

## Gemini 5 Mission Commentary Transcript

### PART 2

This document was scanned and annotated by David Harland, with 'proof checking' feedback from Derek Henderson and Ken Glover.

We would like to express our thanks to Colin Fries, Stephen Garber and Roger Launius of the History Office at NASA Headquarters in Washington, and Glen Swanson, the Historian at the Johnson Space Center.

PRELIMINARY - 8 October 1999

Dateline, 21 August 1965

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\* NOTE \*

The preparations for the second launch attempt, the launch, and the first four hours of the mission are missing!!!!  
Anyone with this section, let me know.

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This is Gemini Control, Houston, 4 hours 13 minutes into the mission. We've had no contact since the Carnarvon pass. The spacecraft, now over an island chain in the far south western Pacific, is still running in a very much powered down configuration. Probably the most optimistic thing we've heard, came from Jim McDivit recently, who said the decrease seems to -- the rate of decrease -- seems less than it had been, that O2 pressure element that we're watching. The flight continues here. Most of the controllers are on a luncheon break. In general things have not changed in the past ten minutes -- since our last report. Gemini Control, Houston.

This is Gemini Control at Houston, 4 hours 32 minutes into the mission. Our status is unchanged. The spacecraft's just leaving the Hawaii station acquisition area. We did power up the transmitters and talk with the spacecraft and powered up several pieces of equipment to check our readings. We found that reactant oxygen pressure in the fuel cell was standing at about 65 pounds. When this value -- if it drops as low as 20, we would have to turn off at least one of the two fuel cell sections because, at that point, we would lose our ability to regulate and monitor the pressure. We'll leave the Gemini 5 spacecraft in a powered down configuration, except for a brief interrogation, probably over the Texas site. It may be the Texas site, or it may be Canaveral -- chances are right now, it looks like the Texas site will be used.

Earlier, we identified that should a termination become necessary in the next few orbits, we would probably elect to land in an area called 6-4. This is a point about 490 miles north east of Hawaii. There is an oiler on station there, earlier identified by the callsign it is using today. The callsign is Bankside-K. The name of the ship is the Chipola. 'C' as in Charlie, i-p-o-1-a. In addition, there is a destroyer steaming in that direction,

steaming out of Pearl Harbor. It's present position is 190 miles northeast of Hawaii. It is proceeding to a point some 60 miles up-range from the Chipola.

In summation then, the general status of the fuel is unchanged. We are still watching it very closely. At 4 hours and 34 minutes into the mission, this is Gemini Control.

In addition, we have the tape from the Hawaii pass racked up, and we are prepared to play it for you now.

Hawaii	Gemini 5, Hawaii CapCom.
Conrad	Go ahead, Hawaii.
Hawaii	Would you place your OAMS Heater Circuit Breaker to 'Off'.
Conrad	Roger, OAMS Heater Circuit Breaker 'Off'.
Hawaii	Roger. Would you give me a fuel cell O2 quantity readout, please.
Conrad	Roger. The fuel cell O2 quantity is reading about 65 for quantity; 96 percent.
Hawaii	Roger. What about tank pressure?
Conrad	About 65 psia.
Hawaii	Roger.
Hawaii	Gemini 5, Hawaii. You can power back down.
Conrad	Roger.
Hawaii	Hawaii has loss of telemetry.
Flight	Okay, Hawaii. Tell him not to acknowledge, but the next time... is over Canaveral... we'll call him, but do not answer, and we'll go through the same procedure over Canaveral.
Hawaii	Gemini 5, Hawaii. The Cape advises that...

This is Gemini Control, Houston, at 5 hours 2 minutes into the mission. We're on our 4th revolution with the spacecraft moving down across the South Atlantic Ocean -- it's just crossed the equator.

During a long quiet pass across the United States, we had a brief conversation between Pete Conrad -- I believe -- and our Corpus Christi station. We will play that tape for you a little later, but first I want to bring you up to date on the fuel cell. Basically the cell -- the oxygen side of the cell -- operates with a small conduit carrying a wire which acts a heater. Some source of heat is needed in the cell to bring the temperature of the oxygen, which is kept in the bottle at -297 degrees, to elevate slightly in temperature, to build up pressure to drive the oxygen out of the bottle and into the cell itself. It's this heater that, apparently, is inoperative, and we've got just a small trickle of oxygen out of the bottle -- rather than the normal flow that we should have. The decision has been made to turn off the power to one of the two sections, and to monitor that situation for a while to see if it has any effect. We are still watching the situation very closely. The heads are together on the problem, and we will continue to monitor it very carefully and bring you any development as it occurs.

We have the tape ready to play for you of the Stateside pass, and we'll bring it to you now.

McDivitt	Gemini 5, Gemini 5. This is Houston, here. Would you please bring up your UHF transmitter.
Cooper	Roger, go ahead. This is Gemini 5.
McDivitt	Roger. Standby... a minute.

McDivitt Gemini 5, we'd like to have you verify that you turned the 02 Heater Circuit Breaker 'Off'.

Conrad No, I have the H2 and 02 Circuit Breaker 'On'. Do you want them off?

McDivitt Okay. Have you turned the switch 'Off'?

Conrad The switches are all 'Off' -- they're all in 'Off'.

McDivitt Okay, they are all in 'Off'. What is your pressure reading right now.

Conrad It's down to 60. Sixty. Sixty pounds.

McDivitt Roger, I understand. 60.

McDivitt Gemini 5. You can put your transmitter back to standby.

This is Gemini Control, Houston, again. That concludes the exchange between Jim McDivitt and Gemini 5 as it passed across the States. The spacecraft is now directly over Ascension Island. We've had no attempt at contact. This is Gemini Control at 6 minutes after the hour.

This is Gemini Control, Houston, at five hours and 25 minutes into the mission. The spacecraft has just passed over the Tananarive site in the Indian Ocean, and Jim McDivitt, remoting through the Tananarive site, broadcast a two-part message. The first part of the message was "if you have had a significant pressure rise, please bring your transmitter up and tell us about it; if you have not had a significant pressure rise, don't call us, and wait until Carnarvon and we'll talk about it there." The other part of the message was that "the fuel cell Section 2 power switch should be in the off position, along with the secondary coolant loop". The secondary coolant loop switch is another measure to reduce the power drain on the spacecraft. I reiterate, Jim McDivitt broadcast the message twice by remoting through the Tananarive station. We got no reply. The fact that we got no reply could mean one of two things: either the spacecraft did not read the transmission, or they don't have a significant pressure rise and they were following directions and did not reply. We'll know at Carnarvon, in about 10 minutes from now. This is Gemini Control, at 27 minutes after the hour.

This is Gemini Control, 5 hours 42 minutes into the mission with the spacecraft off the north coast of Australia. We just had a pretty substantial conversation with the spacecraft as it passed over the Carnarvon area. The pilots did, apparently, hear our transmission from Tananarive, and they elected not to return the broadcast because they'd seen no significant rise in pressure. The pressure they are reporting is 60 pounds. This has been a consistent value since Hawaii, on the earlier revolution. In other words, its remained the same, now, for almost one complete revolution -- at 60 pounds in the oxygen tank in the fuel cell. The quantity of oxygen remains good and high -- