft BEF for UHF test over Carnarvon; use the adapter antenna. Do you copy so far?

- 139:25:50 C We've had to quit.
- 139:27:52 CC Okay.
- 139:27:53 C The D-4/D-7. We'll pick it up later over Guaymas.
- 139:27:56 CC Okay.
- 139:29:01 P Use 16mm for IR at 139:30.
- 139:29:15 P Okay. I'll pick it up. Use 1 foot per second for correlation with D-4/D-7.
- 139:34:25 C Comment. We just took pictures over Lake ... at 139:31:50. At D-4/D-7, Sequence 418; and S-5, Sequence 21, Magazine C, starting Frame A - I mean Frames 8, 9 and 10. The thing that I'm - interested in the view up here concerning photographs is the almost total lack of green coming through. Everything looks a sort of brownish color except, of course, when you're on the water or in the horizon when it's predominantly blue. But it does seem the greens are washed out. You agree, Jim?
- 139:35:03 P Right.
- 139:35:06 P Yes, the greens are washed out. Actually that same thing pre -

TANANARIVE

- 139:42:11 CC Gemini VII, Gemini VII, Houston CAP COM. How do you read?
- 139:42:20 C Go ahead, Houston.

CONFIDENTIAL

CONFIDENTIAL

409

139:42:22 CC Like to continue the flight plan update if your communications are okay through Tananarive.

139:42:29 C Roger. We're working a little hard here now trying to get ready for D-5.

139:42:35 CC Roger. Let me know if you have time to copy.

139:42:39 C Roger.

139:42:58 C Flight, we need some information on Sequence 14 ...

139:43:05 CC Sequence what?

139:43:14 CC Say again, Gemini VII.

139:43:34 CC Gemini VII, Houston. Understand you need some more information on some sequence. Did not copy.

139:43:42 C Roger. ... sequence which occurs at 140:44:08. We don't have the - we don't know what the title of it is.

139:43:52 CC Roger. That's a Transponder Test.

139:43:57 C Roger.

139:44:06 C Go ahead, Elliot. I can copy now.

139:44:08 CC Roger. I understand you left off on the UHF test and you did get the time on it. Is that correct?

139:44:19 C UHF test.

139:44:26 CC We seem to be cutting in and out, Gemini VII. Understand you copied UHF test and the time. Instructions follow. Control spacecraft BEF for the test over Carnarvon. Use adapter antenna. How do you copy?

139:44:52 C Fine. But we don't have the time on that one.

139:44:53 CC Roger. Time is 143:02:56. Do you copy?

139:45:05 C Roger.

139:45:09 CC Next item: Time, 143:07:56; begin UHF test; key

CONFIDENTIAL

CONFIDENTIAL

UHF continuously until 143:17:01; voice-modulate UHF until 143:12:28. How do you copy?

139:45:57 CC Gemini VII, Houston. Did not read any answer.
How do you copy the last update?

139:46:02 C We copied it. Go ahead, please.

139:46:06 CC Roger. Understand you copy. I'm going ahead.
MSC-4: 143:36:44; Sequence 05; Mode 01; pitch 30
degrees down, yaw 13 degrees left. MSC-4:
144:14:58; Sequence 10; Mode 01; pitch 30 degrees
down, yaw 20 degrees left. Do you copy?

139:46:55 C We copy, Houston.

139:46:56 CC Roger. That's the complete flight plan update.

139:47:01 C Thank you.

CARNARVON

139:56:56 CC Gemini VII, Carnarvon CAP COM.

139:58:31 CC Gemini VII, Carnarvon CAP COM.

139:58:36 C Go ahead, Carnarvon. Gemini VII.

139:58:37 CC Roger. Would you check your circuit breakers,
please? We do not have an ACQ-AID beacon and we
had to go to a standby T/M frequency to pick you
up.

139:58:47 C Roger. They're all off. We're turning them back
one at a time, running a D-5 test.

139:58:51 CC Roger. Understand.

139:59:56 C You should have them all back now, Carnarvon.

139:59:59 CC Roger, Gemini VII.

140:00:14 C Carnarvon, can you transmit this to Houston for us?

140:00:17 CC Roger. I sure can.

CONFIDENTIAL

CONFIDENTIAL

411

140:00:18 CC On the D-5 instrument we alined and calibrated on Sirius. When we pushed the calibration button, it stayed FULL-RED regardless of the position of any of the transmitters. Regardless of the position of the gain wheel. When we did not use the calibration button, it stayed FULL-GREEN regardless of anything we did, including the gain wheel.

140:00:42 CC Roger. I think we've got all that. We've got it on tape, if not.

140:00:46 C I think they'd like to know it right away.

140:00:49 CC I'm sure Flight's copying.

140:00:52 C Thank you.

140:00:53 P Carnarvon, there is one little explanation to be made, without pushing the Calibrate button. The GREEN had a tendency to finally go RED at the low gain settings, but it would always stay positive GREEN all the way up to the gain settings.

140:01:15 CC Okay, thank you.

140:01:22 CC Gemini VII, Carnarvon. Did you get all the information on the flight plan update? Are you happy with all the plans?

140:01:28 C One thing we need to know -

140:01:46 CC Gemini VII, Carnarvon. Say again.

140:01:53 C Roger. We need to know after D-4/D-7 at 141:20:00.

140:01:59 CC Roger.

140:02:00 C Between then and the UHF test at 143:02:56.

140:02:05 CC Roger. Okay. At Time 142:00:00: that's exercise period. At 142:10:00: eat period. Do you copy?

140:02:22 C Thank you.

140:02:24 CC Roger.

140:02:27 P And Carnarvon, one more item on the D-5 photometer -

CONFIDENTIAL

CONFIDENTIAL

we had a light go out in the cockpit just recently, and now it appears like it saturated both Calibrate down and Calibrate to not down. The reticle is FULL-GREEN.

- 140:02:51 CC Gemini VII, was that after you completed the other test?
- 140:02:54 P Roger. That's after we completed the other test. We turned the light on in the cockpit to make the updates and I was still using the D-5 and noticed that the reticle phased GREEN now whether the Calibrate is down or not.
- 140:03:06 CC Roger. Thank you.
- 140:03:10 P And it was a very dim light actually. It must be a very sensitive instrument.
- 140:03:16 CC Roger.
- 140:03:27 CC Okay. I have some general information for you on the fuel cells. As you're probably well aware, Stack 2C has been carrying most of the load and the experts feel that during the hydrogen purging, since all three sections are purged together, that 2C hasn't been getting all of the water driven out of it. So they're considering, at the present time, doing a special hydrogen purge on 2C sometime today over the States. And they're still looking into that. We'll give you more information on it over the States.
- 140:04:05 P Roger.
- 140:22:51 P Lovell dumping urine at ... over.
- 140:24:22 P Okay, would you ...
- 140:24:24 C Turn it off?
- 140:24:25 P Turn off the airflow, please.
- 140:24:30 P You have both of them off?
- 140:24:31 C What?
- 140:24:34 P You have both of them off, right?

CONFIDENTIAL

CONFIDENTIAL

413

140:24:36 C I can't that blue stuff ...
140:24:46 P What's our next item?
140:24:53 P We ought to keep this thing up to date so we don't have to keep looking in this book.
140:25:00 C What?
140:25:07 P Okay. We have GO/NO-GO and another fuel cell purge here.
140:25:39 C Okay.
140:25:41 P Okay. Just a minute. I'll get this urine thing ...
140:26:24 C You want some more urine here, or did you put some away this morning?
140:26:27 P I put some away this morning.
140:26:58 C Okay.
140:27:58 C What's the next item on the list?
140:28:03 P We've got a fuel cell purge coming up here at 30.
140:28:22 C Anything else after that?
140:28:24 P Yes. Well, we have a GO/NO-GO. Oh listen, we better - GO/NO-GO - we better get our stuff out here.
140:28:31 C Right.
140:28:32 P I'll do a battery check right now.
140:28:34 C Copy.
140:28:36 P I'll do the battery check. Right now.
140:28:46 P One's good. 23 volts.
140:28:48 C How much?
140:28:51 P 23.

CONFIDENTIAL

CONFIDENTIAL

140:28:52 C 3?

140:28:53 P 23 volts. 2's good. 23 volts.

140:28:58 P Whoops!

140:29:03 P 3's good. Okay. It's okay, 23 volts. I was looking at the amps too. The amps up above ...

140:29:10 P 4? 4's good. Not quite - 28 volts.

140:29:17 C 1A.

140:29:22 P 1A is reading 5 amps; 1B reading 5 amps; 1C reading 5 amps; 2A's reading 3 amps; 2B's reading 3 amps; and 2C is reading 2 amps.

140:29:34 C ... voltmeter ...

140:29:41 P RCS B is reading 2900 at ...

140:29:43 C B or A?

140:29:46 P B. Reading 2900 at 75 degrees. RCS A today is reading 3000 at 80 degrees. ...

140:29:58 C That's the volt - main bus voltage?

140:30:05 P Reading with this configuration at 26.2 volts.

140:30:10 P Let me get some more stuff out of here.

140:30:12 C Secondary O₂?

140:30:15 P Left Secondary O₂ reading 54; Right, 53.

140:30:22 C Okay.

140:31:34 C You have the procedures book? Sequence 02.

140:32:00 P What's Sequence 02?

140:32:12 C You know, the light above Cape.

140:32:15 P Okay.

140:33:53 P This map is updated, right?

CONFIDENTIAL

CONFIDENTIAL

415

140:33:57 C We just missed a radar turnoff. We were supposed to turn off at ...

GUAYMAS

140:34:08 CC Gemini VII, Guaymas CAP COM. Did you copy? Place your T/M switch to the REAL-TIME in ACQ-AID position.

140:34:15 C T/M is REAL-TIME in ACQ.

140:34:18 CC Roger. We have it. Place your adapter C-Band to CONTINUOUS.

140:34:23 C Adapter C-Band is CONTINUOUS.

140:34:24 CC Roger. We'd like to get an open-circuit voltage on Stack 2C before the purge.

140:34:31 P Roger, coming up right now.

140:34:36 P 2C.

140:34:46 P We're not doing too good, pal.

140:34:58 P This is VII. Open-circuit voltage now reading 30 volts. It's probably still going up very slowly.

140:35:05 CC Roger. Understand. Just as a precaution during this purge, we'd like for you to monitor 2C on the voltmeter and the ammeter. If there are any large deviations during the purge they'd like for you to stop the purge.

140:35:17 P Roger. I'll keep 2C on the voltmeter. It's going up now to 30.5. 2C amps are reading 0, of course.

140:35:24 CC Roger. We're ready for your purge. Everything looks good on the ground.

140:35:29 P You want us to make a normal purge?

140:35:31 CC Roger. Normal purge.

140:35:32 P Roger. Coming through now.

CONFIDENTIAL

CONFIDENTIAL

140:35:36 P Crossover on.

140:35:55 P One more question. Do you want me to keep 2C off the line for this second section hydrogen purge?

140:36:02 CC Negative.

140:36:03 P Roger. Thank you.

140:37:48 P Hey, we just had another day go by.

140:37:51 C What?

140:37:53 P Another day's just gone by.

140:37:58 P Be my guest.

140:37:59 C No, 144.

140:38:00 P Oh, 144.

140:38:03 C 144.

140:38:05 P ... 144?

140:38:39 C Purge 2B now? Section 2?

140:38:41 P Yes.

140:39:27 P Who we over now? Mexico?

140:39:41 C Not yet.

140:40:15 P Over the Gulf of Mexico now?

140:40:41 C Yes.

140:40:48 P Purge complete, Guaymas. Couldn't see any change on the 2C amps.

140:40:52 CC Roger.

140:40:54 CC Would you place your Quantity Read to ECS O₂, please?

140:40:57 P Roger.

CONFIDENTIAL

CONFIDENTIAL

417

140:41:10 C Your ...
140:41:17 P Boy, is there a change in the spread now.
140:41:24 C Yes.
140:41:29 P Guaymas, this is VII. Did notice a change in the main amps. Difference here between Section 1 and Section 2 here after the purge test. About 6 now.
140:41:44 CC Would you say again, please?
140:41:48 P Difference between Section 1 and Section 2 ammeter reading are about - about 6 amps now. Section 1 is about 6 higher than 2.
140:41:57 CC Roger.
140:42:04 CC We're ready for Fuel Cell O₂.
140:42:25 P What have you got over there on the left-hand side? Is that the --
140:42:29 C -- the mouth of the Mississippi.

HOUSTON

140:42:30 CC Gemini VII, Houston. How do you read?
140:42:33 P Loud and clear, Houston.
140:42:36 CC Roger. This will be a UHF 6 pass.
140:42:41 P Roger.
140:42:45 CC We observed you have the A Pump on in the primary coolant loop. Could you tell us about when you put that on?
140:42:54 P Stand by a second. We put it on at 140:10.
140:43:02 CC Roger. Is that just to get a little more cooling?
140:43:06 P Roger. Frank's out of his suit, so we put the A Pump on for him.

CONFIDENTIAL

CONFIDENTIAL

140:43:11 CC Roger. We know you're coming up on that tracking pass at the Cape here. Just let me know when we need to stop talking to you for that part.

140:43:19 P Roger. It appears from observation now that there might be cloud coverage over the Cape.

140:43:24 CC Roger. Gemini VII, you're GO for 104-1. We'll get your GO/NO-GO information after the Cape pass.

140:43:35 P Roger. We'll pass up the GO/NO-GO. You were cut off at the beginning. Did you say we were GO for another ...

140:43:44 CC Roger. You are GO for 104-1.

140:43:47 P Roger. 104-1. We have the Cape in sight now.

140:43:52 CC Roger. Would you give us FUEL CELL H₂ on the Quantity Read switch?

140:43:58 P H₂ on.

140:44:06 C Okay. They should be picking us up now.

140:44:10 CC Did Pump A help on the cooling problem?

140:44:16 P Roger. It helped somewhat, Houston.

140:44:19 CC Roger. Got the message.

140:44:26 P We're tracking the Cape now.

140:44:29 CC Roger. Tracking the Cape now.

140:44:36 P I see they're working hard down there at Pad 19 again.

140:44:39 CC Roger. Can you actually see people on the pad with your telescope?

140:44:43 P No, we can't, Houston.

140:44:46 CC Roger. Place your T/M switch to COMMAND.

140:44:51 P T/M is on COMMAND.

CONFIDENTIAL

CONFIDENTIAL

419

140:44:53 CC And C-Band adapter switch to COMMAND.
140:44:59 CC Roger.
140:45:03 CC Let me know when you're finished the tracking task
and we'll continue.
140:45:08 P Roger.
140:45:16 CC Stand by for your T_R, Gemini VII.
140:45:23 CC Gemini VII, stand by for your T_R update.
140:45:27 P Roger.
140:46:01 P No update yet, Houston.
140:46:03 CC Roger. We've got a little T/M problem we're
working on. We're transmitting again, Gemini VII.
140:46:20 CC Gemini VII, you can place your Quantity Read switch
to OFF.
140:46:34 P This is a much better telescope, Frank.
140:46:41 P Much better.
140:47:02 P This scope is much better.
140:47:19 C Okay. Tell Chuck ...
140:47:22 P Tracking test complete ... T_R being received.
140:47:24 P Chuck, he passed the ...
140:47:26 CC Roger. We've got a problem with our ground
equipment. We'll update you as soon as we can,
either here or possibly Canaries or Carnarvon.
140:47:34 P Roger. Understand.
140:47:40 CC We're going to try one more time here, Gemini VII.
Looks like we can't put it in here. Gemini VII,
we'll catch you at another station.
140:47:57 P Roger.
140:47:59 CC I'm ready to copy your GO/NO-GO information.

CONFIDENTIAL

CONFIDENTIAL

140:48:05 C Roger, the main batteries were all 23 volts, 1A, 5 amps; 1B, 5 amps; 1C, 5 amps; 2A, 3 amps; 2B, 3 amps; 2C, 2 amps; main bus, 26.2 volts. RCS A, 3000; 80 degrees. RCS B, 2900; 75 degrees. Left Secondary O₂ 5400. Right Secondary O₂, 5300.

140:48:17 P 2A, 3 amps; 2B, 3 amps; 2C, 2 amps. Main bus, 26.2 volts. RCS A, 3000; 80 degrees. RCS B, 2900; 75 degrees. Left Secondary O₂, 5400; right Secondary O₂, 5300.

140:48:40 CC Roger.

140:48:46 CC Gemini VII, we tried the T_R again and our indication is that it got in correctly. Did you get an update?

140:48:54 C That's affirmative. We've got an update.

140:48:58 CC Roger.

140:49:04 CC Gemini VII, would you stand by for the Surgeon? He'd like to get a couple of questions in relation to your last pass.

140:49:12 CC Gemini VII, this is Surgeon. We didn't get an answer. I'm not sure you heard about this oral temperature at 128 hours, just at the beginning of the sleep period on the Command Pilot. Do you have any explanation for that?

140:49:26 P Tell him the ...

140:49:29 C The sun might have shined on it or something, Chuck. I don't know what could have happened.

140:49:31 CC Okay. How are you doing with the water story, Frank? Have you got it done yet or --

140:49:36 P Tell him we're working on it now.

140:49:38 C We're working on it now. We've been very busy this last pass.

140:49:41 CC Roger. That's fine. Any time you get it.

140:49:44 C Roger. We have to go back and repeat sometimes,

CONFIDENTIAL

CONFIDENTIAL

421

counted each half-ounce or ounce or something, but we'll check it.

140:49:51 CC Roger.

140:49:54 CC How did your tracking across the Cape go, Frank? Was the weather okay there?

140:49:58 C Yes, it was perfect. There was actually no problem.

140:50:01 CC Roger. We'll let you know on that as soon as we get the word.

140:50:05 C Roger. We'd be interested in knowing if they got any good data off our tracking on the boosters.

140:50:17 CC Gemini VII, I'm not sure we know what you mean by that.

140:50:21 C Did ... receive any of the information he wanted?

140:50:25 CC Roger. They're very happy about their results.

140:50:28 C Okay, thank you.

140:50:40 C What do you want us to do about this Section 2C of Stack 2C if it keeps going down and we're not in contact with anyone?

140:50:41 C Son of a gun. It's hot in this place.

140:50:43 P Yes. No worry on that.

140:50:52 CC We're working on that, Frank. We're considering a longer purge or possibly a purge on just that one stack. They're running a special test on the sim flight fuel cell at St. Louis. We should have some word on that for you very shortly.

140:51:08 C Remember a purge is never a cure.

140:51:10 CC Roger.

140:51:13 CC Roger, Doctor.

140:51:14 P I'm not so sure.

CONFIDENTIAL

CONFIDENTIAL

140:51:19 C Gosh darn it.

140:51:20 P You're just upset. The same thing that those people told you now. The purge goes through there --

140:51:24 C Yes, but the other people that know told us that. Weber told us that.

140:51:26 P Yes, but --

140:51:29 C We have to get in the position - and I said well naturally you have to watch those fellows ...

140:51:36 P That was a longer purge ...

140:51:38 C 141:00. Come on, we're all messed up. Give me some fuel.

140:51:41 P 00.

140:51:43 C We have an Apollo Landmark.

140:51:46 P Oh, ... pretty good. Get out the book.

140:51:58 P Okay, what is it?

140:52:02 P The car.

140:52:03 C 101.

140:52:05 P Okay. You got the book? Or do I have it?

140:52:17 C We're 20 degrees short, 24 left.

140:52:36 P Acquisition and 8-hour photos.

140:52:46 P West point on peninsula approximately 3 miles northwest of the Dakar.

140:52:50 C Where is it?

140:52:51 P Okay ...

140:52:55 P Thin ankle. That's what it looks like.

140:52:58 P What time?

CONFIDENTIAL

CONFIDENTIAL

423

140:52:59 C 141.
140:53:00 P 00?
140:53:02 C 141:00:10.
140:53:05 C He said take a picture ... and then right away we have a Sequence 413 on 02 and a D-4/D-7 using Venice, Jim.
140:53:17 P Okay.
140:53:22 P Cameras ready to go. What's that sequence?
140:53:24 C 413.
140:53:29 C I like it when we stay busy. Do you?
140:53:31 P Yes, much better than we ...
140:53:36 P ACQ-AID beacon open. We better do that right now.
140:53:46 P Temperature warm-up at, what's the time on that one?
140:53:50 C 141:00.
140:53:56 P Okay. That's 00:10. What's the D-4/D-7?
140:54:00 C 141:20.
140:54:02 P All right. 141:11 I get a load of this stuff.
140:54:10 P What's the mode on D-4/D-7?
140:54:14 C 02.
140:54:17 P Okay.
140:54:18 C Now on the mode on Apollo, you want two shots, right?
140:54:19 P Yes, acquisition and meter.
140:56:53 C ... coming up for one for 141:00:10; Apollo; Sequence 85; Mode 01. BIO MED Recorder Number 1 coming on slightly before Number 141:00. Track ...

CONFIDENTIAL

CONFIDENTIAL

CANARY ISLANDS

140:57:40 CC Gemini VII, Canaries.
140:57:42 C Go ahead, Canaries.
140:57:44 CC You can turn off the transponder now.
140:57:45 C Thank you.
140:58:10 CC VII, Canaries.
140:58:12 C Go ahead.
140:58:13 CC We want another Section 2 purge, normal Section 2
purge.
140:58:18 C Roger. What time?
140:58:20 CC Right now.
140:58:22 C Is it critical or can we wait until after we get one
Apollo Landmark ...
140:58:28 CC That's okay.
141:00:55 C ... Okay. Sequence ... photograph ...
141:01:06 P Canaries, this is VII. Coming through with the
Section 2 purge.
141:01:11 CC Affirmative.
141:03:22 P Purge complete ...
141:03:52 CC Canary, Roger. Cape said they probably tracked
the transponder for about 2 minutes.
141:03:59 P Roger. Thank you.
141:04:01 CC You're welcome.

KANO

141:06:18 CC Gemini VII, Gemini VII, Houston CAP COM.

CONFIDENTIAL

CONFIDENTIAL

425

141:06:24 P Gemini VII. Go ahead.

141:06:25 CC Out here we'd be interested if you notice any significant change in Section 2.

141:06:38 P Doesn't appear that there is any change in the amperage; still reads about 2 amps. I monitored two or three voltages during the second purge. It now reads about 27.2. Looks like it's a little higher than it was before.

141:06:51 CC Roger. We'll continue to watch it.

141:06:54 P Roger. It's got, I'd say, about a 6-amp difference between Section 1 and Section 2 ammeter reading.

141:07:02 CC Roger, we concur.

141:21:19 P Canary. This is VII. Starting D-4/D-7 at 141 - oh, about 141:19 - and using Sequence 413, with the change that we are now tracking Venice.

141:24:17 P Stopping the D-4/D-7 track at 141:24:20.

CARNARVON

141:35:44 CC Gemini VII, Carnarvon.

141:35:47 C Gemini VII. Go ahead, Carnarvon.

141:35:48 CC Roger. We have you GO on the ground. We also have some information for you. We're in the process of running an H₂ purge on a similar stack at St. Louis. We'll have more information on this test over the States. The one in St. Louis has shown similar characteristics to the one on board.

141:36:12 C Roger.

141:36:16 CC That's about all we have for you this pass. We'll be standing by.

141:36:21 C Thank you.

141:38:07 CC Gemini VII, Carnarvon.

CONFIDENTIAL

CONFIDENTIAL

141:38:09 C This is Gemini. Go.
141:38:10 CC Roger. Have you finished your D-4/D-7?
141:38:15 C That's affirmative. We finished D-4/D-7.
141:38:18 CC Okay. We still don't have an ACQ-AID ready. Do you have your circuit breaker off?
141:38:24 C Did you get one now? We'd have to turn it on.
141:38:27 CC I will check.
141:38:35 CC Roger. ...
141:38:42 C Big brother is watching.
141:38:44 CC Roger.

HAWAII

142:00:00 CC Gemini VII, Hawaii CAP COM.
142:00:05 CC We have nothing for you. You need not acknowledge. We show you GO on the ground.
142:00:54 P Hawaii, this is VII.
142:00:57 CC Gemini VII, this is Hawaii.
142:00:59 P Did you receive our last transmission? Over.
142:01:00 CC Negative.
142:01:01 P Okay, thank you. Just checking.
142:01:07 C Hawaii, Gemini VII with the correction to our water report.
142:01:12 CC Roger, VII. Go ahead.
142:01:13 P Roger. Our recomputed figures show that the Command Pilot to date has had 452 ounces of water.
142:01:26 CC Roger. That was Command Pilot, 2 days, 452 ounces of water.

CONFIDENTIAL

CONFIDENTIAL

427

142:01:32 P No, that's total to date, total water.

142:01:35 CC Roger.

142:01:37 P The Pilot, 396.

142:01:41 CC Roger.

142:01:55 P Having a Meal B on the sixth day. Just opened up the meal and we find another ... first at 142 hours and 1 minute. Bacon and egg bites for a noon meal. I always thought they were for breakfast.

142:02:27 CC Gemini VII, Hawaii CAP COM. I have some information for you.

142:02:31 P Go ahead.

142:02:33 CC Place your Stack 2C switch to the OPEN CIRCUIT position for 15 minutes - one fiver minutes. Houston will pick it up over the States, and if the voltage stays around 30 volts or better they will do a single-stack hydrogen purge over the States.

142:02:56 P Roger. At this time I'm going to go CIRCUIT on Stack 2C; will keep an open circuit. As I understand, if the voltages stay 30 volts or better, they'll do a single-stack hydrogen purge. Is that correct?

142:03:08 CC That's affirmative.

142:03:10 C Roger. Going to OPEN CIRCUIT 2C.

142:03:12 CC Roger.

142:05:34 CC Gemini VII, will you say again, please?

142:05:38 P VII was not transmitting.

142:05:40 CC Roger.

GUAYMAS

142:09:51 CC Gemini VII, Houston.

CONFIDENTIAL

CONFIDENTIAL

142:09:54 P This is VII. Go ahead.

142:09:56 CC Roger. How's lunch?

142:10:02 P Well, we're sort of eating it right now.

142:10:03 CC Sort of what?

142:10:06 P Eating it up.

142:10:07 CC Roger. How's the voltage looking, Jim?

142:10:11 P It's off-scale high, Elliot, at least 32 volts.

142:10:18 CC Roger. We'll watch it for a couple more minutes here. I'd like to give you the procedure that we have for single-stack purge here.

142:10:34 P Roger. Go ahead.

142:10:37 CC It's probably about as you have figured out. Essentially, it's just Crossover open, 2A and 2B off. Then purge Section 2 for 13 seconds.

142:10:59 C Elliot -

142:11:06 CC Go ahead, Frank.

142:11:08 C The voltage on this open circuit is higher now than the last two times we open-circuited.

142:11:23 CC Roger. We're not ready for you to start this purge yet. I just wanted to give you the procedure.

142:11:29 C Okay.

142:11:32 CC And we want you to monitor 2C closely during the purge. Of course, to purge it you're going to have to put it back on the line before we start this thing, but we want you to monitor it closely during the purge; and then after the purge just turn Stack 2A and 2B back on.

142:11:44 C Right. And, Elliot, I want to tell you another thing. We are fooling around with this D-5 again, trying to calibrate on Venus and everything else, and I tried it too and the conclusion is that when

CONFIDENTIAL

CONFIDENTIAL

429

it - the calibration button is down, it's always RED; when it's not down, it's always GREEN.

- 142:12:01 CC Roger.
- 142:12:04 P Lets go over this procedure one more time. We'll have the Crossover open and 2A and 2B will be open-circuited, and then we'll put 2C back on the line and we'll purge hydrogen for 13 seconds.
- 142:12:19 CC That's correct, Jim, but I think we should put Stack 2A back on the line first, before you take 2A and 2B off.
- 142:12:27 P Roger. I'll put 2B back on before I take 2A and 2B off. And we're not going to have to bother with the oxygen at all. Right?
- 142:12:33 CC That's correct.
- 142:12:41 P And you're to do this purge over the States. Is that correct?
- 142:12:44 CC We'll tell you when we're ready, Jim. What does the voltage look like from Hawaii in to here when you were - all the time that you've had it off? Has it been steady or rising, or what?
- 142:12:58 P Every time we have open-circuited, it goes up fairly rapidly. There's 30 volts, then very slowly it continues to rise. The last time we talked to you it was up around 31 and since we've had it open longer, now it's 33 and it might be above that - that's as high as the scale goes.
- 142:13:16 CC Roger. I copy.

TEXAS

- 142:13:35 CC Have some questions about the - your attempt at MSC-3 yesterday. Did you definitely acquire Hawaii?
- 142:13:45 P On that attempt, no. When we first picked up the Islands we just see ... and ... but I can never

CONFIDENTIAL

CONFIDENTIAL

pick up Hawaii. I think it was at an oblique angle covered by clouds. And when he gave us the Mark we were almost over ... that's why I thought perhaps that Houston ... even though ...

- 142:14:17 CC Roger. So you never actually saw Hawaii, so you couldn't scan it with the telescope or with your eyes or anything?
- 142:14:18 P That's right. We never did pick up Hawaii, but ... and ... stood out very nicely.
- 142:14:24 CC Roger.
- 142:14:55 P Houston, VII.
- 142:14:57 CC Go ahead.
- 142:14:58 P Just as a matter of interest, our friend, the Delta-V light, finally went out. It's been on for the last several days.
- 142:15:05 CC Roger. When did it go out?
- 142:15:07 P Just now.
- 142:15:09 CC Roger.
- 142:15:15 CC Okay. Why don't you put Stack 2C back on at this time and give us a stabilized reading there before we proceed?
- 142:15:22 P Roger. Stack 2C going back on the line.
- 142:15:35 P Okay. We're back on the line and 2C is reading 27.8 volts now and the amps are back up to 5 amps. Highest I've seen it in some time.
- 142:15:47 CC Roger. Let's let it stabilize there for a minute.
- 142:15:50 P Roger.
- 142:15:52 CC What are the other amp readings?
- 142:15:55 P 2A and 2B are both about 2 1/2. This is the situation we had originally for the first 4 or 5 days.

CONFIDENTIAL

CONFIDENTIAL

431

142:16:02 CC Roger. Let's watch it here for a minute Jim, and then we'll decide about this purge.

142:16:14 P Roger.

142:17:04 CC What do your currents look like now, VII?

142:17:06 P They're stabilized; 2C voltage is 27.8, and 5 amps on the 2C ammeter.

142:17:14 CC And how about 2A and B?

142:17:17 P 2A and 2B each read about 3 amps now.

142:17:22 CC All right. You have 2A and 2B, 3 amps; 2C, 5 amps. Is that correct?

142:17:29 P That is correct. Their both sections are balanced.

142:17:34 CC Roger. How about reading off the A Section then?

142:17:39 P Roger.

142:17:40 CC I mean Section 1.

142:17:41 P 4; 1B about 4, and 1C about 4.

142:17:52 CC And C are all 4.0?

142:17:53 P That's affirm.

142:17:56 CC Roger. We want to keep watching it here for a minute, Gemini VII.

142:18:02 P Roger.

142:18:22 C Houston, Gemini VII.

142:18:25 CC Go ahead.

142:18:26 C We made a couple of qualitative checks on the UHF adapter - or UHF antennas, and it seems that the reentry antenna is just a little bit better than the adapter antenna.

142:18:38 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

142:18:45 C Neither one of them is bad, though. We've been using primarily the adapter antenna since the platform was powered up yesterday.

142:18:50 CC Roger. Okay, Jim. How about giving me another readout on 1 and 2 amperages?

142:19:02 P Roger. Section 1 is reading about 3 1/2 to 4 - that's 1A. 1B is about 4, 1C is 4, 2A is 3, 2B is 3 and 2C is 5.

142:19:21 CC Roger.

142:19:24 C And the Delta-V light is still out.

142:19:38 CC Is that Delta-V light still out, Jim?

142:19:41 P Roger. Still out. You know what we say about letting sleeping dogs lie.

142:19:45 CC Yes, we're just about to invoke the Taft-Hartley Act here. Got a Tx coming up at you, VII.

142:19:59 P Received.

142:20:01 C If you want us to purge, how about promising it won't hurt it.

142:20:05 CC How about promising, you say?

142:20:07 C Roger.

142:20:08 CC We haven't purged yet. Stand by. If we ask you, we will promise.

142:20:21 CC Maybe we've got something wrong with the ammeter.

142:20:25 P Might be the operator. I never can tell.

142:20:30 CC Gemini VII, we are not going to purge. We're going to leave it like it is.

142:20:35 P Roger.

142:20:37 CC Are you ready for the day's news with your lunch?

142:20:41 P Exciting! Go ahead.

CONFIDENTIAL

CONFIDENTIAL

433

- 142:20:45 CC Mr. Mikoyan resigned yesterday as president of the Soviet Union on grounds of health and age. He was replaced by Nickoli Pegornia. Branch Rickey died yesterday at the age of 83. A big fireball was observed over Lake Erie yesterday. It apparently was a meteorite. Several grass fires were reported in the northern Ohio and western Pennsylvania area; we should have more on that later. We'll let you know if we do. The Gemini news today is all about the preparations for the Gemini VI launch on Sunday. We've talked to them recently and they're in real good shape there. They're through the precount and they're in very good shape. We have a sim set up for Wally tonight. Everyone got a kick out of your message to Tommy Nobis to encourage him to come with the Oilers and a Post sportswriter said that he knew Bud Adams had friends in high places, but this was too much!
- 142:22:07 P Outstanding!
- 142:22:30 CC Just before we lose you, VII, we'd like to get another set of readings on the fuel cell. I'll call you when we need that.
- 142:22:38 C Did Dr. Berry get all the water information from Hawaii, Elliot?
- 142:22:42 CC Yes, we got it, and they're now happy, Frank.
- 142:22:45 C Good.
- 142:22:47 CC If you can conceive of that.
- 142:22:52 CC Frank, we got the totals and we're perfectly happy with them, and we won't have to go back and jiggle the other things. We'll jiggle it here on the ground.
- 142:23:00 C Thank you.
- 142:23:06 CC I don't know about you, Frank, but I wonder what he's going to jiggle?
- 142:23:26 CC Were you able to see Hawaii at all on that last pass - to get some idea what the weather's going to be like this time?

CONFIDENTIAL

CONFIDENTIAL

142:23:36 P Elliot, we're drifting with the shutters up to keep cool.

142:23:41 CC Roger. So you didn't see Hawaii that last pass?

142:23:42 P Negative.

142:23:45 CC Roger.

142:24:28 CC VII, Houston. Would you comment on your fueling situation? We were wondering about your last comment there. Are you able to maintain adequate cooling with the present pump configuration?

142:24:45 P This is VII. Roger, we're both fine. Of course I'm without the suit and Frank's with it. We have the primary A pump on now.

142:24:58 CC Roger, VII.

142:25:29 C You're all going to have to work a double shift today, right, Elliot.

142:25:33 CC Oh, we'll manage.

142:25:37 C How are you holding up after these 14 - 7 days?

142:25:41 CC Appreciate your asking. Haven't even thought about it.

142:25:45 C How about CM3 and 4?

142:25:48 CC They're doing fine. They're having a ball.

142:25:54 CC How about CML and 2?

142:25:55 C We're fine. We're kind of - I guess the person we're really worried about is the Old Man, Flight Director.

142:26:02 CC Yes, we're keeping an eye on him.

142:26:04 C Missing all those golf games.

142:26:09 CC That doesn't even deserve a comment.

142:26:18 CC Okay. Why don't you give me another readout on those stack currents, Jim?

CONFIDENTIAL

CONFIDENTIAL

435

- 142:26:24 P Roger. Coming up now. 1A is 4 amps; 1B, 4 1/2 amps; 1C, 4 amps; 2A, 3 1/2 amps; 2B, 3 1/2 amps; and 2C is 4-over 5 amps - about 5 1/2, I guess.
- 142:26:42 CC Roger. We'll watch it for a while. Thank you.
- 142:29:23 CC We'll see you the next time around, VII. What we're really worried about here is the Flight Surgeon.
- 142:29:32 CC I said we'll see you next time around. The one we're really worried about here is the Flight Surgeon.
- 142:29:36 P Roger. Is he getting enough water?
- 142:29:40 CC He's been hearing noises and sounds a little hoarse. It sounds like he's been drinking medicinal water.
- 142:29:51 C Tell him to remember all of his dreams, please.
- 142:30:02 CC We've prescribed a treatment, but he won't follow it.
- 142:30:16 C Houston.
- 142:30:17 CC Go ahead.
- 142:30:18 C Got the Delta-V light again.
- 142:30:20 CC Roger. Delta-V light again.
- 142:40:17 CC Gemini VII, Gemini VII, Houston.
- 142:40:22 P This is VII. Go ahead.
- 142:40:24 CC Sorry to bother your lunch, Jim. Could you give me another set of readouts on the stack amperages?
- 142:40:32 P Roger. We're now reading 3 1/2 on 1A; 4, 1B; 3 1/2, 1C; about 4-over 3 on 2A; 3 on 2B; and just barely under 5 on 2C.
- 142:40:50 CC I did not copy 2A and 2C.
- 142:40:55 P 3, 2A; and slightly under 5 on 2C.

CONFIDENTIAL

CONFIDENTIAL

142:41:02 CC Roger. Understand about 4.9 on 2C.

142:41:37 CC Gemini VII, also I'd like to tell you that the MSC-4 for Hawaii next pass is deleted due to weather at Hawaii.

142:41:50 P This is VII. Understand MSC-4 deleted.

142:41:57 CC Also, MSG-4 for Ascension on the following revolution is deleted because they have not received all the equipment they require to make their repairs. So it looks like we won't make that one again today. I'm sorry.

142:42:16 P Roger. Understand.

143:08:04 C Jim and I are both looking at the aurora. A beautiful sight. Sort of a yellow green with BEF. We're coming up on Carnarvon. The aurora looks almost like a rainbow. We can see both ends of it and the area underneath the cuff part of the rainbow, about in the middle of it, is very, very dark. I don't see any clouds in there at all, do you Jim?

143:08:20 P No.

143:08:23 C It would appear that it's almost ...

CARNARVON

143:12:29 P Carnarvon, Gemini VII. UHF test: 1, 2, 3, 4, 5, 5, 4, 3, 2, 1.

143:12:41 P Just saw the aurora - the southern aurora - for the very first time. Very beautiful.

143:12:51 P This is Gemini VII. UHF test: 1, 2, 3, 4, 5, 5, 4, 3, 2, 1.

HAWAII

143:33:34 CC Gemini VII, Hawaii CAP COM.

CONFIDENTIAL

CONFIDENTIAL

437

- 143:33:36 C Go ahead, Hawaii. Gemini VII.
- 143:33:39 CC Okay. You're looking real good down here. How are you doing?
- 143:33:41 C Very good.
- 143:33:42 CC Okay. Are you too busy to copy a flight plan update?
- 143:33:46 C We're a little busy right now. Could we wait off a minute?
- 143:33:49 CC Surely. Do you want to copy it later here or over the States? Well, just let me know.
- 143:33:52 C I'll give you a call when we're through here.
- 143:33:55 CC Very good. I have a long pass.
- 143:33:57 C Thank you.
- 143:34:53 C Go ahead, please, Hawaii.
- 143:34:55 CC Okay, here we go. MSC-2 and -3: 144:20:00; Sequence 02; off at 159:00:00. At 144:55:00, we'd like a cabin temperature survey. S-6: 145:27:00; Sequence 02, 03 and 04; take several pictures. D-9: 145:51:00; Sequence 04; perform Node procedure described after mode number listings. 146:46:00: crew status report, Command Pilot at Hawaii. At 147:19:00: crew status report on the Pilot at the RKV. At 148:03:00: a PLA update at the CSQ. At 148:22:00: flight plan report at Hawaii. At 149:00:00: BIO MED Recorder Number 2 to CONTINUOUS, off at 159:00:00. Did you copy all of that?
- 143:37:22 C Got it all.
- 143:37:24 CC Okay, very good. We have nothing further for you. We'll be standing by if you need us.
- 143:37:28 C Thank you.
- 143:38:23 CC Gemini VII, Hawaii.

CONFIDENTIAL

CONFIDENTIAL

143:38:26 C Go ahead.

143:38:27 CC McDonnell expert, Mr. McDonnell, a Mr. Weber, had a theory on what's going on up there. They claim that when you took Stack 2C to the open circuit to remove the load from the cell, the water pressure was relieved from the cell and it kind of cleared it out of there, and that's what's solving your problem.

143:38:52 C What you're suggesting is, if it happens again, probably a similar procedure will solve it again.

143:38:58 CC Yes, but I think you better hold up on doing that until we give you word.

143:39:02 C We don't need you now. It's running perfect.

143:39:04 CC Yes, I mean if it happens again.

143:39:07 C Don't worry, we will.

143:39:08 CC Okay.

143:39:11 C When are you going to get some clear weather down there ... so we can see your laser?

143:39:14 CC I don't know. It's been raining for a couple of weeks. Right up on top of the mountain here it rains all the time.

143:43:51 C ... time was 13:06 when we first started - correction - 143:06 ... Borman dumping urine.

TEXAS

143:49:42 CC Gemini VII, this is Texas CAP COM. You need not acknowledge. We have you on the ground - GO on the ground, and are standing by.

143:55:52 CC Gemini VII, Houston.

143:55:56 C Go ahead, Houston.

143:55:58 CC Got a couple of flight plan update items, if you can get your book out.

CONFIDENTIAL

CONFIDENTIAL

439

- 143:56:03 C Go ahead. We're ready.
- 143:56:06 CC Node: Time, 144:56:20; Rev 91; 136.7 degrees east; right ascension, 10:50:45. Time: 144:44:14; purge fuel cells at Carnarvon. You have a T_X coming up now, Gemini VII.
- 143:56:54 CC VII, did you copy a T_X coming up?
- 143:56:57 C Roger.
- 143:57:01 CC Next is 148:55:00; purge fuel cells at the RKV.
- 143:57:15 C Roger.
- 143:57:21 CC Stand by for the Surgeon, Gemini VII.
- 143:57:26 CC Gemini VII, this is Surgeon. Have you had any dandruff problem up there, Frank?
- 143:57:32 C No.
- 143:57:34 CC Say again.
- 143:57:36 C N O, No, negative.
- 143:57:38 CC Good show. He's having trouble with his hearing, Gemini VII. You might help him out.
- 143:57:44 C Roger.
- 143:57:47 CC Is Jim - I'd like to talk to both of you a little bit about this nasal stuffiness, and we'd like to have you try something here. Did you use the skin cream from those little bottles? Did you try some of that last night before you went to sleep?
- 143:58:06 P Yes we did. It works pretty good.
- 143:58:10 CC Okay, I'll tell you what I'd like to have you do to see if we can clear this up some during the day, is - I'd like to have you keep using that so that you don't dry out. Just keep your noses moist with that all the time and if we can just use it for that purpose, we'll probably have plenty to go the route. The other thing I'd like to have Jim try because he sounds like he is more plugged. I would like to have him try one of the Actyfeds,

CONFIDENTIAL

CONFIDENTIAL

Item E. It will last about four hours and we can give a trial to see if this will clear up that nasal stuffiness for you. The main thing is keeping your nose moist with the lotion tube. Do you read?

- 143:58:54 P I'll do it if it's in the field of medical research, otherwise I'd prefer not to.
- 143:59:00 CC Oh, well it's - we (ha ha) outstanding.
- 143:59:06 CC Okay. You feel that the stuffiness isn't enough to bother you. Is that right, Jim?
- 143:59:13 P Chuck, that cream you gave me is working very nicely. I put some more in my nose this morning, and I expect a certain amount of stuffiness due to the oxygen content, but other than that we are fine.
- 143:59:25 CC Okay. Well, if you don't feel that the stuffiness is bothering you as far as breathing is concerned there is no real reason to - to have to do this, and I think it would clear up the stuffiness for you. So we know it's there, and I'm not directing you to take it. I think it is one of these choice things that we can do if you want to do it. If you feel the stuffiness isn't bothering you, we won't do it.
- 143:59:52 P Roger. Thank you, and if I become more stuffy, I'll be sure and take one.
- 143:59:56 CC Roger.
- 143:00:04 C Hey, Chuck, have you got a minute?
- 144:00:06 CC Yes, sir. Surgeon standing by, Frank.
- 144:00:14 C I don't have any problem, but my brother-in-law hurt his back moving a piano. Could you prescribe something for him?
- 144:00:21 CC Where is he?
- 144:00:24 C I was just kidding you. We're all in good shape, Chuck.
- 144:00:28 CC Very good. The gals are in good shape down here, too.

CONFIDENTIAL

CONFIDENTIAL

441

- 144:00:35 C Is everything all right at home?
- 144:00:38 CC Yes, everything is very fine, Frank. I talked to both Sue and to Marilyn this morning and it's fine. Marilyn is out having coffee again, having lunch. They're fine.
- 144:00:52 P Tell her I'm doing my part, now she has to do hers.
- 144:00:56 CC Not yet. Not for another week or so anyway.
- 144:01:01 C Chuck, I want to tell you one thing. There is just no comparison medically between suits on and suits off. Boy, it's - I bet you half the problems you've had with people getting dehydrated were because of these darn suits.
- 144:01:12 CC Yes, we're in firm agreement with that statement, Frank. And it's pretty obvious, I think, that's - do you think that's part of your problem with sleep too, Frank? The suit on?
- 144:01:25 C I'm certain it's part of my problem. I even buttoned it up last night, trying to see if that would keep me cool; you know hood - hood down and everything, and there is just no comparison between Jim's comfort and mine.
- 144:01:37 CC Okay. Well, you keep us posted and we're --
- 144:01:46 CC Roger, we copy, Gemini VII.
- 144:01:54 C Houston, this is Gemini VII. One thing - last pass over Australia we saw a brilliant display of the aurora and we would like to take some pictures this time, if we can afford a couple of spurts of attitude fuel.
- 144:02:12 CC Flight Director says have at it.
- 144:02:14 C Thank you.
- 144:34:54 C ... Taking a picture of dim-light photography at 144:34:56; careful at taking several pictures starting at 145:76 ...

CONFIDENTIAL

CONFIDENTIAL

CARNARVON

144:45:08 CC Gemini VII, Carnarvon.

144:45:11 C Go ahead, Carnarvon. Gemini VII.

144:45:13 CC Roger. We're waiting for your fuel cell purge.

144:45:17 C Roger. We'll do it now. We've been waiting for you.

144:45:27 C Purging.

144:45:29 CC Roger.

144:49:43 C Gemini VII, Carnarvon.

144:49:47 C Go ahead, Carnarvon.

144:49:48 CC Roger. I'd like for you to check your RCS B-3 circuit breaker.

144:49:56 C Roger.

144:49:59 CC We lost it.

144:50:00 C Roger. It was out. Thank you very much.

144:50:03 CC Roger, Gemini VII.

144:50:10 C Purge complete.

144:50:12 CC Roger, Gemini VII. Could you position your Quantity Read switch to ECS O₂, please?

144:50:21 C Roger.

144:50:34 CC Okay, to Fuel Cell O₂?

144:50:49 C Okay, to Fuel Cell H₂, please.

144:51:03 CC Okay. You can go to the OFF position. You're looking good here on the ground, Gemini VII.

144:51:16 C Thank you.

CONFIDENTIAL

CONFIDENTIAL

443

HAWAII

145:10:11 CC Gemini VII, Hawaii CAP COM.
145:10:15 C This is VII. Go ahead, Hawaii.
145:10:17 CC Roger. We show you GO on the ground. We're standing by. You need not answer.
145:10:22 C Well, we will anyway. Thank you.
145:10:24 CC Roger.

GUAYMAS

145:24:58 CC Gemini VII. This is Texas CAP COM.
145:25:01 C Go ahead, Texas.
145:25:02 CC We have you GO on the ground. Stand by. We're going to send you a T_X.
145:25:06 C Thank you.
145:25:11 CC We have nothing further for you. We'll be standing by.
145:30:24 P Yes, right now, Frank.
145:30:26 C Fix was taken on ... Charlie ... pictures ...
145:31:34 CC Gemini VII, Gemini VII, Houston CAP COM. Over.
145:31:39 C This is VII. Go ahead, Houston.
145:31:41 CC Roger, VII. We're just checking out a new communication circuit. Just want to make sure you can read me and we'll be standing by here. And for information, we're always standing by at any of the remote sites - Tananarive, and so forth - throughout the flight - in case you want us.
145:31:56 C Roger. You're coming in loud and clear with no background noises.

CONFIDENTIAL

CONFIDENTIAL

145:32:01 CC Okay.
145:32:07 P This is VII. Go ahead.

ANTIGUA

145:34:59 CC Gemini VII, Houston CAP COM.
145:35:03 P This is VII. Go ahead.
145:35:07 CC Jim, we would like to have Frank - correction - have you get back in your suit at this time and have Frank get out of his. Our plan is to leave you in this mode through the rendezvous and docking. After that - the rendezvous and stationkeeping, and after that the thought would be to consider the matter further, as far as suit configurations are concerned. We feel that this is an important step in carrying the suit situation further. Do you copy?
145:35:52 P Roger.
145:36:20 C Houston. VII.
145:36:21 CC Go ahead, VII.
145:36:23 P Do you wish to program the suit time at this time?
145:36:31 CC Whenever you think is the best time to do it. Whenever you can work it in the flight plan here. We've just got this word, so we have not programmed it in the flight plan, yet.
145:36:45 P Roger. I'd like to get some instructions. It's going to take a little while for us to get squared away here, so I would like to have it worked into the program during a quiet period.
145:36:56 CC Roger, VII.
145:37:03 CC Looks like after the D-9 at the RKV, you might have some period in there - about 45 minutes or so - before the crew status on the Command Pilot at Hawaii. It looks like that might be a good spot.

CONFIDENTIAL

CONFIDENTIAL

445

145:37:23 P Roger.

ROSE KNOT VICTOR

145:44:28 CC Gemini VII, RKV CAP COM. You need not acknowledge. All systems are GO. We're standing by.

145:44:35 P Roger.

145:47:03 C RKV CAP COM. This is Gemini VII.

145:47:05 CC Go ahead, Gemini VII.

145:47:07 C Would you ask Houston, please, if it would be acceptable if we remained in our present configuration until tomorrow when Jim will suit-up for the rendezvous, and then I will remove the suit after rendezvous? I would prefer not to have us make too many suit changes in the spacecraft. The danger of hitting switches and so on is great. If it would be acceptable to them, we will delay switching suits until after rendezvous.

145:47:31 CC Okay.

145:47:33 P The rendezvous tomorrow.

145:47:34 CC Roger. I'll check with Houston. Stand by.

145:48:19 CC Gemini VII, RKV.

145:48:20 C Go ahead.

145:48:21 CC Did you say that you wanted to stay in the present suit configuration until tomorrow? Is that affirm?

145:48:26 C That's affirmative. At which time Jim Lovell will suit-up.

145:48:31 CC Okay.

145:48:35 C We are afraid of damaging BIO MED communications and the cuffs getting misadjusted and so on.

145:48:41 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

145:48:59 CC Gemini VII, RKV.

145:49:01 C Go ahead.

145:49:02 CC Chris would like you to get back into your suit.

145:49:05 C I'm not out of it. I'm still in it.

145:49:06 CC No, but he'd like a - I think he'd like you to change.

145:49:12 C That means we would have to change again tomorrow then, RKV.

145:49:19 C I'm comfortable. I'm all right. I'm not comfortable, but I'm all right. It's a big job for Jim to get in and out of the suit, and once he gets in he probably won't want to get out again ...

145:49:27 P Well, at this time ...

145:49:28 C ... and I'll get out after tomorrow.

145:49:30 CC Roger.

145:51:16 CC Gemini VII, RKV.

145:51:23 C Go ahead, RKV.

145:51:25 CC Roger. We'll discuss the suit situation with you over Tananarive.

145:51:30 C How's everything on the RKV tonight?

145:51:32 CC Real nice.

145:51:34 C That's good. How far out to sea are you all?

145:51:37 CC You won't believe it. We're anchored 35 miles off the coast. 180 feet of anchor.

TANANARIVE

146:04:30 CC Gemini VII, Gemini VII, Houston CAP COM. How do you read?

CONFIDENTIAL

CONFIDENTIAL

447

- 146:05:17 CC Gemini VII, Gemini VII, Houston CAP COM. How do you read?
- 146:05:28 C Houston, Gemini VII. Read you loud and clear.
- 146:05:31 CC Roger. Gemini VII. We copied your comments over RKV. We would like to reiterate that we feel it is important for you to change suit configurations at this time.
- 146:05:50 C Let me finish bringing my position on this. That means three changes in 24 hours. Me out and then ...
- 146:05:58 C ... I would rather wait for you ... than make it up. It's no easy task to change suits in the spacecraft.
- 146:06:09 CC Frank, I think you may be confused on your days here. The rendezvous is not tomorrow, it is the following day.
- 146:06:25 C Roger. But we thought we'd get suited tomorrow night and get ready for the rendezvous, so we didn't have to fool around Sunday morning.
- 146:06:31 CC What we have in mind is for Jim to put on his suit now, and you to get out of yours at this time. And then in preparation for the rendezvous, you would get back in.
- 146:06:46 CC And not until Sunday morning, Frank.
- 146:06:51 C Roger. If that's what you want, we'll do it, but I sure would rather just stay the way we are. Since we put this Pump A on, I'm cool and comfortable, and I'm not kidding you, it's tough to get in and out of the suit, especially for Jim.
- 146:07:04 CC Frank, let's - I think you understand what's going on down here, and the only way I feel that we're going to get both of you out of the suits is to have you get out and Frank - and Jim get back in again.
- 146:07:23 C Aye, aye, sir. We'll do it. If you want us to, that's it. We'll do it. I just wanted to explain our position. But we'll change tonight.

CONFIDENTIAL

CONFIDENTIAL

146:07:29 CC We understand completely, Frank.

146:07:32 C Okay, thank you.

146:07:34 CC We hope you do.

146:28:28 P ... saw a blue haze by air on the right ... Telescope with the blue filter in. I can see a definite blue layer around the earth, but it's the same whitish haze layer that we see during the day without a filter. It - the haze gets thinner as it gets towards the sky. I cannot see any special blue band around other than what we normally see as white light during the ... whitish blue during the ...

146:29:20 P Okay.

146:29:22 C Okay. You want to write in there then later on?

146:29:26 P Yes.

146:29:28 P Okay. Let me get into my suit.

146:29:31 C Let me get out of mine first. Let's get all the stuff squared away.

146:29:33 P Okay. ... planning to do it?

146:29:36 C Well - -

146:29:38 P Okay. First of all I have to take a tinkle.

146:29:40 C A tinkle?

146:29:43 P I have to urinate. Let's power-down the spacecraft, okay?

146:29:45 C Let's do. Let's power this son of a gun way down and not touch it for the rest of the night.

146:30:12 C What do you say about that ...

146:30:16 C Let's see, at 11:46 I have a crew status report so we might as well - -

CONFIDENTIAL

CONFIDENTIAL

449

COASTAL SENTRY QUEBEC

146:30:35 CC Gemini VII, CSQ CAP COM. We have you GO on telemetry. We have nothing to pass this pass. Standing by. You need not acknowledge.

146:30:43 C Thank you, CSQ.

146:30:52 P Here.

146:30:57 P It ought to be ...

146:31:26 C ... Wasn't it?

146:31:28 P ... juice. We have to get over there ...

146:31:38 C Roger. ...

146:31:40 P Roger. ...

146:35:52 P Couple of comments. It's very difficult to operate 20-80 system like we have on-board as compared to the 50-50 one which we practiced with. When we try to take star shots or even the same stars-to-same-stars, since the light that is attenuated by the 20 percent is - cuts out all the - any star except Sirius completely. As far as the same star-to-same star, the only good star we could use was Sirius or perhaps something like Nodus. But any one like Aldebaran, Betelgeuse, those stars were too dim to take calibration shots of. It was also true on star-to-star. For instance, I tried Rigel to Sirius and had to use the 20 percent light, gathering the 20 percent on Sirius and 80 percent on Rigel. I could not use the other way around, nor can I use any other two stars. For instance, I tried Rigel and Betelgeuse for a while. I couldn't use those two. This was taken about 146.

146:41:59 P Lovell is dumping urine at 146:42.

HAWAII

146:46:09 CC Gemini VII, Hawaii CAP COM.

CONFIDENTIAL

CONFIDENTIAL

146:46:15 P Go ahead, Hawaii. This is VII.

146:46:17 CC Okay. We're showing you GO here on the ground.
How are you doing?

146:46:20 P Oh, we're doing great. We're doing great.

146:46:22 CC Okay. We've got a valid oral temp. Stand by for
Surgeon. Waiting for your blood pressure.

146:46:29 P Roger. Blood pressure coming down now.

146:46:42 CC Your cuff is full-scale.

146:47:39 CC We have a good blood pressure. Standing by for
your exercise.

146:47:43 P Exercise started now.

146:48:10 P Exercise finished. Blood pressure coming down.

146:48:22 CC Your cuff is full-scale.

146:49:14 CC We have a good blood pressure. Standing by for
your food, water and sleep report.

146:49:30 C Hawaii, Gemini VII - -

146:49:38 CC Gemini VII, this is Hawaii Surgeon. Standing by
for your food, water and sleep report.

146:49:42 C Roger. The Command Pilot's had, to date, a total
of 486 ounces of water. We had an additional meal
since the last time. Day 6, Meal B, but he did not
eat three egg bites. Had a total in Column 5 of
15, total in Column 6 of 3.

146:50:08 C The Pilot's had a total of 417 ounces of water.
He had Meal A or Day 6, Meal B, but did not
eat two egg bites. And he's had 15 in Column 5
and 2 in Column 6.

146:50:24 CC Roger, Gemini VII.

146:50:34 CC Gemini VII, Hawaii. We have nothing further.
We'll be standing by.

146:50:38 C Thank you.

CONFIDENTIAL

CONFIDENTIAL

451

ROSE KNOT VICTOR

147:18:36 CC Gemini VII, RKV. We copy your oral temp. Please effect a blood pressure.

147:18:59 CC Gemini VII, RKV Surgeon. We did not get full-scale.

147:19:06 CC We have full-scale.

147:19:49 CC Gemini VII, we have a valid blood pressure. Standing by for your exercise.

147:19:59 P MARK on the exercise.

147:20:28 P Blood pressure coming down.

147:20:30 CC Roger.

147:20:35 CC Your cuff is full-scale.

147:21:16 CC Gemini VII, we have a valid blood pressure. Has there been any change in your food and water status since Hawaii?

147:21:27 P This is VII. Negative ...

147:21:30 CC Roger.

147:21:34 CC Surgeon out.

COASTAL SENTRY QUEBEC

148:03:48 CC Gemini VII, CSQ CAP COM.

148:03:52 C This is Gemini VII.

148:03:55 CC Roger. I have your PLA update when you're ready to copy.

148:04:00 C Stand by.

148:04:03 CC Say again.

CONFIDENTIAL

CONFIDENTIAL

148:04:05 C Stand by a minute, please.

148:04:07 CC Roger. I also want to get a propellant quantity reading, and an OAMS fluid pressure reading.

148:04:17 C Propellant quantity is 26 percent. OAMS fluid 1300.

148:04:28 CC I copy. 26 percent and 1300.

148:04:31 C Roger.

148:04:37 CC Also, you should have a radio check for a Number 6 pass over Hawaii this revolution.

148:04:44 C Thank you.

148:04:49 C I'm ready to copy.

148:04:51 CC Okay. The RE ... 400K on all these areas is the same and the time is 21 plus 50. That's the RE 400K. Same for all areas.

148:05:07 C Thank you.

148:05:11 CC Okay. Area 95-3: 150:52:55; Area 96-3: 152:28:20; Area 97-Bravo: 154:04:53; Area 98-Delta: 155:02:28; Area 99-Delta: 156:38:03; Area 100-2: 158:11:32. Just broke into the hundreds.

148:06:16 C Roger.

148:06:18 CC Area 101-2: 159:47:33; Area 102-1: 161:15:54; Area 103-1: 162:51:24. The weather is good in all areas except 96-3, weather is marginal. Do you copy?

148:06:55 C Roger. We copy.

148:06:59 CC All systems are GO here on the ground. That's all we have. We're standing by.

148:07:04 C Thank you very much.

148:07:06 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

453

148:07:08 C You might ask Houston what plans they have on this fuel cell 2C ... stacked up again.
148:07:15 CC Roger. Will do.
148:08:12 CC Flight advises that they will talk with you about the Stack 2-Charlie over Hawaii, or the RKV.
148:08:19 C Thank you.

HAWAII

148:22:36 CC Gemini VII, Hawaii CAP COM.
148:22:39 C Come in, Hawaii. Gemini VII.
148:22:41 CC Roger. We show you GO on the ground. What is your status in the spacecraft?
148:22:47 C We're GO now. Jim is in the suit, and I'm out of it.
148:22:51 CC Roger.
148:23:08 C Hawaii, Gemini VII. I have a flight plan report if you're ready.
148:23:11 CC Roger. Standing by.
148:23:14 C Roger. We made one more frame of dim-light photography today. We've used 20 frames on the third night and these have Magazine C of S0217, and one additional tape cartridge.
148:23:33 C On D-9, Sequence 4, we used - we completed it, but we used two different stars, Rigel and Sirius, and we did the third part of that Sirius and Sirius.
148:23:48 CC Roger.
148:23:52 C We also sighted a brilliant aurora south of Australia, but were not able to photograph it.
148:24:05 C We were unable to get the readout picture of Apollo

CONFIDENTIAL

CONFIDENTIAL

Landmark 85 because of cloud cover. That's about it for today.

- 148:24:18 C Everything else that has been scheduled has been accomplished and I won't report on that because you have all that already.
- 148:24:25 CC Roger. I have some information for you if you're ready to copy.
- 148:24:33 C Go ahead.
- 148:24:34 CC Roger. Your status on the electrical and fuel cell will be passed to you over the RKV prior to your sleep period.
- 148:24:43 C Thank you.
- 148:24:45 CC The values for you to hold on your fuel cell hydrogen will be passed to you over RKV.
- 148:24:52 C Thank you.
- 148:24:54 CC You will also have a UHF 6 over the RKV.
- 148:24:58 C Roger.
- 148:25:00 CC And if you have a little more time, I can give you your OAMS status.
- 148:25:03 C Go ahead. We have plenty of time.
- 148:25:06 CC Okay. You have a - 56 pounds of fuel remaining. You have more oxidizer than you can possibly use. This means that you have an actual 31 percent remaining and your on-board indications should be 27 percent. That's two seven percent. We're evaluating what we want you to try to accomplish between now and the end of the mission and we'll brief you on that tomorrow.
- 148:25:35 C Roger. Will you tell them that we prefer to save 2 pounds a day for attitude so we don't have to drift the last few days of the mission? Two pounds a day for attitude, please.
- 148:25:50 CC Roger. That is already included in your budget.

CONFIDENTIAL

CONFIDENTIAL

455

148:25:53 C Thank you.
148:26:07 C Are you still cloudy down there, Hawaii?
148:26:10 CC That's affirmative.
148:26:12 C When does it clear up down there?
148:26:14 CC Seldom. It's been raining and cloudy for almost two weeks now.
148:26:19 C That's too bad. We sure want to get that laser in.
148:26:23 CC Oh. Maybe we can make it tomorrow or so.
148:26:26 C We'd like to.

ROSE KNOT VICTOR

148:54:59 CC Gemini VII, RKV.
148:55:09 P VII here.
148:55:10 CC Roger. We're standing by for your purge.
148:55:14 P Roger. Coming down to you at this time.
148:55:24 CC Would you place your Quantity Read switch to ECS O₂?
148:55:28 P Roger.
148:55:59 CC FUEL CELL O₂.
148:56:11 CC FUEL CELL H₂.
148:56:20 CC Would you turn the Quantity Read switch to OFF?
148:56:25 CC I have a map update for you when you're ready to copy.
148:56:30 C Stand by, please.
148:56:39 C Go ahead, please, RKV.

CONFIDENTIAL

CONFIDENTIAL

148:56:42 CC Node: 150:57:26; Rev 95; 44.3 degrees east; right ascension; Time, 10:43:13.

148:57:05 C I have it, thank you.

148:57:07 CC Your next fuel cell purge after you wake up will be at Carnarvon on Rev 100, at a GET of 159:18.

148:57:19 C Have that.

148:57:24 CC We'd like to pass along the bedtime rules for the cryogenic pressures. We'd like your ECS O₂ heaters to be off. Fuel Cell O₂ Heater to AUTO, and your Fuel Cell H₂ Heater off. We'd like you to pump up the fuel cell H₂ to 510 psi, and your minimum for tonight will be 380.

148:57:52 C Roger. Three eight zero.

148:57:58 CC Would you give us a count off the water gun?

148:58:02 C Stand by one.

148:58:10 C Water gun now reads 2402.

148:58:13 CC Roger. Could you look in your log and see what your figures are for total water consumption for both the Pilot and the Command Pilot?

148:58:23 P Roger. Stand by, please.

148:58:28 CC Reason we want these figures is - it gives us a real good handle on the efficiency of the fuel cells.

148:58:35 C Roger.

148:58:52 C Okay. The Pilot's used 410 - 417 ounces of water.

148:58:57 CC Roger.

148:59:04 C Command Pilot, 486.

148:59:06 CC Roger.

148:59:10 C ... got the count off the gun is most accurate.

CONFIDENTIAL

CONFIDENTIAL

457

148:59:14 CC Roger.

148:59:17 CC Now, will you place the BIO MED Recorder Number 2 to CONTINUOUS?

148:59:20 C Say again.

148:59:22 CC BIO MED Recorder Number 2 to CONTINUOUS.

148:59:25 C Roger.

148:59:28 C Do you have any additional reading on the water, Jim?

148:59:31 CC Negative. Go ahead and give it to us.

148:59:33 C 628.

148:59:35 CC 628.

148:59:36 C Negative. 528. Over.

148:59:38 CC Roger. 528.

148:59:42 CC We'd like to give you a report on your fuel cell status.

148:59:46 C We'd be happy to hear it.

148:59:48 CC Okay. After the open-circuit check is Stack 2C. It is again picking up more than its share of the load. The present theory is it probably will become saturated with water again sometime during the duration. The telemetry will indicate this approximately 10 hours before it is necessary to go open-circuit on that cell. Now, this should prevent ground controllers from having to wake you up during a normal sleep period.

149:00:13 C Would you please channel back to Houston that we would be happy to wake up on any sign in order to take care of that cell.

149:00:20 CC We figured you would.

149:00:22 CC Okay. The Cryo status telemetry indicates your trial usage rate is still less than nominal. So

CONFIDENTIAL

CONFIDENTIAL

you're in good shape there.

149:00:30 C Very good.

149:00:31 CC Roger. ECS O₂ is expected to vent at 400 hours and the fuel cell hydrogen tank is still expected to vent after 300 hours.

149:00:41 C I'll take a bet on that one.

149:00:44 CC Okay. Your Cryo quantity expected at the end of 14 days will be ECS O₂, 40 percent; fuel cell O₂ will be 33 percent; and fuel cell H₂, 39 percent.

149:00:56 C Roger.

149:01:02 CC Say it again. I didn't copy that.

149:01:25 CC How'd your suit exchange go?

149:01:46 CC You're coming in awfully garbled, Gemini VII.

149:18:42 C Borman about to dump urine at 149:18.

COASTAL SENTRY QUEBEC

149:42:38 CC Gemini VII, CSQ CAP COM.

149:43:01 P This is VII. Go ahead.

149:43:03 CC Roger. We want to mention to you to bring your fuel cell H₂ up to 510. We'd like to look at it on the ground before we start your sleep period.

149:43:16 P Roger. We're in AUTO heat right now. I guess it's coming up.

149:43:19 CC Roger.

149:45:35 P General note to Dr. Chance: I have in my hand tuna salad, Serial Number FC565, with the tuna so dry at the spout end where you eat at, that you can't possibly force anything through it. Out.

159:06:17 C What?

CONFIDENTIAL

CONFIDENTIAL

459

159:06:22 C Not that one.
159:08:05 P Boy, this window was cold!
159:08:19 C Yes, I agree.
159:08:41 P Yes, that points a good point.
159:08:48 C Turn on the recorder, will you?
159:08:51 P Jim's taking a picture of what we think at ...
159:08. Magazine C, 22, 23, 24 on that last
picture at 159:08. At 159:41 we have another
CST first. Chicken with gravy for breakfast.
159:09:35 P Lovell dumping urine at this time.
159:09:37 P Dumping urine at this time.

CARNARVON

159:18:41 CC Gemini VII, Carnarvon.
159:18:50 C Good morning, Carnarvon. This is VII.
159:18:52 CC Good morning to you. All right, we have a fuel
cell purge for you this morning, if and whenever
you're ready.
159:19:01 C Stand by a second.
159:19:25 C Purge coming down.
159:19:27 CC Roger.
159:22:34 P How's the weather down there, Carnarvon? It looks
like a lot of lightning down there.
159:22:38 CC Yes, we have a little storm, looks like, up north
of us here.
159:22:46 C We went to B pump on the primary loop last night
at 154:32:25.
159:22:54 CC Roger. Copy, Gemini.

CONFIDENTIAL

CONFIDENTIAL

159:23:03 C For some reason, when we woke up this morning, we were tumbling much faster than we ever had been before, and our cabin wall temperatures and fuel temperatures were about 20 degrees colder than they've ever been before. We were chilly.

159:23:16 CC Roger. Copy.

159:51:14 C Borman about to dump urine at 159:50.

159:58:40 P Note 2 to Dr. Chance: at 160:11; second rye and beef sandwiches; crumbs all over the cockpit. Could not even control it.

TEXAS

160:10:58 CC Gemini VII, Houston. How do you read?

160:11:01 C Good, Charlie. How do you read?

160:11:03 CC Morning, Frank. How are you this morning? I'm reading you five-square. Loud and clear.

160:11:18 CC Gemini VII, Houston.

160:11:29 CC Gemini VII, Houston.

160:12:00 CC Gemini VII, Houston.

160:12:04 P Go ahead, Houston.

160:12:06 CC Good morning. How are you this morning?

160:12:09 P Fine. The beef pies are delicious.

160:12:12 CC Very good. How was your night?

160:12:22 CC Gemini VII. How did you rest?

160:12:28 P Not too good last night. Not as good as the night before.

160:12:37 CC Your systems look good down here. How are they up there?

CONFIDENTIAL

CONFIDENTIAL

461

160:12:42 P They look pretty good from here. The temperature
...
160:14:32 C Another note for Dr. Chance: I agree it looks like
we're in a snow storm with crumbs from the beef
sandwiches. At 300 dollars a meal! I think you
can do better than this. Okay. At 160:29:
taking pictures of some interesting terrain features
over Africa.

CANARY ISLANDS

160:16:15 CC Gemini VII, Canary CAP COM, Com check. How do
you read?
160:16:19 P Read you loud and clear, Canary.
160:16:21 CC Okay, fine. Would you place your Quantity Read
switch to ECS O₂, please? Also would like a
readout on OAMS propellant quantity.
160:16:33 P Roger.
160:16:37 C 27 percent on the OAMS.
160:16:47 CC Roger. Can I get a quantity and pressure on
ECS O₂?
160:16:52 C Roger. Quantity is about 78 percent. Pressure is
690.
160:16:59 CC Roger. I copy 78.
160:17:03 C Roger.
160:17:04 CC Okay, Quantity Read switch to FUEL CELL O₂.
160:17:07 C 66 percent, 660.
160:17:12 CC Copy.
160:17:14 C Pardon me - that's 760.
160:17:17 CC 760.

CONFIDENTIAL

CONFIDENTIAL

160:17:20 C Fuel Cell H₂ is 72 percent, at 450.

160:17:26 CC Okay, hold it there for a minute.

160:17:40 CC Okay, Quantity Read switch to OFF, please.

160:17:43 C Roger.

160:17:44 CC Okay. We'd like Fuel Cell O₂ Heater switch to OFF also.

160:17:49 C It's off.

160:17:51 CC Okay.

160:17:53 C Canary, we have something for the systems people to work on.

160:17:56 CC Say again.

160:17:58 C I say, we have something for the systems people to work on.

160:18:00 CC Okay, go ahead. Ready to copy.

160:18:02 C We woke up - we were cold most of the night. When we woke up this morning, we were tumbling much more rapidly than we ever have been before and the cabin wall temperatures were 20 degrees lower than they've been running. The windows were steamed up and it was very cold in here. The suit inlet temperature I had was about the same. Right now we're running with the highest suit inlet temperature we've ever seen - 68 percent. Full warm, and we're just comfortable.

160:18:29 CC Roger.

160:18:32 C What I want to know is why.

160:18:34 CC I think it's because of your tumble rate.

160:18:38 CC Houston calling me. Stand by.

160:18:41 C I want to know why we're tumbling.

160:18:54 C I think the people on the BLUE TEAM ought to

CONFIDENTIAL

CONFIDENTIAL

463

- figure that one out.
- 160:18:58 CC Okay. Stand by. I'll try to get an answer.
- 160:19:33 CC Well, the BLUE TEAM says they believe the water boiler has reached its fill point and it's boiling off right now, causing you to tumble.
- 160:19:45 C I see.
- 160:21:46 CC VII, Canary.
- 160:21:50 C Go ahead, Canary.
- 160:21:51 CC Roger. Can you give me an estimate on your tumble rate, or the tumble rate you had this morning when you woke up?
- 160:22:08 C Stand by. We'll think about it. We stopped it right away.
- 160:22:27 C We think it was at least on the order of 10 degrees a second.
- 160:22:31 CC Okay, we copy.
- 160:22:33 C Time ... but it was very, very much greater than anything we've seen to date.
- 160:22:41 CC Roger. Copy. Okay, we have nothing else for you. The reason why we had you turn that O₂ heater switch off is we want to get a few data points on that pressure decay while the heater is off.
- 160:22:52 C Okay.
- 160:22:53 CC Roger. We'll be standing by.
- 160:22:55 C See you later on today.
- 160:22:57 CC Okay.
- 160:33:45 P Memo to ... Thank you very much for giving us the yellow pills, because we passed many hours ...

CONFIDENTIAL

CONFIDENTIAL

CARNARVON

160:52:16 CC Gemini VII, Carnarvon.

160:52:21 P This is VII. Go ahead.

160:52:22 CC Roger, Gemini VII. You're looking good here on the ground. I have a flight plan update whenever you're ready to copy.

160:52:29 P Roger. Stand by one.

160:52:51 P You may fire when ready, Carnarvon.

160:52:53 CC All right. The title is a Node: Time, 161:29:23; Rev 101; longitude 117.3 degrees west; right ascension, 10:32:55. Next item is a flight plan time line update: Change 160:00:00 to 160:17:00. Next item: Time, 161:37:11; crew status report, Command Pilot at Canaveral. The next item has been deleted. It is an MSC-12 at Time 161:55:13. That has been deleted due to clouds.

160:54:31 CC The next item is Apollo: Time, 162:09:21; Sequence Number 137; Mode 01; pitch 30 degrees down, yaw 7 degrees left. Do you copy?

160:55:01 P I have copied, Carnarvon.

160:55:04 CC Time: 162:27:19; crew status report, Pilot and PLA update at Carnarvon. MSC-12: 162:45:00; Sequence 14. Time: 163:08:25; GO/NO-GO at Texas. Time: 163:16:00; purge fuel cells after readout. MSC-12: 163:30:28; Sequence 06; pitch 30 degrees down, yaw 0 degrees. D-4/D-7: 164:03:14; Sequence Numbers 415 and 416; Mode 02. Apollo: 165:08:30; Sequence Number 94; Mode Number 03; pitch 30 degrees down, yaw 19 degrees right. Time: 165:20:00; exercise period. Time: 165:30:00; eat period. Time: 166:50:00; cabin temperature survey. Time: 167:14:43; purge fuel cells at Carnarvon. That completes the flight plan update if you copied. Any questions?

160:57:53 P Have copied.

160:57:55 CC Roger. You're still GO here. You're looking real good.

CONFIDENTIAL

CONFIDENTIAL

465

160:57:59 P Roger. Thank you.
160:58:24 CC Gemini VII, Carnarvon.
160:58:27 P Go ahead there, Carnarvon.
160:58:30 CC Does the Command Pilot - is he disconnected? We received no BIO MED T/M for the first 30 seconds.
160:58:37 P Right. We were removing the orbital flight gear and he was disconnected.
160:58:41 CC Roger. Understand.

TEXAS

161:35:28 CC Gemini VII, Houston.
161:35:35 P This is VII. Go ahead, Houston.
161:35:37 CC Hello. Houston, Gemini VII. We'd like to have your oral temperature and please await for a Mark to start your blood pressure.
161:35:45 P Roger. Understand you have a valid oral temperature.
161:35:48 CC That's affirm. But please await the blood pressure. Listen, on this next pass over the Dakar area, would you check the weather?
161:35:58 P Roger. Will do. And I have a question for you, Sir.
161:36:01 CC Roger.
161:36:03 P You gave us MSC-12, which is a Sequence 14.
161:36:10 CC Roger.
161:36:14 CC We have a flight plan update too, with regard to that, but we would like to make it after the Medical Data Pass.
161:36:21 CC Cuff is full-scale.

CONFIDENTIAL

CONFIDENTIAL

161:36:23 P Roger. Hold. We'll stand by.

161:36:25 CC Okay.

161:37:28 CC Gemini VII. We have a good blood pressure. Standing by for your exercise.

161:37:33 C MARK on the exercise.

161:38:01 C Blood pressure coming down.

161:38:04 CC Roger. We copy.

161:38:13 CC Your cuff is full-scale.

161:38:28 CC Roger, Gemini VII. We have a good blood pressure. Standing by for your food report.

161:38:37 P Roger. Stand by.

161:38:45 C Okay. Last night we had Day 5, Meal C. This morning, Day 6, Meal A. Lovell didn't eat the peanut cube. Borman didn't eat the peanut cube, or four of the peach bites. The pilot had 461 ounces of water. The Command Pilot had 536 ounces of water.

161:40:18 CC Roger. Copied your water report also. Standing by for your sleep report.

161:40:28 P Okay. Let's see. We had about 5 or 6 hours sleep last night. Not too good.

161:40:36 CC That's the same for both crewmen?

161:40:39 C Roger.

161:40:40 CC Roger. Would you give us a total count on your water gun now?

161:40:49 P Total count on water gun is 2591.

161:40:53 CC Roger. Thank you.

161:40:54 CC Now that the suit is off, we would like to try to repair the respiratory trace on the Command Pilot. We believe that the connector on the output or the lower portion of the signal conditioner has

CONFIDENTIAL

CONFIDENTIAL

467

come loose, and it's the second signal conditioner from the left. We would like the Command Pilot to have a look. See if it's loose and attempt to tighten it some.

- 161:41:16 P Roger. You're certainly in Flight Maintenance, and we'll get to work right away.
- 161:41:20 CC Roger. And in the meantime would you say the tumbling had anything to do with your lack of sleep?
- 161:41:26 P No. We didn't know we were tumbling until we woke up.
- 161:41:30 CC Roger. Understand.
- 161:41:33 P We had a - quite a drop of temperatures in the cabin last night, about 20 degrees.
- 161:41:39 CC Roger. We copy. Your rising suit inlet temperatures. I gather from a transmission over Carnarvon that the Command Pilot donned his orbital flight suit. Did he do that before the sleep period started or during?
- 161:41:53 P He did that during. He not only donned one, he donned both orbital flight suits.
- 161:42:00 CC At what elapsed time?
- 161:42:13 CC Gemini VII, Houston. What time did the Command Pilot don his - the orbital flight suits?
- 161:42:24 P About 1:55 elapsed.
- 161:42:28 CC Roger. Copy 1:55. We request that you have the Pilot report over Carnarvon whether he took exercise yesterday or not, and if so, his assessment of the results. We would also like to ask if the Pilot can get at the sternal lead sensors easily or not? Over.
- 161:42:48 C He did not take the exercise and his nose is better. He's been using the skin cream in his nose. And what do you want him to do to the lead ...?

CONFIDENTIAL

CONFIDENTIAL

161:42:59 CC We're asking if he can get at the sternal sensors easily. We've seen a decrement in the sternal EKG since donning the suit. We would like to know how hard it's going to be for him to get at those two sensors.

161:43:16 C He can reach down there and push on them. Is that what you want him to do?

161:43:19 CC Roger. Let's have a go at that.

161:43:21 C Okay. I can't find anything wrong with the leads to this amplifier.

161:43:30 CC Roger. Understand. We're still receiving a poor trace. Leave it with us for a while.

161:43:35 C Roger. What are those - what are those amplifiers doing?

161:43:39 CC The respiratory trace or impedance pneumogram. It's the second one from the left in the garment and we think it's the lower connector.

161:43:50 C It's on tight.

161:43:51 CC Roger. Would you advise what position your suit flow control valves were in during the night?

161:44:01 C Roger. They were almost all the way closed.

161:44:04 CC Roger. Copy, closed.

161:44:11 CC Gemini VII, CAP COM. I have a flight plan update for you.

161:44:16 C Ready to copy.

161:44:18 CC MSC-12: Time, 162:45:00; Sequence 14; delete.
MSC-12: Time, 164:14:00; Sequence 14; substitution for the above deletion. And again we would like to check the weather in the Dakar area on this pass. This specific area just north of the beach. We'd also like to know if you can tell us the major component of this drift you experienced during the night.

CONFIDENTIAL

CONFIDENTIAL

469

161:45:07 C No, we can't tell you that, Charlie. It was a random drift.

161:45:11 CC It was random.

161:45:14 C We blacked out completely, and when we play like in nighttime - and when we opened up - we found out we were going around and around.

161:45:21 CC I see. What control inputs did you use to stop the drift.

161:45:26 C Pulse.

161:45:28 CC You used pulse.

161:45:35 CC Do you note this drift rate is still building on you?

161:45:37 C No. It's fine now. Just like it was before.

161:45:40 CC Okay. You're not inducing any drift now at all?

161:45:44 C No. We're drifting but not rapidly.

161:45:49 CC I see. Thank you very much.

161:45:52 C Roger.

CANARY

161:55:04 C Canary, Gemini VII.

161:55:07 CC Go ahead, VII. Canaries here.

161:55:08 C Roger. We're starting to pick up a slight drop in 2C again with a down slight imbalance of the two buses.

161:55:14 CC Roger. Copy.

161:55:25 CC Roger. We noticed that down here. We're going to have to go OPEN in that 2C, but not right now.

CONFIDENTIAL

CONFIDENTIAL

161:55:32 C Okay. We just wanted to let you all on the ground know we see it.

161:55:35 CC Roger.

161:55:48 P Canary, VII.

161:55:49 CC Go ahead.

161:55:50 P Most of the ... from our crossing point - up ... north the sky is clear. The silk stratus ... right above us - right below us - I should say.

161:56:04 CC Okay. We copied.

161:56:06 P That's a typical weatherman's report.

161:56:08 CC Very good, Jim.

161:56:12 P It looks like it might rain if the sun didn't shine.

161:56:16 CC You guys are in good jolly spirits this morning.

161:56:20 C I don't know why.

KANO

162:03:35 CC Gemini VII, Gemini VII, Houston CAP COM. How do you read?

162:03:40 C Loud and clear, Houston.

162:03:43 CC Roger. Have you got a minute to talk to me or are you tied up with this Apollo Landmark?

162:03:51 C Go ahead. We can talk. Jim can talk and I can too.

162:03:55 CC Roger. We've got a sort of whistle on the line here. I'm not sure I can hear you too well. We would like to get an assessment from you regarding this tumbling, to try to establish definitely whether or not it might have been due to the water boiler venting. Are you able to tell at all -

CONFIDENTIAL

CONFIDENTIAL

471

were you able to tell at all what axis the tumbling initiated from?

- 162:04:34 P We're not sure, but we feel that it was sort of a left-yaw-type of motion.
- 162:04:42 CC Roger. As I understand it, you just found this upon waking up, and you took it out at that time and it has not started again. Is that correct?
- 162:04:56 P We haven't noticed it now. This might build up a long time. Remember that we close up here at night. It had all night to build up, but since we took it out we haven't noticed any additional buildup of it. Right now we ... GO.
- 162:05:11 CC Roger. We've got a very bad background noise here. I understand your comments though. We'd be interested in your thinking about it further and let us know if you have any additional points on it.
- 162:05:24 P Roger, Houston.
- 162:05:41 CC Gemini VII, Houston. Your HF is up if you're interested.
- 162:05:46 C Thank you.
- 162:10:11 C 162:09:21: trying to take a picture of Apollo Landmark, Sequence 137. ... obscured by clouds.
- 162:28:02 CC Gemini VII, Carnarvon.
- 162:28:05 C This is VII. Go ahead.
- 162:28:06 CC Roger. This is a crew status report on the Pilot. We haven't received a temperature. Do you have the probe in?
- 162:28:41 CC Gemini VII, Carnarvon.
- 162:28:43 C Go ahead.

CONFIDENTIAL

CONFIDENTIAL

162:28:44 CC While we're waiting on the temperature and blood,
do you want to copy a block update?

162:28:48 C Roger.

162:28:51 CC Okay, this is Area 104-1: 164:27:03.

162:29:34 CC Area 107-4: 170:30:56. Area 108-3: 171:47:37.
Area 109-3: 173:23:17. Area 110-3: 174:58:54.
REP of 400 feet; 21 plus 50 for all areas. Did
you copy?

162:30:27 C Roger. Thank you.

162:30:28 CC Roger.

162:30:34 C Have you got the temperature yet, Carnarvon?

162:30:36 CC Roger, we have your temperature. I'll turn you
over to our Surgeon.

162:30:44 CC Gemini VII, this is Carnarvon Surgeon. We're
ready for your blood pressure.

162:30:51 C Blood pressure coming up.

162:30:58 CC We're getting - your cuff is full-scale.

162:31:24 CC Gemini VII, the Pilot - your cuff is not bleeding
down.

162:31:30 CC There we go.

162:32:15 CC Gemini VII, we have a valid blood pressure.
Give us a Mark before you start your exercise.

162:32:21 P MARK.

162:32:50 P Blood pressure coming down.

CONFIDENTIAL

CONFIDENTIAL

473

- 162:32:58 CC Your cuff is up.
- 162:34:35 CC Gemini VII, Carnarvon. You're still looking good here on the ground. We'll be standing by if you need us.
- 162:34:42 P Roger. We're noticing that 2C is slowly, slowly decaying. Do you agree with us?
- 162:34:53 C 2C on the fuel cell.
- 162:35:05 CC Roger. We're keeping an eye on it, Gemini VII. The - it has - we have been seeing it going down. But you have turned off your Primary A pump?
- 162:35:17 C Roger, that's affirm.
- 162:36:19 CC Gemini VII, Carnarvon.
- 162:36:22 C VII, Carnarvon.
- 162:36:24 CC The Flight Director says that you're becoming philosophical with those kinds of words.
- 162:36:35 C That's a nice compliment from the Flight Director. Thank you.
- 163:02:54 P The screwdriver has been invaluable in repairing Helmet screws that have come off, camera track screws that have come off, and fouled up the camera, etc.

CONFIDENTIAL

CONFIDENTIAL

CANTON ISLAND

163:11:06 CC Gemini VII, Houston.

163:11:09 C Go ahead, Houston. Gemini VII.

163:11:13 CC Roger. Be advised you're GO for 119-1.

163:11:15 C Thank you, Ed.

163:11:17 CC Roger. You know you're all down hill from this one out.

163:11:20 C Yes, that's what we just figured out.

163:11:22 CC Roger. How about a read back on all your quantities?

163:11:26 C Roger. Fuel - the only thing we have any abnormalities in is the Fuel Cell 2C. The main batteries are all okay, 3 volts. Fuel cell stack readouts: 1A, 3.0; 1B, 3.5; 1C, 3.0; 2A, 2.5; 2B, 2.5; 2C, 3.5 instead of 3, and is now decreased to 3 on 2C. Main bus voltage, 27; RCS A, 2900; temperature 75 degrees; RCS B, 3000, and temperature is up to 90 degrees on Allen; Left-Hand Secondary O₂, 5400; Right-Hand Secondary O₂, 5300.

163:12:15 CC Roger. Sounds real good, and be advised the OAMS cutoff for the day is 23 percent. You'll not get to that under normal usage, but it's just on to say the proper amount. You're really being an old miser there with that fuel.

163:12:29 C Roger. For the people who are concerned about the water boiler and wondered about it, we are getting venting out the left side here. We can see it now, quite a good amount.

163:12:39 CC Good. That confirms what we were thinking down here, and we've got some further thoughts on that for you later on.

163:12:46 C Roger. I think ... difficult to determine which way we're rolling as we - we stay buttoned up in here for 10 hours and then when we awakened we

CONFIDENTIAL

CONFIDENTIAL

475

just had a very random type of oscillation.
Mostly yaw-left, though.

- 163:12:59 CC Right. Understand. You're yawing left. We looked at your control inputs and they appeared to be mostly yaw-right to take it out with some pitch.
- 163:13:09 C Right.
- 163:13:10 CC Do you want to go ahead with the fuel cell purge?
- 163:13:13 C Stand by, here it comes through, Jim. Hey, Jim, wake up!
- 163:13:17 P Fuel cell purge coming down.
- 163:13:19 CC Roger.
- 163:13:25 CC Stand by for T_R , Gemini VII.
- 163:13:28 C Stand by.
- 163:13:37 C T_R received.
- 163:13:42 C For your information, we were not able to accomplish the Apollo Landmark 137. Clouds over and light.
- 163:13:48 CC Roger. Understand.
- 163:14:13 C And another thing that I was wondering about. We're running with the RCS heaters on AUTOMATIC all the time. Is this what they wanted?
- 163:14:21 CC That's affirmative.
- 163:14:22 C Okay. Fine and dandy.
- 163:14:35 CC That's a good spot in the flight plan when it's starting down hill from there, isn't it?
- 163:14:40 C It is in this one.
- 163:14:41 CC You bet! You are all really doing a great job.

CONFIDENTIAL

CONFIDENTIAL

163:14:49 C Thank you. The best decision made was when Mr. Kraft ordered me to get out of that suit.

163:14:54 CC We thought it would be.

163:14:59 CC You just made his whole day.

163:15:02 C Listen, he made mine all night and day. Lovell's not commenting.

163:15:08 CC We had some interesting exchanges of bets in here when you put both flight suits on.

163:15:16 CC Gemini VII, Houston Flight. Jim, how about telling us how it is back in the suit.

163:15:23 P Are we a UHF 6 pass?

163:15:26 CC Negative.

163:15:29 P It's horrible, believe me! I would much rather be out of this suit than in it.

163:15:36 CC Give me a little more verbal description.

163:15:39 P Roger. It's mainly - I'm fairly comfortable as far as temperature goes, because the temperature did drop. It's just the restrictedness of not being able to move around. The suit holds you down quite a bit. I think that Frank will agree, now that he's out of his suit, that he has much more leeway. He's much more free to move and it's a lot easier to do things.

163:15:59 CC Roger.

163:16:03 C Seriously, no kidding on this suit business. You've got to remember we've got a lot lighter and better suit for a long duration than the other ones. I don't see how we can plan any long-duration flights in even this light-weight suit.

163:16:18 CC I think GT-V crew would sort of agree with that.

163:16:24 P Roger.

CONFIDENTIAL

CONFIDENTIAL

477

- 163:16:31 C Can you give us any idea when you're going to open-circuit 2C again?
- 163:16:35 CC I think we want to wait awhile there on that, Frank, until we establish this trend again.
- 163:16:42 C Roger.
- 163:16:43 CC Understand your report at this point was 3.5 amps. Is that correct?
- 163:16:49 C We prepared that report about 10 minutes ago. It's now down to about 3 amps in the cockpit, but it's difficult to tell because you always made a tape dump and so on. It's right around between 3 and 3½.
- 163:17:01 CC Roger. Frank, what we're considering there is open-circuiting the whole cell.
- 163:17:07 C Roger.
- 163:17:37 C ... things go real good at the Cape?
- 163:17:40 CC Roger. Looking real good.
- 163:17:44 CC Yes, they're still ahead of schedule there and we're going to support their pad test here in about 2 hours.
- 163:17:50 C Roger.
- 163:18:03 P Purge complete, Houston.
- 163:18:06 CC Roger. Stand by for Surgeon.
- 163:18:09 CC Gemini VII, this is Surgeon. Could you give me a little bit of description about what you think your general condition is this morning, and particularly as to how you think you are as far as rest status and fatigue? We are interested in this particularly because we're trying to plan something for tonight so that we've got you in shape for this rendezvous, which is going to go into your sleep period tomorrow night.

CONFIDENTIAL

CONFIDENTIAL

163:18:36 C Chuck, I think we're in pretty good shape. We are a little sleepy at times because it is difficult to sleep that full 10 hours. We do catnap during the day frequently, though.

163:18:47 CC You are getting some good catnaps in then?

163:18:49 C Right.

163:18:51 CC Very good.

163:18:54 CC Was there any moisture in the spacecraft that you could tell last night when you got this temp down so low?

163:19:02 C Both windows were not frosted, but fogged over.

163:19:07 CC Do you think that had anything to do with helping to clear this nasal business? You sound better this morning.

163:19:15 C Think that a little water did help a lot. As a matter of fact, I've been moistening towels in here and putting them over my nose and rubbing my face with them. So has Jim.

163:19:25 CC Very good. Jim, we've pretty well lost that sternal lead on you. Have you tried pressing the sensors at both the top and the bottom of the sternum there?

163:19:40 P Roger. I'll try it again.

163:19:42 CC Okay.

163:20:08 P Any luck, Surgeon?

163:20:10 CC Negative, Jim. That doesn't seem to help it very much. I think we are not going to be able to do much with it until we can get you out of that business to look at it, so we'll just ride it along here now. We got one good lead on you, though, and we've got good respiratory trace and, Frank, we've got two good leads. His respiration trace still is not very good, and that "fixit" we tried didn't seem to work, so you might just check yours, Frank, and make sure that everything is good there. It

CONFIDENTIAL

CONFIDENTIAL

479

can't be the sensors on you because your auxiliary lead is very good.

- 163:20:48 C Roger. Both sensors are tight, and the amplifier is tight, also.
- 163:20:55 CC Very good. Well, I'd just leave it alone then.
- 163:20:59 C Roger.
- 163:21:32 CC Gemini VII, this is Surgeon. We're thinking of just sleep - slipping this sleep period an hour tonight, have you start an hour later and have it go a couple of hours longer tomorrow morning, and have you try and fit into the program that way so that you will be ready to go a little bit later tomorrow night. Does that sound agreeable to you?
- 163:21:53 C Roger. That's fine with us.
- 163:21:55 CC Very good.
- 163:22:13 CC Gemini VII, Houston.
- 163:22:15 C Go ahead.
- 163:22:16 CC How'd you come on the dim-light work?
- 163:22:20 C We've taken a couple of pictures of the ... We had a good shot of the ... yesterday, but by the time we got around again it was gone.
- 163:22:28 CC Yes, I think you'll find the only target of opportunity is when they're up.
- 163:22:34 C Roger. We didn't have the fuel to use it.
- 163:22:37 CC Right. If we see anything down here that is particularly - we feel would be particularly worthwhile for you, we'll give you an update on it.
- 163:22:44 C Thank you. Hey, listen, Jim and I really appreciate the - all the efforts everybody - it's really been great. Everybody on the ground has been really helping out. I wish you'd tell them all.

CONFIDENTIAL

CONFIDENTIAL

163:22:56 CC Listen, effort's all up there. You're making it as smooth as silk for us.

CANARY ISLANDS

163:30:36 CC Gemini VII, Canary CAP COM. Com check. How do you read?

163:30:40 C Loud and clear, Canary.

163:30:42 CC Okay, we have nothing much for you except we'd like the humidity readout within the next pass. You can relay it over the next stateside contact.

163:30:45 C Did it change contrast at all, Jim?

163:31:01 P No. I can't even tell the color, Frank.

163:31:04 C Okay. ...

163:31:19 C Thank you.

163:31:46 P 27.

163:31:48 C Yes.

163:31:50 CC Okay, we'll be standing by.

163:32:22 C Okay. Did you get it?

163:32:23 P Yes.

163:32:27 C Never even changed color?

163:32:29 P No. ...

163:32:30 C Why don't you tell Canaries that?

163:32:34 C Okay. Now we've had this trouble with this photometer ever since we got it. I believe it's defective.

163:32:36 P Have you ... in the report?

163:32:39 C It's all on the recorder. Everything we did.

CONFIDENTIAL

CONFIDENTIAL

481

- 163:32:42 C Canaries, Gemini VII.
- 163:32:44 CC Go ahead, VII.
- 163:32:45 C We attempted Area C-12. The land ... looked good through the clouds. However, we had no color change on the reticle again.
- 163:32:58 CC Okay. We copy.
- 163:33:00 C ... the day selected and calibrate down.
- 163:33:06 CC Say again your last.
- 163:33:07 C To tell color ... against a sort of a tan, pinkish area such as the western part of Africa here. Would you relay that to Houston, please?
- 163:33:20 CC Okay. Will do.
- 163:33:21 C Would you also tell them, please, that this photometer is defective?
- 163:33:26 CC Okay.
- 163:33:30 CC Flight Rogers that.
- 163:34:34 P Okay. This is MSC-12, 163:34. Comments after the task has been completed: visual contrast was great, the water a deep blue, the land area a pinkish tan - the desert area of western Africa. Apollo Landmark features: over the area we were at, there was a small point of land to the north, a light on the camera, which has been recorded. Other than that, it is just another smooth coastline. Cloud cover: there was some cloud cover to the left. I attempted to use a photometer on the clear land that was further to the north. There was window glare and there's also a deposit on my window, which might have some effect on the recordings. Continue with the MSC-12: the gain wheel was left in the FULL-UP position - full clockwise position - and the color did not change.

KANO

163:37:55 CC Gemini VII, Gemini VII, Houston. Do you read?

CONFIDENTIAL

CONFIDENTIAL

163:37:59 C Loud and clear, Houston. Go ahead, please.

163:38:02 CC We want you to delete the next MSC-12 activity for the time being. We want to look at the data on the next tape dump from this one you just did. We'd like you to put the instrument away without changing the calibration setting.

163:38:23 C Roger. The calibration setting was set in a FULL-UP position, since it never changed colors. Jim just rotated it full-up, and so we have a very ready source where it was.

163:38:35 CC Roger.

163:40:13 C Correction, D-4; correction D-12; MSC-12 at 163:30:28; slightly cloudy below.

163:40:50 C Houston, Gemini VII.

163:40:59 CC Go ahead, VII.

163:41:04 CC Go ahead, Gemini VII.

163:41:06 C Fuel Cell 2C stack is now down to 2 amps and we're getting a 2-amp split, the main bus amps.

163:41:16 CC Roger.

163:41:27 CC Okay. We'll probably give it an open-circuit at Carnarvon this time, VII.

163:41:33 C Roger. Thank you.

163:41:35 CC We'll be in touch with you at Tananarive also if necessary.

163:41:38 C Roger.

TANANARIVE

163:51:13 CC Gemini VII, Houston. Do you read?

163:51:18 C Loud and clear, Houston. How me?

CONFIDENTIAL

CONFIDENTIAL

483

163:51:20 CC Roger. You're also loud and clear. Could you give us a reading on Stack 2C again, please?

163:51:29 P We're reading about 2 amps on Stack 2C.

163:51:32 CC Roger. Understand. You're still maintaining 2 amps.

163:51:39 P Roger. Closed circuit of voltage is 28 volts.

163:51:45 CC Say again. That's the bus voltage, 28 volts?

163:51:53 P Stack voltages. 2C stack voltage is 28 volts.

163:52:01 CC Roger. Is that the bus voltage, or did you open-circuit?

163:52:06 P No, that's the bus voltage. No open-circuit.

163:52:09 CC Roger.

163:52:36 CC Gemini VII, Houston.

163:52:46 CC Gemini VII, Houston. Do you read?

163:52:49 P VII. Roger.

163:52:52 CC Our present plans are to turn off that section at Canton with a power switch and let it be open-circuit from there to the US, and then we'll turn it back on and observe how it reacts with that.

163:53:15 P Understand. You plan on turning off the second section open-circuited Power switch at Canton and leaving it off until we get to the States. Is that correct?

163:53:25 CC Roger.

CARNARVON

164:04:38 CC Gemini VII, Carnarvon CAP COM.

164:04:41 P Go ahead, Carnarvon. This is VII.

CONFIDENTIAL

CONFIDENTIAL

164:04:43 CC Roger. We are receiving ACQ-AID beacon and we were expecting D-4/D-7. Is there any problem?

164:04:56 P We don't have a schedule yet, Carnarvon. Stand by, we're checking our log now.

164:05:01 CC Roger.

164:05:06 P We thought it was later. We thought it was 30, but it is 03.

164:05:10 CC All right.

164:05:20 CC Gemini VII, Carnarvon. We have nothing else for you this pass. You're looking good here on the ground. We're standing by.

164:05:26 P Roger. Could you have them schedule that for the next pass, please? It's our fault.

164:05:33 CC Roger. That's no sweat. They say Texas will take care of it.

164:05:37 P Thank you.

164:06:20 CC Gemini VII, Carnarvon. Would you give us another readout on 2C, please?

164:06:25 P Roger. Stand by.

164:06:32 P We're reading about $2\frac{1}{2}$ amps, as close as I can read it.

164:06:37 CC Roger. Thank you.

164:06:44 CC Okay. Flight says that makes us feel better. It agrees with the ground readings quite closely.

164:06:51 P Roger.

CANTON

164:24:05 CC Gemini VII, Houston.

164:24:08 P This is VII. Go ahead.

CONFIDENTIAL

CONFIDENTIAL

485

- 164:24:12 CC We'd like to get ready for turning off the Section 2 Power switch, Jim. Could you give us a complete readout on your stack currents at the present time?
- 164:24:24 P Say again, please. Drift in your voice.
- 164:24:27 CC We'd like a complete readout on your stack currents.
- 164:24:37 C This is Gemini VII. You're unreadable. Say again, please.
- 164:24:42 CC Would you give us a complete readout on your stack currents?
- 164:24:52 P If I understand it, you said you want a complete readout on our stack currents. Stand by, I'll give it to you.
- 164:24:57 CC Roger.
- 164:25:01 P 1A, 3.5; 1B, 4; 1C, 3.5; 2A, 3; 2B, 2½; 2C, 2½.
- 164:25:27 CC Roger, Gemini VII. And what is your bus current - bus voltage?
- 164:25:40 P You're coming in very weak, but I'll give you bus voltages for the complete stack. 1A, 27.8; 1B, 27.8; 1C, 27.8; 2A, 27.8; 2B, 27.8; 2C, 27.8.
- 164:26:07 CC Roger.
- 164:27:04 CC Gemini VII, Gemini VII, Houston.
- 164:27:16 CC Gemini VII, Houston.
- 164:27:20 P Houston, Gemini VII. You're very, very weak. Say again.
- 164:27:25 CC Do not turn off Section 2. Repeat. Do not turn off Section 2.
- 164:27:34 C Roger. We will not.

CONFIDENTIAL

CONFIDENTIAL

GUAYMAS

164:40:41 CC Gemini VII, Guaymas CAP COM. If you copy, place your T/M switch to the REAL-TIME and ACQ-AID positions.

164:40:55 CC Roger. We have it.

164:43:19 CC Gemini VII, Guaymas CAP COM. You need not acknowledge. All systems look good on the ground.

164:43:24 C Thank you.

TEXAS

164:45:24 CC Gemini VII, Houston.

164:45:26 C Go ahead, Houston.

164:45:29 CC This is a UHF 6 pass.

164:45:35 C Roger.

164:45:38 CC The Lovell family's all here this morning observing this pass. We'd like to tell you congratulations on your halfway mark. You're now heading downhill.

164:45:53 P Elliot, would you say hello to them for me, please, and I'll thank you very much.

164:45:57 CC You just did it yourself. I also see the Borman boys are here.

164:46:06 C Hi, boys!

164:46:14 CC I have a couple of flight plan updates for you.

164:46:31 P Stand by just a minute, Elliot.

164:46:47 P Go ahead, Elliot.

164:46:49 CC D-4 and 7: 165:43:35; Sequences 415 and 416; Mode 02; rescheduled from previous pass. MSC-4: 166:20:41; Sequence 01; Mode 01; pitch 30 degrees down, yaw 25 degrees left. Do you copy?

CONFIDENTIAL

CONFIDENTIAL

487

164:47:41 P We've copied.

164:47:44 CC Roger. Do you have the humidity reading that we asked for in the cockpit?

164:47:50 P Roger. Stand by.

164:48:12 P The average temperature/dew point reads in our survey this morning have been dew point around 58, temperature around 82.

164:48:21 CC Roger. Copy. 58 and 82.

164:48:24 C That's 16 degrees higher than it was this morning when we got up, Elliot.

164:48:30 CC 16 degrees higher. Roger.

164:48:38 CC On the fuel cell, we looked at your amp readings and decided we would hold off a little bit on this open-circuit technique and just observe it a little longer.

164:48:52 P Roger. Understand that.

164:49:12 CC Those are the only items we have on this pass and we'll be standing by for the rest of your pass.

164:49:30 P Houston, we were trying out some of this high-contrast film on the States pass, but I see you're quite cloudy today.

164:49:38 CC That's affirmative. We're hoping for a break in this weather so we can try an MSC-4 at Hawaii, but it looks pretty bad for today.

164:49:50 CC For your information, the Ascension MSC-4 equipment is still down.

164:49:56 C That's just what I was going to ask you.

164:50:30 CC We had a simulation with the GT-VI crew last night; final run-through on the rendezvous sim. Everything went real well.

164:50:40 C Good.

CONFIDENTIAL

CONFIDENTIAL

164:50:44 P Looks like the east coast is pretty clear, up there towards north.

164:50:50 CC Roger.

164:50:53 P If anybody's going up that way.

164:52:35 CC Gemini VII, are you still having any of the water boiler venting?

164:52:43 P This is VII. Not to our knowledge, Houston.

164:52:46 CC Roger.

ANTIGUA

164:52:56 C When the boiler vents it also gives us a left roll, Elliot, which is very pronounced. Well, you know it's there.

164:53:04 CC Roger.

164:53:37 P Elliot, you can tell the Lovell family that I'm past the ... point.

164:53:44 CC I didn't copy that, VII. Say again.

164:53:47 P Did you tell the Lovell family that our grass looks like it needs mowing?

164:53:54 CC I'll tell her.

164:58:24 CC Gemini VII, Houston.

164:58:29 P This is VII. Go ahead.

164:58:30 CC Give us another readout on those stack currents.

164:58:34 P Roger. Stand by.

164:58:40 P 1A is $3\frac{1}{2}$ amps; 1B is 4 amps; 1C just slightly under 4 amps; 2A, 3 amps; 2B, about $2\frac{1}{2}$ amps; and 2C is slightly under 3 amps.

164:58:59 CC Roger.

165:00:27 CC We'll see you after lunch, next time around, VII.

CONFIDENTIAL

CONFIDENTIAL

489

165:00:31 P Roger. Adios.

CANARY ISLANDS

165:07:51 CC Gemini VII, Canary.

165:07:54 C Go ahead, Canary.

165:07:55 CC Roger. We're noticing your fuel cell hydrogen is low, almost down to minimum. You might take a look at it and boost it up a little bit.

165:08:02 C Roger. Thank you.

165:08:03 CC Okay. Also, it looks like your Fuel Cell 2 has just about leveled out. Everything looks pretty good. We'll keep a close look on it on the ground, however.

165:08:11 C Roger.

165:08:16 CC And that's about all we have for today and we'll see you tomorrow.

165:08:21 P Right. In regards to the Apollo Landmark star, which we're coming up on right now, there are so many clouds and a lot of haze, that we don't think it's worth taking the shot.

165:08:33 CC Roger.

165:08:53 CC Okay. If you can't do it, just don't worry about it. Forget it.

165:09:00 P Roger. Thank you.

165:09:48 CC VII, you still with us?

165:09:50 C Roger. We're still with you.

165:09:51 CC Go to COMMAND on your REAL-TIME and ACQ-AID switch.

165:09:55 C Roger.

CONFIDENTIAL

CONFIDENTIAL

KANO

- 165:14:02 CC Gemini VII, Houston. How do you read?
- 165:14:05 P This is VII. Read you loud and clear.
- 165:14:08 CC Roger. We'd like to ask you to keep track of this water boiler venting. Keep a log of it so we can get a handle on how often it is happening here.
- 165:14:21 P Roger, Houston. The only time we can tell it's venting is at twilight or when the sun shines in a certain light and it forms a sparkle on the - ice crystals against the black sky.
- 165:14:34 CC Roger. In other words, it is so minor that you can only tell it when you see it. You do not get any motions out of it that are particularly noticeable.
- 165:14:45 P Roger. Although - right now we're in a slow left roll. After we had lined up on this Apollo Landmark and shut down, we did go into a slow left roll.
- 165:14:57 CC Roger.
- 165:15:16 CC VII, we'd like you to just do the best you can on that as far as keeping track of it, to see if we can establish any pattern here as to how often it does vent.
- 165:15:27 P Roger. Will do.

CARNARVON

- 165:40:00 CC Gemini VII, Carnarvon CAP COM. We have nothing for you this pass. Everything looks good on the ground. We are standing by.
- 165:40:12 C Roger, Carnarvon.
- 165:50:33 C Yes. We just completed D-4/D-7, 165:50. We did 3 minutes over water, a little more than 4 minutes

CONFIDENTIAL

CONFIDENTIAL

491

over land. Land was covered by clouds with some lightning in it, so you should take that into account when you're inspecting.

165:51:30 P I am urinating at this time.
165:54:45 C I have it set up for MSC-4 right away.
165:54:48 C I guess that's all right ...
165:54:59 P Roger.
165:55:31 P Okay.
165:55:34 C What?
165:55:36 P Very good.

HAWAII

166:04:40 CC Gemini VII, Hawaii CAP COM.
166:04:43 CC Gemini VII, Hawaii CAP COM.
166:04:46 C Roger, Hawaii. VII here.
166:04:49 CC Roger, Gemini VII. Would you place your DCS circuit breaker to OPEN?
166:04:55 C ... Open.
166:04:57 CC Your T/M Control switch to REAL TIME and ACQ-AID.
166:05:01 C ...
166:05:04 CC Say again.
166:05:05 C I did.
166:05:07 CC Adapter C-Band to CONTINUOUS.
166:05:10 C Adapter C-Band to CONTINUOUS. Roger.
166:05:15 CC Roger. Standing by.

CONFIDENTIAL

CONFIDENTIAL

166:06:02 CC Gemini VII, Hawaii CAP COM.

166:06:04 C Go ahead, please.

166:06:05 CC Roger. We're going to leave you in this configuration until Flight advises us to change. The reason for this is we're supporting the pad test on VI so we'll just leave you in this configuration.

166:06:21 C Fine. Thank you.

166:06:25 CC We show you GO on the ground, and I have some information for you to copy when you're free.

166:06:32 C Stand by a minute.

166:06:44 C Go ahead, Hawaii.

166:06:46 CC Roger. You have a UHF 6 over the States on this pass. You'll be having a manual tape dump over the States and I have a flight plan update when you're ready to copy.

166:07:02 C I'm ready.

166:07:05 CC Title: Node at 166:00:12; Rev 104; 173.3 degrees east; right ascension 10 hours, 24 minutes, 18 seconds.

166:07:33 C Roger. We have it.

166:07:34 CC Transponder test: 167:35:00; Sequence 01 at Hawaii; off at 167:59:00. Apollo: 168:08:29; Sequence 58; pitch 30 degrees down, yaw 13 degrees right. MSC-2 and 3: 168:15:00; Sequence 02; at the same time replace tracer storage accumulator if not previously done. At 168:52:00: crew status report, Command Pilot, Carnarvon. At 169:00:00: BIO MED Recorder Number 1 - CONTINUOUS. Are you with me?

166:09:23 C Right there.

166:09:25 CC At 169:17:00: crew status report, Pilot, Hawaii. S-5: 169:34:00; pitch 90 degrees down, yaw 0 degrees; single; photographs of the southern Mexican Yucatan area. MSC-2 and 3: 169:49:00;

CONFIDENTIAL

CONFIDENTIAL

493

Sequence 03; stop at 170:04:00. At 171:00:00:
BIO MED Recorder Number 1 off. Are you still
with me, Gemini VII?

166:10:42 C Roger.

166:10:43 CC At 171:26:00: PLA update; fuel cell purge over RKV. At 171:35:00: exercise. At 171:45:00: housekeeping period. At 172:10:00: flight plan report, CSQ. At 172:15:00: eat period. At 173:15:00: BIO MED Recorder Number 2 CONTINUOUS, and start the sleep period. At 184:15:00: end of sleep period. MSC-2 and 3: 184:15:00; off. At 184:23:00: purge fuel cells; PLA update over Canaries. Did you copy, Gemini VII?

166:12:36 C Everything but the last time.

166:12:38 CC The last time was 184:23:00.

166:12:46 C Roger. We have it.

166:12:48 CC Roger.

CALIFORNIA

166:15:16 CC Gemini VII, Houston. How do you read?

166:15:20 C Loud and clear.

166:15:23 CC Roger. Like to advise you that, at the laser site, we have clear to 1/10 cloud coverage. Should be real good. And we have two grey smoke pots 10 miles north of the laser. And they are 30 miles apart. The wind direction is from the west, about a 5-knot wind.

166:15:51 C Roger.

166:15:53 CC Good luck.

166:15:55 C Thank you.

166:17:08 CC Gemini VII, Houston. Let me know when you're complete with your laser tracking so that we can work on the tape dump.

CONFIDENTIAL

CONFIDENTIAL

166:17:16 C Roger.

166:18:21 CC Gemini VII, Houston. When you get a break would you give us - us the amp readings on the fuel cells?

166:18:27 C Roger.

TEXAS

166:21:33 C Elliot, we're right on it but we don't see a thing.

166:21:37 CC Roger. Keep looking.

166:21:40 CC You don't see the smoke either?

166:21:42 C I see what looks like smoke. Roger.

166:21:44 CC Okay. It's ten miles south of the smoke.

166:21:53 C It ... the whole works, but I mean ... the whole works. I see the smoke. I got the smoke very clearly.

166:22:09 CC Roger.

166:22:10 P Flight, we got the smoke but no beam.

166:22:13 CC Keep looking. It's 250 miles away. I'm not too surprised.

166:22:44 C No luck, Elliot.

166:22:46 CC Roger. You're about 252 miles away so I guess you're just too far away for it. Okay. I'd like a readout on the stack amperages.

166:23:09 CC Gemini VII, do you copy?

166:23:12 C Say again.

166:23:13 CC Give me a readout on your fuel cell stacks. Just the amperages.

CONFIDENTIAL

CONFIDENTIAL

495

- 166:23:23 P Roger. 1A is $3\frac{1}{2}$; 1B is 4; 1C is 4; 2A is 3; 2B, $2\frac{1}{2}$; and it looks like 2C is either - just barely below 2.
- 166:23:39 CC Roger. We would like to place 2C on OPEN-CIRCUIT at this time, just like we did yesterday.
- 166:23:49 P 2C is open-circuited.
- 166:23:52 CC Roger. And we'll leave it open for about 15 minutes-the same way we did yesterday.
- 166:24:01 P Roger. Understand.
- 166:24:12 CC Gemini VII, we want to do a manual tape dump. Place your Standby T/M switch to DELAY TIME.
- 166:24:19 P Standby T/M on DELAY TIME.
- 166:24:28 CC Roger, VII. Jim, we'd like you to press on your top sternal lead again. Just the top one and hold it until I tell you.
- 166:24:38 P Roger.
- 166:25:05 CC Gemini VII, place your Tape Playback switch to CONTINUOUS.
- 166:25:11 P Roger. Tape Playback in CONTINUOUS.
- 166:25:22 CC Okay, Jim. You can release the top sternal lead . and press on the bottom one until I tell you.
- 166:25:35 P Roger, Elliot.
- 166:25:39 CC Sounds like you have about three hands going there.
- 166:25:43 P Right.
- 166:25:51 P Elliot, we had a beautiful view of White Sands, and I don't think we were that far away that we just picked that beam up ...
- 166:26:00 CC Roger.
- 166:26:10 CC Jim, I'd like you to release that bottom sternal lead and then press on it again alternately on and off for a few times here.

CONFIDENTIAL

CONFIDENTIAL

166:26:20 P Roger.

166:26:31 CC Okay, that's fine, Jim. You can release the sternal lead.

166:26:40 CC Captain Brentnall's here. Telling me again what a good job you guys are doing on the D-4 and D-7's. You did real well and you got the Polaris real well.

166:26:49 P Very good.

166:27:29 C Elliot, we just did a Camera Temperature Survey a short time ago. Do you mind if we scrub this one coming up at 166?

166:27:32 CC Roger. That would be okay.

166:27:37 CC Could you tell me what the open-circuit 2C is looking like now on the amperage - on the voltage?

166:27:45 P Roger. It's 31.2.

166:27:50 CC 31.2. Roger.

ANTIGUA

166:30:29 CC Gemini VII, place your Tape Playback switch to COMMAND.

166:30:34 P In COMMAND.

166:30:38 CC And Standby T/M switch to OFF.

166:30:44 P Standby T/M is off.

166:31:00 CC VII, Gemini VII, we'll take a look at the fuel cell open-circuit voltage and the time and so forth again at Ascension, and we'll probably put it back on at that point.

166:31:18 P Roger. Understand. We'll probably put it back on at Ascension.

CONFIDENTIAL

CONFIDENTIAL

497

- 166:31:27 C Elliot, if we lose communication with you, we shouldn't leave it on more than 13 or 14 minutes, should we?
- 166:31:32 CC That's right, Frank. I think maybe we ought to turn it off here before we have LOS at Antigua. So stand by a minute.
- 166:31:40 C Roger.
- 166:32:05 CC VII, stand by for a minute. The Surgeon has a brief note and I have - we'll get back with you on the fuel cell.
- 166:32:14 CC Gemini VII, this is Surgeon. Jim, we've - in checking that lead, it's very definitely the lower sensor, the sensor on the bottom of the sternum there, so we obviously cannot do anything about that as long as you're in a suited condition, and we'll have to wait some further developments in that area before we're able to have you do anything further with that sensor. We're going along with the single lead.
- 166:32:42 P Roger. Understand.
- 166:33:05 CC Gemini VII, Houston. Do you still have the Delta-P light on?
- 166:33:11 P Affirmative. The Delta-P light has been on.
- 166:33:13 CC Roger. And the Stack 2C voltage has gone up to the top of the scale, 32 volts?
- 166:33:19 P It's moving a little bit, but not much. I'd say about a tenth to two-tenths.
- 166:33:24 CC Roger.
- 166:35:43 CC Gemini VII, Houston. We'd like to have you put Stack 2C back on the line at this time and then give us a complete stack amperage readout.
- 166:35:52 P Roger. 2C going back on the line.
- 166:36:02 P 1A is 4 amps; 1B, $4\frac{1}{2}$; 1C is 4; 2A, 3; 2B about $2\frac{1}{2}$; and the poor 2C is still down around 2 amps.

CONFIDENTIAL

CONFIDENTIAL

166:36:20 CC Roger, VII. We'll be contacting you further on it at Ascension.

166:36:25 P Roger.

166:36:35 CC I'm sure you'll be keeping track of it between here and Ascension. We'll be interested in whether it increases or what it does.

166:36:43 P Roger. I'll watch it.

166:36:51 CC See any difference in 2C yet? The last reading was 2.0.

166:36:57 P Well, actually, Elliot, it looks like it's down almost to $1\frac{1}{2}$ amps now.

166:37:03 CC Roger.

166:37:30 CC Gemini VII, Houston. How do you read?

166:43:32 C Clear.

166:43:34 CC Roger, VII. Could you give us a readout on the stack amperages again, please?

166:43:43 P 1A is $3\frac{1}{2}$; 1B is 4; 1C is 4; 2A, 3; 2B, $2\frac{1}{2}$; and 2C about $1\frac{1}{2}$ to 2 - - slightly under 2.

166:44:00 CC Slightly under 2. Roger.

166:44:02 CC And 2A was 3.0. Is that correct?

166:44:07 P Roger. 3.0.

166:44:10 CC And 2B was 3.5. Is that correct?

166:44:15 P Negative. ... It looks like 2.5. 2.5.

166:44:20 CC Roger. 2.5.

166:44:25 CC VII, we'd like you to do a normal fuel cell purge at this time.

166:44:33 P Roger. Commencing normal fuel cell purge.

166:45:36 C This is Gemini VII. The water boiler is venting again.

CONFIDENTIAL

CONFIDENTIAL

499

166:45:40 CC Roger, VII. Water boiler is venting again.

166:46:02 CC Gemini VII, our thought here is to observe the results of this purge, and, if it does not help the situation, we will probably be doing the high-flow purge again as we started to do yesterday.

166:46:20 P VII. Roger.

166:46:27 C I have ... flight plans ... attitude control ... more fuel ... venting.

166:46:37 CC Understand. You want us to allow some fuel for the venting control. Is that what you are saying, Frank?

166:47:52 CC Gemini VII, Houston. We understood you to say that we should take into account the water boiler venting in regard to scheduling of the experiments, from a fuel standpoint. Is that correct?

166:48:06 P ... fuel to control these rates.

166:48:10 CC Roger.

166:48:20 CC Gemini VII, would you verify that the adapter C-Band beacon is on?

166:48:33 P C-Band beacon is on CONTINUOUS.

166:48:38 CC And place your T/M switch to COMMAND.

166:48:45 P T/M switch is on COMMAND.

166:48:47 CC Roger.

166:49:29 P Purge complete.

166:49:32 CC Roger. Understand. Purge complete.

166:49:38 CC What does Stack 2C amperage read now, Jim?

166:49:44 P Fuel, 1½ amps.

166:49:47 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

166:51:19 CC Gemini VII, I think we are about to lose contact.
Do you notice any change in Stack 2C at this point?

TANANARIVE

167:00:23 CC Gemini VII, Gemini VII, Houston. How do you read?
167:00:27 C Loud and clear, Houston. Go ahead.
167:00:30 CC Roger. Can you tell us anything new on Stack 2C?
167:00:38 P 2C looks like it's maintaining its own, about $1\frac{1}{2}$ amps. Very low.
167:00:44 CC Roger, VII. We'll be standing by.
167:06:49 P Another memo to Doctor Chance: chicken with vegetables, Serial Number FC680, neck is almost sealed shut. You can't even squeeze it out. I'll probably have to cut the bag to get it. Continuing same memo to Doctor Chance: just opened the seals; chicken with vegetables all over window at this time.

CARNARVON

167:14:49 CC Gemini VII, Carnarvon CAP COM. Would you turn your T/M switch to REAL-TIME, ACQ-AID position?
167:14:57 P Roger. T/M's REAL-TIME in ACQ-AID and the Fuel Cell 2C stack is on the low side of $1\frac{1}{2}$, it appears to me.
167:15:07 CC Roger. Thank you.
167:15:25 CC Gemini VII, would you turn your adapter C-Band beacon to the CONTINUOUS position, please?
167:15:32 P C-Band is on CONTINUOUS.
167:15:34 CC Roger.
167:16:14 CC Gemini VII, Carnarvon CAP COM.

CONFIDENTIAL

CONFIDENTIAL

501

- 167:16:18 P This is VII. Go ahead.
- 167:16:21 CC Roger. I have an update for you on an MSC-4 experiment when you're ready to copy.
- 167:16:27 P Roger. Stand by.
- 167:16:43 P Go ahead, Carnarvon.
- 167:16:45 CC Roger. MSC-4: Time, 167:43:24; Sequence Number 05; Mode 01; pitch 30 degrees down, yaw 20 degrees right. That will be over Hawaii this pass.
- 167:17:17 P We copy.
- 167:17:19 CC Roger.
- 167:17:33 CC Would like to have you transmit on your beacon regardless of whether you see it from the ground or not.
- 167:17:41 P Will do.
- 167:17:43 CC We'd also like to know whether you were using the special laser telescope on your last pass over the States.
- 167:17:52 P That's affirm. I was using both. I was using the telescope and also just eyeballing it.
- 167:17:58 CC Okay. And did you do any transmitting?
- 167:18:03 P Roger. I did a few seconds transmitting at closest point of approach.
- 167:18:08 CC Roger.
- 167:18:27 CC We'd like to have you leave your C-Band - adapter C-Band beacon on for tracking over the RKV and up to Hawaii.
- 167:18:38 P Roger.
- 167:19:36 CC Gemini VII, Carnarvon. The ground computation shows that your amperage is up slightly.
- 167:19:43 P That's right. It was up over Carnarvon.

CONFIDENTIAL

CONFIDENTIAL

167:19:46 CC Roger.

167:19:49 C You guys do good work.

167:19:51 CC I don't see how we could help all that though.

167:20:08 CC There's a possibility that White Sands was not boresighted on that last pass.

167:20:15 P I thought it was. Boy, we had it dead right.

167:20:19 CC Roger.

167:21:39 CC Gemini VII, Carnarvon.

167:21:42 P Go ahead, Carnarvon.

167:21:44 CC Roger. Our ground calculations at the present time are showing 2.46 amps.

167:21:51 P Let me scrunch down here and see what I can read.

167:21:56 P Right, I'm reading close to 3 amps now.

167:21:59 CC Roger. Very good.

167:22:07 CC Flight says scrunch down just a little more and get it up to 5, would you?

167:22:12 P I'm doing my best.

167:22:14 CC Roger.

167:23:08 CC Gemini VII, Carnarvon. We'll have LOS shortly. Would you turn your T/M back to the COMMAND position?

167:23:18 P Roger.

HAWAII

167:40:08 CC Gemini VII, Hawaii CAP COM.

167:40:10 C Go ahead, Hawaii.

CONFIDENTIAL

CONFIDENTIAL

503

167:40:11 CC Will you close your DCS circuit breaker?
167:40:15 C Closed.
167:40:16 CC T/M Control switch to COMMAND.
167:40:20 C To COMMAND.
167:40:23 CC Okay. And will you put your adapter C-Band to
COMMAND?
167:40:29 C COMMAND.
167:40:31 CC Roger.
167:40:35 C How's your weather?
167:40:36 CC The weather is real good. I'll give you some look
angles here. General area look angles. I'll give
you those as soon as we get acquisition.
167:40:49 CC Do you have your C-Band in COMMAND?
167:40:50 C Roger.
167:41:07 CC Put your adapter C-Band back in the CONTINUOUS
position.
167:41:10 C In the CONTINUOUS position.
167:41:12 CC Roger.
167:41:22 C Are you reading us?
167:41:24 CC We're seeing your beacon intermittently. It
should lock shortly.
167:41:43 CC Gemini VII, look 080.
167:41:49 C What do you mean 080?
167:41:51 CC If you look at - if you look at an azimuth of 080
from your spacecraft. Look generally to the east,
and you may be able to pick out the island.
167:42:00 C These are not the planing commands we got.

CONFIDENTIAL

CONFIDENTIAL

167:42:02 CC Okay. I'm just giving you a general look as you come up over from where my radar's looking at you. I'm turning them around, so maybe you'll have a general look towards the island. In other words, stay with your mode, pitch 30 down and yaw 20 right, but try and look in that general vicinity from the window.

167:42:21 C I have it now, I think.

167:42:22 CC Roger.

167:42:24 C ... told yaw 2 right. It's yaw 20 right, is that correct?

167:42:30 CC Roger. Yaw 20 right. 20.

167:42:33 C Okay. I thought it was 2 but we've got the island.

167:42:40 CC Okay. Could you give me a readout at 2-Alpha, 2-Bravo and 2-Charlie?

167:42:54 C We're looking right on it. We ought to receive the beacon.

167:42:57 CC Roger.

167:43:26 CC Anything of the beacon at all?

167:43:27 C Nothing at all, but we see the island loud and clear.

167:43:30 CC Okay. Are you transmitting dump?

167:43:31 C Roger.

167:43:32 CC Okay.

167:44:05 C Are you that group of buildings on the top of the hill?

167:44:08 CC That's affirmative. Right up on top of the mountain, on the northwest portion of the island.

167:44:11 C Man, I got you loud and clear!

167:44:13 CC Okay. You don't see the beacon at all?

CONFIDENTIAL

CONFIDENTIAL

505

167:44:15 C Not a thing.

167:44:17 CC Can you see - can you pick out any of the antennas to the north of the building?

167:44:21 C Now there's clouds over the east of you.

167:44:25 CC Okay.

167:44:28 C I see a lot of buildings and it looks like antennas scattered around right outside --

167:44:31 P ... transmit.

167:44:32 C -- northwest side of the mountain.

167:44:34 CC Okay.

167:44:35 C There's also some smoke, it looks like, over on the south side of the hill.

167:44:39 CC That could be true. They're probably burning sugar cane.

167:44:42 C Looks like it.

167:44:44 C We're transmitting.

167:44:45 CC Roger.

167:44:53 C We're going by now - I got it.

167:44:56 CC You got the beacon in sight?

167:44:57 C Got beacon. Saw blink.

167:44:58 CC Roger.

167:45:03 C Is it pretty close to the edge of the mountain, right by the ridge there?

167:45:06 CC That's affirmative.

167:45:07 C Okay. I saw it. I can see it again. I see it again.

167:45:10 CC Very good.

CONFIDENTIAL

CONFIDENTIAL

167:45:11 C You're witness.
167:45:15 C You're not - there it is again.
167:45:16 CC Very good. Try aiming at it.
167:45:18 C Okay. I don't hardly believe it.
167:45:19 CC Okay.
167:45:22 C You're still a witness.
167:45:23 CC Okay.
167:45:31 C We should have gotten you with that one.
167:45:33 CC Very good. Stand by one.
167:45:54 CC Do you see any more of it?
167:46:09 CC VII, Hawaii.
167:46:13 P Go ahead, Hawaii.
167:46:15 CC Okay. Have you seen any more of it?
167:46:18 P I don't believe so.
167:46:20 CC Okay. You're getting pretty far down on the pass.
I'd knock it off at this time. Can you give me
a readout on Section 2?
167:46:25 P Roger. Stand by.
167:46:33 P 2A is 3 amps; 2B, 2 $\frac{1}{2}$ amps; and 2C, 2 amps.
167:46:38 CC Okay. Thank you very much.
167:46:58 CC VII, Hawaii CAP COM. We have nothing further.
We'll be standing by.
167:47:01 C Thank you.
167:47:16 CC VII, Hawaii.
167:47:18 C Go ahead.
167:47:19 CC Could you put your adapter back to COMMAND?

CONFIDENTIAL

CONFIDENTIAL

507

167:47:22 C Roger.

167:47:23 C How about having ... tell MCC, if they have picked us up.

167:47:27 CC Okay. They're copying all that.

167:47:29 CC You in COMMAND?

167:47:32 C Roger.

TEXAS

167:51:42 CC Gemini VII, Gemini VII, Houston. Do you read?

167:51:46 P Roger, Houston.

167:51:56 CC Could you give me a readout on your Stack 2 - all your Stack 2 - Section 2 stacks.

167:52:06 P Roger. 2A is reading 3 amps; 2B, 2-1/2; 2C, 2.

167:52:13 CC Roger. We're planning to do this single-stack purge. In preparation for that, we'd like you to put 2C on OPEN-CIRCUIT and we'll check the voltage at that point.

167:52:29 P 2C going OPEN-CIRCUIT at this time.

167:53:27 P Houston, this is VII. Reading 30.8 on the open-circuit voltage 2C.

167:53:35 CC Roger, Gemini VII. Watch it for a minute, see if it goes up a little bit.

167:54:12 CC Gemini VII, did you acquire the Hawaii beacon, Jim?

167:54:20 P Roger. Frank got it. I was looking through the laser. Frank got the beacon. We viewed the island for some time and Frank got the beacon for some time.

167:54:30 CC Did you actually have the beacon also?

167:54:33 P Going out.

CONFIDENTIAL

CONFIDENTIAL

167:54:34 CC I say, did you actually have the beacon also?

167:54:37 P Roger. Frank saw the beacon.

167:54:40 CC I say, did you see it also?

167:54:44 P I saw it for a moment, but then as soon as you go into the telescope again you lose it. The green telescope fades everything out.

167:54:51 CC Roger. So you feel your pointing was very good.

167:54:54 P Yes, for a spacecraft it was great.

167:54:58 CC Roger.

167:55:15 CC What does your voltage look like now, Jim?

167:55:18 P Reading about 31 volts now, Elliot.

167:55:23 CC Roger. We'd like to have you put it back on the line now. And after it stabilizes for a few seconds or 30 seconds or so, give us a stack - correction, Section 2 stack readouts.

167:55:48 P Roger. Stack readouts coming up. 2A, 3 amps; 2B, 2-1/2; and 2C about 2.

167:56:02 CC Roger. Do you want me to read out the procedure for this purge, or do you want to just do it step by step?

167:56:13 P We can do it step by step and make sure we've done the correct procedure.

167:56:17 CC Roger.

167:56:21 CC Do you see any difference in the 2C current at this point?

167:56:27 P Negative. It's still pretty low, between - put it around 2 volts, or 2 amps.

167:56:35 CC Okay. The procedure is as follows: Crossover open.

167:56:40 P Crossover is open at this time. It's off - open.

CONFIDENTIAL

CONFIDENTIAL

509

167:56:43 P It's open.
167:56:45 CC And Stack 2A and 2B off?
167:56:52 C 2A and 2B going off.
167:56:55 CC Roger. Now would you give us a reading on the Stack 2C amperage?
167:57:04 C Stack 2C now reads 3 amps.
167:57:09 CC Roger. Now we want a normal hydrogen purge on the Section 2.
167:57:16 C That's Roger.
167:57:34 C Purge complete.
167:57:40 CC Roger, Gemini VII. Let's pause a minute and then we'll be putting 2A and 2B back on. And you can close the Crossover any time you want.
167:57:59 P The Crossover is off.
167:58:03 CC Roger. You see any difference in the current yet? Is it still about 3?
167:58:11 P Roger. It's 3 amps.
167:58:14 CC Okay. You can put 2A and 2B back on at this time.
167:58:21 P 2A and 2B are back in line.
167:58:30 CC And when they settle down a little bit you can give us a stack readout again.
167:58:47 P 2A is reading 3 amps; 2B, 2-1/2 amps; 2C, 2 amps.
167:58:55 CC Roger, VII. We'll watch it for awhile now.
167:58:59 P Roger. I have one question that still is on my mind. The Crossover valve on that purge is in the OFF position. Is that the way you wanted it?
167:59:07 CC Negative. It should be - should have been in the OPEN position.

CONFIDENTIAL

CONFIDENTIAL

167:59:11 P You mean ON position?

167:59:13 CC Roger.

167:59:14 P Well, it wasn't that way. We interpreted it as the OFF position.

167:59:31 CC Gemini VII, we'd like to repeat it and do it this time with the Crossover valves in an ON position; that is - OPEN.

167:59:40 P Roger. Going to the ON position.

167:59:43 CC Then 2A And 2B off and a normal purge.

167:59:50 P 2A and 2B are off and we're going on with a normal hydrogen purge.

168:00:12 P Purge complete. Crossover going off.

168:00:17 CC Roger.

168:00:26 P You want 2A and 2B back on the line?

168:00:29 CC Okay. Roger. 2A and 2B back on.

168:00:50 P Okay, Elliot. Let's see - 2A is reading 3, 2B is reading 2 1/2, and afraid 2C is still down there at 2.

168:00:59 CC Okay. We'll watch it for awhile here now.

168:01:54 CC Okay, Gemini VII. Are you ready for the day's news?

168:01:58 P Roger. Standing by.

168:02:04 CC Defense Secretary McNamara announced plans for a new bomber development yesterday. It's to be a Mach 2 type airplane, based on a variable sweep wing concept. It's to go into operation in 1968 and is to replace the B-52's. Everything is GO for the GT-VI tomorrow, and we've been in touch with them several times today. Everything is going along real fine. Congressman Olin (Tiger) Teague says he plans to introduce a bill making anti-Vietman war demonstrations an act of treason.

CONFIDENTIAL

CONFIDENTIAL

511

The Pirates' pitcher, Bob Friend, has been traded to the Yankees and the Chargers play the Oilers here tomorrow.

- 168:02:59 C Thank you.
- 168:03:47 CC Gemini VII, did you have the Transponder switch on over Hawaii for that temperature survey?
- 168:03:52 C I goofed that, Elliot. I have to turn it on - I was going to ask you where. Should I turn it on now?
- 168:04:00 CC Okay. We'll reschedule it for you.
- 168:04:06 C We were so busy with the laser that we forgot about it completely.
- 168:04:09 CC Roger. I thought that happened.
- 168:04:19 C That laser is no great big bathtub of light. It looks more like a speck in a big vast island.
- 168:04:24 CC Roger. We'll make it work yet.
- 168:04:30 C I saw it loud and clear, but it just wasn't what I expected.
- 168:04:37 CC Do I understand that Jim is unable to keep it acquired real well while he's looking through his sighting device; that the color of the filtered air tends to blank it out so that he can't keep in contact with it?
- 168:04:53 C Well, I don't think he really had it long enough to try it well. Did you, Jim?
- 168:04:56 P No. The best idea, I think, is to pick it up with your eyeball and then go the ... telescope. And what I was trying to do was eyeball it with the telescope first. I had the island and we took it through the scope, trying to find the light, and the green filter makes it impossible, just about.
- 168:05:13 CC Roger, Jim.

CONFIDENTIAL

CONFIDENTIAL

168:05:18 CC It may turn out that trying to do that at night is going to be about the only way to really be sure of it.

168:05:26 P Roger. I think we ought to look seriously into a night pass some place and make that a high priority.

168:05:32 CC Roger. Right now we're trying to get any kind of pass. As you know, we've had the weather problems so much, and equipment problems.

168:05:42 P Roger.

168:06:43 C Hey, Elliot.

168:06:44 CC Go ahead.

168:06:46 C If you get a chance, how about checking with Susan and see how everything is on the home front, will you? I'll talk to you next time around if we get time.

168:06:54 CC Everything is real fine. Your boys are doing particularly good in school, Frank.

168:06:58 C Well, good!

168:07:06 CC I'll give her a call anyway and get some more specific word. But I did get that word definitely today.

168:07:12 C Thank you.

168:07:16 C We're looking for Trinidad now, but it's very cloudy down here.

168:07:19 CC Roger.

168:07:41 CC Flight says he'd like a weather forecast for the Cape tomorrow morning.

168:07:47 C We'll give you one tomorrow. I tell you, I think it will be cloudy unless the sun is shining.

168:07:55 CC Roger, we copy that. You probably notice from that big long flight update that we gave you that we're

CONFIDENTIAL

CONFIDENTIAL

513

juggling your time somewhat to plan for the - the launch tomorrow, the GT-VI launch. That is why we changed all your times there. What we're planning in regard to your suit or getting Jim suited - getting you suited back is to wait until after the launch because only then will we know for certain just how long the rendezvous is going to take and we'll have plenty of time after that.

- 168:08:29 C Roger.
- 168:08:31 CC As you know, it might even be as much as a day to complete the rendezvous. So we didn't want to get you back in the suit early if it were not necessary.
- 168:08:40 P ... you're my friend.
- 168:08:46 C Lovell volunteered to spend the next week in the suit.
- 168:09:00 CC I didn't hear Jim's comment on that.
- 168:09:03 C Elliot, I might also comment that whoever is computing these planning commands is doing a fantastic job. They're right on the money every time.
- 168:09:13 CC Unfortunately, he heard that. You're going to give him the big head.
- 168:09:21 C They are really good. We just saw Trinidad and took a picture, but through some clouds.
- 168:09:26 CC Roger.
- 168:09:37 CC How about giving me one more readout on your stacks there, Jim, before we lose you?
- 168:09:40 P Roger, Elliot. 2A is reading 3, 2B, 2-1/2; and our friend 2C is still barely hanging on to 2. Slightly below.
- 168:09:52 CC Roger.
- 168:10:05 C Elliot, I'd like to reiterate to the flight planners - it's going to take a lot more fuel this week just to maintain attitude. The vents or the water boiler build up the rates very swiftly.

CONFIDENTIAL

CONFIDENTIAL

168:10:15 CC Roger, VII. We're going to work on that.

168:10:17 C Thank you.

168:16:41 C 168:16: turning MSC-2 and 3 on. Sequence 02.

168:20:00 CC Gemini VII, Gemini VII, Houston. How do you read?

168:20:04 C Go, Houston.

168:20:06 CC Roger. I just talked to Sue, Frank, and she said everything's fine on the home front and she is glad to see that you're on the downhill side.

168:20:15 C Thank you, Elliot.

168:20:19 CC She reiterated that the boys are doing real ... in school, and also she said they thoroughly enjoyed their visit to the Center here on your last pass, and your message to them.

168:20:30 C ...

168:20:35 CC I have a flight plan update for you on this transponder test. We've rescheduled it, when you're ready to copy.

168:20:41 C Ready.

168:20:43 CC You are ready?

168:20:45 P Yes.

168:20:46 CC Okay. Time: 1 - -

168:20:48 C All ready.

168:20:52 CC Time: 169:20:00; transponder on; off at 169:35:00. Do you copy?

168:21:12 C ...

168:21:23 CC Gemini VII, did you copy?

168:21:26 C Negative. You were cut off.

168:21:34 CC Gemini VII, did you copy? I've had some interference here.

CONFIDENTIAL

CONFIDENTIAL

515

168:21:39 C Roger, Elliot. Say again, please?
168:21:44 CC Did you copy the flight plan update?
168:21:48 C Negative. Say again, please.
168:21:51 CC Roger. 169:20:00; transponder on; off at
169:35:00. Do you copy?
168:22:09 C Roger. We copied.
168:22:12 CC And how does Stack 2C look?
168:22:19 P 2C is 1-1/2 amps.
168:22:23 CC Roger. Copy 1.5.
168:22:31 C Carnarvon will probably fix it for us, Bill.
168:22:36 CC Say again, VII. Did not copy.
168:22:39 C Carnarvon will probably fix it for us.
168:22:46 CC Still didn't understand you.
168:23:29 CC Gemini VII, we'll contact you again at Tananarive.
168:23:35 P VII. Roger.

TANANARIVE

168:37:09 CC Gemini VII, Gemini VII, Houston. How do you read?
168:37:18 P This is Gemini VII. Go ahead.
168:37:20 CC Roger. Would you give us the Stack 2C reading?
168:37:32 P 1-1/2 amps, Elliot.
168:37:35 CC Roger. We would like to place Stack 2C off, turn
it off, and we will leave it off through Carnarvon.
That will be 20 minutes. We have confirmed this
with a test a McDonnell, St. Louis, for 30 minutes.
Do you copy?
168:37:58 P Roger. Stack 2C ... for 20 minutes.

CONFIDENTIAL

CONFIDENTIAL

168:38:07 CC You cut out on that transmission, Jim. Say again.

168:38:14 P I said ... open circuit, now clock it for 20 minutes and we'll talk to you over Carnarvon.

168:38:20 CC Roger, Gemini VII.

168:38:28 CC Like to inform you that the GT-VI midcount is completed with no problems.

168:38:36 P Roger. We just say ... we'll be waiting for them up here. We'll have tea with them.

168:38:41 CC Roger.

CARNARVON

168:51:48 CC Gemini VII, Carnarvon CAP COM. We have a valid temperature. We're standing by for your blood pressure.

168:51:55 P Blood pressure coming down.

168:52:03 CC Good. Your cuff is full-scale.

168:52:06 CC Gemini VII.

168:52:08 P Roger.

168:52:51 CC Gemini VII, we have a valid blood pressure. Give us a Mark before you start exercising.

168:52:57 P MARK.

168:53:26 P Blood pressure coming down.

168:53:32 CC Your cuff is full-scale.

168:54:28 CC Gemini VII, we have a valid blood pressure. We're standing by for your food, water and sleep report.

168:54:34 P Roger. Wait one.

168:54:46 P The Command Pilot has 563 ounces to date, and for noon meal we had Day 6, Meal B.

CONFIDENTIAL

CONFIDENTIAL

517

168:55:01 CC I understand that both Pilot - Command Pilot had Day 6, Meal B. Command Pilot has had 563 ounces to date. I do not have any data on the Pilot.

168:55:14 P Roger. The Pilot has 434 ounces to date.

168:55:16 CC Understand 434.

168:55:20 C I was 563, not 663.

168:55:23 CC I copy the Command Pilot 563 and Pilot 434.

168:55:31 P 474 for Pilot.

168:55:33 CC 474. Thank you.

168:55:47 CC Gemini VII, have you had any sleep to report?

168:56:03 C Open-circuit voltage on 2C is off-scale high.

168:56:06 CC Roger.

168:56:16 CC Sounds good.

168:56:19 C Roger. It looks like it takes a little longer.

168:57:37 CC Carnarvon CAP COM. Would you turn your T/M to the COMMAND position?

168:57:43 P T/M attitude to the COMMAND position, Carnarvon.

168:57:51 CC Place your Tape Playback switch to the RESET position.

168:58:01 P ... say again, please.

168:58:03 CC Tape Playback switch to RESET position.

168:58:13 P Carnarvon, this is VII. Request to put 2C back on the line.

168:58:20 CC Go ahead.

168:58:39 P Carnarvon, this is VII.

168:58:41 CC Go, VII.

CONFIDENTIAL

CONFIDENTIAL

168:58:45 P ...
168:58:49 CC Roger, Gemini VII. Copy that you have placed 2C back on the line at this time.

HAWAII

169:17:13 CC Gemini VII, Hawaii CAP COM.
169:17:20 C Go ahead, Hawaii. Gemini VII.
169:17:21 CC Roger. We have a valid temperature. Standing by for your blood pressure.
169:17:24 C Roger. We're turning on radar transponder now.
169:17:27 CC Roger. Understand.
169:17:43 CC Your cuff is full-scale.
169:18:07 C Hawaii, Gemini VII. Will you inform MCC that our water boiler is venting.
169:18:12 CC Roger. Understand water boiler venting.
169:18:31 CC We have a good blood pressure. Standing by for your exercise on your Mark.
169:18:48 C MARK.
169:19:21 CC Your cuff is full-scale.
169:20:07 CC Gemini VII, your cuff is full-scale, but it is not bleeding down.
169:20:14 C Okay, let's try that one.
169:20:59 CC Gemini VII, we have a good blood pressure. Could we have a total reading on your water gun?
169:21:12 C 2683.
169:21:15 CC Read 2683.
169:21:18 CC Thank you, Gemini VII. We'd like to get the Pilot to take in more water if possible.

CONFIDENTIAL

CONFIDENTIAL

519

169:21:27 P Right. Will do.
169:21:29 CC Thank you. Surgeon out.
169:21:46 CC Gemini VII, Hawaii CAP COM. Would you give me a read - stack reading on 2-Charlie, please?
169:21:52 P Roger. 2-Charlie is reading around 1-1/2 volts.
169:21:59 P ... I'm sorry.
169:22:00 CC Say again.
169:24:05 CC Would like you to place your Fuel Cell O₂ heater to the AUTO position.
169:24:12 C Roger.

TEXAS

169:31:38 CC Gemini VII, this is Texas CAP COM. You need not acknowledge this transmission. We have you GO on the ground. Standing by.
169:33:22 CC Gemini VII, Houston.
169:33:25 P VII. Go.
169:33:27 CC Roger. I have a flight plan update for you if you're ready to copy.
169:33:37 C Go ahead.
169:33:40 C Go ahead PCM 2.
169:33:42 CC Node: 172:01:19; Rev 108; 81.0 degrees east; right ascension, 10:17:13. MSC-4: 172:31:11; Sequence 05; Mode 02; pitch 30 degrees down, yaw 19 right. Use 16mm camera, nominal settings, 01 frame per second. If you have a good laser track, use Mode 03 also. Do you copy?
169:34:49 P Roger.
169:34:56 CC How does the Stack 2C look to you now, Jim?

CONFIDENTIAL

CONFIDENTIAL

169:35:04 P Read 2 amps now, Elliot.

169:35:06 CC 2 amps. Roger.

169:35:20 CC Jim, in all this changing around we've done with the fuel cell, have you had the Delta-P light off at any time?

169:35:28 P Negative. Been on all this time.

169:35:31 CC Roger.

169:35:51 CC VII, we have a report from Hawaii that they believe they received your laser beam. They will know better when they develop film. They had to actually develop that film to check their data, but they do have a scope and they believe they received some pulses.

169:36:12 P Good. ...

169:36:15 CC We're scheduling it again for 108 and we'll give it another try then.

169:36:53 CC We're checking the fuel situation. It's possible we may have to terminate the experiments a little early today in order to save enough fuel to cope with this venting. We are definitely keeping an eye on that.

169:37:10 C Let's try that laser though, even if we have to cut something else out. Can we?

169:37:15 CC Roger. We'll get that one a high priority then.

169:37:23 CC We believe, at the present time, that we will have enough fuel for all the presently scheduled activities today, but we'll keep up on that.

169:37:33 C Thank you. We're not even touching the Hand Control unless you schedule it, Elliot.

169:37:40 CC Roger.

169:37:42 C Except when it starts to - tumble pretty swiftly from time to time.

CONFIDENTIAL

CONFIDENTIAL

521

- 169:37:48 CC I get the impression that it does that at discrete times. That is, that such a continuing thing as it is, is an occasional pulse. Maybe four or five times a revolution. Does that sound right to you?
- 169:38:03 C Roger. It's not giving a pulse, but the thing starts venting and then it just slowly builds up. I just reported one to Hawaii.
- 169:38:12 CC That happened about four times a revolution?
- 169:38:15 C I don't believe it's quite that frequent.
- 169:38:17 CC Roger.
- 169:38:20 C You can tell it very easily because the cockpit cools off a lot.
- 169:38:24 CC Say again.
- 169:38:26 C You can tell it very easily when the cockpit cools off.
- 169:38:30 CC The cockpit cools off - as soon as this venting happens?
- 169:38:35 C When the water boil boiler - when the water boils the - it seems like the cockpit cools down.
- 169:38:42 CC We believe that it's simply venting and not actually boiling.
- 169:38:47 C I don't know, but we're getting a change in temperature with it.
- 169:38:52 CC Roger. We'll take that into consideration here and see if we can add it to our analysis.
- 169:38:59 C Roger.
- 169:39:06 CC Frank, how do you feel about how much tumble you can stand while you're sleeping?
- 169:39:13 C ... I don't think it bothers us. We don't even know it until we wake up.
- 169:39:19 CC That's - what concerns me is if - if you can stand the tumbling then we don't have to worry about getting rid of some of that water.

CONFIDENTIAL

CONFIDENTIAL

169:39:27 CC Do you feel that the tumble actually waked you up last night, Frank? You said you noticed it after you waked up. We were wondering if the tumbling caused you to wake up.

169:39:37 C I don't think the tumbling did. The coolness is more of a problem than tumbling. But we did have a terrible sensation, or at least I did, like we were standing on our heads part of the night. And this might be attributed to the tumbling.

169:39:49 CC Roger.

169:40:22 CC Jim, could you comment on - could you comment on the ease or lack of sleeping in the suit, as compared to having been out of it before?

169:40:39 P Well, the suit makes you more available for sleeping. You're sort of rigid in the cockpit space - there are hot spots in the suit where your legs are bent back and forth under the crouch area - which are local hot spots and of course damp - those suits - of course you're sort of vented all over.

169:41:04 CC Roger. Are you operating with all the zippers open, the same way Frank was?

169:41:11 P No. I have a zipper open in the crouch area and that's all.

169:41:15 CC Roger.

169:41:16 P Also, with the suit on the helmet, of course, is right on the back of my neck.

169:41:24 CC Roger.

169:42:17 CC We're probably about to lose you, Jim. Could you give me one more check on 2C?

169:42:26 P Roger. No change. It's a little bit closer to 2 volts than 1 1/2.

169:42:30 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

523

ROSE KNOT VICTOR

169:52:15 CC Gemini VII, RKV CAP COM. You need not acknowledge.
All your systems are GO. We're standing by.

169:52:22 P Roger, RKV.

170:13:01 C Borman about to dump urine.

COASTAL SENTRY QUEBEC

170:36:00 CC Gemini VII, CSQ. We have you GO on the ground. We
have nothing for you this pass. You need not ack-
nowledge this transmission. CSQ standing by.

170:36:12 C Roger. Thank you.

HAWAII

170:53:42 CC Gemini VII, Hawaii CAP COM.

170:53:45 C Come in, Hawaii, Gemini VII.

170:53:47 CC Roger. We show you GO on the ground. I'll get
back to you in a second.

170:53:52 C Roger.

170:54:24 CC I have a couple of questions here to ask you.
First of all, how much time do you have left on your
D-4/D-7 tape recorder.

170:54:34 C Stand by. We'll look it up.

170:54:48 P We have 8 minutes and 10 seconds left.

170:54:52 CC Roger. Copy 8 minutes, 10 seconds.

170:54:54 CC Okay. I would also like to have your evaluation
of the weather over Hawaii if you're in a position
where you don't have to use maneuvering.

CONFIDENTIAL

CONFIDENTIAL

170:55:07 P Roger. Could you give us our CPA?

170:55:12 CC You mean your PCA?

170:55:15 P PCA. Right.

170:55:23 P We're just tumbling now. If we had an idea just exactly when we'll be over the Islands we could - we're looking down we could probably check it.

170:55:30 CC Roger. We'll give it to you.

170:56:38 CC You're approaching a point PCA on my Mark.

170:56:41 CC MARK.

170:56:44 P Roger. We're now PCA, so it might be a little bit before we can give you a good evaluation.

170:56:50 CC Roger.

170:57:04 C Has the weather deteriorated any since the last time you made it on the laser?

170:57:08 CC Say again.

170:57:10 C Has the weather deteriorated any since the last time we tried the laser?

170:57:12 CC Roger. It has quite a bit.

170:57:16 P We can't see the Islands now. I'd sure like to try it again, if it's not bad. I'd like to give it a whirl anyway.

170:57:26 CC Roger. We'll keep you advised of the weather situation here and maybe I can get something straightened out before your next revolution.

170:57:33 C Are you overcast or broken?

170:57:35 CC Broken.

170:57:36 C Okay.

170:58:22 CC We have a slight flight plan change here for you. You ready to copy?

CONFIDENTIAL

CONFIDENTIAL

525

170:58:33 C Stand by one.

170:58:43 C Go ahead, please.

170:58:45 CC Roger. The fuel cell purge due over the RKV at 17 plus 26 - 171 plus 26 has been deleted. We'll have a fuel cell purge over the RKV at 173 plus 10.

170:59:10 CC - 01.

170:59:15 P Understand the fuel cell purge scheduled for 171:26 has been deleted and we're now going to purge at 173 plus 10. Is that correct?

170:59:25 CC Negative. That was 173 plus 01.

170:59:33 P Roger. New purge time is 173 plus 01.

170:59:37 CC Roger.

170:59:41 CC Do you still have your BIO MED tape recorder on?

170:59:44 P Affirmative.

170:59:45 CC Roger. You can turn Number 1 off.

170:59:51 P Roger. 1 is off.

171:00:16 CC Roger.

171:00:22 C Hawaii, will you ask Houston how long we can leave the 2C on OPEN - when we should shut it down and when the amps get below what figure, should it be shut down?

171:00:31 CC Roger. Will do.

171:00:45 CC You'll be advised of that over the RKV.

171:00:46 C Thank you.

171:06:07 P ... clouds taken at 171:06. Confirmation of 30 degrees apart.

CONFIDENTIAL

CONFIDENTIAL

ROSE KNOT VICTOR

171:26:18 CC Gemini VII, RKV.

171:26:22 C This is VII. Go ahead.

171:26:24 CC Roger. I've got a block update for you when you're ready.

171:26:28 C Roger. Stand by.

171:26:43 C Ready to copy.

171:26:47 CC Roger. The REP of 402 feet for all areas is 21 plus 40. Area 111-3: 176:34:57. Area 112-Bravo: 178:09:57. Area 113-Delta: 179:08:38. Area 114-2: 180:44:24. Area 115-2: 182:17:29. Area 116-2: 183:50:35. Area 117-1: 185:23:05. The weather is good in all areas.

171:28:09 C Roger.

171:28:14 C I have one question. Was that Area 111-Delta?

171:28:18 CC Negative. It was Area 111-3.

171:28:26 C Roger. And what was the Delta area at this ... ?

171:28:30 CC That was Area 113-Delta.

171:28:33 C Area 113-Delta. Thank you.

171:28:35 CC Roger.

171:28:54 CC Gemini VII, RKV.

171:28:57 C Go ahead, RKV.

171:28:58 CC Would you read me back Area 117-1?

171:29:03 C Roger. 117-1: 185:23:0 - you gave me - you gave me a 7-digit there?

171:29:12 CC I'll give it to you again. It's 185:23:07.

171:29:19 C Roger. 185:23:07.

CONFIDENTIAL

CONFIDENTIAL

527

171:29:21 CC Roger.

HOUSTON

171:47:15 CC Gemini VII, Gemini VII, this is Houston CAP COM. Over.

171:47:18 C Go ahead, Houston CAP COM.

171:47:21 CC Roger, Gemini VII. I've got an update on your flight plan if you are ready to copy.

171:47:26 C Stand by one minute.

171:47:48 C Ready.

171:47:49 CC Okay, Gemini VII. We're being forced to scrub the MSC-4 at Hawaii. We've looked at it pretty closely from all directions. This is the MSC-4 at 172:31:11. The weather is broken overcast. You've got a bad set angle and the experimenters would rather wait for a Hawaii night or very early morning pass rather than go ahead and try it now. It doesn't look too good at all.

171:48:13 C Fine. Thank you.

171:48:16 CC Okay, and I've got a D-4/D-7 update.

171:48:21 C Roger.

171:48:22 CC Okay. D-4/D-7 at 172:38:57; Sequence 427; Mode 02; pitch 12 degrees down, yaw 95 degrees left; passing below, right to left for a total of 5 minutes; use 30 seconds recorder maximum, and use cameras.

171:49:08 C Roger. We have it.

171:49:11 CC Roger. Understand you've got it. We'd like a prop quantity readout, please.

171:49:15 C My propellant quantity reads 93 - 94 percent.

171:49:21 CC Roger. Understand 74 percent.

CONFIDENTIAL

CONFIDENTIAL

171:49:26 C Correction. I'm right - 24 percent.

171:49:28 CC Roger. 24 percent. We got it.

171:49:31 C 24 percent.

171:49:33 CC Understand 24 percent.

171:49:34 C Right.

171:49:37 CC Okay. And I'd like to advise you your pass over the CSQ will be UHF 6.

171:49:41 C Thank you.

171:49:42 CC Okay. And Frank, we're taking a good look at your fuel cell at this time and will advise you as soon as we come up with some reasonable conclusions on it.

171:49:53 C Thank you.

171:53:58 P ... you going to put it on?

171:53:59 P No. It was ...

171:54:03 C It was off when I got it just now.

171:54:08 P Oh? Did you move the big knob?

171:54:09 C Yes. It was on but ...

171:54:10 P Okay.

171:54:19 CC Gemini VII, Gemini VII, Houston CAP COM.

171:54:22 C Go ahead, Houston.

171:54:23 CC Roger. Frank, we'd like you to turn your Section 2 Power switch off at this time. We'd like to monitor it for about a revolution. We'll probably bring it back on at the RKV this next pass, and we will advise you further at that time. Over.

171:54:39 C Section 2 Power?

171:54:41 CC That's affirmative. Your Section 2 Power switch to the OFF position.

CONFIDENTIAL

CONFIDENTIAL

529

171:54:45 C It's off.
171:54:46 CC Okay.
171:54:47 C Here we go!
171:54:51 P Okay. Roger. 2 on. Off.
171:56:18 P 2A is off high, 2B is off high, 2C is a little sick.
171:56:37 P 2A and 2B are in good shape.
171:58:58 P 3857. ...
171:58:59 P What happened?
171:59:01 P Okay.
171:59:10 P That's 39 minutes from now.
171:59:20 P How about a little lunch or dinner?
171:59:25 P We'll get it out, but we'll have to, pretty soon.
172:00:54 P I looked over here.
172:00:57 C I thought I fixed Power 2 switch off.
172:02:58 C You've got to warm that thing up 10 minutes ahead
of time.
172:04:37 P Right down in the water, Kid.
172:04:39 C How many do you have there?
172:04:40 P Rattling around; it's not too many.
172:05:34 C ...
172:10:05 C ...

COASTAL SENTRY QUEBEC

172:10:18 CC Gemini VII, CSQ.
172:10:25 C This is VII, CSQ. Go ahead.

CONFIDENTIAL

CONFIDENTIAL

172:10:27 CC Roger, Gemini VII. Can you verify that the Cross-over switch is on the ON position?

172:10:34 C I can verify that the Crossover switch is on the OFF position.

172:10:39 CC We want it on the ON position.

172:10:41 C Roger. Crossover switch is in the ON position.

172:10:43 P Roger. That's the first we heard. We'll put it in the ON position.

172:10:45 CC Roger.

172:10:54 CC Gemini VII, we would like open-circuit voltages on 2-Alpha, 2-Bravo and 2-Charlie.

172:11:03 C Roger, CSQ. Coming up. 2-Alpha is off-scale high about 32 volts; 2-Bravo is off-scale high about 32 volts; and so is 2-Charlie off-scale high about 32 volts.

172:11:29 CC Very good.

172:11:30 CC ... Gemini VII.

172:11:34 P I haven't heard of this system.

172:11:35 CC Gemini VII, we are standing by for your flight plan report.

172:11:40 C Roger. Gemini VII has a ... situation. We've used two magazines plus 40 exposures of S0217. That's the ASA-64. Two magazines plus 30 feet of 16mm film, 5 exposures of dim-light black and white, 7 exposures of color-shifted IR. We have not used any of the ASA-500 S0217. Your Command Pilot total on Column 5 is 18; Column 6 is 4. The Pilot on Column 5 is 17 and Column 6 is 2. Pilot this morning on the S-8/D-13 vision test missed 3, the Command Pilot missed 7.

172:12:29 C That's about it.

172:12:30 CC Roger. Copy.

CONFIDENTIAL

CONFIDENTIAL

531

- 172:12:33 C That's about it. We've accomplished everything else in the flight plan except the things that Flight has been informed of already.
- 172:12:39 C We've accomplished everything else in the flight plan except the things that Flight has been informed of already.
- 172:12:43 CC Roger, Gemini VII.
- 172:12:44 P Would you have a urination there for me?
- 172:12:49 P No. You don't have to tell them ...
- 172:12:53 P Oh, I thought you had.
- 172:12:54 CC Gemini VII, we'll have a complete briefing over the RKV on the next pass on your fuel cell status.
- 172:13:00 C Roger. Thank you.
- 172:13:01 P Roger. Thank you.
- 172:13:03 C Okay, Jimmy. One urination now.
- 172:13:10 P Sure the section's down and the Crossover is supposed to be on?
- 172:13:13 C Yes.
- 172:13:15 C To keep the regulators ... back pressure. You knew that and so did I. We just didn't think of it.
- 172:13:25 C I think we're getting logy. No question about it.
- 172:13:27 P No. We're not getting logy.
- 172:13:29 C Sure. You're calling those volts and I'm doing things wrong. We're getting logy. We better watch ourselves.
- 172:13:34 P We just - just getting logy.
- 172:13:42 C ... get this thing turned around early in the game.

CONFIDENTIAL

CONFIDENTIAL

172:14:01 P Well, in a situation like this, though, where they're playing games back and forth, that's what I mean.

172:14:03 C They should tell you what to do.

172:14:05 P That's right. I don't know what the heck they're doing.

172:14:08 C ...

172:14:37 P Yes.

172:14:41 C Charlie, come on out, will you? I want you to meet your brother.

172:16:05 P Chuck Berry will have us taking three ...

172:16:13 P Just about like that Polaris.

172:17:25 C ... to procedures ...

172:17:29 C Okay.

172:17:51 P What did they say about cameras?

172:18:03 C Did you ever hear something doose, or is it deuce?

172:18:05 P What kind?

172:18:17 P No, I've already read the log. It didn't say anything about it.

172:18:27 P 10-minute warmup requires 418. That right?

172:18:29 C That's right.

172:18:41 P Passing below, right to left, 5 minutes.

172:18:46 C Right to left.

172:18:51 C What's he have here? Let's read that off and make sure we have it correct.

172:18:56 C ... 30 seconds, 30 seconds.

172:19:01 P 30 seconds to ...

CONFIDENTIAL

CONFIDENTIAL

533

172:19:53 C I am set to go.

172:20:05 C Yaw 95 left.

172:20:10 C We're pitched down ...

172:20:15 P And it's going to pass right to left for 5 minutes below. How can that be? I would say it's almost parallel with us.

172:20:27 C Yes ...

172:20:32 P How can it be below us and yet we're ... it's going to go from right to left? That means we wouldn't be passing it.

172:26:17 P There's one going to Hawaii.

172:26:25 P What?

172:26:27 C ...

172:26:29 P Sometimes there's an instrument ...

172:26:34 P The camera is ready. I used the ...

172:26:37 C ...

172:26:39 P Okay. I get it.

172:26:41 P Okay. 28 ...

172:26:53 C You can't ...

172:27:02 P Yes. Turn it on.

172:28:03 P Okay. We're all set to go.

172:28:05 P Transmitter dump.

172:28:44 C There's a lot of water in the ...

HAWAII

172:28:48 CC Gemini VII, Hawaii CAP COM.

CONFIDENTIAL

CONFIDENTIAL

172:28:51 C VII. Go.

172:28:52 CC Okay. We're showing you GO here on the ground.
How are you doing?

172:28:57 C Well, we're still hanging in there.

172:29:00 CC Okay. We'd like a little evaluation of what that
laser looked like to you as far as light intensity.

172:29:10 C It wasn't too bright. The thing that impressed me -
I thought that up here it would be bigger than just
a small point source. I guess I was a little misled
there. It looked rather small.

172:29:23 CC It's got a very narrow beam at .008.

172:29:27 C Right. But at a couple of hundred miles I thought
it would be a little wider than that.

172:29:31 CC I think they're going to widen it up a little for
you.

172:29:34 C Yes. But listen, if we get good weather, there's
absolutely no problem in acquiring it. We had
that colder than a mackerel.

172:29:36 C Listen, if we get good and ready there is
absolutely no problem of acquiring it. We had
that colder than a mackerel.

172:29:42 CC Very good.

172:29:46 C Looks like a nice little setup you all have up
there on that mountain top.

172:29:50 CC Say again.

172:29:51 C It looks like the national camp you have up there
on that mountain top.

172:30:05 P Yes. The weather looks pretty good.

172:30:10 P Tell you what ...

172:30:12 CC Can you give us some comparison as far as the
intensity goes, some star that you're aware of?

CONFIDENTIAL

CONFIDENTIAL

535

- 172:30:25 C That's pretty tough to do, offhand. I'd say it was on the order of Rigel, maybe.
- 172:30:31 CC Okay. Thank you.
- 172:30:32 P That bright? See, when I saw it, it was just like a real small thin dot on top of that ridge.
- 172:30:39 P I didn't see it pulsing. It'd go and then it would go away for a while.
- 172:31:13 P I think we're coming right up on Hawaii, now. Some place!
- 172:31:21 C Hawaii, this is VII.
- 172:31:22 P Hawaii, this is VII. We've got you again, got the island again. Looks like you're sort of broken overcast. Is that correct?
- 172:31:23 CC Go ahead.
- 172:31:24 C We've got you again. I've got the Island again. Looks like sort of a broken overcast, is that right?
- 172:31:30 CC Yes. Last time outside it looked like about, oh, about 5000 broken and .6 covered - .7 covered.
- 172:31:40 C Yes, the center part of the Island looks pretty good, but your end there has some cloud coverage over it.
- 172:31:41 C Straight down here.
- 172:31:43 P Yes, the center part of the island looks pretty good, but your end has a cloud coverage over it.
- 172:31:47 CC That figures. How's it look down around my hotel?
- 172:31:48 P Oh, I'll be honest with you. Can see the whole works.
- 172:31:53 C Looks pretty good; in fact, most of your island is uncovered.
- 172:32:00 CC Well, I think I'm going to spend the night up here tonight.

CONFIDENTIAL

CONFIDENTIAL

172:32:04 C Hey, you ought to go to Honolulu. Looks pretty clear out there, too.

172:32:07 CC You mean Honoruru?

172:32:09 C Yes.

172:32:13 C Pig Island looks pretty cloudy though.

172:32:17 P There's old - look at that! There's Waikiki.

172:34:08 CC What are you having for supper?

172:34:11 P Well, we had a little tuna salad, a little orange drink, apricot pudding - had it last night, too.

172:34:18 CC Give my regards to the chef, will you?

172:34:22 P I wish we had one.

172:35:04 CC Okay. We'll be standing by here if you need anything else.

172:35:07 P Thank you, Hawaii.

ROSE KNOT VICTOR

173:03:01 CC Gemini VII, RKV CAP COM.

173:03:05 C This is RKV. Go ahead, VII.

173:03:08 CC Roger. We would like to know whether you've been monitoring your open-circuit voltage on Section 2.

173:03:14 P We sure have. Section 2C is off-scale high now. It's about 32 volts.

173:03:20 CC Are all three off-scale high?

173:03:23 P Roger. All three are off-scale high.

173:03:25 CC Have you noticed any deviations or fluctuations at all?

CONFIDENTIAL

CONFIDENTIAL

537

- 173:03:29 P 2C was a little low when we first went to OPEN-CIRCUIT. It was about 31 volts, and then it just went up to 32, and all three have stayed there.
- 173:03:40 CC Roger.
- 173:03:41 P We still have a Delta-P light, however.
- 173:03:44 CC Roger.
- 173:03:51 CC Would you bring your Section 2 Power switch to ON and also leave the Crossover switch on?
- 173:03:57 P Roger. Leave Crossover on, Section 2 Power switch on.
- 173:04:00 CC Roger.
- 173:04:31 P It looks like it's carrying about between 2 1/2 and 3 amps now, RKV.
- 173:04:37 CC Roger.
- 173:04:39 P We put the switch on ... amp meter readings of about 5 amps.
- 173:04:56 CC We're standing by. We'd like you to purge both sections.
- 173:05:00 P Roger. Double purge, both sections coming up.
- 173:05:21 CC Would you place your Quantity Read switch to RCS O₂.
- 173:05:37 CC FUEL CELL O₂.
- 173:05:44 CC FUEL CELL H₂.
- 173:05:52 CC You can place the Quantity Read switch to OFF.
- 173:07:20 C ... be powered up the rest of the time up.
- 173:07:22 CC Roger. We'd like you to leave the Power switch on for CSQ. They'll give you some more data when you get to CSQ.
- 173:07:38 C Okay.

CONFIDENTIAL

CONFIDENTIAL

173:07:43 CC We've got your information for you on the OAMS status.

173:07:48 C Go ahead.

173:07:49 CC Okay. Your ground equations show you have 47 pounds of OAMS fuel remaining and this is an actual 26.5 percent. Your on-board gage should read 20 percent at this time. This puts you about 3 pounds above the minimum, but we want to keep you ... since lift-off.

173:08:07 C Thank you very much.

173:08:08 CC Incidentally, we have budgeted a total of 9 pounds of fuel for contingencies such as venting, which is included in the minimum requirements.

173:08:18 C Thank you.

COASTAL SENTRY QUEBEC

173:46:32 CC Gemini VII, CSQ.

173:46:45 CC Gemini VII, CSQ CAP COM.

173:47:02 C This is VII. Go ahead.

173:47:35 C Pilot, 498. Command Pilot, 585.

173:47:43 CC Roger. I've got it.

173:47:48 CC We'd like you to turn the Section 2 Power switch to OFF, and will remain that way through the sleep period.

173:47:56 C Section 2 off.

173:48:00 CC Say again, CSQ. I did not copy.

173:48:04 C You say you want Section 2 off through the entire sleep period?

173:48:07 CC That's affirmative.

CONFIDENTIAL

CONFIDENTIAL

539

- 173:48:08 C And you want the Crossover valve left off?
- 173:48:11 CC That's affirmative.
- 173:48:12 C Okay.
- 173:48:38 CC Gemini VII, this is CSQ.
- 173:48:41 CC We would like that switch to be in the OFF position.
The Crossover switch to the OFF position.
- 173:48:46 P Roger. We understand. Crossover switch to OFF
position.
- 173:48:49 CC Roger.
- 173:48:53 CC Gemini VII, can you verify that your BIO MED
Recorder Number 2 is in CONTINUOUS.
- 173:48:58 P Roger. BIO MED Number 2 is in CONTINUOUS.
- 173:49:10 CC Your Cryo rules for the sleep period are as
follows: ECS O₂, no heat required; Fuel Cell O₂
in AUTO. Fuel Cell H₂: prior to going to sleep
we want it to pan up to a maximum of 510, minimum
390. We'll monitor that from the ground.
- 173:49:39 C Roger, CSQ. If you want us to stay awake in
shifts to watch second section we'll be happy to.
- 173:49:47 CC That's not necessary, Gemini VII.
- 173:49:53 C Okay.
- 173:49:58 CC Gemini VII, could you give us your sleep con-
figurations as for gloves, headgear, etc?
- 173:50:11 P The Command Pilot will have the nominal flight
suit on and the Pilot will have the regular pressure
suit.
- 173:50:18 P Neither of us will wear gloves. Negative headgear.
- 173:50:23 CC Will wear gloves, negative headgear.
- 173:50:26 P No gloves. No headgear.
- 173:50:28 CC Roger. Copy.

CONFIDENTIAL

CONFIDENTIAL

173:52:34 CC Gemini VII, the Section 2 Power switch was turned off in hopes of removing some of the water from Section 2. We feel that the extraction rate is not sufficient to remove the produced water.

173:52:46 P Roger.

CANARY

181:11:46 P Canary, Gemini VII.

181:11:49 CC Go ahead, VII. Canary here.

181:11:51 P Roger. For your information, the Delta-P light went out about 180:30. ... but it came back on about 181:00 ...

181:12:04 CC Roger. Copy.

181:12:08 CC We have all systems GO on the ground.

181:12:11 P Thank you very much.

181:12:13 CC Good morning.

181:12:14 P How you all?

181:12:16 CC We're feeling fine and dandy this morning.

181:12:18 C What's the word on VI?

181:12:20 CC Everything is still GO.

181:12:21 C Very good.

181:12:30 P We're still in our sleep period but we'll be happy to entertain any ...

181:12:38 CC Okay. Have anything for the fuel cells?

181:13:13 CC VII, Canary.

181:13:16 P Go ahead.

181:13:18 CC Stand by.

CONFIDENTIAL

CONFIDENTIAL

541

181:13:41 CC Okay, VII. This is Canary. A little later on we're going to power-up the second section again - not right now though, and don't know whether or not we're going to purge with or without that second section up, at the present time.

181:13:55 C Okay. Thank you.

181:13:57 CC Roger.

181:14:08 CC Could you place your C Adapter switch to CONTINUOUS, please.

181:14:15 C Roger.

181:14:42 P ... been over 32 volts for a long time now.

181:14:48 CC You said it's been over three - for how long now?

181:14:53 P Well, we haven't been monitoring closely, we've been asleep, but they've been over 32 volts over the last 5 - 4 hours.

181:15:01 CC Okay.

TEXAS

184:09:52 CC Gemini VII, Houston.

184:10:09 CC Gemini VII, Houston.

184:10:11 P Go ahead. You're all clear.

184:10:13 CC Good morning. I have some PLA updates and a flight plan update for you.

184:10:20 P All right, Houston. Just a minute.

184:10:47 P Houston, Gemini VII. Go ahead with PLA's and I'll get the flight plan later.

184:10:52 CC Okay. I'll read you your new flight plan first. Node 185:33:43; Rev 116; 126.9 - 126.9 degrees west; right ascension is 10 hours, 00 minutes, 6 seconds. Flight plan time line update: change 184:00:00 to 184:12:00.

CONFIDENTIAL

CONFIDENTIAL

184:11:51 CC Time: 185:40:14; crew status report on the Pilot at Texas.

184:12:08 CC Time: 185:58:02; crew status - -

184:12:14 P Houston, VII.

184:12:16 CC Go ahead, Gemini VII. Houston.

184:12:18 P Was that time 185:40:14, and was that crew status report on Pilot at Texas?

184:12:25 CC That's affirm, Jim.

184:12:26 P Okay.

184:12:28 CC Next item: Time, 185:58:02; crew status report on the Command Pilot at CYI, Canaries. Next item: D-4/D-7 at 187:21:47.

184:13:00 CC Sequence 430; Mode 02; pitch 30 degrees down, yaw 4 degrees left. This is a D-4/D-7 on the Gemini VI launch and take S-6 photos of the Cape weather. The nominal lift-off time of Gemini VI is 187:24, about. We'll update that later when we get a better track on it.

184:13:34 P Roger. This is the Pilot. D-4/D-7, we didn't get that up here.

184:13:39 CC Roger. 187 - 187:21:47.

184:13:48 P Roger. Have it.

184:13:50 CC Are you ready for your PLA updates?

184:13:57 P Roger. Go ahead.

184:13:58 CC Carry a 118-1; Time, 186:58:39.

184:14:12 C You are not keying, Houston. We are not reading you. Say again, please.

184:14:16 CC 118-1: 186:58:39; 119-1 at 188:34:27; 120-4: 191:25:52.

CONFIDENTIAL

CONFIDENTIAL

543

184:15:08 CC 121-4: 193:01:27; 122-4: 194:37:24. That's 24:13. Correction there, 195:54:13. 123 - 124-3 is 197:29:47. RET 400K is 21:40 for all areas, and the weather in all areas is good.

184:16:14 P Roger.

184:16:17 CC Be advised to keep your continuous adapter C-Band on until TPI, and we'll have a test on your fuel cells coming up for you at CYI, so we'd request no fuel cell activity until acquisition of Canary Islands. In general, we intend to warmup Stack 2 before purging. That's Section 2. You'll receive a GO/NO-GO at Carnarvon in the next revolution.

184:17:01 CC Yes, that's this pass over Carnarvon, Gemini VII. How do you feel this morning?

184:17:20 CC Gemini VII, Houston.

184:17:23 C Go ahead.

184:17:26 CC Roger. How do you feel - -

184:17:37 C We're fine, how do you read us?

184:17:39 CC I'm reading you now. We just switched to Bermuda. Do all your systems appear good?

184:17:45 C Say again.

184:17:46 CC Are all your systems good?

184:17:48 C All systems are good, right.

184:17:51 CC Good. Did you have the same tumbling rates this morning when you awakened?

184:17:54 C ... check, we haven't awakened yet.

184:17:58 CC Well, okay. Sorry about that.

184:18:02 C ... there's no tumble this morning.

184:18:09 CC When you rested the last night, was the temperature a little better?

CONFIDENTIAL

CONFIDENTIAL

184:18:20 CC Gemini VII, be advised the count is going very well at the Cape.

184:18:25 C How are you reading now? Do you read me?

184:18:27 CC I'm reading you all right. How are you reading me?

184:18:30 C ... but be advised that tumble rates are very slow and we do not ... cabin wall temperatures are normal this morning; they are not cold.

184:18:42 CC Oh, very good. Be advised that the count's going very well at the Cape on Gemini VI.

184:18:47 C ...

184:18:49 CC The crew's up and healthy, and we're all ready to go.

CANARY ISLANDS

184:22:59 CC Gemini VII, Canary. Com check. How do you read?

184:23:02 P A - this is VII, Canary, and good morning to you there.

184:23:05 CC And good morning to you, also. We have some information for you on this fuel cell.

184:23:10 P Right. Listening.

184:23:12 CC Okay. Right now we'd like for you to open the Primary Cooling Valve circuit breaker.

184:23:20 P We are now going to open the Primary Cooling Valve circuit breaker.

184:23:25 CC Roger.

184:23:27 P It is now open.

184:23:29 CC Okay. You want the Radiator switch to BYPASS.

184:23:33 P Radiator switch going BYPASS.

CONFIDENTIAL

CONFIDENTIAL

545

- 184:23:34 CC Okay. This is going to ... to BYPASS on the radiator, and kind of warm up that second section. Okay? And now what we would like from you is a normal purge on Section 1.
- 184:23:49 P Okay. A normal purge on Section 1. Section 2 Power switch is ... still off.
- 184:23:53 CC Affirmative.
- 184:23:58 P Stand by. We want to check to see whether our Crossover should be off or on.
- 184:24:37 CC Okay. We want the Crossover switch on.
- 184:24:39 P Roger. Here is our procedure. ... the Crossover switch ON and make a normal Section 1 purge ... is that correct?
- 184:24:50 CC That's correct.
- 184:25:26 C Canary, this is Gemini VII.
- 184:25:28 CC Go ahead, VII.
- 184:25:29 C Would you check with Houston and find out when they want us to start getting suited ... ?
- 184:25:35 CC Okay.
- 184:26:15 CC VII, this is Canary. Flight says that you can wait awhile and they want to make sure they get lift-off first, then you can start putting them on.
- 184:26:22 C Fine, thank you. We'll hold off.
- 184:26:27 C Be advised you can tell them the first time we had poor communications ... with Houston on that last pass - I guess they're remoting us.
- 184:26:36 CC Yes, that's right, they were. Okay. I'll give you a little preliminary briefing about what's going to happen over Carnarvon. Upon Carnarvon's instruction, we'll adapt a flow on the radiator and then we'll close the Primary Cool Valve circuit breaker again and then you'll perform an open-circuit, double-length purge on a second section. Do you copy?

CONFIDENTIAL

CONFIDENTIAL

184:27:04 P An open-circuit, double-length purge on the second section.

184:27:08 CC That's right. That's upon Carnarvon's instruction, okay?

184:27:11 P Roger.

184:27:12 CC We want to let that secondary loop warm up a little bit.

184:27:21 P First section purge is complete and the ... is going off.

184:27:24 CC Okay. Can you break the Quantity Read switch to ECS O₂, please?

184:27:28 P Roger. Done.

184:27:29 CC And I would like some readings.

184:27:36 C 72 percent at 820 pounds. S_{CO}2 is 62 percent and 750 pounds.

184:27:53 CC Okay. Hold it there for a minute.

184:28:02 CC Fuel cell H₂.

184:28:07 C 68 percent and 460 pounds.

184:28:21 CC Okay. Go back to OFF on the Quantity Read switch. That's about all we have. Can we help you in any way?

184:28:34 C No, I think we're in pretty shape.

184:28:35 CC Okay. Very good. We'll be standing by.

184:28:38 C Roger.

CARNARVON

184:58:11 CC Gemini VII, Carnarvon CAP COM.

184:58:13 CC Roger. Carnarvon.

CONFIDENTIAL

CONFIDENTIAL

547

- 184:58:15 C This is VII. Go ahead, Carnarvon.
- 184:58:17 CC Roger. Good morning from Australia and we would like to have you place your Radiator switch to the FLOW position and your Primary Cool Valve circuit breaker to the ON.
- 184:58:28 C Roger. Primary Cool Valve is ON and radiators in FLOW position.
- 184:58:41 CC Okay. I would like your readout on 2A, 2B, and 2C voltages.
- 184:58:51 C 2A is off-scale high about 32 volts. 2B is almost off-scale high and looks like about 32.3 volts. 2C is off-scale high about 32 volts.
- 184:59:14 CC Roger. Sounded good.
- 184:59:17 CC Okay. And we're standing by now for a double-length purge on Section 2. That's open-circuit, double-length purge.
- 184:59:36 P Roger. You want section and you want an open-circuited, right?
- 184:59:41 CC That's affirmative.
- 184:59:43 P And I'll increase valve on ... by two and I'll leave the Crossover - I'll put the Crossover on. Is that correct?
- 184:59:51 CC That's Roger.
- 184:59:52 P Okay.
- 184:59:56 P Crossover on. Inboard ... for 26 seconds.
- 185:00:00 CC Roger.
- 185:00:32 P Going ... for 4 minutes.
- 185:00:47 CC Okay. Gemini VI, are you purging to ... Can you give us some of your readouts for GO/NO-GO?
- 185:00:55 P Roger. Stand by a second, please.

CONFIDENTIAL

CONFIDENTIAL

185:01:38 C Carnarvon, I'll give you some of these now -
The RCS A reads 3000, the temperature is 80.
B is 2900, temperature 80. The secondary oxygen
5400, right secondary O₂ 52-5300. The batteries
are all okay - 23 volts, actually 22.7 volts on
the main battery.

185:02:20 C Section 1A reads 7; Section 1B reads 8; Section 1C
reads 7.5. Cores 2A, 2B, and 2C are zero and the
main bus voltage is 25.2.

185:02:33 CC Roger.

185:04:41 C Purge complete. Crossover on.

185:04:44 CC Roger. Would you give me a reading on the open-
circuit voltages on Section 2?

185:04:56 C 2A off-scale high at least 32 ... 2B about 32.2.
2C off-scale high over 32.

185:05:09 CC Turn it on.

185:05:11 CC Roger. Would you place Section 2 back on the line?

185:05:15 C Section 2 back on the line.

185:05:30 CC Okay. Would you give me a current readout on this
as soon as you get it?

185:05:37 C Okay. 2A, 2 amps; 2B, 2 amps; 2C, 4 amps.

185:05:47 CC Oh, very good. Okay. We have you GO on the ground
for Area 134-1 and we're going to update your T_R
clock at this time.

185:05:57 P Roger, understand it's GO to 134-1.

185:06:02 CC T_R received.

185:06:05 CC ... on the ground and I updated you with the T_R
time for Area 148-1; however, the GO is for Area
134-1.

185:06:22 P Roger. Understand.

185:06:24 CC Okay. We have another minute to go here.

CONFIDENTIAL

CONFIDENTIAL

549

185:06:27 C Bob, will you give us the time hack, please - elapsed time hack?

185:06:31 CC Roger. I'm reading 185; let's see, 06, 37, 38, 39, 40.

185:06:42 C Right.

185:06:44 CC Roger.

185:06:49 CC We'd like an on-board readout to OAMS Propellant Quantity.

185:06:58 C Looks like about 25 percent.

185:07:02 CC Roger. Force pressure of 1300 pounds.

185:20:32 P Food stowage in case ... makes it earlier, Frank. Saving up for me ... the food packages have expanded, probably during launch. We found out when I got my food out. It makes it very difficult. It was ... they were vacuum-packed - you can imagine, Frank, what they are when they ... 187:21:10 of the Cape area ... launch.

TEXAS

185:40:55 CC Gemini VII, Texas CAP COM.

185:40:59 C Go ahead, Texas. This is Gemini.

185:41:02 CC Roger. We'd like you to place your Standby T/M switch to the REAL-TIME position, and it will be left there for the duration of the rendezvous phase. Over.

185:41:09 C Roger. Standby T/M REAL-TIME. You're very, very weak, Texas.

185:41:55 CC Gemini VII, Texas has you GO on the ground.

185:41:58 C Roger. Thank you. We read you loud and clear.

185:42:05 C Was your last instruction to place the Real-Time T/M switch or the Standby T/M switch to the REAL-TIME position?

CONFIDENTIAL

CONFIDENTIAL

185:42:14 CC Gemini VII, Texas. Say again, please.

185:42:19 C I say, was your last instruction to place the Standby T/M switch to the REAL-TIME position?

185:42:24 CC That's affirmative and it'll be left there for the duration of the rendezvous phase. Over.

185:42:28 C Roger. What about our DCS circuit breaker? Do you want that open now?

185:42:32 CC Negative. We're getting a tape dump at this time.

185:42:34 C Okay.

185:42:42 C Texas, we'd like to confirm the last nodal update also, please. Was it west or east?

185:42:54 CC It was west and Houston will confirm in a minute.

185:42:58 C Thank you.

185:44:16 CC Gemini VII, Gemini VII, Houston. How do you read?

185:44:18 C Loud and clear, Houston.

185:44:21 CC Roger. Good morning.

185:44:22 C Good morning.

185:44:24 CC Would you give us a quick readout on Section 2 stacks? Amperages only.

185:44:29 C Jim's got his thermometer in his mouth. Do you want a crew status report?

185:44:34 CC We're going to get that in just a second.

185:44:36 C Okay. Section 2 is now reading 4 amps - correction -2A is about 1.5 amps; 2B is about 2 amps; 2C is about 4.5 amps.

185:44:52 CC Roger. We have a valid temperature. Give us a blood pressure and stand by for the Surgeon.

185:44:58 C Roger.

185:45:11 CC Cuff is full-scale.

CONFIDENTIAL

CONFIDENTIAL

551

- 185:46:18 CC Gemini VII, we have a valid blood pressure. You could start your exercise.
- 185:46:22 P Roger.
- 185:46:23 C Chuck, while he's exercising, do you have time to take the report?
- 185:46:26 CC Roger. We're ready. I'd like to get the sleep report first, Jim, and I think - I mean, Frank and I think it's pretty important that we get a good hack on this sleep this time because we're trying to build some data down here. So could we get a pretty good rundown on how you did last night?
- 185:46:45 C I has 6 hours of the best sleep on that since I've been up here. It was excellent. I feel like a million dollars this morning!
- 185:46:52 CC Very good! Much better without the suit, right?
- 185:46:55 C Right. Jim had 6 hours of suited sleep and he had a - sort of off-and-on, but he feels pretty good.
- 185:47:04 CC Okay. Very good. Blood pressure is full-scale.
- 185:47:14 CC Okay. Frank, you want to go ahead with this food report then?
- 185:47:17 C Roger. Last night we had Meal C and we lost the day number on it. It was Meal C and it consisted of tuna salad, fruitcake and apricot pudding, so you can determine what day that is.
- 185:47:30 CC It did not have a day number - just Menu 1, Meal C - is that all?
- 185:47:34 C Yes. We lost the day number on it.
- 185:47:38 P We lost the day number.
- 185:47:40 CC Roger. Copy. You lost the day number. That blood pressure - the telemetry dropped out. Could we get another blood pressure?
- 185:47:47 C Coming right up.

CONFIDENTIAL

CONFIDENTIAL

185:47:52 C The Pilot's had 498 ounces of water. Total of Column 5 is 19; Column 6 is 2.

185:48:06 C The Command Pilot has had 607 ounces of water. Column 5, 20; Column 6, 4.

185:48:15 CC Roger. Copy. Frank, can you conveniently get a reading off the water gun right now? Just the total off the gun.

185:48:24 C 25. I remember ...

185:48:49 CC Gemini VII, say again.

185:48:52 CC Gemini VII, turn off your DCS circuit breaker.

185:48:58 C Roger. It's off now.

185:49:13 CC Frank, did Jim send another blood pressure?

185:49:17 C Roger. Coming up.

185:49:19 CC Did he send one a minute ago?

185:49:22 C This is his third one.

185:49:25 CC Okay. Well, listen, don't - stop it, delete it, because it's not coming through from the Cape. There's something wrong with the T/M setup right now, so delete the blood pressure, Frank.

185:49:45 CC Frank, we're going to need these data on this exercise and the response after the exercise. It's two of the things that we're plotting on the suit versus the non-suit configuration here and we're going to need it on both you and Jim, so we may have to repeat this exercise period on Jim somewhere over one of the next sites here. We'll get to you as soon as we can figure out where is the best place to do it.

185:50:13 C That's fine with us.

185:50:15 CC Roger.

185:50:17 C We're going to have a little breakfast now.

CONFIDENTIAL

CONFIDENTIAL

553

- 185:50:22 CC Frank, what about the exercise before meals? Have you been doing that the last few days?
- 185:50:28 C Missed one, Chuck.
- 185:50:29 CC Haven't missed one?
- 185:50:30 C Just one.
- 185:50:31 CC Very good! Is it any harder to do when you're - as far as your actual movement of the - with the exerciser, is it any different when you're in the suited or the unsuited condition?
- 185:50:45 C I'll let Jim answer that.
- 185:50:48 P Definitely, Chuck. It's very difficult to exercise with the suit on as compared with the suit off. Relatively speaking.
- 185:50:53 CC Well, we've noticed this in your times to complete the exercise. There's a lot of difference between whether you're suited or unsuited. You can do it much faster - about half the time - when you're unsuited, it appears.
- 185:51:04 P Right. I can get much more mobility. I can do a lot of different exercises with the suit off than I can on. I can arch my back and everything like this. I can turn around and everything.
- 185:51:14 CC Roger. Fine. Turn you over to CAP COM.
- 185:51:17 P Okay.
- 185:51:18 CC Gemini VII, place your ACQ Beacon circuit breaker OFF.
- 185:51:32 CC Gemini VII, place your ACQ-AID circuit breaker beacon - Beacon circuit breaker OFF.
- 185:51:38 P It's off, CAP Com.
- 185:51:40 CC And place your Real-Time Transmitter circuit breaker OFF.
- 185:51:49 P Real Time circuit-breaker is off.

CONFIDENTIAL

CONFIDENTIAL

185:51:52 CC Roger. And I have your Node update if you're ready to copy.

185:51:56 P Roger.

185:52:03 CC Ready to copy?

185:52:05 P Go ahead.

185:52:07 CC Time: 185:33:43; Rev 116; 126.9 degrees west; right ascension, 10:00:06. Do you copy?

185:52:34 P Roger. We've copied it this time.

185:52:38 CC And did you have your flight plan time line update change okay?

185:52:44 C I believe it's 14 minutes. Is that not correct? 12 minutes, that is.

185:52:48 CC That's correct - 12 minutes.

185:52:50 C Roger.

185:52:56 CC For your information, GT-VI is inserted; both pilots are in and we've closed the hatches. Everythink is looking real good.

185:53:07 C Sounds good.

185:53:10 CC And we observed that your Delta-P light is on. Is that correct?

185:53:13 C That's right. It was off for a half an hour last night and then came back on and has been on ever since.

185:53:18 CC Okay, Frank. We'll see you next time around.

185:53:22 C How about a lift-off time on VI?

185:53:25 CC Roger.

185:53:31 CC In your time it would be 187:24:06.

185:53:38 C 187:24:06.

CONFIDENTIAL

CONFIDENTIAL

555

185:53:41 CC That's affirmative.
185:53:42 C Thank you.

CARNARY ISLANDS

185:58:37 CC Gemini VII, Canary CAP COM. We have a valid oral temp. Standing by for your blood pressure.
185:58:55 CC Gemini VII, Canary Surgeon. Your cuff is full-scale.
185:59:04 C Roger.
185:59:46 CC We have a valid blood pressure. Standing by ... exercise.
185:59:53 C Roger. MARK.
186:00:16 C You want the blood pressure?
186:00:18 CC Roger.
186:00:30 CC Cuff full-scale.
186:01:17 CC Blood pressure is valid. Canary Surgeon out.
186:02:30 CC VII, Canary.
186:02:32 C Go ahead, Canary. Gemini VII.
186:02:33 CC Roger. Would you confirm your ACQ-AID circuit breaker is open at this time?
186:02:39 C Stand by one. Let me check again.
186:02:51 C I must have turned off the rescue beacon. The ACQ-AID beacon is now off.
186:02:55 CC Roger. Thank you.

CARNARVON

186:34:37 CC Gemini VII, Carnarvon CAP COM.

CONFIDENTIAL

CONFIDENTIAL

186:34:42 P How are you, Carnarvon? This is VII.

186:34:44 CC Oh, Roger. Would you place your T/M switch to the REAL-TIME DELAY-TIME position?

186:34:52 P Roger. T/M is on REAL-TIME DELAY-TIME.

186:34:59 CC Okay. Would you place your Tape Playback switch to CONTINUOUS?

186:35:05 P Tape Playback is on CONTINUOUS.

186:35:07 CC Roger. We're standing by for your Medical Data Pass.

186:35:15 CC Gemini VII, this is Carnarvon Surgeon. We're ready for your blood pressure.

186:35:19 C Understand you want this on the Pilot, right?

186:35:22 CC Pilot - affirmative.

186:35:26 C We weren't told you were going to pick it up here but we'll do it right now.

186:35:39 C Blood pressure coming down.

186:35:41 CC Roger.

186:35:48 CC Cuff is full-scale.

186:36:38 CC We have a valid blood pressure. Would you begin your exercise on your Mark?

186:36:47 P MARK.

186:37:15 P Blood pressure coming down.

186:37:17 CC Roger.

186:37:25 CC Cuff is full-scale.

186:37:32 CC Gemini VII, Carnarvon CAP COM. Will you place your Tape Playback switch to the COMMAND position, please?

186:37:38 C Roger.

CONFIDENTIAL

CONFIDENTIAL

557

186:37:42 CC T/M - T/M switch to COMMAND position.

186:37:48 C Roger.

186:37:59 C The second section looks like it's holding its own, Carnarvon.

186:38:03 CC That's affirmative. We plan to leave it just as it is for the time being. It looks real good.

186:38:14 CC We have a valid blood pressure.

186:38:18 CC Gemini VII, Carnarvon. Houston Surgeon requests us to get a statement on your last meals. Would you give us a readout on what you had for breakfast, please?

186:38:32 C This last meal, which we're just finishing up now, is Day 7, Meal A.

186:38:41 CC Roger. Thank you. Do you have readily available a reading on the water gun?

186:38:45 P Roger. Stand by.

186:38:50 P 2887 on the dot.

186:38:52 CC Read 2887. Thank you. Gemini Surgeon out.

186:39:02 CC Gemini VII, Carnarvon CAP COM. We'd like to have you bring the Fuel Cell H₂ pressure up to on-board reading of 500 psi.

186:39:12 C Up she comes.

186:39:14 CC Roger. Also, at the present time they're working on a power-up sequence for approximately 2 hours after Gemini VI launch.

186:39:31 C Okay.

186:39:50 C Carnarvon, this is VII.

186:39:52 CC Go ahead, VII.

186:39:54 C Is your Surgeon down there from Georgia or Alabama?

CONFIDENTIAL

CONFIDENTIAL

186:39:59 CC Negative. He's from Australia - Southern Australia,
that is.

186:40:03 C That's it, then.

GUAYMAS

187:14:52 C Guaymas, Gemini VII.

187:14:55 CC Gemini VII, Guaymas.

187:14:57 C I was just wondering how everything's going.

187:14:59 CC Everything looks real good down here. We're showing
2-Charlie at 3.92 amps.

187:15:04 C Roger. The two sections seem to be going closer
together to start the ...

187:15:09 CC Roger.

187:15:10 C How's the launch going with VI?

187:15:12 CC Oh, VI is going along real well. They're still in
the 25-minute hold.

187:15:18 C They've already had a 25-minute hold?

187:15:20 CC It's a built-in hold.

187:15:21 C Roger.

187:15:28 CC Houston said everything's progressing normally.

187:15:31 C Thank you.

TEXAS

187:16:02 CC Gemini VII, Texas CAP COM. Need not acknowledge.
We have you GO on the ground and standing by.

187:16:07 C Thank you.

CONFIDENTIAL

CONFIDENTIAL

559

187:17:29 CC Gemini VII, Texas. Houston reports the weather at the Cape is GO for launch.

187:17:34 C I know that. I just wanted to know how it's going to be for our purpose, but they'll probably make it known there.

187:18:51 CC Gemini VII, Texas.

187:18:53 C Go ahead.

187:18:54 CC Roger. The weather at Cape is reported 5000 scattered, 10,000 overcast.

187:18:59 C That's Roger. We have it. Thank you.

BERMUDA

187:25:18 CC Gemini VII, Houston.

187:25:21 P Roger. We saw ..., Elliot.

187:25:23 CC Roger.

187:25:31 CC Everything's still okay, Frank. We'll let you know.

187:25:35 P Roger. Elliot, we were in perfect position, too.

187:25:44 CC Everything's still okay on the pad. We'll keep you informed.

187:25:48 C Thank you.

187:26:05 CC Gemini VII, were you copying the air/ground on that?

187:26:10 C Roger.

187:26:11 CC Very good.

CANARY ISLANDS

187:37:59 CC VII, Canary.

CONFIDENTIAL

CONFIDENTIAL

187:38:01 C Go ahead, Canary. Gemini VII.

187:38:03 CC Okay. We have a little bit of information for you. It seems they had a program lockout at Cape and also they lost a tail plug out of the launch vehicle, which gave them the lift-off problem. As things stand right now, looks like a 4-day recycle time, which would make that about 8:43 AM, that's Eastern Standard Time, your twelfth day.

187:38:29 C Roger. Did they actually get a light-off?

187:38:32 CC I don't believe so. Stand by.

187:38:46 CC They say they got an ignition and a hold-kill right afterwards.

187:38:52 P Roger. This is VII, your friendly target vehicle, standing by.

187:38:55 CC Roger.

187:39:41 CC The word is to tell you we're still tracking you and we're right back on Spacecraft VII.

187:39:45 C Okay. First things first.

187:39:48 CC That's right.

187:39:54 C Have they got Tom and Wally out of there yet?

187:39:57 CC Say again.

187:39:58 C Have they got Tom and Wally out of the spacecraft yet?

187:40:01 CC Negative. They're still in, but everything is safe.

187:40:04 C Okay. Thank you.

187:40:05 CC Roger.

187:40:09 C As you've probably guessed, we're venting an ECS O₂ now.

187:40:12 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

561

187:40:43 CC VII, Canary.
187:40:44 C Go ahead.
187:40:45 CC Do you still have your heaters on the FUEL CELL HYDROGEN?
187:40:48 C Oh no. Negative. They're off. They've been off for some time.
187:40:50 CC Okay. What's your reading up there?
187:40:53 C I read 530.
187:40:55 CC 530. Okay. Thank you.
187:41:24 CC You can turn your Quantity Read switch off again.
187:41:27 CC Thank you.

KANO

187:43:05 CC Gemini VII, Gemini VII, Houston. How do you read?
187:43:08 C Loud and clear, Elliot.
187:43:11 CC Roger. Frank, we'd like to give you a flight plan update.
187:43:16 C Roger. Stand by.
187:43:32 C Go.
187:43:34 CC S-5: 188:55:22; Sequence 12; Mode 02; pitch 30 degrees down, yaw 3 degrees right. Stand by, Frank.
187:44:07 C Standing by.
187:44:53 CC Gemini VII, Houston.
187:44:56 C Go ahead, Houston.
187:44:59 CC We'd like you to close the DCS circuit breaker, the ACQ-AID circuit breaker, and the Real-Time T/M circuit breaker.

CONFIDENTIAL

CONFIDENTIAL

187:45:10 P Roger. Understand.

187:45:14 CC We'd like you to put - let me give you another flight plan update item here. Time: 188:00:00; BIO MED Recorder Number 1 on; off at 190:00:00. You copy?

187:45:39 C Roger.

187:45:42 CC That's all the flight plan update we'll give you at this time. There's a possibility of MSC-4 or S-8/D-13 at - on the next US pass - I think it is - yes.

187:46:01 C Roger, Elliot.

187:46:06 CC We'll keep you posted.

187:46:24 C Tell Tom and Wally we will still be waiting the twelfth day if they can make it.

187:46:29 CC Okay. Frank, it's the - it's two US passes from now that we have a possible activity for you. We'll be letting you know.

187:46:38 C Very well.

187:46:42 CC Give us Section 2 stack readout while we're at it.

187:46:47 C Roger. Will do.

187:46:51 P Section 2A is reading about 1 1/2 amps, 2B is reading 2, and our friend 2-Charlie is reading 4.

187:47:02 CC Roger, Jim.

TANANARIVE

188:01:16 CC Gemini VII, Houston.

188:01:19 C Go ahead, Houston.

188:01:21 CC You can delete the S-5. We have weather.

188:01:27 C Roger.

188:02:36 C Houston, VII calling.

CONFIDENTIAL

CONFIDENTIAL

563

188:02:40 CC Go ahead, VII.
188:02:46 CC Gemini VII, Houston. Go ahead.

CARNARVON

188:10:12 CC Gemini VII, Carnarvon.
188:10:13 P Go ahead, Carnarvon. Gemini VII.
188:10:15 CC Okay. We would like for you to read your ... to
the following positions, please.
188:10:20 P Okay.
188:10:22 CC Adapter - C-Band Adapter switch to COMMAND.
188:10:28 C Roger.
188:10:29 CC C-Band Reentry switch to COMMAND.
188:10:33 C Reentry to COMMAND.
188:10:34 CC Standby T/M switch off.
188:10:43 C It's off.
188:10:45 CC T/M switch to COMMAND
188:10:48 C It's in COMMAND now.
188:10:50 CC Roger.
188:10:51 CC DCS Power circuit breaker closed.
188:10:55 C Stand by.
188:11:02 C It's closed.
188:11:04 CC Real-Time Transmitter circuit breaker closed.
188:11:11 C Say again, please.
188:11:13 CC Real-Time Transmitter circuit breaker closed.

CONFIDENTIAL

CONFIDENTIAL

188:11:16 C It's already closed.

188:11:18 CC Delayed Time Transmitter circuit breaker closed.

188:11:23 C It's also closed.

188:11:25 CC Standby Power circuit breaker closed.

188:11:29 C It's closed.

188:11:31 CC Command Control circuit breaker closed.

188:11:34 C It's closed.

188:11:36 CC ACQ-AID Beacon circuit breaker closed.

188:11:38 C It's closed.

188:11:41 CC C-Band Beacon circuit breaker closed.

188:11:44 C And it's closed.

188:11:45 CC Roger. We have your T/M. You're looking good here on the ground.

188:12:11 C Carnarvon, Gemini VII. We had to go to A prop on the primary loop at 187:56 because the Pilot was getting warm in his suit.

188:12:19 CC Roger. Copy.

188:12:35 CC Gemini VII, Carnarvon. How was your temperature last night?

188:12:39 C ... last night.

188:12:43 CC Repeat, VII. I did not copy.

188:12:46 C They were very good last night. Very good.

188:12:49 CC Roger. Copy.

188:13:13 C Carnarvon, Gemini VII. Have you heard whether they're definitely going to try to recycle VI or not?

188:13:19 CC We don't know definitely. The only thing that I

CONFIDENTIAL

CONFIDENTIAL

565

heard was the transmission to you over Canary.

188:13:36 CC Okay. They're just standing by. They don't know what they are going to do and they will keep you advised when they can tell it.

188:13:43 C Roger.

188:15:52 CC Gemini VII, Carnarvon. We'd like to confirm the Command Pilot has been exercising.

188:16:01 C You read, Carnarvon?

188:16:03 CC Negative. I do not copy.

188:16:04 C I'm in my exercise period right now.

188:16:07 CC Roger. Thank you.

188:21:29 C 188:47: took shot from Magazine C at 48 ocean to go while crossing Mexico. Shot 56 ... Magazine C, Exposure 51 and Magazine C, Exposure 55, taken at 188:50 ... 189:00 ...

188:30:05 P ...

CANTON

188:34:33 CC Gemini VII, Houston. How do you read?

188:34:37 P Loud and clear.

188:34:44 CC We still don't have any definite word from the Cape yet, VII. We're going to be extremely careful with our fuel. Continue to be so and we're going to give you some experiments today, but we want you to be extremely stingy on the fuel. We will try to minimize the fuel-using-type experiments, but we will give you some which you can try to pick up in drifting flight, or with very minimum fuel usage. We're presently planning a MSC-4 on the next revolution at White Sands. We'll be giving you an update on that later.

188:35:27 P Roger. Understand.

CONFIDENTIAL

CONFIDENTIAL

188:35:33 CC We were wondering if you saw the ignition at the Cape?

188:35:40 P Negative. The Cape was open when we went over it and we were in fine position for photography, but we never saw the ignition. We were waiting for the light.

188:35:49 CC Roger. Apparently it was on and off very quickly. We'll be keeping you informed on that as soon as we get some more.

HAWAII

188:38:17 CC Gemini VII, Hawaii CAP COM.

188:38:20 C Roger, Hawaii. This is VII.

188:38:23 CC Roger. We show you GO on the ground. Have a question for you when you're ready.

188:38:27 C Go ahead.

188:38:29 CC Roger. We'd like to know if you had any moments when the ECS O₂ vented? And if you noted the time?

188:38:37 C We - negative. We did not notice any particular moments or gyration of spacecraft, and we did not note the time.

188:38:45 CC Roger. Understand. Standing by.

GUAYMAS

188:48:11 CC Gemini VII, Guaymas CAP COM. You need not acknowledge. All systems look good on the ground. We'll be standing by.

188:48:16 C Roger, Guaymas. Thank you.

CONFIDENTIAL

CONFIDENTIAL

567 -

TEXAS

188:50:24 CC Gemini VII, this is Texas CAP COM.
188:50:28 C Roger, Texas.
188:50:30 CC We've got you GO on the ground this time and standing by. We'd like to have you do a normal fuel cell purge at this time.
188:50:40 C Roger. Normal purge coming through.
188:54:37 CC Gemini VII, Texas CAP COM.
188:54:40 C Go ahead.
188:54:41 CC They're in the process of raising the erector at the Cape at this time.
188:54:47 C Thank you.
188:54:53 C We noticed that that purge really raised 2A up.
188:55:22 C Purge complete.
188:55:27 CC Gemini VII, Texas CAP COM.
188:55:30 C Go ahead.
188:55:31 CC I'd like to get a cryogenic quantity readout at this time. Would you place your Readout switch to the ECS O₂ position?
188:55:41 C Roger. ECS O₂.
188:55:55 C Let's see. Our pressure is -
188:56:06 CC Roger. Ready to go to FUEL CELL O₂?
188:56:15 C FUEL CELL O₂.
188:56:31 CC FUEL CELL H₂.
188:56:33 C Roger.
188:56:48 CC Roger. You can place the Quantity Readout switch to the OFF position, and we're standing by.

CONFIDENTIAL

CONFIDENTIAL

188:57:03 CC Gemini VII, Houston.

188:57:05 P Go ahead, Houston.

188:57:06 CC Have flight plan update when you're ready to copy.

188:57:24 P Go ahead, Houston.

188:57:27 CC MSC-4: 190:27:00; Sequence 01; Mode 01; pitch 26 degrees down, yaw 34 degrees left. On this one, we want you to minimize your fuel if you don't acquire them, then give it up. We're trying to minimize fuel and this is a White Sands pass. However, it is a very good White Sands pass. It'll be about the closest one we've had and the weather there is clear.

188:58:11 C Roger. Understand. ...

188:58:16 CC Supposedly, they have and they're ready to go.

188:58:19 C Thank you.

188:58:21 CC Okay. Next item: 190:40:00, exercise. 190:50:00 - you have a Tx coming up. Do you copy, VII?

188:58:41 P Roger. Tx coming up. Haven't received it yet.

188:58:44 CC Okay. Eat period, MSC-2 and 3, 190:50:00. Sequence 02; same time as the start of eat period. Apollo: 192:12:06; Sequence 70; Mode 01. Time: 193:23:00; crew status report on the Command Pilot at Hawaii. Do you copy?

188:59:26 P Roger.

188:59:29 CC Did you ever get the Tx?

188:59:31 P Negative.

188:59:33 CC About 30 seconds more. Continuing with the flight plan update: 193:35:00: purge fuel cells at Guaymas. 193:56:00: crew status report on the Pilot at RKV. Tx transmitted. Do you receive?

189:00:03 P Roger. Got it.

189:00:05 CC Okay. 194:41:00: flight plan report at CSQ.

CONFIDENTIAL

CONFIDENTIAL

569

194:59:00: PLA update at Hawaii. 196:17:00: fuel cell purge CSQ and BIO-MED Recorder Number 2 CONTINUOUS. Do you copy?

- 189:00:46 P Roger. I copy.
- 189:00:52 C Elliot, I'd like to ask a question.
- 189:00:55 CC Go ahead.
- 189:00:58 C Three guesses.
- 189:00:59 CC Go ahead.
- 189:01:02 C Since we're going to be drifting a lot, we'd like to go ahead and take more targets of opportunity - photographs, because it's almost impossible to program anything now and we've got a lot of film we haven't used yet.
- 189:01:13 CC Roger. We intend to give you a lot of different kinds of assignments that you might be able to pick up in drifting flight, and feel free to pick any of them up in drifting flight that you can.
- 189:01:30 C Okay. What I say - that if we see anything interesting down here, I propose we go ahead and take some pictures of it. We've been briefed by the weather and the terrain people because if we're drifting, you just can't program anything early.
- 189:01:44 CC Roger. I'm observing the White Room. They have the erector up; they have the White Room up and they're presently taking Wally and Tom out of the spacecraft.
- 189:01:59 C Very good.
- 189:02:17 CC Jim, are you keeping up on the water drink now? We want you to keep drinking the water.
- 189:02:24 P Roger. Since I've had the suit on, my water consumption has gone up.
- 189:02:28 CC Roger.
- 189:02:31 P Any decision yet?

CONFIDENTIAL

CONFIDENTIAL

189:02:43 CC Gemini VII, Houston. Did you understand that you are free to take pictures of those targets of opportunity in drifting flight, as you requested?
189:02:54 P Roger. We understand that.
189:02:56 CC Roger.

BERMUDA

189:03:25 CC Gemini VII, we have nothing new to report to you on the VI problem. We'll keep you posted just as soon as we find anything more.
189:03:34 C Right. Looks like our fuel cells are pretty good. Both 2A, 2B and 2C are back to normal.
189:03:42 CC Roger. We're watching it and we're learning with everything we do.
189:04:10 CC Wally and Tom are out of the White Room now. They're in the elevator and getting ready to go down.
189:04:16 C Roger. Understand. ...
189:04:38 CC They'll be back.
189:04:48 C Elliot, ...
189:04:57 CC I understand your comment was regarding the suit, Frank. Is that correct?
189:05:04 C Roger. I would like to get Jim out of the suit also, until Guaymas.
189:05:07 CC Roger. We're working on that full-speed.
189:05:11 C Take your time.
189:07:08 CC See you next time around, VII.
189:07:48 CC Gemini VII, Houston Flight.
189:14:02 C 189:13:57: a picture of a cloud formation. I don't know if it's of a contrail or ship. It's maybe the kind that we're looking for ...

CONFIDENTIAL

CONFIDENTIAL

571

189:14:09 P ...
189:15:08 CC Gemini VII, Houston. How do you read?
189:15:10 C Roger, Houston. Loud and clear.
189:15:14 CC Roger. We presume that Wally and Tom were unhappy with your orbit. They're waiting on a 161 circular.
189:15:24 C Okay. ...
189:15:34 CC I beg your pardon.
189:15:36 C They will program our ...
189:15:41 CC Roger. Would you like your present orbit?
189:15:45 C We'd like what?
189:15:47 CC Would like to know what your present orbit is?
189:16:03 CC Gemini VII, have we given you your present orbit?
189:16:08 C Please give us our present orbit.
189:16:13 CC Roger. It is 161.5 circular.
189:16:18 C Roger. That is a little far off for Wally and Tom, I agree. In three or four days they should be down on target.
189:16:25 CC Very good. We'll give them your message.
189:17:06 C It's 189:03:57: a picture; looks like a shoal of a reef ... long ... of the Atlantic.
189:17:18 P ... ASA 500, Rev 8, excuse me - used S0217 ... might have been thunderstorm activity and the exposure was ...
189:30:17 P 126; time was 189:30.

CARNARVON

189:46:06 CC Gemini VII, Carnarvon. You're looking good here on the ground. We're standing by.

CONFIDENTIAL

CONFIDENTIAL

189:46:13 P Roger, Carnarvon. So are we.

189:52:04 CC Gemini VII, Carnarvon. We just noticed you switched your Primary Pump B on. Were you getting cool?

189:52:11 P We just want to get a little activity, and since we're not warm we thought we'd try to go back to B.

189:52:18 CC Roger. I understand.

190:01:15 P 190 hours. Have all lights out in the cockpit. ... and the stars at ... that reflects through the window and my window's particularly dirty from ... boosting or during our urine dumps. Verbally, though, we do have good results ... Frank and I would agree we cannot see any more stars up at 10061 orbit than an airplane 35 to 45 thousand, so there are now a thousand more stars showing that we never saw before Rev 8. Southern heading down at Yucatan, looking straight down to Central America. Pretty cloud cover. Looking down to land on both sides of the Atlantic and the Pacific.

HAWAII

190:11:32 CC Gemini VII, Hawaii CAP COM.

190:11:36 C Go ahead, Hawaii.

190:11:38 CC Roger, VII. We show you GO here. And we are standing by.

190:11:44 P Roger.

CALIFORNIA

190:21:22 CC Gemini VII, Houston CAP COM. Do you read?

190:21:26 P Loud and clear, Houston.

190:21:27 CC Roger. We're standing by for your MSC-4 pass. We'd like to add to that, go to the Talk Mode if you get extremely good acquisition.

190:21:38 C We will, thank you.

190:21:41 CC Keep us posted on your pass. We have a message for you as soon as you've completed that.

190:21:46 C Thank you.

CONFIDENTIAL

CONFIDENTIAL

573

190:22:31 CC Gemini VII, Houston.

190:22:33 P Go ahead, Houston.

190:22:35 CC The laser site is marked the same way as the last time you tried it. We have two grey smoke pots, which are 10 miles north the laser site. The smoke pots are 30 miles apart, east and west of each other. The weather report there is clear and wind calm. Do you copy?

190:23:00 P Roger.

190:26:23 C We have White Sands in sight now, Elliot. The Rio Grande stands out real clear today.

190:26:29 CC Say again, VII.

190:26:31 C We have White Sands in sight now, Elliot - coming up on it - and Rio Grande stands out very clear today.

190:26:36 CC Roger.

190:26:47 C We can even see my old home town of Tucson, Arizona, down there.

190:26:50 CC Very good. Roger. Tucson.

190:27:00 C Jim's got the telescope on it now. We've got a very good picture of the site and we still don't have the laser.

190:27:05 CC Roger.

190:27:57 C We're going on by. I've had two blinks on the laser, Elliot, but it's not coming in loud and clear.

190:28:04 CC Roger. Understand you saw two pulses from the ground station and that was all.

190:28:10 C Right. We're still going by, though, as a matter of fact we're approaching the approach now.

190:28:16 CC Roger.

TEXAS

190:28:51 C ... no luck, Elliot.

CONFIDENTIAL

CONFIDENTIAL

190:28:55 CC Roger. We copy. Have you completed your tenth?

190:29:01 C Please keep talking if you can. Jim's still gazing down there, transmitting.

190:29:07 CC Roger.

190:29:12 CC You say he is trying to transmit, or he's just using the 100-pulse beam?

190:29:17 C No. He used the 100-pulse beam while it's closest approach, but he unfortunately didn't have ... of lasers. I saw it twice.

190:29:28 CC Roger. You saw two pulses and that's all?

190:29:32 C That's affirmative.

190:29:34 CC And you say he never actually saw the beam for sure?

190:29:38 C That's right.

190:29:40 CC Roger.

190:29:49 CC We have a flight plan update for you when you are ready to copy, and you're finished with your tracking.

190:30:21 C Go ahead, Elliot.

190:30:22 CC Okay. You've got a TX coming up here pretty soon.

190:30:26 C Thank you.

190:30:29 CC A flight plan update: Apollo, 192:12:06: Sequence 70; Mode 01; pitch 30 degrees down, yaw 13 degrees left. MSC-2 and 3: Time, 206:42:00; off; the MSC-2 and 3 off. Time, 206:42:00: fuel cell purge at Antigua and the same time BIO MED Recorder Number 2 off. Do you copy?

190:31:36 C Roger.

190:31:56 P Houston, VII.

190:32:01 CC Go ahead, Gemini VII.

CONFIDENTIAL

CONFIDENTIAL

575

- 190:32:04 P You might inform the experimenters on MSC-4 that the green filter for daylight acquisition is about completely useless, because it's impossible to recognize any of the terrain around the light.
- 190:32:21 CC Roger. Understand the green filter blocks out or filters so much it causes you to lose terrain definition around the light, trying to locate the laser light.
- 190:32:32 P Affirmative. It might be good at night, but not the daytime.
- 190:32:37 CC Roger, VII. We'll work on that. We may be able to operate without it.
- 190:32:57 P Any other news, Elliot?
- 190:33:00 CC Roger. I've got that for you now, if you're ready. The news is imminent. Would you like some local news meanwhile?
- 190:33:15 C I was talking about on VI. Any word on that?
- 190:33:19 CC No, really nothing further. We were watching the press conference here a minute ago and they have not set a definite time on the recycle, that I could hear. I was - they're estimating an announcement about 4 or 5 o'clock this afternoon as to the recycle time.
- 190:33:44 C Roger.
- 190:33:45 CC It appears that it was strictly a faulty indication. An electrical plug dropped out or fell out at the bottom, starting a lift-off sequence, but we had actually not lifted off yet, and that caused the whole kill. So it's just a question now of a recycle time.
- 190:34:08 C Roger.
- 190:34:29 C What else is new, Elliot?
- 190:34:32 CC I've got some new, regular news here for you here if you're ready.

CONFIDENTIAL

CONFIDENTIAL

190:34:38 C We're ready.

190:34:40 CC Mr. Haney's News Service says there's mostly sports and Gemini news in the papers this morning. Texas A & M has been put on probation for some of its athletic practices, and he adds that's not just another Aggie joke. Oklahoma University has offered Daryl Royal the head coaching job there and he says he's willing to talk about it.

190:35:10 CC Think you're pretty well up on the Gemini news.

190:35:12 C Roger. Thank you.

190:35:15 P Would you read little Orphan Annie to Frank. He misses it.

190:35:22 CC Roger. ... that she's in the bottom of the falls in a barrel.

190:35:33 C Oh, Oh!

190:35:36 CC And nobody's ever gone over that falls in a barrel and lived before.

190:35:47 P Frank's really worried.

190:35:52 CC Tell him the Flight Director's worried about it, too. We'll keep him informed.

190:37:38 CC Gemini VII, Houston. You can turn it on HF now, if you're interested.

190:37:46 C Thank you.

190:38:02 C Elliot, how do your fuel cells ... fuel cells are looking?

190:38:07 CC Looking very good at the present time. We're learning something every day on them.

190:38:12 C Okay.

190:38:13 CC I'm sure you are too.

190:38:22 P Houston, VII.

CONFIDENTIAL

CONFIDENTIAL

577

- 190:38:24 CC Go ahead.
- 190:38:25 P For information, window problem hasn't been solved yet. We still have deposits in our windows and we're not too sure whether it was caused during the SECO, or staging, or caused by the urine dump on my side, or whether its on the inside of the outer pane.
- 190:38:45 CC Roger. Understand this is on both windows, or primarily on your window?
- 190:38:52 P I believe I have a heavier coating, although Frank has some. It looks like little grease spots with greasy little spots in it.
- 190:39:02 CC Roger. Understand. It looks like grease spots.
- 190:39:05 P Roger.
- 190:39:08 CC You probably hit a few bugs.
- 190:39:11 P Roger.
- 190:39:17 CC Flight says they must be fireflies.
- 190:39:22 P ...
- 190:39:27 CC Roger. That - -
- 190:39:44 C Elliot, we can pick up white sand dunes from over the coast of lower California.
- 190:39:50 CC Roger, Frank.
- 190:40:11 CC Might be interested - Dr. Semens issued a special statement this morning commenting on the Gemini VII/VI mission, reflecting favorably on the planning of it and the contingency operations, and specifically citing Wally and Tom for their correct analysis and cool planning under the circumstances there - not ejecting at the whole-kill.
- 190:40:48 C Right. That was good work.
- 190:40:53 C I hope they can recycle it.

CONFIDENTIAL

CONFIDENTIAL

190:40:55 CC So do we. We're all waiting on that.

190:51:51 CC Gemini VII, Houston. How do you read?

190:51:54 P ...

190:51:56 CC I have a brief flight plan update for you, if you're ready to copy.

190:52:06 P Stand by one.

190:52:16 P Go ahead.

190:52:19 CC Node 191:34:45; Rev 120; 140.6 degrees east; right ascension 9:52:21. Do you copy?

190:52:46 P This is VII. Not all of it. Understand Node 191:30:45; Rev 120; 140.6 degrees east. And what is the right ascension, please?

190:53:00 CC Roger. Right ascension 9:52:21 and your time was incorrect. It is 191:34:45. Do you copy?

190:53:16 P Roger. The time is 191:34:45 and I have the right ascension.

190:53:26 CC Roger, VII.

190:54:46 CC Gemini VII, Gemini VII, Houston. Do you still read us?

190:54:51 P Roger, Houston.

190:54:53 CC Roger. Sorry to disturb your lunch, but we have a message here we think you'd be interested in.

190:55:02 P Roger. Go ahead.

190:55:07 CC We're coming up on special time here. About 5 seconds ~ MARK, you have just exceeded the world's manned space flight endurance record and, by sheer coincidence, we are pleased to inform you that you are cleared to go to whatever suit configuration you would like. Keep us informed.

190:55:33 C Hallelujah! Thank you very much. You're all doing good work.

CONFIDENTIAL

CONFIDENTIAL

579

190:55:47 CC Roger. We copy.
190:55:55 CC Are you out of that suit yet, Jim?
190:55:58 P I've got one leg to go.

TANANARIVE

191:10:05 CC Gemini VII, Houston. Do you read?
191:10:08 C Loud and clear, Elliot. Go ahead.
191:10:13 CC Could we ask you what the present suit configuration is?
191:10:17 C We're still in the same configuration. Jim will ...
191:10:24 CC Roger. We have an option here on the HF. We can put the Green Bay-Baltimore game on if you think you would prefer that to the music. What's your opinion on that?
191:10:40 C Okay. Let's try the Green Bay-Baltimore game. I think that would be great!
191:10:45 CC Say again.
191:10:48 C Let's try the football game, please.
191:10:50 CC Roger. We'll give it a try. It's about a half an hour yet before it will start, but when it comes in we'll put it on.
191:11:00 C Thank you, Elliot.

CANARVON

191:22:41 CC Gemini VII, Carnarvon. You look real good here on the ground.
191:22:50 C Roger, Carnarvon. Jim will be removing his suit at this time.

CONFIDENTIAL

CONFIDENTIAL

191:22:54 CC Roger. Copy.

HAWAII

191:47:36 CC Gemini VII, Hawaii CAP COM. We have nothing further for you. We'll be standing by.

191:47:40 C How's the weather down there in Hawaii?

191:47:42 CC Real fine today. Beautiful.

191:47:44 C I wonder if we can get an MSC pass later on today?

191:47:50 CC Well, we went through that a little bit earlier, but we'll have to stand by. Hang loose here.

191:47:52 C Okay. We'd sure like to.

191:47:55 CC Copy all that?

191:48:02 C Hawaii, for your information, Jim is now out of his suit. He's in suit's-off configuration.

191:48:14 CC Roger.

HAWAII

191:48:57 CC Do you copy in HF up there?

191:49:06 C There's been a lot of static today for some time. I just turned it on.

191:49:09 CC Okay. It's 7 to 3, Green Bay, at the end of the first quarter.

191:49:12 C Very good.

191:49:19 CC That is in the first quarter.

191:49:23 CC Maybe it'll get better if you're closer to States.

191:51:12 CC VII, does your pilot there like water?

CONFIDENTIAL

CONFIDENTIAL

581

191:51:17 C Roger. He's drinking it.

191:51:18 CC He better keep drinking it, because if he doesn't get some into him by the time he gets to the States, he's going to have the Flight Surgeon on his back.

191:51:24 C Okay. We'll put some more into him right now.

191:51:27 CC Roger.

191:52:39 CC Gemini VII, Houston -

191:52:58 CC Gemini VII, Houston.

191:53:01 C Loud and clear, Houston.

191:53:02 CC Right. Did you acquire the laser site on that pass?

191:53:06 C No, we're just drifting.

191:53:08 CC Okay. It doesn't look like you have a path that will take you much closer than that till in your sleep cycle, except perhaps the 122nd and we'll look into at least scheduling one for you just to look at it, and see if you can acquire the beam and perhaps not use any fuel.

191:53:24 C Fine, thank you.

191:53:25 CC Okay.

GUAYMAS

191:59:22 CC Gemini VII, Guaymas CAP COM. Everything looks good here on the ground.

191:59:27 C Roger.

191:59:29 CC And by the way, it's now Green Bay 14 to 3.

191:59:32 C Excellent!

CONFIDENTIAL

CONFIDENTIAL

TEXAS

192:02:01 CC Gemini VII, this is Texas CAP COM.
192:02:04 C Go ahead, Texas.
192:02:05 CC Sending you a Tx.
192:02:10 C Roger. Got it.
192:02:12 CC You're GO on the ground. We'll be standing by.
192:02:14 C Thank you.

HOUSTON

192:02:55 CC Gemini VII, Houston.
192:02:57 P Go ahead, Houston.
192:02:58 CC You receiving the HF okay?
192:03:07 P Coming in a little garbled but okay.
192:03:09 CC You want to keep that going, or do you want to go back to the other?
192:03:12 P We'll keep it.
192:03:14 CC Okay. Stand by for the Surgeon.
192:03:19 CC Jim, we're interested in checking on this lead and it looks like you've got a very good sternal here. Did you replace the sensor already?
192:03:28 P No, I think that probably happened when I was struggling out of the suit.
192:03:32 CC Well, gee, you - it looks very, very good right now, so let's leave it alone for a while, and see what happens. If it deteriorates again, what we would like for you to do is just remove the tape and clean the sensor out, and start all over with new tape and new Stoma Seal tape, and then the new tape over it so we'll start off fresh. It should

CONFIDENTIAL

CONFIDENTIAL

583

be that lower sensor, Jim.

- 192:04:01 P Roger, the lower front sensor. Will do.
- 192:04:04 CC But if the lead looks fine, and your water intake is way down, Jim, we'd like for you to keep at it. And are you having any thirst at all? Do you feel that you ought to be taking more water?
- 192:04:17 P No, I'm perfectly happy with the water intake. Of course I've just taken about 13 or 1 $\frac{1}{4}$ ounces here in the last hour.
- 192:04:25 CC Roger. Okay. Let's keep at it and we'll keep an eye on it and keep you posted.
- 192:04:35 P Oh, about 550 something now, I think.
- 192:04:38 CC Very good.
- 192:04:51 CC Are you a little more comfortable now?
- 192:04:54 P Much better. This is really great!
- 192:05:05 C If you happen to see Joe Shea around playing tennis anywhere, you might as well tell him this is the only way to fly.
- 192:05:11 CC Roger. We copy that, Gemini VII. Think we got 1 $\frac{1}{4}$ days made this way, right?
- 192:05:18 C In the box. As long as you all don't get too tired.
- 192:05:26 CC We'll try and hold up. You just do the same.
- 192:05:31 P We have the RED and WHITE team up here.
- 192:05:32 CC Well, we're all BLUE down here. Many days like this one, we're going to get tired.
- 192:05:44 C Let us know about the recycle as soon as you hear, won't you please, Chris?
- 192:05:49 CC Roger. They're talking Wednesday at the moment, but nothing final yet.
- 192:05:53 C Very good.

CONFIDENTIAL

CONFIDENTIAL

192:09:03 C Time 192:09: - Okay. We just took several photographs starting at 192:12:00, ending at 192:12:56. Apollo Landmark 70 and also some from 5. These were for Apollo Landmark for S-5. They contained Magazine E - Exposures 1, or about 5, to 16. Unfortunately, about five of those were taken without the IR filter. The first series also ... Magazine 13 12.

ROSE KNOT VICTOR

192:22:38 CC Gemini VII, RKV CAP COM. We have nothing for you this pass. We're standing by.

192:22:43 P This is VII, Roger. We're having one of the best trips here of all. We've followed the South America all the way down.

192:22:50 CC You got a good view?

192:22:52 C It's an outstanding view!

192:24:08 P RKV, VII.

192:24:11 CC Go ahead, VII.

192:24:13 P What's your closest port that you're anchored to?

192:24:17 CC Would be Rio. We're 35 miles off the coast and I guess 150 miles north of Rio.

192:24:24 P Roger. Thank you.

192:24:37 CC That's 350 miles north of Rio.

192:24:51 CC You should be able to see a river south of us.

192:24:58 P Roger. We'll get you the next pass.

192:25:01 CC Roger.

TANANARIVE

192:45:20 CC Gemini VII, Houston. How do you read?

CONFIDENTIAL

CONFIDENTIAL

585

- 192:45:27 P This is VII. Read you loud and clear, Houston.
- 192:45:30 CC Tremendous communications! We have the word that they're going to attempt to launch VI in 3 days, and if they don't make it then, of course, they will just go the next day. The launch time on the third day, which will be Wednesday, is 8:37 Eastern Standard Time.
- 192:45:54 P Roger. We'll wish with him for all the success in the world on the Gemini VI. ... we'll be standing by.
- 192:46:03 CC Roger. And from now until then we're planning a level of experiments for about 3.4 pounds propellant per day versus an average of about 6 pounds that we had been scheduling for you.
- 192:46:25 P Understand.
- 192:46:26 CC And we will make every attempt to schedule as many of the minimum fuel-user-type passes as we can.
- 192:46:36 P We'll be very conservative on our fuel.
- 192:46:39 CC Roger. And we have a progress report on the football game. It's San Diego 7, Houston nothing.
- 192:46:51 P Oh! oh! Frank's crying over here.
- 192:46:54 CC Roger.
- 192:47:02 CC Are you receiving the HF all right down there?
- 192:47:08 P We lost just a moment ago, so we turned it off. We're going to give it a try right now.
- 192:47:13 CC Roger. They're going to start trying to send it out of California on your Pacific pass, so you may get it a little better from now on.
- 192:47:28 P Very good.
- 192:48:12 C Elliot, are you still reading?
- 192:48:14 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

192:48:18 C Boy, the HF is great here!
192:48:21 CC The HF?
192:48:26 CC Say again, Gemini VII.
192:52:02 P Comment : Certainly the urine Bio-measuring ... it would be highly desirable to replace the cuffs every day.
192:57:07 P Lovell dumping urine at 192:57. Stand by.
192:58:37 C Borman dumping urine at 192:5...
193:00:21 C Dump completed.
193:00:23 P ... Borman ...

COASTAL SENTRY QUEBEC

193:10:27 CC Gemini VII, CSQ CAP COM. We have you GO on all the systems. We have nothing to pass to you. Standing by.
193:10:36 C Thank you, CSQ. See you later on tonight.
193:10:43 CC Roger.
193:12:04 CC Gemini VII, CSQ. We're reading HF out of California at this time. Do you copy HF?
193:12:14 C Roger.

HAWAII

193:23:41 CC Gemini VII, Hawaii CAP COM.
193:23:45 P This is VII. Go ahead.
193:23:47 CC Roger. We have a good temperature. Standing by for your blood pressure.
193:23:57 P Roger. Coming down shortly.

CONFIDENTIAL

CONFIDENTIAL

587

193:24:03 P Roger. Coming down, Charlie.
193:24:12 CC Your cuff is full-scale.
193:25:14 CC We have a good blood pressure. Standing by for your exercise.
193:25:22 C MARK.
193:25:44 C Blood pressure.
193:25:53 CC Your cuff is full-scale.
193:26:52 CC We have a good blood pressure. Standing by for your food and water report.
193:26:57 P Roger. Coming down. The Pilot to date has had 560 ounces of water. Column 5 is 20; Column 6, 3. The last meal was Day 11, Meal B. Did not eat the apricot cubes. The Command Pilot has had 651 ounces of water, same meal. Ate every bit. Column 5, 21; Column 6, 5.
193:27:50 CC Roger, Gemini VII.
193:27:56 CC We have nothing further for you at this time. We're standing by.
193:27:59 P Roger.

GUAYMAS

193:34:45 CC Gemini VII, Guaymas CAP COM.
193:34:49 P This is VII. Go ahead.
193:34:51 CC Roger. All systems are GO on the ground. We'd like - we're ready for you to start your fuel cell purge.
193:34:57 P Roger. Purge coming up.
193:39:38 P Purge complete, Guaymas.
193:39:40 CC Roger. We're ready for your quantity read. Would you place in the ECS O₂ position?

CONFIDENTIAL

CONFIDENTIAL

193:40:11 CC FUEL CELL O₂.
193:40:36 CC FUEL CELL H₂.
193:41:07 CC Okay. Replace to the OFF position. Everything is still looking good here. We have nothing else for you.
193:41:17 C What happened to the HF, Guaymas? Do you know?
193:41:19 CC Negative.
193:41:22 C Okay. Thank you.

TEXAS

193:41:58 CC Gemini VII, Gemini VII, this is Houston CAP COM. Over.
193:42:05 CC Gemini VII, Gemini VII, this is Houston CAP COM. Over.
193:42:24 CC Gemini VII, Gemini VII, Houston CAP COM. Over.
193:42:27 C Go ahead Gene, Houston. This is Gemini VII.
193:42:30 CC Okay, Frank. The ball game may have been interrupted slightly. We went from California transmitter to Canaveral transmitter.
193:42:48 C What's new, Houston? Anything?
193:42:56 C Houston, Gemini VII.
193:42:59 CC Roger, Gemini VII. Reading you loud and clear now. We have nothing new right now. We're still looking forward to Wednesday.
193:43:03 C Okay.
193:43:05 C So are we.
193:43:07 CC I think there's two other guys who are, too.
193:43:10 C As a matter of fact, we're all looking forward to Saturday.

CONFIDENTIAL

CONFIDENTIAL

589

193:43:15 CC You getting itchy?
193:43:34 CC Gemini VII, Houston. Are you receiving your HF now from the Cape?
193:43:37 C Roger. Very good.
193:43:38 CC Okay.

ROSE KNOT VICTOR

193:56:43 CC Gemini VII, RKV CAP COM. We copy your oral temp. We're standing by for blood pressure.
193:57:51 C Coming down with blood pressure.
193:57:59 CC You didn't get full-scale, Gemini.
193:57:05 CC There you go! Pump is just a little bit high, up there. Real fine. We have it.
193:57:54 CC Gemini, ... Surgeon. We've got a good blood pressure. Standing by for your exercise.
193:58:11 C MARK. Our exercise.
193:58:12 CC Right.
193:58:45 CC Full-scale.
193:59:33 CC We've got a good blood pressure, Gemini. Has there been any change in your food and water report since Hawaii?
193:59:39 C Negative.
193:59:40 CC Thank you. Surgeon out.

COASTAL SENTRY QUEBEC

194:41:32 CC Gemini VII, CSQ CAP COM. We have you GO on telemetry. Standing by for your flight plan report.

CONFIDENTIAL

CONFIDENTIAL

194:41:39 C ... Gemini VII ... 553 ..., ... flight plan ...
... 17 and 500 ...

194:42:19 C Pilot now 5, Command Pilot, 25; ... Pilot, 3; ...

194:42:26 CC One eight, Pilot, 560; Command Pilot, 654 ...,

194:42:33 CC Roger, Gemini. Would you give me the first item?
The first item you reported.

194:42:40 C 20 magazine plus 10 exposures of S0217 AF64.

194:42:48 CC Okay. You must have dropped out then. I picked
you up at 13 exposures of color-shifted IR. Any
items prior to that with the exception of the one
you just repeated, I have not received.

194:43:01 P Roger. The - that was - you received it all be-
cause the IR would be the second item.

194:43:05 CC Roger.

194:43:19 P ... Gemini. Tell them at Houston that we have run
a cabin temperature survey since we've been without
suits, and conditions are the same as they've been
for the whole flight.

194:43:31 CC Roger.

194:44:03 CC We have nothing else. We're standing by.

194:44:06 C Roger. All ...

HAWAII

194:59:13 CC Gemini VII, Hawaii CAP COM.

194:59:16 C Go ahead, Hawaii.

194:59:18 CC How are you doing? We're showing you GO down here.

194:59:23 C Will you say again, please, Hawaii?

194:59:26 CC How are you doing up there?

CONFIDENTIAL

CONFIDENTIAL

591

194:59:27 C Very good.

194:59:28 CC Okay. We're showing you GO down here. I've got a landing area update. Let me know when you're ready to copy.

194:59:39 C Roger. Ready. Go ahead, please.

194:59:48 CC Okay. Area 125-3 199:05:27; 126-Bravo: 200:42:01; 127-Bravo: 202:30:19; 128-2: 203:14:37; 129-2: 204:48:31; 130-2: 206:24:34; 131-1: 207:53:25; 132-1: 209:28:41. The RET at 400K at all these landing areas is 21 plus 40.

195:01:22 C Roger, Hawaii. Thank you.

195:01:24 CC Okay. The weather is good in all areas except 131-1. That one is marginal.

195:01:34 C Okay.

195:01:36 CC And there'll be a UHF 6 pass at the RKV and also at the CSQ on Rev 123.

195:01:44 C Thank you.

195:01:55 CC Okay. If you need anything else, we'll be standing by.

195:01:58 C Very good.

195:29:37 P Photograph at f5.6, 1/25, at 195:29:30, and zero of wave clouds over the Andes near Volivia. That was Magazine C, Exposure 59.

ROSE KNOT VICTOR

195:32:32 CC Gemini VII, RKV CAP COM.

195:32:37 C Good evening, RKV.

195:32:39 CC Roger. All systems are GO.

195:32:43 CC I have an over status for you when - whenever you're ready.

CONFIDENTIAL

CONFIDENTIAL

- 195:32:46 P Roger. We're - we're ready.
- 195:32:51 CC Okay. You have 47 pounds of fueling remaining. This is essentially 26.5 percent actual and your gages read 24 percent. We've seen essentially no usage of fuel the last 24 hours. We're planning to use a total of approximately 3 pounds of fuel per day between now and GT-VI lift-off. This will leave you the necessary reserve for contingencies.
- 195:33:21 CC On the ECS O₂ status, as a result of the open-circuiting of Section 2 last night, the section came back strong. We believe it was because the water in the cell had time to fuse out. The ECS O₂ vented last night. It's predicted it will probably happen tonight again when metabolic consumption decreases. We'd like to leave the Quantity Read switch in ECS O₂ tonight in order to calculate vent rate, to evaluate the heat rate on the bottle.
- 195:33:52 C Roger. What's the diagnosis for the fuel cell now that the water's out of it? Do you think it's going to load up again?
- 195:33:57 CC It's hard to tell right now, but it looks real good - at least on the curve we've been running.
- 195:34:03 C Yes, I'm still worried why we have the Delta-P light. I guess nobody really knows down there.
- 195:34:07 CC That's a 100-dollar question.
- 195:34:09 C Right.
- 195:34:12 CC All your Cryo quantities look good for the 15-day-plus mission.
- 195:34:16 C Thank you.
- 195:34:18 CC Your bedtime cryogenic rules for tonight will be ECS O₂ Heater switch OFF; your Fuel Cell O₂ switch to AUTO and your Fuel Cell H₂ - we'd like you to pump it up to 510 psi; and your minimum for tonight will be 445. We'd like you to leave the Fuel Cell H₂ Heater off.
- 195:34:42 C Roger.

CONFIDENTIAL

CONFIDENTIAL

593

195:34:47 CC Okay. We'll update you on the status of the GT-VI launch over CSQ this revolution.

195:34:51 C Thank you.

195:34:53 CC I've got some ball scores for you.

195:34:55 C Hey, it sounds interesting!

195:34:57 CC In the third quarter LA 28, the Browns 7; Green Bay 42 and Baltimore 27; that's a final score.

195:35:08 P Sounds interesting.

195:35:13 CC We didn't tell you last night, but the two previous nights we had a visual on you over RKV. Had a real good look at you.

195:35:21 C With the naked eye or a telescope?

195:35:24 CC The naked eye. We had about 10 or 15 troops up there.

195:35:27 P So what do we look like?

195:35:32 CC You're the fastest star we've ever seen.

195:35:34 P (Laugh) Okay.

195:35:38 CC Okay. Before we lose you, I would also like to congratulate you, both of you, for all the Flight Controls around the world on the way you guys are flying this mission. You're making our job real easy.

195:35:49 P Our pleasure, believe us.

195:35:51 C Thank you.

195:36:23 CC Houston will be giving you a call over Tananarive.

195:36:27 C Okay, RKV. We'll be seeing you tonight.

195:36:31 CC Did you look at us on your last pass?

195:36:32 C Couldn't find you.

CONFIDENTIAL

CONFIDENTIAL

195:36:39 C I've got an admiral on-board, too, and even he couldn't find you.
195:36:43 CC We don't have a wake, that's the problem probably.
195:36:46 C Right.

TANANARIVE

195:53:26 CC Gemini VII, Gemini VII, Houston CAP COM. Over.
195:53:34 C Houston, this is Gemini VII. Go ahead.
195:53:37 CC Roger, Frank. We'd like to clarify a couple of items on the flight plan report. Did you accomplish all the items that were updated today, all experiments?
195:53:45 C Yes, everything that was updated except the ones you already know about, like the laser.
195:53:51 CC Roger. But you did - you did attempt everything that was updated, is that correct?
195:54:01 CC Gemini VII, Houston. I understand that you did attempt everything that was updated today.
195:54:07 C That's Roger.
195:54:08 CC Okay. And can you give us an estimate on your D-4/D-7 tape remaining?
195:54:09 C Stand by.
195:54:30 C 7.
195:54:33 CC Say again, Gemini.
195:54:35 C We have 7 minutes and 40 seconds left.
195:54:39 CC Roger. Have 7 plus 40. I've got a node update if you're ready to copy.
195:54:49 C We used 30 seconds today waiting for GT-VI.

CONFIDENTIAL

CONFIDENTIAL

595

195:54:53 CC Roger. Understand you used 30 seconds for GT-VI.

195:54:58 CC Gemini VII, I've got a node update when you're ready to copy.

195:55:02 C Roger. Actually that was yesterday when we tried to look for that Sequence 430.

195:55:12 C Didn't use it for VI.

195:55:14 CC Roger. Understand.

195:55:20 P Go ahead, Houston.

195:55:22 CC Okay. Node at 199:06:06: Rev 125; 25.3 degrees east; right ascension 09:43:39.

195:55:51 P Houston, this is VII. We didn't get all that. Could you give us the longitude and the latitude again, please?

195:55:57 CC Okay, the longitude is 25.3 degrees east. 25.3 degrees east.

195:56:06 P Roger. And the right ascension?

195:56:07 CC Roger. Right ascension is 09:43:39.

195:56:14 P Roger. We copy.

195:56:15 CC Okay. And we have someone here who want to say a few words to you.

195:56:23 CC Say, Big Shortie and Frisbee, this is Short Biggie. I want to offer you my sincerest congratulations. I can't think of two guys I'd rather see the record go to, and for Frisbee - everything okay at home. The Prime Driver's standing by.

195:56:40 P Thank you ... Pete. Just stand by and listen in case anything happens.

195:56:46 CC Everything's fine on the home front.

195:56:49 P We'll see you, Pete.

195:56:50 CC Roger. Have a good flight for the rest of the trip.

CONFIDENTIAL

CONFIDENTIAL

195:56:54 P Roger.

195:57:03 CC Gemini VII, this is Houston CAP COM. Can you give us an account on what you actually saw during the attempted GT-VI launch?

195:57:16 P Houston, could you say that one more time, please?

195:57:20 CC Roger. Can you again give us a short account of what you saw during the GT-VI attempted launch?

195:57:30 P Roger. We went right over the Cape area. Inside the Cape area we saw actually no ignition or fly-by or anything. We were just photographing with the 16mm and the 70mm, the Cape area at this stage of the launch after the countdown and the read. Over.

195:57:51 CC Roger, Jim.

195:57:55 P We were also performing D-4 and D-7 at that time.

195:58:15 CC Gemini VII, this is Houston.

195:58:18 P Go ahead, Houston.

195:58:22 CC Roger. The Surgeon advises that your sternal lead, Jim, is still a little bit noisy and if you get a chance, you might take a look at it.

195:58:31 P Roger. I'll look at it.

195:58:33 CC And have you been receiving the LA-Cleveland game via HF?

195:58:38 C Roger.

195:58:39 CC Okay.

COASTAL SENTRY QUEBEC

196:16:38 CC Gemini VII, CSQ CAP COM. We're standing by for your purge.

196:16:46 C Roger, CSQ. We're going through.

CONFIDENTIAL

CONFIDENTIAL

597

196:17:52 CC Gemini VII, I would like to get an on-board readout on you - propulsion quantity, propellant quantity and OAMS source pressure.

196:18:00 P Roger. Coming up.

196:18:05 C Propellant quantity reads about 23 percent. The OAMS source pressure is 1300 psi.

196:18:12 CC Say again pressure.

196:18:15 C 13 high, 1300 psi.

196:18:18 CC Roger. I copy.

196:18:24 CC We don't have any further information on Spacecraft VI launch. We'll advise you tomorrow after your sleep period.

196:18:33 CC Okay.

196:18:35 C How far out in the water are you, CSQ?

196:18:38 CC We're about halfway between Okinawa and Manila.

196:18:42 C Fine. You got any rough seas out there?

196:18:44 CC Oh, you bet. There's a storm over us, I suppose. We're in rain squalls now.

196:18:50 C No, it's very cloudy.

196:18:53 C ...

196:18:59 CC Yes, we've had some.

196:19:03 P Just wait until you get to Hong Kong. Good liberty.

196:19:07 CC Yes, we'd like to.

196:19:09 CC Maybe you could talk to Flight about that.

196:19:23 CC We're going to try to rush back for Christmas.

196:19:26 C Roger.

196:19:29 C Were you able to get reservations, Smiley?

CONFIDENTIAL

CONFIDENTIAL

196:19:31 CC Yes, we've got confirmed reservations all the way back in.

196:19:35 C Good show!

196:20:07 P Stand by ...

196:20:12 P ... But can you imagine?

196:20:24 C Thank you, Jim. Three meals in a row we've had fruit. For three meals in a row we've had apricots and pudding.

196:20:37 CC Flight advises that you requested the "Rambling Rose" earlier. It's on HF now. Do you copy it?

196:20:43 C It's running now.

196:22:14 CC Gemini VII, we'd like to remind you to leave your Quantity Read switch in the ECS O₂ position for the sleep period.

196:22:21 P Well, I just put the hydrogen up to 510; I'll switch it over.

196:22:25 CC Roger.

196:22:26 P "Rambling Rose" is NO-GO.

196:22:30 CC NO JOY. I copy.

196:22:36 CC I'll request that Flight give you a replay.

196:22:39 C Thank you, Dick.

196:23:22 P 196:0: took several shots of the Hawaiian Island chain.

196:23:31 CC Gemini VII, San Diego beat the Oilers 37 to 26.

196:23:36 P There's no joy in Mudville tonight.

196:23:40 CC That's affirmative.

196:23:42 CC A bad note for your sleep period.

196:23:44 C Wait till next year!

CONFIDENTIAL

CONFIDENTIAL

599

196:23:47 CC Roger to that.
196:23:53 CC We're approaching LOS. We'll say goodnight and we'll be talking to you tomorrow.
196:23:57 P Okay. Fine and dandy.

HAWAII

196:35:12 CC Gemini VII, Hawaii CAP COM.
196:35:14 C Go ahead.
196:35:15 CC Roger. I have a quick change to a PLA when you are ready to copy.
196:35:23 C Go ahead, Hawaii.
196:35:25 CC Roger. Area 128-2; Time 203:15:11. Did you copy?
196:35:39 C Roger. We copy.
196:35:41 CC Roger. We have nothing further for you. We're standing by.
196:35:48 C Thank you.
196:38:29 C Hawaii, Gemini VII.
196:38:36 CC Gemini VII, Hawaii CAP COM.
196:38:38 C Man, we're right over you now! You're loud and clear!
196:38:47 C We can see your little - your little camp up there on the hill.
196:38:51 CC Roger. It's been clearing up this afternoon a little bit.
196:38:56 C Well, there are some clouds but the ... looks like it's pretty good.
196:39:00 CC Say again.

CONFIDENTIAL

CONFIDENTIAL

196:39:02 C I say there are some clouds over the middle of the island, but your end of it looks like it's pretty good.

196:39:07 CC This is the way it has been for quite a while here. What does it look like on the south end?

196:39:18 C South end doesn't look too good. The middle has just got a layer of high stratus clouds.

196:39:24 CC That's where we live.

196:39:26 C We're going right down the chain now.

196:40:13 CC Are you receiving your "Rambling Rose" at this time?

196:40:25 C I don't know what it is. The HF was great when the football game was on and now it is just sort of cutting out on us.

196:40:55 P Magazine C ... 250. Exposures 66 and 67.

196:41:07 C 66 and 67.

196:41:17 P I mean 61 and 6 - 61 and 62. We've got to change the film now.

196:42:25 CC This is California rebroadcasting on the 15016 to the astronauts on GT-VII. This is California rebroadcasting on 15016 to the the astronauts on GT-VII.

ROSE KNOT VICTOR

197:09:42 C RKV, Gemini VII.

197:09:44 CC Go ahead, Gemini VII.

197:09:45 C Tell Flight that came through great. We heard it.

197:09:49 CC Roger.

197:09:55 CC For the next couple of revolutions we'll be re-moting through the Cape and also through Hawaii.

CONFIDENTIAL

CONFIDENTIAL

601

197:09:55 CC Thank you.
197:31:21 P Lovell ... urine is 197:31.
197:34:45 P ...
197:35:52 P Ha! Ha! Ha!
197:36:09 P I'll tell you what I'll do for you now.
197:37:31 C Next time I'll ...
197:40:24 C ... we walk everywhere ... Ha! Ha! Ha! ... Let everybody try it ...
197:57:35 P ... one 64 ... How are you doing?
197:58:21 C Well.
197:59:45 P Who turned the redamp screws?
197:59:59 C Your ...
206:34:53 C 206:34: peanut cubes for breakfast ... a couple of them. ... for the peanut cubes ... now.

GRAND TURK ISLAND

206:40:39 CC Gemini VII, Houston.
206:40:41 C Right, Houston. Gemini VII.
206:40:42 CC Good morning, Gemini VII.
206:40:45 C Howdy, Houston.
206:40:46 CC Would you start your purge on Section 1, please?
206:41:11 CC Gemini VII, Houston. Could you tell me how difficult it is to get to your tape recorder?
206:41:18 C Get the tape recorder?
206:41:19 CC That's affirm.

CONFIDENTIAL

CONFIDENTIAL

206:41:21 C Which one do you mean?

206:41:25 CC Your T/M tape.

206:41:31 CC I'll tell you the problem. We've got a little problem in getting the tape rewound on it. Seems to have gone forward to the end of the tape and we can't rewind it. We're wondering if you're in a position where you can knock it or anything like that to vibrate it. We've just about exhausted all of our means to try and get it to work.

206:41:57 C We have a bag over the top of it, but we can kick it maybe.

206:42:02 CC Can you kick it all right?

206:42:04 C Yes. We can kick it.

206:42:06 CC Why don't we wait, perhaps till Canary, and we'll give you a little procedure over Canary.

206:42:33 CC Gemini VII, Houston. Would you start purge on Section 1, please?

206:42:38 C Roger. Stand by one minute.

206:42:55 C Beginning purge.

206:42:57 CC Roger.

206:43:01 P You want both sections, don't you?

206:43:03 CC Let's just do Section 1 right now. How was your night?

206:43:11 C Very good.

206:43:13 CC Were you tumbling at all when you awakened?

206:43:18 P We were rotating very slowly.

206:43:20 CC Very slowly. I see.

206:43:22 CC Was the temperature all right in the cabin?

206:43:25 P ... but not too badly last night.

CONFIDENTIAL

CONFIDENTIAL

603

206:43:30 CC Okay.

206:43:50 CC Gemini VII, Houston.

206:43:53 P Go ahead.

206:43:54 CC Request you open-circuit Stack 2C and not purge Section 2 until the Canaries.

206:44:02 P Roger. Open-circuit Stack 2C; do not purge until the Canaries. Roger. Will do as soon as I get Section 1 purge here.

206:44:09 CC Okay. Fine.

206:44:13 P What's wrong, Elliot?

206:44:15 CC I beg your pardon?

206:44:17 C Why do you want to open-circuit 2C?

206:44:20 CC It's dropping slightly in load-sharing.

206:44:24 C Okay.

206:44:26 CC I've got a flight plan update if you'd like to take it. If not, we can wait till a little later.

206:44:31 C Why don't we wait? We're just in the middle of breakfast.

206:44:34 CC Right. We'd be happy to.

206:44:42 P You know, it seems like our mornings are getting earlier every day.

206:44:45 CC Yes, we're finding that down here, too. It's around 4:00 our time. It wasn't long ago that I couldn't talk to you at all.

206:44:56 C Right.

206:45:03 CC I'd like to give you the morning news, but I really haven't heard any.

206:45:10 P Nothing's new up here either.

CONFIDENTIAL

CONFIDENTIAL

206:45:21 P We've completed purge on Section 1 and 2C is open-circuited.

206:45:25 CC Okay. Thank you, Gemini VII.

206:45:31 CC Is there anything I can do for you all down here?

206:45:36 C From now on do you want to leave this open-circuited, Charlie?

206:45:39 CC We'll get to - when we get to the Canaries, we'll give you further instructions, Frank.

206:45:48 P I can ... this bag off, Charlie, and see if I can do something with that T/M tape recorder.

206:45:59 CC We'd appreciate that, Jim, if you can. If all else fails over the Canaries, we'd like you to just kick at it a couple of times and see if we get any motion indicated down here.

206:46:12 P Okay.

206:46:52 CC Incidentally, I wouldn't be too concerned about this stack - Stack 2C. Things don't look any different - any worse than they ever have before. No one's really unduly concerned about it down here.

206:47:25 CC Gemini VII, Houston. Can you give us an open-circuit voltage on 2C?

206:47:32 C Roger. 32 volts.

206:47:34 CC 32 volts. Thank you.

206:47:39 CC We'll leave you alone now. Enjoy your breakfast.

206:47:42 C Right.

206:50:26 P Now to the food provision CST.

206:50:29 P Suggest the food package labeled "Chicken With Gravy" should be relabeled "Gravy with Chicken". At 207:03: an oblique shot at the Sahara showing sand dunes and the ... that was a horizon scan pass.

CONFIDENTIAL

CONFIDENTIAL

605

CANARY

206:59:04 CC Gemini VII.

206:59:06 P Roger. ... okay. I'm trying to kick.

206:59:18 CC Okay. We don't get any indications down here. Tell you what. Why don't you open up that Tape Recorder power circuit breaker?

206:59:33 P Right. The Power circuit breaker's open.

206:59:43 CC We'll think about it a little while and see what else we can do later.

206:59:58 CC We thought we would leave it in that position for an orbit or two, and then we'll try and bring it back up again - possibly give it another kick.

207:00:07 P When in doubt, kick.

207:00:08 C Roger.

207:00:10 CC Affirmative.

207:00:29 CC We'd like to confirm just one thing, that the Tape Playback switch is in COMMAND right now. Is it?

207:00:35 P Roger. Tape Playback is COMMAND.

207:00:38 CC Okay.

207:01:45 CC What kind of rates did you build up during the night?

207:01:49 P Very slow. We've got a very slow rate. I think we had nothing ... when we went to bed with us.

207:01:56 CC Okay. ...

207:02:05 P Roger. We're eating applesauce now.

207:02:08 CC Roger.

CONFIDENTIAL

CONFIDENTIAL**CARNARVON**

207:31:57 CC Gemini VII, Carnarvon.

207:31:59 C Roger, Carnarvon.

207:32:01 CC Roger. Welcome to Australia in the daylight.

207:32:04 CC We're standing by if you need us down here. You're looking real good.

207:32:09 C Roger. We were just discussing that. We said we think we might be able to see Australia before it gets dark.

207:32:14 CC How much can you see?

207:32:16 C I'm picking it up right now as a matter of fact. I think I see - let me see - George Bay maybe.

207:32:21 CC Roger. Copy.

207:32:29 C Right now there's the land down yonder.

207:35:28 CC Gemini VII, Carnarvon.

207:35:30 P Go ahead, Carnarvon.

207:35:31 CC Roger. We noticed your EKG phase is just starting to get some static on it. We wonder what kind of movement you had in the last couple of seconds here.

207:35:42 C The main play-over went down instead of banging on the tape equipment down there in the footwell.

207:35:49 CC Roger. Copy.

207:35:54 C Borman dumped urine at 207:5.

207:49:30 C Urine dump will be starting S5, Sequence 06, 08, 52. It's ... North Africa. One every 10 seconds ...

208:13:30 CC Gemini VII, Houston.

CONFIDENTIAL

CONFIDENTIAL

607

- 208:13:33 C Go ahead, Houston. Gemini VII.
- 208:13:35 CC Gemini VII, Houston. Request you place Tape Recorder circuit breaker on and give us OAMS propellant quantity readout.
- 208:13:50 C Roger. Tape Recorder circuit breakers on and OAMS Propellant Quantity reads about 21 percent.
- 208:13:57 CC Roger. I have a flight plan update for you.
- 208:14:15 C Go ahead, Houston. We're ready to copy.
- 208:14:19 CC First of all, a note about the laser filter. We're getting a laser - machine down here, and we're going to be working on it and we request that you not try to remove the filter until we get some more information on it.
- 208:14:35 C We won't.
- 208:14:36 CC Okay. Here's your Node update: Time, 208:07:39; Rev 130; 113.3 degrees west; right ascension; 9 hours, 32 minutes, 20 seconds. Flight plan time line up-date change: 208:00:00 to 208:10:00. Item S-5: 208:52:00; Sequence 06; Mode 01; pitch 90 degrees down, yaw 0 degrees. Time 209:04:37: crew status report, Command Pilot at Carnarvon.
- 208:16:05 CC Time 209:45:56: crew status report, Pilot at Texas. Time 211:21:00 will be GO/NO-GO at Texas. Time 211:29:39: purge fuel cells at Bermuda. Item, Apollo Landmark: 211:44:00; Sequence 85; Mode 01; pitch 30 degrees down, yaw 1 degree right. Apollo Landmark: 211:59:50; Sequence 130; Mode 01; pitch 30 degrees down, yaw 5 degrees right. Time, 212:10:00; exercise period. S-8/D-13: 212:59:20; Sequence 02; pitch 30 degrees down, yaw 10 degrees right. 213:10:00; eat period. Item S-8/D-13: 214:34:58; Sequence 02; pitch 30 degrees down, yaw 12 degrees left. That's the end of the update.
- 208:18:51 C We have it all. Thank you, Charlie.
- 208:18:53 CC Will you turn your T/R Control circuit breaker off?

CONFIDENTIAL

608

CONFIDENTIAL

208:19:02 C Which one? UHF T/R?

208:19:05 CC That'll be the Tape Recorder Control circuit breaker.

208:19:09 C Roger. It's coming off.

208:19:11 CC And I have your PLA updates also, Frank.

208:19:16 C Stand by.

208:19:29 P Go ahead, Charlie.

208:19:31 CC Area 133-1: 211:04:14. Area 134-1: 212:40:34.
135-4: 215:32:16. 136-4: 217:08:00. 137-3:
218:24:51. 138-3: 220:00:33. 139-3: 221:36:04.
140-3: 223:11:55. RET 400K remains 2140, and the
weather is good in all areas.

208:21:10 P Have it, Charlie.

208:21:12 CC Okay. I'm afraid we're giving up on your T/M tape
recorder. We've just about exhausted everything
and it looks like it's still caput.

208:21:24 C What are you doing about Step 2, Charlie? We
didn't help that out either.

208:21:29 CC I beg your pardon, Frank?

208:21:31 C We were talking about Step, Charlie. We didn't
help that out by open-circuiting it either.

208:21:38 CC We'll hang onto it for another revolution, Frank,
and take another look at it.

208:21:43 C Okay.

208:21:45 CC I have somebody else that wants to talk to you
here.

208:21:50 CC This is CM4, Frank. How's your home-sweet-home
up there?

208:21:53 C Pretty good, Mike. How are you doing?

208:21:56 CC Just fine. You get your Tape Recorder Power cir-
cuit breaker open, off?

CONFIDENTIAL

CONFIDENTIAL

609

208:22:00 C Roger. It's open.

208:22:01 CC Thank you.

208:22:02 CC Everything's going real well down here on the home front.

208:22:05 C You want the Power circuit breaker open, or the control?

208:22:08 CC We would like them both off.

208:22:10 C Okay. They're both off.

208:22:12 CC Thank you.

208:22:13 C How's Sue and the kids, Michael?

208:22:14 CC Just fine. Saw them yesterday evening. Everything is going great over there.

208:22:18 C Fine.

208:22:20 P Hey, Mike. Your suit storage is working out pretty good.

208:22:23 CC Say again.

208:22:26 P ...

208:22:27 CC Roger. I understand your suit storage - is the helmet visor in the way at all?

208:22:32 P No. It's tied ... over here on the right-hand side, completely out of the way.

208:22:36 CC Good deal.

208:22:41 CC How about a cup of warm belly wash?

208:22:43 C Listen, that would taste good right now. I'm getting withdrawal symptoms.

208:22:48 CC Roger.

208:22:50 C We just couldn't hack the peanut cubes this morning.

CONFIDENTIAL

CONFIDENTIAL

208:22:54 CC Roger.

CANARY ISLANDS

208:31:22 CC Gemini VII, Canary.

208:31:25 P Roger, Canary.

208:31:26 CC Okay, one little favor. Would you close your Tape Recorder Control circuit breaker?

208:31:33 P Right. It's closed.

208:31:39 CC Okay. The reason for this being - in the event you may have to set your ECS circuit breaker or your relays in ECS system.

208:31:50 P Right.

208:32:01 P Canary, this is VII.

208:32:02 CC Go ahead.

208:32:04 P Does this mean now that you're getting only Real-Time data, no delayed time?

208:32:08 CC That's affirmative. You didn't kick it hard enough.

208:32:11 P Man, I tried! In fact, the Surgeon in Australia thought I had a heart failure.

208:32:16 CC We understand.

208:33:11 C Canary, Gemini VII.

208:33:12 CC Go ahead, VII.

208:33:13 C Would you give us the last time on the last node update they gave us? I think that something's wrong.

208:33:18 CC Okay. The time: 208:07:39.

208:33:26 C Okay. How about the time for the S-5 sequence at 208 then?

CONFIDENTIAL

CONFIDENTIAL

611

208:33:30 CC Okay. 208:52:00.

208:33:37 C Okay.

208:33:43 CC Something doesn't jibe up there, or something?

208:33:47 C I didn't realize that Africa was almost as big as Texas, I guess.

208:33:52 CC Roger.

208:36 27 CC VII, Canary.

208:36:30 C Go ahead.

208:36:31 CC Roger. We've rechecked that nodal update and also the S-5 and the times are correct.

208:36:37 C Roger.

208:36:38 P My buddy here didn't realize that Africa was so big.

208:36:41 CC Roger. We copy.

208:36:55 C Very presumptuous of you calling me a friend. As a matter of fact, I'm going to start relaying messages through ground stations.

208:37:04 CC Okay.

208:37:06 C Will you please tell Jim to bank more to the left?

208:37:08 CC Bank one left, Jim.

208:37:12 P Right, Al.

208:37:15 C You sound sleepy, too, Canary.

208:37:17 CC No! No! We're wide awake here.

208:37:20 C Okay.

208:37:32 CC The Surgeon said to speak for myself.

208:37:38 C Too bad we don't have an airlock. I'd send you down some peanut cubes we couldn't eat for breakfast.

CONFIDENTIAL

CONFIDENTIAL

208:37:43 CC You guys never eat those things?

208:37:45 C Right.

208:42:40 P The photographs that we carried on-board here ...
Canaries ... concerned Houston ... pass the word
... a little deeper.

208:42:45 P By and large that's a very accurate target ... pro-
duction. What would you say, Jim?

208:42:50 C Right - but have no way of knowing what time the
photographs were taken, but other than a little
deeper ... it's very, very close.

208:42:31 P Another thing that ... up here.

208:43:54 C Right.

208:43:56 P Green cannot come through. ... brownish color,
brownish gray. Green cannot come through. ...

208:47:01 C ... Picture 208:47 ... lead with an island and
ended up with Apollo Landmark.

208:47:39 P At the same time I'll be switching on the ...
per second for four ...

208:48:47 C ... Five I started ... before our times went into
effect. This time's no good. ... Five zero.

CARNARVON

209:04:56 CC Gemini VII, Carnarvon.

209:04:58 C Go ahead, Elliot.

209:05:00 CC Roger. We'd like for you to cycle your Tape Re-
corder circuit breaker to the ON position, please.
This is the Power circuit breaker.

209:05:11 C It's on.

209:05:13 CC It's on. Okay. Listen.

CONFIDENTIAL

CONFIDENTIAL

613

209:05:36 C Carnarvon. Is this going to be a crew status pass?

209:05:38 CC That's affirmative. We'd like a crew status report on the Command Pilot, please.

209:05:44 C Roger. Do you have my temperature?

209:05:52 CC We have a valid temperature. I will hand you over to the Surgeon.

209:05:57 CC Gemini VII, Carnarvon Surgeon. We have a valid temperature. We're standing by for your blood pressure.

209:06:02 C Here it comes.

209:06:13 CC The cuff is full-scale.

209:06:49 CC Gemini VII, CAP COM. Okay, will you turn your Tape Recorder Power circuit breaker to the OFF position now, please?

209:06:58 C Roger.

209:07:09 CC Gemini VII, we have a valid blood pressure. Start your exercise.

209:07:12 C Roger.

209:07:37 C ... here comes the blood pressure.

209:07:38 CC Standing by for blood pressure.

209:07:49 CC Cuff is full-scale.

209:08:41 CC Gemini VII, you have a valid blood pressure. We're standing by for your food, water and sleep report.

209:08:54 C All right.

209:08:55 CC Gemini VII, Carnarvon Surgeon. Did you copy?

209:08:58 C Roger.

209:09:03 CC We're standing by for your food, water and sleep.

209:09:08 C It's coming up. Okay, to date the Command Pilot's had a total of 694 ounces of water.

CONFIDENTIAL

CONFIDENTIAL

209:09:16 CC Understand. 694.

209:09:18 C Right. For breakfast we had Day 14, Meal A. The Command Pilot did not eat three beef bites, or any of the peanut cubes.

209:09:27 C The Pilot did not eat any of the beef bites or any of the peanut cubes.

209:09:31 CC No beef bites and no peanut? Say again.

209:09:36 C Cubes.

209:09:37 CC Cubes.

209:09:38 C And the Pilot now has a total of 593 ounces of water.

209:09:42 CC I understand. 593.

209:09:44 C And I guess we got probably about 5 hours of sleep last night. Not as good as some - just about average.

209:09:53 CC 5 hours of light sleep.

209:09:57 C Well, a little heavier than that, say 5 to 6 hours of medium.

209:10:01 CC Very well. Medium-type sleep.

209:10:03 C Listen. Any you get up here is good!

209:10:07 CC Any you get anywhere is good!

209:10:12 CC Gemini VII, this is Carnarvon Surgeon again. Could you tell us how long you had the temperature probe in your mouth, please?

209:10:19 C Oh, about 3 minutes. You want it in again?

209:10:21 CC Negative. We have a valid reading, but I think it would be helpful to have it in a little longer. We don't seem to come up to full-scale.

209:10:29 C Okay. Fine. Maybe I'm just not percolating as fast as I should be.

209:10:35 CC Well, this is possibly true. If it's in a little longer, we'd know.

CONFIDENTIAL

CONFIDENTIAL

615

209:10:38 C Okay.

209:10:39 CC Gemini VII, Carnarvon Surgeon out.

209:10:42 C Adios.

209:10:45 CC You're still looking good here on the ground, Gemini VII. We'll be standing by.

209:10:51 C I'm glad I look good on the ground 'cause we just looked in the mirror and we look terrible up here.

209:10:55 CC Ha, ha, ha!

209:10:59 CC Yes, we had a visual on you here, just a little bit ago.

209:11:02 C Did you really?

209:11:03 CC Affirmative.

209:11:04 C The RKV said they had one the other night, too.

209:11:07 CC Oh, we've seen you a couple or three times.

209:11:09 C Well, as a matter of fact, we saw - I think it was Sidney, the last pass. Of course, we're drifting and just tumbling around. It's difficult to pick your location up, but we saw two cities right on the coast here last pass.

209:11:21 CC Roger.

209:13:06 P Lovell is dumping urine at 209:13. 209:13.

209:14:37 P That 60mm, 1 ... per seconds; movies of the convoy ... Apollo 108.

209:14:55 C Apollo Landmark Number 108.

GUAYMAS

209:45:56 CC Gemini VII, Guaymas CAP COM.

209:45:58 C Morning, Guaymas.

CONFIDENTIAL

CONFIDENTIAL

209:45:59 CC Roger. Everything is GO here on the ground. We'd like you to place your Crossover switch to the ON position.

209:46:09 C ON.

209:46:10 CC Roger.

209:46:17 CC Houston will give you an explanation of this after you get over Texas.

209:46:21 C Okay. Fine.

TEXAS

209:47:37 CC Gemini VII, Houston.

209:47:40 P Hi there, Houston!

209:47:42 CC Well, hi there to you, also! We have a valid oral temp. Give us a blood pressure, and stand by for the Surgeon.

209:47:50 C Roger.

209:47:51 CC You guys sound awful chipper this - you guys sound awful chipper this morning.

209:47:58 C We've been sleeping all the way around this time.

209:48:09 CC Cuff is full-scale.

209:48:19 CC Frank, while we're getting that blood pressure, could you check and - check your meal for dinner last night? We got Day 14, Meal A for breakfast this morning. We don't have a recording for dinner last night.

209:48:34 C Roger. Checking. Stand by.

209:48:46 C Day 13; Meal C.

209:48:52 CC Roger. Copied. 13-C.

209:48:58 CC Did you eat all of it?

CONFIDENTIAL

CONFIDENTIAL

617

209:49:04 C Roger. We both ate all of it.

209:49:06 CC Very good.

209:49:08 P ...

209:49:11 CC I believe it.

209:49:34 CC Okay. We have a valid blood pressure down here. We're ready for exercise any time.

209:49:38 P MARK.

209:50:16 CC Cuff full-scale.

209:50:21 CC Frank, while we're waiting for this pressure to read down, could we get a check on the total count on the water gun?

209:50:34 C 3207.

209:50:36 CC 3207. Roger.

209:50:39 C Column 5 for me is 22. Column 6 is 5. For Jim it's - Column 5 is 22 and Column 6 is 3.

209:50:52 CC 22 and 5 and 22 and 3.

209:50:57 P ... is low ...

209:51:10 C I think we probably lost a little weight, sir.

209:51:15 CC You do? Can you tell from looking at yourselves?

209:51:19 C Yes, I think so.

209:51:22 CC Valid blood pressure.

209:51:25 CC How long is that beard right now, Frank?

209:51:28 C You'll have to talk to Jim. He's the bearded one.

209:51:33 CC CAP COM concurs that you lost considerable weight. I think you're down about 170 pounds.

209:51:42 C Roger.

209:51:44 C You all are playing with our fuel cells again.

CONFIDENTIAL

CONFIDENTIAL

209:51:47 CC We're going to tell you about that.

209:51:49 C Okay.

209:51:50 CC Frank, I've got two other quick questions here. On this sleep last night, we got that you both got about 5 to 6 hours of what you call medium sleep. Was that better than the night before?

209:52:02 C No. Not as good for me.

209:52:04 P Same.

209:52:05 C Not as good for Jim either.

209:52:06 CC Not as good for you. Were you having thermal problems at all?

209:52:09 C No, we were very comfortable but - just didn't go to sleep.

209:52:19 CC What was the position of your suit Flow Control valve during the sleep period?

209:52:24 C They're all - they're just full-flow and the temperature in here is just ideal. Just like it's in an air-conditioned home, beautiful.

209:52:44 CC Frank, you said FULL-WARM and that's the position now, also?

209:52:49 CC Roger. FULL FLOW - both valves.

209:53:11 P Chuck, did you get the blood pressure okay?

209:53:14 CC Roger. We got a valid blood pressure. We said that. I guess you didn't hear it when we were talking there. I'm sorry.

209:53:20 P Okay. I was just holding my arm here.

209:53:33 CC Gemini VII, Houston Flight.

209:53:36 C Yes sir.

209:53:37 CC Tell you a little bit about George Weber's newest theory. You ready?

CONFIDENTIAL

CONFIDENTIAL

619

- 209:53:43 P All set.
- 209:53:45 CC They think maybe the oxygen pressure coming out of the regulator in the Fuel Cell Number 2 is being blocked off possibly by the check valve and that, as a result, they're not getting enough oxygen to Fuel Cell Number 2, which besides the fact they're not getting rid of the water, is also not giving it enough oxygen to develop the power. So we're going to run for a while with the Crossover Valve on and see if the increased oxygen flow to Fuel Cell 2 improves the performance.
- 209:54:19 P Very good. Number 2C is pretty far down now, as you know.
- 209:54:24 CC Yes. We've been - it was pretty steady until you woke up and it started dropping again, and that's been its characteristic for about 3 days. So we thought we'd try something different.
- 209:54:36 P Fine.
- 209:54:39 CC How much water did you drink when you first woke up?
- 209:54:44 P Not too much. Well, we filled up all the - all the breakfast meal so that is a pretty good amount. I'll tell you exactly.
- 209:54:51 CC Yes. We think that may have some effect on pressure in the fuel cell.
- 209:54:57 P Chris, we noticed it when we opened circuit at the fuel cell but it did - 2C dropped about an amp. It never recovered.
- 209:55:05 CC Roger.
- 209:55:13 CC Jim, are the M-1 cuffs still operating as they - are you aware of them?
- 209:55:21 P They're still operating. No, I've gotten quite used to them by this time.
- 209:55:28 C Guess we took about 40 ounces out of that right at breakfast time.

CONFIDENTIAL

CONFIDENTIAL

209:55:32 CC Roger.

209:55:40 CC Gemini VII, we'd like to have you observe a couple of the Apollo Landmarks on this revolution, in preparation for your photographs on the next revolution; specifically, 85 and 130. And, also, check the 108 site for possible use later today.

209:56:07 C I don't want to use fuel to do that, Elliot. You mean just drift and look at them, right?

209:56:12 CC As best you can, right. You'll be - you're set up for a pass on them the next revolution after this one. We thought it would be a good idea to get a weather check this time so that we can scrub them, if necessary, so you don't even do it next time.

209:56:27 C Okay, fine. Our fuel is down pretty low. Elliot, get sort of a status report on how you plan to handle VI and VII now if they go up Wednesday or Thursday, and when we're going to reenter and all that sort of stuff.

209:56:43 CC We don't have - I don't see what you mean on that, VII. There wouldn't be any change in our plans.

209:56:50 CC No change in that, Frank. We're still planning the same kind of flight, hoping to get off on Wednesday, and that is what they're working towards. They do have some things that they don't fully understand about the launch vehicle that they want to check into; but they are pressing forward with a Wednesday launch, picking up an abbreviated midcount tomorrow morning.

209:57:18 CC Did you copy that, VII?

209:57:20 C Negative.

209:57:22 CC We do not have any change in our plans as far as the rendezvous and reentry and so forth are concerned. Did you have a specific question there? I'm not sure I understand what you mean by that.

209:57:33 C It appeared to me that we might both be coming in on the same day.

CONFIDENTIAL

CONFIDENTIAL

621

209:57:39 CC Negative. If they launch on Wednesday, they'll be back Thursday or Friday. Your day is Saturday.

209:57:46 C What is our T_R time?

209:57:49 CC You have 120 hours to go, right -

209:57:52 CC MARK.

209:57:55 C Okay. Thank you.

209:57:58 CC You're right. We are taking a look at what would happen if we had to launch and get you both down on the same day, and right, now, it looks like 205 and 207, with you coming down on 205.

209:58:14 C What's our nominal then, Chris? When do you plan on bringing us down if everything goes normal?

209:58:18 CC 207, and that was the GET RC that I gave you.

209:58:23 C Thank you.

BERMUDA

209:59:25 CC Gemini VII, Houston. Your present GET RC would be 329:57:53.

209:59:38 C Roger. Thank you.

209:59:40 C That's at 207-1.

209:59:43 C Right. Five days left, 120 hours.

209:59:57 CC Essentially, I think that the best way to look at it, VII, is that our plans have not changed from preflight planning, in regard to the reentry.

210:00:06 C Roger. That's fine. I just - I'm glad to hear you're considering the possibility of ... I just wanted to ...

210:00:17 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

CANARY ISLANDS

210:00:50 C Canary, this is Frank.

210:00:55 C This is Gemini VII.

210:00:56 CC Go ahead.

210:00:59 C This morning we picked up an Apollo Landmark that was obscured by weather yesterday while we were doing an S-5. It's Apollo 137. ...

210:01:08 CC Apollo 137. Roger.

210:05:29 CC Gemini VII, Canary.

210:05:31 C Go ahead, Canary. Gemini VII.

210:05:33 CC Roger. Looks like you lost your Delta-P light, right?

210:05:36 C You're right.

210:05:38 CC Okay. Tell you what we're going to do. We'd like you to leave that Crossover switch on for a revolution, and we'd like you to monitor current and voltage and try to give us a readout on what's yours. Okay? If there's any variation at all.

210:05:51 C Oh, we were just suggesting that. It's already jumped about an amp and a half since we put the Crossover Valve on.

210:05:56 CC How about that?

210:06:00 C Actually, we suggested doing that about 8 days ago.

210:06:08 CC I have no comment on that.

210:06:13 C I bet Flight does.

210:06:15 CC I didn't hear anything.

210:06:24 CC Flight says that he's had all kinds of suggestions.

210:06:27 C Ask him how his golf game went this weekend, will you?

CONFIDENTIAL

CONFIDENTIAL

623

210:06:30 CC You just asked him.

210:06:41 CC Flight can't remember when he played golf last. How about that?

210:06:44 C Canary, could you give me an update on the elapsed time, please?

210:06:48 CC I sure will. It's 210:06:55:67.

210:06:58 C Okay. Fine. Thank you. That last sequence time for S-5, you know - we were concerned about it being a little late?

210:07:05 CC Yes.

210:07:06 C It was late. That's the first time they've missed on it. We started early though, and got the pictures.

210:07:11 CC Okay. Very good.

210:08:31 C Canary, the weather looks real good for Apollo 85 on the next pass.

210:08:36 CC Okay. We copy you. Thank you

210:09:00 CC VII, Canary.

210:09:03 C Go ahead, please.

210:09:05 CC Roger. Check Apollo in 108, too, if you can, will you?

210:09:09 C Sure will.

KANO

210:16:59 CC Gemini VII, Houston.

210:17:03 P Go ahead.

210:17:05 CC Have you been able to check the weather in the 108 area yet? Looks like you're about opposite that now.

CONFIDENTIAL

CONFIDENTIAL

210:17:18 P Roger. The weather here looks pretty good, Elliot.
...
210:17:22 CC Are you looking down through the southwest there,
where you'll be next revolution?
210:17:27 P Well, we can't really look anywhere. We can just
look the way the spaceship is pointing and any place
it's pointing is good weather.
210:17:33 CC Roger. We're considering adding in a 108 on the
next pass, which would be between Dakar and the 130
site, Lake Niasar, or whatever it is there. It's
a little tight in there, but maybe if you get your
attitude set up you could hit all three of them
fairly easy.
210:17:54 P Well, that's - we ought to take more advantage of
this because once we get our attitude set up, it's
no trouble taking more than one picture along our
path.
210:18:03 CC Okay. Well, we'll get an update for you on that
one.
210:18:10 C Elliot, did you copy that our update for S-5 was too
late?
210:18:14 CC Roger. We're looking into that, Frank.
210:18:17 C Good.
210:18:49 CC Gemini VII, Houston. Surgeon says that your sternal
lead is deteriorating on Jim there and he would like
you to replace it as discussed yesterday, if you can
manage that at this time.
210:19:03 C Okay.
210:19:07 CC Thank you, Dr. Borman.
210:19:10 C Wait until I can get out my razor so I can shave him
again.
210:19:14 C Operation beginning.
210:19:19 CC Do you want me to send up a nurse?

CONFIDENTIAL

CONFIDENTIAL

625

210:19:23 C Tell Mr. Kraft that as of right now we're still
... 15 days, we may need it.

210:19:33 CC Roger, VII.

CANARY

210:41:14 CC Gemini VII, Canary CAP COM. We have nothing for
you this pass. We are standing by. Everything
looks good from the ground.

210:41:21 C How's the Pilot's sternal lead now? We just re-
placed the ...

210:41:36 CC Oh, Roger. It's looking good. It's coming in real
good.

210:41:40 C Thank you.

CARNARVON

210:42:48 CC Gemini VII, Carnarvon. If the Section 1 Delta-P
light comes on, turn the Crossover switch to the
OFF position.

210:42:58 C Roger, will do.

GUAYMAS

211:18:00 CC Gemini VII, Guaymas CAP COM. As you copy, place
your T/M switch to the REAL-TIME and ACQ-AID
position.

211:18:12 CC Roger. We have it. Place your Adapter C-Band to
CONTINUOUS.

211:19:11 CC Gemini VII, Guaymas CAP COM. Everything looks good
here. We'll be standing by if you need us.

211:19:17 C Thank you, Guaymas.

CONFIDENTIAL

CONFIDENTIAL

211:21:18 CC Gemini VII, Houston.
211:21:26 CC Gemini VII, Houston.
211:21:29 P Go ahead, Houston.
211:21:32 CC Place your T/M switch to COMMAND.
211:21:41 P This is VII. You were cut out. Say again, please.
211:21:44 CC This is a UHF-6 pass. Place your T/M switch to
COMMAND.
211:21:51 C Roger. T/M in COMMAND.
211:21:54 CC And - C-Band Adapter switch to COMMAND.
211:21:58 P C-Band Adapter is COMMAND.
211:22:07 CC You have a T_X coming up, VII.
211:22:18 CC Gemini VII, did you copy? We have a T_X coming up.
211:22:21 P Roger. Copy, and we haven't received yet.
211:22:24 CC Roger and you are GO for 148-1.
211:22:28 P Roger. GO for 148-1. Do you want a systems check?
211:22:33 CC Roger. Standing by.

TEXAS

211:22:41 C The main batteries are all 22.8 except Number 4
which is 22.5. Fuel cell stack readout 183.0; 1B,
3.0: 1C, 2.5; 2A, 2.0; 2B, 2.0; 2C, 4.0. Main bus
voltage, 27.2. RCS A, 3000 psi, 80 degrees. RCS
B, 2900 psi, 79 degrees. Left-hand secondary O_2 ,
5400. Right-hand secondary O_2 , 5300.
211:23:19 CC Roger. Copied.
211:23:27 CC VII, can you confirm that the Delta-P lights have
continued to stay out all this pass?

CONFIDENTIAL

CONFIDENTIAL

627

211:23:34 P Roger. The Delta-P light has stayed out, both for Sections 1 and 2.

211:23:39 CC Roger.

211:23:43 CC Have a flight plan update item for you when you're ready to copy.

211:23:47 P Roger. Stand by.

211:23:54 P We're ready to copy.

211:24:05 P Go ahead, Houston. We're ready to copy.

211:24:08 CC First, Jim, let me ask, do you recall approximately how long after you opened the Crossover valve that the Delta-P light went out?

211:24:17 P Stand by. We have a time on that.

211:24:37 P We think it was around 2:09:50.

211:24:40 CC 2:09:50. Roger.

211:24:44 P About 2:10:00. Correct us on that.

211:24:48 CC 2:10:00.

211:24:51 P Roger.

211:24:52 CC Roger.

211:24:57 CC Okay. First, I'd like to mention that the S-5 time that we had given you was incorrect. You were right on that. Flight plan update. Item Apollo: 211:54:03; Sequence 108; pitch 30 degrees down, yaw 5 degrees right. Also, in the nature of flight plan update, but not exactly that type, we have some areas of weather interest that we'd like you to observe and take pictures of if you can in drifting flight. We do not want to use fuel for these. We can jot down the areas. Frontal clouds, northwest Florida. Frontal clouds north and west of Hawaiian Islands. Do you copy?

211:26:15 C Roger. Our Number 2 Delta-P light just came back on.

CONFIDENTIAL

CONFIDENTIAL

211:26:19 CC Roger. I copy. Number 2 Delta-P light back on.

211:26:23 C It was on at 22:11:25.

211:26:45 CC Okay. We copied the Delta-P light, VII, and we got your time here on the ground.

211:26:53 CC We are standing by for your fuel cell purge at this time.

211:27:09 P Starting purge.

211:27:10 CC Roger.

211:27:28 C Houston, Gemini VII.

211:27:29 CC Go.

211:27:31 CC How do things look at the Cape on the recycle?

211:27:34 C Coming along real good.

211:27:35 CC Very good.

211:29:54 CC Still no report, Frank, on exactly what or how it happened - this plug coming out. They're still looking into it.

211:30:03 C Roger.

211:30:28 CC VII, the movies indicate that plug coming out, but there's no evidence of why. It's clearly shown coming out but that's about as far as we can get.

211:30:40 C Roger.

211:30:51 CC VII, we're standing by for your O₂ Section 2 purge.

211:30:57 P We're purging the O₂ Section 2.

211:30:59 CC Roger.

211:31:07 P Aren't you receiving it down there?

211:31:10 CC Not at the moment.

211:31:12 P O₂ has been out for about a minute and a half now, coming up on the second minute.

CONFIDENTIAL

CONFIDENTIAL

629

211:31:16 CC Roger.

211:31:41 P Purge is complete, but the Crossover is still on.

211:31:45 CC Roger, VII.

211:31:56 P Houston, do you want us to keep the Crossover on?

211:31:59 CC Gemini VII, do you still have the Delta-P light?

211:32:03 P Roger.

211:32:04 CC We'd like to turn the Crossover off for the time being.

211:32:10 P Crossover is off.

211:32:11 CC Roger.

211:32:18 CC We'll continue to observe it and then we'll go back to that if we feel it's necessary.

211:32:35 CC Jim, would you check Fuel Cell Control No. 2 circuit breaker just to verify that it's closed?

211:32:46 P You're right. Fuel Cell Control was open.

211:32:58 CC Jim, that means we'll need to complete your Section 2 purge, both hydrogen and oxygen.

211:33:04 P Roger. Going through it again.

211:33:10 CC Did that take care of the Delta-P light also?

211:33:36 CC Did the light go off when you put the Crossover valve back on, Jim?

211:33:41 P Crossover is back on and the Delta-P light's still on and purging oxygen at this time.

211:33:45 CC Roger.

211:35:30 CC Gemini VII, Houston. I presume you do not know any reason that that circuit breaker came out.

211:35:37 P Houston, VII.

CONFIDENTIAL

630

CONFIDENTIAL

211:35:38 CC Go ahead.
211:35:41 P Purge complete. Crossover off. There's no reason why it went out. I might have hit it inadvertently.
211:35:48 CC You say you think you might have hit that circuit breaker open?

BERMUDA

211:36:18 CC Gemini VII, we suggest you just keep an eye on that circuit breaker there in case it did pop for some reason. We'd like to be aware of that.
211:36:29 P Roger. Will do and the Crossover is now off and lights are still on.
211:36:35 CC Roger, VII.

CANARY

211:42:11 CC Gemini VII, Canary. Com check. How do we read?
211:42:15 P Loud and clear, Canary. How are you?
211:42:16 CC Roger. Read you loud and clear.
211:42:18 CC We'd like to check to see if you have your fuel cell heater on. Hydrogen.
211:42:28 P Negative. You want it on?
211:42:29 CC No. Negative.
211:42:35 C I had it on earlier this morning, Canary, because it was getting the minimum they gave me last night - 44.5 - but I haven't had it on for awhile when it got up to 510.
211:42:44 CC Okay. Would you go to FC H₂ and give me a pressure, please?
211:42:49 C The pressure now is about 525.

CONFIDENTIAL

CONFIDENTIAL

631

211:42:54 CC Roger. Copy 525.

211:45:18 P Canaries, VII.

211:45:19 CC Go ahead.

211:45:21 P Apollo No. 85 was obscured by clouds.

211:45:24 CC Copy.

211:46:54 CC Well, VII, that's all we have for you here. Everything looks good on the ground. We'll see you tomorrow on Rev 143.

211:47:02 CC Roger, Canary. See you tomorrow.

CARNARVON

212:17:16 CC Gemini VII, Carnarvon CAP COM. We have nothing for you this pass. We are standing by.

212:17:22 C Roger, Carnarvon. Will you inform Flight that the Fuel Cell Control No. 2 circuit breaker popped again after we reset it over Houston?

212:17:30 CC Roger.

212:17:31 CC Roger. We copied that. Can you - have you got a time?

212:17:35 C It was off at - stand by. I'll give you the time.

212:17:39 CC Roger.

212:17:41 C 21:20:3.

212:17:48 CC Flight copies.

212:18:31 CC Gemini VII, Carnarvon. Would you confirm that you have been exercising during the past few minutes - the Pilot?

212:18:38 C I don't know. We've been asleep.

212:18:40 P Seriously, we were exercising.

CONFIDENTIAL

CONFIDENTIAL

212:18:43 CC Affirmative.

212:21:23 CC Gemini VII, Carnarvon CAP COM. Next time it - the circuit breaker pops - if it pops again, leave it open.

212:21:30 P Do you want us to reset? We've left it open now.

212:21:33 CC You still have it open? Okay. Leave it where it is.

212:21:36 P Roger. We're leaving it open.

212:22:27 CC They've found out some interesting information on the GT-VI launch vehicle at the Cape. They'll brief you on that a little later on today.

212:22:39 C Thank you.

212:22:41 CC Roger.

212:22:45 C Does it affect the launch on Wednesday?

212:22:53 CC It means that the launch on Wednesday will probably come off on schedule.

212:22:58 P Thank you.

212:23:01 CC Roger.

212:36:59 P ...

212:37:47 P Is that 15 minutes and 42:01?

HAWAII

212:39:53 CC Gemini VII, Houston. How do you read?

212:39:59 P Loud and clear, Houston.

212:40:02 CC Roger, Jim. We'd like to delete your S-8/D-13 coming up. The weather is too cloudy.

212:40:10 P Roger. Understand. S-8/D-13 is deleted.

212:40:13 CC That is affirmative. Too cloudy.

CONFIDENTIAL

CONFIDENTIAL

633

212:43:01 CC Gemini VII, Hawaii CAP COM.
212:43:03 C Go ahead, Hawaii. Gemini VII.
212:43:05 CC Roger. We show you GO on the ground. How are things going this morning.
212:43:09 C Very good, thank you.
212:43:11 CC We have nothing further for you. We are standing by.
212:43:13 C Okay, Hawaii. Thanks very much.

GUAYMAS

212:54:25 CC Gemini VII, Guaymas CAP COM. Everything's looking good here on the ground. We'll be standing by if you need us.
212:54:31 P VII. Roger. Thank you.

TEXAS

212:56:51 CC Gemini VII, Houston.
212:56:54 C Go ahead, Houston.
212:56:56 CC This will be another UHF-6 pass.
212:57:00 C Thank you.
212:57:03 CC Like to review the circuit breaker situation with you. We've been continuing to analyze it here and at present time, as we see it, a couple of significant factors. The one is that the circuit breaker took approximately 30 minutes to reopen, which gives us a very good idea as to what the current drain might be there, and another is that there is not a continuous flow through that circuit breaker. If you've had your systems out you've probably already seen this. It is used only for

CONFIDENTIAL

CONFIDENTIAL

operating the purge valves and also for operating the Section and Stack Power switches. So we feel that we can operate under this condition for - without a limit. We will have to put the circuit breaker on for purging and then we will turn it off after that. And normally that would be the only need we would have for it. But even if we would need to use it for Section or Stack Power switches, we could also turn it on and then turn it on - turn it off afterwards. Any comments from you on that?

- 212:58:21 C No. As you say, we have been through the systems, but we came to the same conclusion.
- 212:58:26 CC Roger. We're continuing to analyze it and we'll keep you posted on that.
- 212:58:30 C Thank you.
- 212:58:31 CC Have some flight plan updates when you're ready to copy.
- 212:58:40 CC Incidentally, in the systems book, if you haven't done so already, be sure and look at both drawings 121 as well as 122, 'cause there are some circuits shown on 121 that are not shown on 122.
- 212:58:55 P Roger. We're ready to copy.
- 212:59:58 CC Node: 214:08:42; Rev 134; 154.3 degrees east; right ascension 09:24:43. Transponder test: 214:31:00; Sequence 01; Transponder on. Time: 215:29:00; purge fuel cells at Carnarvon. HF test: 215:53:00; Sequence 02; begin tests, horizon-scan mode. Time: 216:00:00; BIO MED Recorder Number 1 to CONTINUOUS. MSC 2 and 3; 216:27:00; Sequence 03; stop at 216:37:00, REAL-TIME T/M. Do you copy?
- 213:00:38 C Roger. I copied all but the one item after the radar test.
- 213:00:44 CC Right after the transponder test?
- 213:00:47 C ...
- 213:00:49 CC What part did you miss? There was a time and a purge fuel cells.

CONFIDENTIAL

CONFIDENTIAL

635

213:00:52 C Okay. I missed the time.

213:00:55 CC 215:29:00. Purge fuel cells at Carnarvon.

213:01:07 C Okay. We have them all, Elliot.

213:01:09 CC HF Test: 217:23:00; Sequence 02. That's an off time. That's the off time for the test which was started at 215:53.

213:01:35 C Right.

213:01:38 CC Time: 217:29:00; crew status report on the Pilot at Hawaii. Time: 218:00:00; BIO MED Recorder Number 1 off. 218:03:00; crew status report, Command Pilot at RKV. 218:47:00: flight plan report at the CSQ. 219:39:00: fuel cell purge and PLA update at RKV. Do you copy so far?

213:02:39 C Roger.

213:02:41 CC 220:10:00: BIO-MED Recorder Number 2 CONTINUOUS. 230:10:00: BIO-MED Recorder Number 2 off. Do you copy?

213:03:07 C We have it.

213:03:10 CC Roger. Have the day's news report from the Haney News Service if you're ready.

213:03:17 C Ready.

213:03:20 CC There was a big management change announced for the Houston Astros today. Paul Richards has been relieved as general manager and Grady Hattan will be a new field manager. Understand he's coming from a Pacific Coast team and has had a very good record out there. Other people involved: Eddie Robinson and Lyman Harris are going to be offered other positions in the Astro organization. The Soviet News Agency Sunday finally got around to confirming fact that two Cosmonauts became ill during the Voskhod I flight in October 1964. These were the two non-pilots and they had a reaction of the seasickness type, and among other things, they suffered from illusions. There's heavy coverage in the papers and on TV of the

CONFIDENTIAL

CONFIDENTIAL

Gemini VI attempt yesterday and also it's being noted widely that you two now hold the space endurance record and are increasing it daily.

213:04:42 C Thank you.

213:05:49 CC Have a good lunch, VII. We'll see you next time around.

213:05:50 C Roger.

213:05:53 CC Incidentally, we looked into trying to substitute a MSC-4 on this pass, but the weather there is also bad.

213:06:00 C Roger.

213:06:07 P Houston, Carnarvon said you'd have some word on the cause of VI's ...

213:06:13 CC We don't have that ready for you yet, VII. We'll let you know as soon as we do.

213:06:18 P Roger.

213:06:36 CC VII, Dr. Berry would like to pass along his thanks for your work on the sternal lead.

213:06:43 P Roger. Anything for inflight maintenance.

213:06:49 CC Still coming through real good, Jim.

213:07:19 CC Gemini VII, we had the HF cut out there for awhile, making some circuit checks. It's back up now if you're interested.

213:07:33 C That's outstanding, Elliot.

CONFIDENTIAL

CONFIDENTIAL

637

CARNARVON

213:53:07 CC Gemini VII, Carnarvon CAP COM. We have nothing for you this pass. We are standing by.

213:53:13 P VII. Roger.

213:58:38 CC Gemini VII, Carnarvon CAP COM.

213:58:42 P This is VII. Go ahead.

213:58:43 CC Roger. The S-8/D-13 on the next pass has been canceled due to weather.

213:58:50 P Roger. Understand.

214:10:22 P Observe a meteor at 214:10; meteor - meteorite falling from the direction of Gemini, below us. Actually, I have Taurus and Pleiades in view and it was right underneath Taurus and Pleiades.

HAWAII

214:17:42 CC Gemini VII, Hawaii CAP COM.

214:17:46 P Hawaii. VII here.

214:17:47 CC Okay, how're you doing?

214:17:49 P Oh, pretty good. We're just watching the sun rise.

214:17:52 CC Roger. We're showing you GO here on the ground. We'll be standing by. We have nothing for you.

214:17:56 P Roger. Thank you.

GUAYMAS

214:31:20 CC Gemini VII, Guaymas CAP COM.

214:31:22 C Go ahead, Guaymas. Gemini VII.

CONFIDENTIAL

CONFIDENTIAL

214:31:24 CC Roger. Everything's looking good here on the ground. We'd like to remind you of your transponder test coming up.

214:31:29 C Thank you.

214:31:55 C Transponder's on.

214:31:57 CC Roger. We have it.

TEXAS

214:32:26 CC Gemini VII, this is Texas CAP COM.

214:32:30 P Roger, Texas.

214:32:32 CC We have you GO on the ground. We'd like to get a cryogenic quantity readout at this time. Would you place the Cryo Quantity Read switch to the ECS O₂ position?

214:32:44 P Roger. It's there.

214:33:02 CC The FUEL CELL O₂ position.

214:33:25 CC To the FUEL CELL H₂ position.

214:33:42 CC Turn the switch to the OFF position.

214:33:49 CC Roger, Gemini VII. We have nothing further, and standing by.

214:33:53 C Texas, I'd like a clarification of the flight plan update. What time are we supposed to turn this transponder off, please?

214:34:01 CC Stand by.

214:35:54 CC Gemini VII, Texas CAP COM.

214:35:56 C Go ahead.

214:35:57 CC The off time is 214:50.

214:36:03 C Thank you.

CONFIDENTIAL

CONFIDENTIAL

639

- 214:36:04 CC Roger. Standing by.
- 214:40:20 C 214:40: Magazine D for Dog; Exposure 31; a picture of the tip of Florida in the shallow waters around the Keys. Continue the same sequences, with picture of the - pictures of around Cuba, of the shallow waters there.
- 214:41:17 P Also, covering with 60mm film at one frame per second.
- 214:41:22 C Okay. Magazine D; Exposure 36; it's a river with blue water.
- 214:44:43 CC Gemini VII, Houston.
- 214:44:45 C Go ahead, Houston. Gemini VII.
- 214:44:49 CC Roger. I'd like to inform you of our latest thinking on the reentry situation in case we do bring both of you down on the fourteenth day. Present planning would be to use Revs 205 and 206, and we are able to target - we are able to target for the same touchdown point from both of those revolutions. So that's the way we would do it. And at the moment we feel we would want to bring VII down first and VI after that on Rev 206, although that could be changed, if necessary for some reason.
- 214:45:31 C Roger. Thank you.
- 214:45:34 CC Also, we'd like to, at this time, change the Carnarvon purge to the next US pass, the one you're coming up on.
- 214:45:43 C Roger. Will stand by. And not purge until we're back over the States.
- 214:45:46 CC Roger.
- 214:46:14 CC VII, were you using any attitude control across the US this time for any reason?
- 214:46:19 C Negative.
- 214:46:21 CC Roger.

CONFIDENTIAL

CONFIDENTIAL

214:46:23 C Why?

214:46:26 CC We were just noticing some beacon performance here, and wondered if it was due to that.

214:46:33 C As a matter of fact, the spacecraft is hardly drifting at all. We were almost straight nose-down all the way across --

214:46:41 CC Straight nose-down all the way across the US?

214:46:44 C Roger. Most of the way.

214:46:46 CC Roger.

214:46:52 CC This looks like another one of those good South America coast passes.

214:46:56 C It sure is. We're looking right now all along the coast here. It's just beautiful.

214:47:42 P At 214:59; a matter of general interest: on the right-hand side of the forward end of the spacecraft; the retro and the recovery section; little specks, looks like little fine sand grains of frozen urine crystals have formed from urine dumps since the start of the mission.

214:47:58 CC Gemini VII, Houston.

214:48:03 C Houston, you're barely readable. Say again.

214:48:05 CC Roger. G and C tells me he hasn't seen any noticeable fuel usage since before the rendezvous. You guys are really cutting it off!

214:48:16 C That's what you told us to do.

214:48:19 CC Roger dodger.

214:48:20 C Okay, we always ... if they're good ones.

214:48:26 CC Say again. You cut out on that last statement, VII.

214:48:33 C I say we always follow instructions, if they are good ones.

CONFIDENTIAL

CONFIDENTIAL

641

214:48:37 CC That's the only kind.

214:48:39 C You're right. Like: take the suits off. Don't use fuel.

214:48:45 CC Drink water.

214:48:48 C Yes, drink water. We're doing everything.

214:48:51 CC Very good.

214:49:03 CC What do you show on OAMS quantity?

214:49:07 C We now show 22 percent.

214:49:10 CC Roger. 22 percent.

214:49:27 CC It turns out, VII, that we really aren't limited very much at all on scheduling experiments by fuel. We are having so much weather, plus we have completed so much that there isn't a lot left that isn't covered by weather, so the fuel really isn't hurting us.

214:49:49 C Very good.

215:16:50 C Urine dump on Borman ... 215:16.

215:18:00 P Oh, Franklin.

215:18:03 C What's wrong?

215:27:58 P Lovell dumping urine at 215:27, 215:27.

CARNARVON

215:29:22 CC Gemini VII, Carnarvon CAP COM. We have nothing for you this pass. Everything looks good. We're standing by. This will be our last pass for this series; so goodnight from Australia.

215:29:35 C Goodnight, Australia. We'll see you tomorrow.

215:29:37 CC Roger.

215:30:00 P Thank you, old buddy!

CONFIDENTIAL

CONFIDENTIAL

215:31:20 C Ought to clean up ...
215:31:31 C ... right tank needs adjustment.
215:31:36 P ...
215:31:37 C ... myself.
215:31:38 P ... stick to it.
215:31:39 P I don't want to get all loaded up with that junk.
It isn't that bad. I have had any - I haven't got
any mess or anything. It comes out and plunks in
the bottom. I don't want to get it all foggy.
215:31:55 C All I can hack.
215:31:55 P What?
215:31:59 C All I can hack ...
215:32:00 P Did that get messed up?
215:32:12 P I'll beat the fighters down.
215:32:14 C You get in there with your riding crop.
215:32:22 P With my swagger stick?
215:32:24 C That's right, swagger sticks.
215:32:29 C There were some guys that carried them for a while.
They got left out of ...
215:32:34 C You guys carry around little swords, don't you?
215:32:38 P Swords?
215:32:38 C Yes. Don't you have sword parties of sorts?
215:32:43 P ...
215:32:43 C What? Don't you have swords, too?
215:32:46 P ...
215:32:55 C What do you carry around swords for?

CONFIDENTIAL

CONFIDENTIAL

643

215:33:05 P ... swagger stick.

215:33:09 C The new Commandant of the Marines sort of put the quietus on that though, didn't he?

215:33:26 P Darn it.

215:34:00 P ... send it now ...

215:34:01 C What's that, James?

215:34:02 P The Cryo reading. At about 215 or 217. Just a minute, let me check.

215:34:14 P At 215:40, just as the sun is coming up, I spotted Scrabo City, ... and also have spotted Berkeley, for the first time this flight.

215:34:17 C Is that okay?

215:34:24 P HF Test, Sequence 02; started at 215:53:00; received Hawaii at that time; much static.

HAWAII

215:52:40 CC Gemini VII, Hawaii CAP COM.

215:52:43 P This is VII. Go.

215:52:45 CC Okay. We want to run a little test here. We're showing you GO here on the ground. We want to run a little test to see about this tape recorder.

215:52:53 P Roger.

215:52:54 CC Okay. I'd like you to take your Tape Recorder Control circuit breaker to the OPEN position.

215:53:03 C Tape Recorder Control in the OPEN position.

215:53:06 CC Okay. I want you to close the Tape Recorder Power circuit breaker.

215:53:11 P Tape Recorder Power is closed.

CONFIDENTIAL

CONFIDENTIAL

215:55:54 CC Gemini VII, I'd like you to close your Tape Recorder circuit breaker.

215:56:01 C Tape Recorder Control closed.

215:59:25 CC VII, Hawaii.

215:59:29 P VII. Roger.

215:59:30 CC Okay. Will you take your Tape Recorder Control circuit breaker and close it please?

215:59:39 P The Tape Recorder Control is in the CLOSED position. Do you want it open?

215:59:42 CC No, I wanted just to make sure it's closed and your Tape Recorder Power circuit breaker to the OPEN position.

215:59:48 P Roger. Tape Recorder closed and Tape Recorder Power is now open.

215:59:52 CC Okay, very good.

215:59:59 CC He really hit me. Okay, it doesn't look like we solved it.

215:00:05 P ...

GUAYMAS

216:06:41 CC Gemini VII, Guaymas CAP COM.

216:06:45 C Go ahead, Guaymas. VII here.

216:06:47 CC Roger. You should have your tape, BIO MED Tape Recorder Number 1 to CONTINUOUS at this time.

216:07:04 C Roger.

216:07:07 CC And your transponder test should be over at this time also.

216:07:17 C Right.

CONFIDENTIAL

CONFIDENTIAL

645

216:07:19 CC Roger. We have it. Everything's looking good here on the ground. We don't have anything else for you. We'll be standing by.

216:07:25 C Thank you.

TEXAS

216:08:22 CC Gemini VII, Houston.

216:08:26 C Go ahead ...

216:08:28 CC Roger. I'd like to clarify a point in the flight plan update I gave you. The MSC-2 and 3 experiment at 216:27. We gave you a note on the end of it, said REAL-TIME T/M. I'd just like to make sure you understand what that means. It's just indicating to you that we'll be taking REAL-TIME T/M data on that, since the tape recorder's inoperative.

216:08:59 P Roger.

216:09:06 CC Gemini VII, we're standing by for your fuel cell purge. You've got to remember to put the Fuel Cell Control circuit breaker on, Jim, before you purge Section 2.

216:09:20 P Roger, will do. ... up or on now?

216:09:24 CC And then we want to turn it off as soon as you're finished.

216:09:26 C The ground elapsed time of 215 plus 58 minutes. Hawaii on HF was very clear.

216:09:28 P Roger.

216:09:32 P At 215:59: photographs - photograph of a - looks like a funnel center clouds. Utilizing Magazine D, Frame 37.

C Okay. And the HF test at 216 hours: weak and garbled; worse transmission; weak and garbled. The HF pulse is now coming in clear. It's clear with some static to it.

CONFIDENTIAL

CONFIDENTIAL

P Concerning the HF test at 215:58: was very clear and good; 216:00: weak and garbled; 216:08: weak and garbled; 216:14: weak and garbled, and we haven't been able to read anything from then on.

216:14:13 P Purge completed, Houston, and fuel cell control ...

216:14:19 CC Roger, Gemini VII.

216:14:27 CC We showed that circuit breaker stayed in all the way. You had a good purge.

216:14:32 P Roger. Good purge.

216:14:54 CC Gemini VII, Surgeon has a brief word for you and then I have a comment for you, or statement for you, on the Gemini launch vehicle for VI.

216:15:04 CC Jim, I'd like for you to tell me if those cuffs are still firm around - if they're tight enough on your legs there to the same extent that they were when you launched, and if not can you tighten them up with the laces.

216:15:22 P Roger. I can. They have been tightened several times. I can get in them real easy. They're still working good.

216:15:29 CC Very good. You've already had to tighten them two or three times?

216:15:34 P That's right. The original knot was rather loose.

216:15:37 CC Very good.

216:15:41 CC We're going to give you a maintenance certificate.

216:15:44 P I'm working on one, Doctor.

216:15:47 CC Jim, is Frank listening also? He'd be interested in this.

216:15:52 P Roger.

216:15:55 CC We have a statement released today on Gemini VI and I'll read through it fairly quickly. It's probably the best way to give it to you.

CONFIDENTIAL

CONFIDENTIAL

647

- 216:16:16 CC Are you ready, VII?
- 216:16:19 P Roger. We're listening.
- 216:16:22 CC "Early release of the pad disconnect plug caused a command to shut down the engines of Gemini VI A-booster Sunday. The early release of the pad disconnect plug is under investigation and will be corrected. Subsequent data analysis of all systems also revealed that one of the first-stage engine systems was malfunctioning at the time of shutdown. Further concentrated review isolated the problem in the gas generator system, which provides power to drive the propellant pump. Late this morning the gas generator system was disassembled, and a foreign object was found, which confirms the analysis. This object was a plastic dust cover inadvertently left in the oxidizer inlet port to the gas generator. The system is being cleaned and will be reinstalled on the engine late tonight. All work schedules indicate that a Wednesday morning launch attempt is possible. Even if the problem with the pad disconnect plug had not occurred, the engine malfunction would have caused shutdown to be commanded 1.03 seconds later. These and other safety features are incorporated into the Gemini launch vehicle to prevent the vehicle from lifting off with any malfunctioning system". How about that!!
- 216:17:53 P We'll buy that.
- 216:17:59 C Gemini VII. If there's any tracking problem, we're standing by for when there's lift-off.
- 216:18:05 CC Roger. We're going to send them out to you. And position them to you.
- 216:19:14 CC VII, both of the MSC-4 sites - that is, Hawaii and Ascension - are down at the present time for equipment. We do not have an estimated time of operation. White Sands, as you know, is scrubbed today as an alternate because of weather. It is operational, however, and we will try it as soon as we get it. As a matter of fact, we're planning a pass for tomorrow on it in conjunction with a D-4. We feel that Frank can boresight the spacecraft on the D-4 site and Jim can try to sight the laser

CONFIDENTIAL

CONFIDENTIAL

independently on the same pass. I'd just like to confirm that that sounds okay with you guys.

216:19:57 P Roger. We'll give that a try.
216:20:00 CC Roger.
216:22:01 CC VII, Flight is interested in how are things on the Amazon?
216:22:07 C It's quite a journey, better than Disneyland.
216:23:00 CC Gemini VII, Houston. Do you still read?
216:23:02 C Roger here.
216:23:05 CC We've had a question of whether you can see the Andes Mountains from your present position.
216:23:12 C We're flying at HORIZON SCAN most of this HF test, Elliot. Yesterday - last night - we saw the Andes just perfectly and we got a couple pictures of them.
216:23:21 CC Roger.
216:23:27 CC Is this hurting your miser soul, Frank, to use a little fuel here?
216:23:32 C On the HF test, yes.
216:23:34 CC Roger. Copy that.

ROSE KNOT VICTOR

216:27:43 CC Gemini VII, RKV. All systems are GO. We're standing by.
216:27:47 C Roger. Gemini VII.
C Considering the HF check: the time is now 216:32 and we hear nothing on the HF even with the volume all the way up. On - that's on HF.
C Here's a present for you.

CONFIDENTIAL

CONFIDENTIAL

649

P Is it empty?
C Yes.
P Bless you.
C That stuff stinks, doesn't it!
P No. I have one down here that ...
C Do you? Okay.
C I get some 20 ...
P Yes, by themselves anyway.
C ...
P ... lose your ...
P ... control ...
C What?
P Waiting for ... get back.
C ...
P I thought we were going to lose ... for a second.

COASTAL SENTRY QUEBEC

217:12:50 CC Gemini VII, CSQ. We have you GO on the ground. We have nothing for you this pass. You need not acknowledge.
217:13:00 P We will anyway, CSQ. Thank you.
217:13:04 CC Roger.
217:16:50 C 37?
217:16:51 P Yes. This HF test goes on now till 17:23. That HF test is a waste of time!
217:17:26 P Okay. Spec mag off.

CONFIDENTIAL

CONFIDENTIAL

217:17:35 P Are we using this pulse?
217:17:36 C Yes.
217:17:53 P Sounds like a Mexican revolution back there.
217:17:57 C ... range.
P Fog?
C Still listening on the ... 138 ...

HAWAII

217:30:48 CC Gemini VII, Hawaii CAP COM.
217:30:52 C Go ahead, Hawaii, Gemini VII.
217:30:54 CC Roger. We do not have a valid temperature.
Would you just leave it in, through the first
blood pressure check, and we're standing by for
blood pressure.
217:31:01 C Coming up now.
217:31:17 CC The cuff is full-scale.
217:32:09 CC We have a good blood pressure and you can take
the thermometer out of the mouth.
217:32:15 CC Start your exercise.
217:32:18 CC MARK.
217:32:41 C Blood pressure coming down.
217:32:48 CC Your cuff is full-scale.
217:33:55 CC Gemini VII, we have a T/M dropout. Could we have
another blood pressure, please?
217:34:00 C Roger.
217:34:08 CC Cuff is full-scale.

CONFIDENTIAL

CONFIDENTIAL

651

217:34:54 CC We have a good blood pressure. Thank you. Standing by for your food, water and sleep reports.

217:35:01 C Roger. The Pilot had a total of 614 ounces of water; Column 5, 23; Column 6, 3. The Command Pilot had 703 ounces of water; Column 5, 24; Column 6, 5. Our last meal was Day 11, Meal B. We all ate everything.

217:35:09 P 215:43: one meteor ... facing Gemini. One meteor ... Start to glow off the highest possible ... 217:01 ... took a high-speed photography picture of the rise of the Big Dipper with the airglow ... Magazine change.

217:35:35 CC Roger, Gemini VII. Thank you.

217:36:17 CC Gemini VII, we have nothing further for you at this time. We're standing by.

217:36:22 C Thank you.

GUAYMAS

217:43:30 CC Gemini VII, Guaymas CAP COM. All systems look good on the ground.

217:43:44 C Thank you, Guaymas.

217:45:34 CC Gemini VII, Guaymas CAP COM.

217:45:37 C Go ahead, Guaymas.

217:45:38 CC Roger. We noticed you had your horizon scanners on. You were in the PULSE mode. We wondered if you were having trouble with staying locked on.

217:45:45 C No. We were using the HORIZON SCAN full on and then we went to PULSE to stay zero, zero, zero, and then we went back to HORIZON SCAN.

217:45:52 CC Roger. Very good.

217:45:54 C We want to form lock-right at sunset. The scanner's

CONFIDENTIAL

CONFIDENTIAL

scales say good pitch downrange. We lost it and we had to go to PULSE to bring it back.

217:46:03 CC Roger, understand. Thank you.

ROSE KNOT VICTOR

218:03:09 CC Gemini VII, RKV. We do not have an oral temp. You can start your blood pressure. Leave the oral temp probe in.

218:03:29 CC I sent Tx for - -

218:03:32 P ...

218:03:37 P Our fault, RKV. I was going to ...

218:03:42 CC Okay. Cuff not full-scale yet. ... full-scale.

218:03:49 C All right. Commenting on the HF test, which was conducted 216:08: weak and unreadable, 216:14; I could hear nothing but some foreign language broadcast and some foreign language broadcast ... Morse code calling. At 217:12: the tone started coming in clearer; at 217:13: I picked up Hawaii, loud and clear, and I heard them again around 217:18 - at 27 - at 217:13, and also at 217:18. At 217:23: ... they were again, weak and garbled. ... long-range communications.

218:04:25 CC Gemini VII, RKV Surgeon. We had a T/M dropout about half way through the blood pressure. Can we have another blood pressure, please?

218:04:36 P Roger. Coming up.

218:04:45 CC Cuff full-scale.

218:05:41 CC Gemini VII, RKV Surgeon. We have a valid blood pressure. Standing by for exercise.

218:05:48 P MARK. Exercise.

218:06:14 P Exercise is coming down.

CONFIDENTIAL

CONFIDENTIAL

653

218:06:19 CC Full-scale.

218:07:10 CC Gemini VII, RKV CAP COM. We'd like for you to place your MSC Experiments 2 and 3 to the ON position and leave them on from now to the end of the mission.

218:07:21 CC Gemini VII, we have a valid blood pressure. Have you had any change in the food and water status since Hawaii?

218:07:27 P Negative.

218:07:28 CC Thank you. Surgeon out.

218:07:32 CC Did you copy that experiment, MSC?

218:07:35 P Roger. And we're clear on that. We'll leave them on until the end of the mission.

218:07:39 CC Roger. I've got a map update for you when you're ready.

218:07:45 P Roger. Stand by one.

218:07:59 P Go ahead.

218:08:00 CC ... 220:09:44; Rev 128, 61.9 degrees east. Right ascension: Time, 09:17:08.

218:08:20 CC Roger. Copy. Over.

218:08:21 CC Okay. We'd also like you to give us a flight plan report over Tananarive on this revolution, rather than CSQ. The time for Tananarive LOS is 218:24:00.

218:08:27 P Roger. Will do.

TANANARIVE

218:24:17 CC Gemini VII, Gemini VII, Houston CAP COM. Over.

218:24:37 CC Gemini VII, Gemini VII, Houston CAP COM. Over.

CONFIDENTIAL

CONFIDENTIAL

218:24:53 C Houston, Gemini VII here. How do you read?

218:24:55 CC Roger. Gemini VII. Reading you a lot better now. Standing by for your flight time report.

218:25:00 C Roger.

218:25:03 C 3 ASA-54, plus 35 exposures; 3 magazines plus 35 exposures. 217, 500, we only got three exposures; IR film, 13 exposures; high-speed black and white, 12; high-contrast black and white, 5; 16mm, 2 1/2 magazines; tapes, 9 1/2. S-8/D-13 scores today; Pilot minus 9, Command Pilot minus 11. Go to the day Column 5, Pilot 23; the Command Pilot 24. ... Pilot 3, Command Pilot 5. We accomplished everything in the flight plan today except openings, which were canceled because of the weather, and you were notified at the time.

218:25:54 CC Roger, Gemini VII. We got - we got all your flight plan report. Just one question. Can you give us an idea of what you've been able to accomplish throughout the flight in the way of the dim-light photography?

218:26:07 C Roger. We've got some pictures of the airglow; the night airglow's about it.

218:26:12 CC Understand. Airglow, the night airglow is about all you were able to get. Right?

218:26:16 C Right ...

218:26:22 CC Okay, Frank, I think we got it all and we'll see you, probably not for a while, tomorrow or so.

218:26:29 C Okay.

COASTAL SENTRY QUEBEC

218:47:57 CC Gemini VII, CSQ.

218:48:00 C CSQ, this is Gemini VII.

218:48:03 CC Like to advise the Command Pilot that his external

CONFIDENTIAL

CONFIDENTIAL

655

EKG is noisy and like for you to try to do something about it if you can.

218:48:11 C Roger.

218:48:14 CC Also, Houston would like for the crew, both members, to bring up their water intake just a little.

218:48:20 C Roger.

218:48:22 CC We have you GO on the ground. All systems operating normally.

218:48:28 C ... external leads ...

218:54:18 P Sequence camera: taking shots of the Andes ... 217:54; short cloud formations are out. We're entering South America and around the country of Ecuador. Continuing Sequence camera at 17:57: just showing the many clouds over the Amazon Valley, and South American has ... funny-shaped tops of thunder storms in the photo. Color IR shot of ... Frame 14 - of Central Brazil, showing a contrast of two greens, dark jungle green and light - looks like ... green.

C 218:20.

P 218:20 was the time. 218:00.

C Man, I ...

HAWAII

219:05:37 CC Gemini VII, Hawaii CAP COM.

219:05:40 C VII. Over.

219:05:42 CC Roger. You - we show you GO on the ground here. We'd like to have a fuel cell O₂ pressure reading, please.

219:05:59 C Roger. 740 psi, has 56 percent.

CONFIDENTIAL

CONFIDENTIAL

219:06:04 CC Roger. Understand 740 - 56 percent. We'd like to also have an OAMS propellant quantity readout.

219:06:12 C Roger. Reading 21 percent on-board.

219:06:15 CC That was 31 percent.

219:06:18 C Negative. 21 percent.

219:06:20 CC 21 percent. Would you give me an OAMS source helium pressure?

219:06:33 C About 1300.

219:06:35 CC Roger. Understand. 1300. We have nothing else for you at this time. Standing by.

219:06:43 C Roger.

219:07:12 CC We show your external lead on the Command Pilot as still being bad.

219:07:22 C Roger. Also on operation ...

219:07:25 CC Roger. Would you turn your Quantity Read switch off, please?

219:07:31 C ...

219:07:33 CC Roger. Thank you.

219:08:39 CC Would you - have you noticed any change in your fuel cell O₂ pressures in the past time? We have a suspected stuck transducer. Your ground T/M has not changed in the past 20 hours.

219:09:01 C Our gage hasn't changed either.

219:09:04 CC Roger. Understand.

219:09:05 C But the heater is cycling in here because we're getting jumps on the ammeter.

219:09:26 C Did you read, Hawaii?

219:09:27 CC That's affirmative, VII.

CONFIDENTIAL

CONFIDENTIAL

657

219:09:30 C Okay, thank you.
219:12:30 CC Gemini VII, you also have a UHF 6 coming up over the RKV on this pass.
219:12:39 P Roger, Hawaii.

ROSE KNOT VICTOR

219:39:14 CC Gemini VII, RKV CAP COM.
219:39:16 C Go ahead, RKV. Gemini VII.
219:39:18 CC Roger. Before you start the purge, I'd like to run through the sequence. I would like you to first purge Section 1, H₂ and O₂, then close the Fuel Cell control 2 circuit breaker, then purge Section 2 H₂ and O₂, and then open the Fuel Cell control 2 circuit breaker.
219:39:35 C ...
219:39:37 CC Okay. We're standing by for your purge.
219:39:39 C ... Section 1 has been dumping off all night.
219:39:43 CC ...
219:39:47 C ...
219:39:49 CC Roger.
219:40:33 CC It looks all right, Gemini VII.
219:40:37 C ...
219:40:40 CC Roger.
219:40:42 CC I've got quite a bit of information about the rendezvous when you're ready to copy.
219:40:45 C Go ahead.
219:40:49 CC Okay. I've got a block update.

CONFIDENTIAL

CONFIDENTIAL

219:40:52 C ...

219:40:53 CC Area 140-2: 222:11:57. Area 141-Bravo: 224:49:06. Area 142-Delta: 225:46:10. Area 143-2: 227:20:08. Area 144-2: 228:55:58. Area 145-1: 220:24:38. 146-1: 221:59:57. Area 147-1: 233:35:28. The altitudes ... for all areas is 21 plus 40.

219:42:05 C Roger.

219:42:06 CC The weather is good in all areas.

219:42:08 C Sounds good.

219:42:14 CC Your next fuel cell purge after you wake up will be at Carnarvon, at Area 144. The time will be 230 plus 01.

219:42:29 C Purge on 230 plus 01.

219:42:31 CC Right.

219:42:40 C VII, RKV.

219:42:42 CC Roger. I'll bring you up to date on the OAMS status. Your fuel remaining is 45 pounds. The oxidizer remaining is 109 pounds. The oxygen percentage remaining is 25 percent. The on-board gage readings are 21 percent ... that's one percent of what we expected.

219:43:01 C Roger.

219:43:06 CC I'd like to give you a bedtime ... Okay, ECS O₂ ... switch should be off, your Fuel Cell O₂ ... switch to AUTO, your Fuel Cell H₂ switch to OFF. ... ECS O₂ position tonight.

219:43:28 C ... fuel cell now.

219:43:31 CC Okay. Your ... per maximum. We'd like you to pump it up to 490 and the minimum for tonight would be 445.

219:43:44 C 490 and 445.

CONFIDENTIAL

CONFIDENTIAL

659

- 219:43:46 CC Right.
- 219:43:52 CC I'll give you a little rundown on the spacecraft
...
- 219:43:57 C Go.
- 219:43:58 CC Okay. Your Fuel Cell O₂ pressure's been reading
about 910 psi for the last 20 hours. We think
the transducer is stuck on that fuel cell with
control 2 circuit breaker which keeps popping.
We have a good explanation right now. It's
probably one of the coils didn't make contact
when it opened.
- 219:44:21 C Roger.
- 219:44:22 CC Over a long time of conducting, the coil may have
burned out the insulation, resulting in a lower
resistance yet. I think this might be ... on
Section 2.
- 219:44:32 C Roger.
- 219:44:36 C ...
- 219:44:39 CC Roger.
- 219:44:47 C ...
- 219:44:49 CC I'm going to revolve the ... 209 ... section,
the Delta-P light went out about 210 and as you
know it came back at 211. ... O₂ H₂ ... raise
the O₂ pressure slightly ... water.
- 219:45:10 C Roger.
- 219:45:26 CC We'll give you some music on HF for the next
three hours.
- 219:45:29 C Thank you.
- 219:45:34 CC ... over South America this last time.
- 219:45:38 C ...
- 220:42:19 C Okay. Borman dumping urine at 220:41.

CONFIDENTIAL

CONFIDENTIAL

220:42:21 P ... go now.

220:43:02 P ...

C 2 percent.

220:43:21 P What?

220:43:57 P Yes, sir. We're ... on the spot.

220:44:02 C What'd he say?

C I can't eat ...

P ...

P I wonder if I got ...

220:49:26 C Pardon me!

220:49:33 P Let's see. We only have 12 more meals?

C Tuesday, Wednesday, Thursday and Friday?

C 12 ...

P 223. Roger.

P Right ... Lovell dumping urine at 220:59 ...

C Ready?

C ... really ...

CARNARVON

230:01:01 CC Gemini VII, Carnarvon CAP COM. Would you place your Crossover switch to the ON position and leave it ON for 30 minutes, 30 minutes, 30 minutes?

230:01:10 C Roger. Crossover coming ON for 30 minutes.

230:01:14 CC Roger, and we're set up to have a purge for this pass. We'd like to start out with a normal purge on Section 1.

CONFIDENTIAL

CONFIDENTIAL

661

- 230:01:22 C Normal purge on Section 1.
- 230:03:00 CC Okay, Gemini VII. Before we start the purge on Section 2, we're going to have to turn that Section 2 Control circuit breaker off. Let me know as soon as you finish with Section 1.
- 230:03:12 C Roger.
- 230:04:12 CC Roger.
- 230:04:54 CC Okay. Would you place your Quantity Read switch to the FUEL CELL H₂ position?
- 230:05:01 C H₂ position reading about 490 psi.
- 230:05:07 CC Roger. Okay. I have a three-item flight plan update if you're prepared to copy.
- 230:05:20 C Go ahead.
- 230:05:22 CC Roger. I don't - Node update 5: 230:41:31; Remarks; Rev 144; 99.7 degrees west; right ascension, 09 hours, 03 minutes, 58 seconds. A flight plan time line update: change 232:00:00 to 232:10:00. HF test: 232:10:00; Sequence Number 01; attitude control not required; use UHF for station passes; stop at 233:40:00. Last item: 232:17:49; crew status report, Command Pilot at Texas. Do you copy?
- 230:06:44 C I have it all.
- 230:06:49 CC Okay, would you place your Quantity Read switch to the FUEL CELL O₂ position?
- 230:06:57 C Purge is complete and Fuel Cell Control Number 2 circuit breaker is off.
- 230:07:01 CC Roger. Thank you.
- 230:07:16 CC A reminder that the BIO MED Recorder Number 2 is to go off at 230:10:00.
- 230:07:26 C Roger.
- 230:07:29 CC Okay. You can place your Quantity Read switch

CONFIDENTIAL

CONFIDENTIAL

to the OFF position.

- 230:07:46 CC Okay. We'll have an LOS here shortly. Good morning from Australia, and that completes the items for this pass.
- 230:07:51 C Thank you.

TEXAS

- 230:47:02 CC Gemini VII, Houston.
- 230:47:09 P Good morning, Houston. VII here.
- 230:47:11 CC The BLUE TEAM wishes you a good morning.
- 230:47:16 CC How is everything this morning?
- 230:47:19 P Pretty good. You're coming in pretty weak, Charlie.
- 230:47:23 CC Okay, Jim. Could I have an OAMS prop readout, please?
- 230:47:28 P 21 percent.
- 230:47:31 CC 21 percent?
- 230:47:32 P Two-one percent.
- 230:47:35 CC Roger. Would you please verify your Crossover off?
- 230:47:38 P Roger. Crossover is off.
- 230:47:41 CC Did you see any rates resulting from ECS O₂?
- 230:47:46 P I'm going to look outside. Just a minute.
- 230:48:11 P They're not bad, Charlie.
- 230:48:13 CC Okay, very good. Listen, E-COM thinks your pressure transducer on fuel cell O₂ is hung up. We'd like you to turn your Fuel Cell O₂ Heater switch to OFF for one or two revolutions to let the tank pressure decay slightly, and perhaps to

CONFIDENTIAL

CONFIDENTIAL

663

unstick the transducer.

- 230:48:31 P Roger. Fuel Cell O₂ going - Heater going off at this time.
- 230:48:34 CC Okay, and you can turn your Delay Data Transmitter back - Transmitter circuit breaker off and this won't be used again since the tape - the tape recorder has failed.
- 230:48:48 P Do you want the Tape Recorder Power circuit breaker back off?
- 230:48:50 CC Yes, that's your Delay Time Transmitter circuit breaker.
- 230:48:58 P Okay, the Delay Time is turned off.
- 230:49:02 CC And listen, are you aware that last night you passed Cooper's individual time in orbit? His record was 22 - 225 $\frac{1}{4}$ hours or so and you're now standing almost 240 hours.
- 230:49:18 P No, we forgot about that.
- 230:49:20 CC Almost 231 hours, I guess.
- 230:49:25 P 230 hours, 49 minutes, and 28 seconds, Charlie.
- 230:49:28 CC You're exactly right.
- 230:49:39 CC Did your Delta-P light go out any time the Cross-over was on, Gemini VII?
- 230:49:44 P Negative.
- 230:49:45 CC Okay. Next stateside pass will probably be a UHF 6 pass.
- 230:49:52 C Very well.
- 230:49:57 C How's everything in Houston?
- 230:49:59 CC Real fine.
- 230:50:02 P Charlie, could you take a message for me?

CONFIDENTIAL

CONFIDENTIAL

- 230:50:04 CC Sure, I'd be happy to.
- 230:50:06 P Would you tell Doctor LaChance, of the Crew's System Division, that his chicken with gravy should be labeled gravy with chicken.
- 230:50:14 CC Chicken with gravy instead of - okay, I got it.
- 230:50:24 C Charlie, this - -
- 230:50:25 CC Okay.
- 230:50:26 C - - Cell fold mode out of this venting seems to be a left roll and a left yaw.
- 230:50:30 C Left roll and left yaw.
- 230:50:34 C It's very close to these smoke ..., and we haven't even looked outside for 10 hours.
- 230:50:39 CC Okay, real good.
- 230:50:46 CC Would you like to hear some of late last night's news?
- 230:50:49 C Sure would.
- 230:50:51 CC Well, there is quite a bit of stuff from Vietnam. The Marines and the Vietnamese troops eased into mopping up stage of Harvest Moon today. There is an estimate that ground and air strikes have killed about 1000 of their quarry, which is a hard-core Viet Cong regiment. US officers said the area where the 3700 Viet Cong had stopped to hold their ground against an allied task force of several thousand men is not secure, supposing to keep it that way. Here's something from Notre Dame, the college. There was apparently a group of students that were going to fast for clerical freedom of speech. The college told them to go right ahead. Then all of a sudden all the fasters disappeared.
- 230:51:49 P Great.
- 230:51:54 CC Psychological warfare experts are mighty happy in that, voluntarily, a group of 22 Viet Cong platoon,

CONFIDENTIAL

CONFIDENTIAL

665

a group of 22 in a Viet Cong platoon surrendered to the 173rd Airborne at Quang Ngai, which is 60 miles east of Saigon. A US spokesman said that was the largest single defection of armed insurgents in months.

- 230:52:21 CC Don't have any sports news. Apparently we don't get that on our tape. I'd be happy to give you some if there were. There's been a little turnover in the management of the Oilers.
- 230:52:34 P Of the Oilers or the Astros?
- 230:52:37 CC That was the Astros. Had you heard about that?
- 230:52:41 P Yes, we heard about that yesterday.
- 230:52:42 CC Okay.
- 230:52:43 P Checked with Frank before they made the turnover.
- 230:52:46 CC Yes.
- 230:52:54 C How are things going at the Cape, Charlie?
- 230:52:56 CC Things are going along real well, Frank. They are going to do it in abbreviated mid-count this morning and pick up the counts tomorrow night at the regular time.
- 230:53:09 C What time is launch scheduled for now?
- 230:53:12 CC It's 8:37.
- 230:53:14 C Houston or Cape time?
- 230:53:17 CC That's Cape time.
- 230:53:22 C "M" equals four.
- 230:53:24 CC I beg your pardon.
- 230:53:26 C Is that the rendezvous at the fourth apogee?
- 230:53:28 CC That's affirmative.
- 230:53:35 C Can you tell us what our orbit has decayed to now?

CONFIDENTIAL

CONFIDENTIAL

- 230:53:38 CC Stand by one.
- 230:53:45 CC It's right about 1 and 61 1/2, Frank. We haven't tracked yet this morning to get any good updated information. We'll give you that just as soon as we get a good track on it.
- 230:53:58 C Okay.
- 230:54:02 CC Say, we have some dim-light photography updates we would like to give you if it would be of any assistance.
- 230:54:10 CC Would you like to take that?
- 230:54:12 C Get it later on, Wade. We've got all of our - we're eating right now.
- 230:54:14 CC Yes, I understand that. We'll give that with your big flight plan update.
- 230:54:19 C Very good.
- 230:54:22 C We would like it. We want to get the photography taken care of tonight and Thursday and Friday night if we can.
- 230:54:30 CC Okay, real good. We think we'll have a pretty interesting day for you today. We hope so.
- 230:55:06 C What time do you go off duty, Charlie?
- 230:55:08 CC I go off at seven.
- 230:55:12 CC That's seven local. Can I do something for you, Frank?
- 230:55:19 C No, I just wondered. It's been a long time for you, hasn't it?
- 230:55:20 CC Yes. I bet it's been a lot longer for you all though.
- 230:55:26 C Yes, Jim and I are beginning to notice the days seem to be lengthening a little.
- 230:55:30 CC Yes, I'll bet.

CONFIDENTIAL

CONFIDENTIAL

667

230:55:34 CC But believe me, we can hack it if you can.
230:55:38 C Got any problems ... Frank ...
230:55:52 C Who is the Surgeon on duty with you, Charlie?
230:55:55 CC I beg your pardon? Oh, it's Nick Kuhns.
230:56:07 CC Gemini VII. Nick Kuhns is the BLUE Surgeon.
230:56:10 C I figured he'd have the night shift. He never goes to bed anyway.
230:56:14 CC (LAUGHTER)
230:56:16 CC He's laughing.

CARNARVON

231:35:58 CC Gemini VII, Carnarvon CAP COM. We have nothing for you this pass. We're standing by.
231:36:03 C Thank you, Carnarvon.
231:41:35 CC Gemini VII, Carnarvon CAP COM.
231:41:39 C Go ahead, Carnarvon.
231:41:41 CC Roger. We're starting activities on Pad 19 at the present time and we'd like to have you turn the DCS circuit breaker off in approximately 5 minutes from now.
231:41:52 C Roger. DCS circuit breaker will be coming off in 5 minutes.
231:41:56 CC Roger. And we'd like to have you turn REAL-TIME T/M on for Texas, and their acquisition time will be 232:16.
231:42:08 C 232:16 acquisition for Texas, and the REAL-TIME T/M on.
231:42:12 CC That's affirm.

CONFIDENTIAL

CONFIDENTIAL

231:54:39 P Lovell urinating at 231:53; 231:53 Lovell ...
231:57:04 C Borman dumping urine ...
P ... that with a player.
...
P No! No! No! No! ...
P With this vehicle.
P Voltage ... this isn't holding like it should be.
C ...
P The fuel cells aren't working. ...
C Roger. Suits are off. Both of them. And everything ... cold. The cabin, of course, is cool hot. ... by warming up a little when we go to sleep and then turning to cold when we wake up.

TEXAS

232:17:48 CC Gemini VII, Houston. Gemini VII, Houston.
232:17:54 C Go ahead, Houston. Gemini VII.
232:17:56 CC Roger. This won't be a UHF 6 pass as previously mentioned. Would you verify your T/M in REAL-TIME and ACQ-AID?
232:18:05 C Roger.
232:18:06 CC And place your adapter C-Band CONTINUOUS. Place Tape Playback to RESET momentarily, then COMMAND. Leave C-Band and REAL-TIME and ACQ-AID in CONTINUOUS until Canaries LOS. I note you have temperature. Would you start your blood pressure, please? Am passing you over to Flight Surgeon.
232:18:46 CC Gemini VII. Your cuff is full-scale.
232:19:04 CC Gemini VII. While that's bleeding down, could the

CONFIDENTIAL

CONFIDENTIAL

669

Pilot tell me if the M-1 has been going continuously, and whether he has any comment on the cuff comfort?

- 232:19:26 P Houston, VII.
- 232:19:31 CC Gemini VII, this is Houston Surgeon. I'll come to you again in a moment. Stand by.
- 232:19:53 CC Gemini VII. We have a good blood pressure. You can start your exercise now, please.
- 232:19:59 C MARK.
- 232:20:12 CC Gemini VII, Houston Surgeon. Would the Pilot comment on the pneumatic cuff comfort for thigh cuff?
- 232:20:19 C Here comes the blood pressure.
- 232:20:23 CC Roger. We copy coming.
- 232:20:25 C The cuffs are okay. He's on an HF test on another frequency, and the cuffs are okay.
- 232:20:30 CC Roger. Gemini VII, thank you.
- 232:20:43 CC Your cuff is full-scale.
- 232:20:51 CC Gemini VII, Houston Surgeon. While that's bleeding down, could you give me a reading on your Suit and Cabin Temperature Control valve setting?
- 232:21:00 C Roger. Suits FULL FLOW, both of them, and everything is FULL COLD. The cabin, of course, is FULL HOT.
- 232:21:10 CC Roger.
- 232:21:13 C We can retain very nice conditions by warming up a little when we go to sleep and then turning them back cold when we wake up.
- 232:22:19 CC Roger. Gemini VII, we have a good blood pressure. While you're turning over to your food and water log, would you comment on your sleep last night, please?

CONFIDENTIAL

CONFIDENTIAL

232:22:28 C Jim got about 7 hours and I got about 6 hours of pretty good sleep.

232:22:32 CC Both pretty good?

232:22:34 C Roger.

232:22:36 CC Roger.

232:22:39 C The Pilot now has a total of 658 ounces of water. We had this morning Day 10, Meal A, and he did not eat the peanut cubes. I did not eat the beef sandwiches. He's had Column 5.24, Column 6.4. Command Pilot's had 780 ounces of water, Column 5.26, Column 6.5.

232:23:11 CC Roger. And we're standing by for your supper report last night.

232:23:17 C Had Day 11, Meal - stand by with us, that's not right.

232:23:30 C We had a Meal C last night. I think it was Day 10, Meal C, I think.

232:23:35 CC Roger. Frank, we'll put it down and check to see it wasn't recorded before. Would you give us a total gun count, now?

232:23:42 C Roger.

232:23:52 C 3521.

232:23:54 CC 3521. Your lips and nose satisfactorily comfortable?

232:24:01 C Say again, please?

232:24:03 CC Are you having any difficulty with drying of your lips and nose?

232:24:07 C We're using the skin cream. We're about out of it. We're getting to the stage now where we're starting to itch a little bit, Nick.

232:24:12 CC On the skin generally, or on the scalp only?

CONFIDENTIAL

CONFIDENTIAL

671

232:24:15 C Scalp and the crotch and that - we're just getting a little crummy.

ANTIGUA

232:24:23 CC Understand. Gemini VII, you did a good job of putting the bio sensors back on. We appreciate that good work. Over to CAP COM.

232:24:34 CC Gemini VII, Houston. I have a flight plan update for you.

232:24:38 C Stand by a minute, please.

232:24:41 CC Right. In passing, I might say that the experimenters on D-4/D-7 are extremely happy with the results that you've given them.

232:24:48 C Well, good.

232:24:56 C Go ahead with the update.

232:24:58 CC Time: 232:35:13; PLA update at Canaries. Time: 233:11:13; crew status report on Pilot at Carnarvon. Next item: Apollo Landmark; 234:21:11; Sequence 97; Mode 01; pitch 30 degrees down, yaw 15 degrees right. 234:47:13: purge fuel cells at Carnarvon. S-8/D-13: 235:30:00; Sequence 02; pitch 30 degrees down, yaw 1 degree left; time of closest approach, 235:31:18. Time: 236:00:00; BIO-MED Recorder Number 1 CONTINUOUS. Time: 236:10:00; power-up platform using on-board platform power-up and alignment check list. Align platform SEF and switch coolant pumps prior to turning platform on. Time: 236:20:00; exercise period. Next item is dim-light photos: 236:50:00; Sequence 04; Remarks, day sky, pitch 0 degrees, yaw 180 degrees, roll 35 degrees left. If there are any questions on the dim-light photo, I'll be happy to try to answer them. I've got a good list of them.

232:28:09 C That's a day sky you say?

232:28:11 CC Say again?

CONFIDENTIAL

CONFIDENTIAL

232:28:13 C You say that was a day sky?

232:28:15 CC That's day sky. Sequence 04. You can expect a GO/NO-GO at Carnarvon at 233:11:13.

232:29:05 C Houston, Gemini VII.

232:29:06 CC Gemini VII, Houston.

232:29:09 C Why are we bringing the platform up today?

232:29:12 CC We have a critical D-4/D-7 that we'd like you to monitor. I have some more flight plan update for you. Are you ready to copy?

232:29:24 C ...

232:29:25 CC D-4/D-7: 237:04:02; Sequence 429; Mode 02; pitch 25 degrees down, yaw 36 degrees left. Turn REAL-TIME transmitter on for this measurement. Do not use experiment recorder. Time of test is 237:05:21.

232:30:09 CC Gemini VII, Houston. Request you turn HF off for a few minutes so we can get good T/M.

232:30:15 C Turn what - -

232:30:16 CC That's HF.

232:30:17 P Roger.

232:30:21 CC Continuing your flight plan update. Time: 237:10:00; will begin your eat period. 238:00:00; BIO-MED Recorder 1 off. Item D-4/D-7: at 238:18:40; Sequence 430; Mode 04; pitch 63 degrees down, yaw 90 degrees left. Turn REAL-TIME transmitter on. Kwajalein will receive. Make 30 seconds of background measurements. Last item: 238:25:00; purge fuel cells at Hawaii and power-down. Gemini VII, did you read?

232:31:42 C Roger.

232:31:50 C ... read you.

CONFIDENTIAL

CONFIDENTIAL

673

BERMUDA

232:31:52 CC Gemini VII. I read you loud and clear.

232:31:54 P Okay. I'll be signing off.

232:31:56 CC Thank you. You can turn the HF on now again, Gemini VII. Thank you very much.

232:32:03 P Roger. Can we turn our HF back on again, Houston, or do you want to leave it off?

232:32:10 CC You can turn HF on.

232:32:13 P Roger.

232:35:05 P HFC ... UHF. This is Gemini VII. 1, 2, 3, 4, 5, 5, 4, 3, 2, 1. Gemini VII, at GET at 232 hours, 35 minutes and 20 seconds.

CANARY

232:36:19 CC Gemini VII, Canary.

232:36:21 C Go ahead, Canary.

232:36:22 CC Roger. I have a PLA update for you when you are ready to copy.

232:36:26 C We're ready. Go ahead, please.

232:36:28 CC Okay. 148-1: 235:11:09. 149-4: 238:03:30. 150-4: 239:38:59. 151-4: 241:14:25. 152-3: 242:31:51. 153-3: 244:07:22. RET 400 K is 21 plus 40. Weather is good in all areas.

232:37:50 C Thank you, Canary.

232:37:51 CC Roger.

232:38:06 CC VII, Canary. Would you turn your HF transmitter off for just a little bit, so we can get some good data.

CONFIDENTIAL

CONFIDENTIAL

232:38:16 C Roger. It's off.

232:38:18 CC Just the keying.

232:39:40 C Okay, VII. You can go back to keying on the HF transmitter.

232:40:13 P This is Gemini VII. 1, 2, 3, 4, 5, 5, 4, 3, 2, 1. Gemini VII. GET at 232 hours, 40 minutes and 20 seconds.

232:43:42 CC Gemini VII, Canary.

232:43:43 CC Go ahead, Canary. Gemini VII.

232:43:46 CC Roger. Would you place your C-Adapter switch to COMMAND?

232:43:51 C Roger.

232:43:54 C Canary, Gemini VII.

232:43:56 CC Would you place your T/M switch to COMMAND also?

232:44:01 C Roger.

232:44:02 CC Okay.

232:44:03 C Listen, that 2C is starting down again, and tell Houston I'm concerned about turning on that platform, and making all that water with these fuel cells the way they are.

232:44:12 CC Okay. We'll relay the message.

232:44:14 C Thank you.

232:50:08 P This is Gemini VII. This is Gemini VII. 1, 2, 3, 4, 5, 5, 4, 3, 2, 1. Gemini VII GET at ...

232:56:27 P This is Gemini VII. 1, 2, 3, 4, 5, 5, 4, 3, 2, 1. Gemini VII GET at ...

TANANARIVE

232:58:27 CC Gemini VII, Houston.

CONFIDENTIAL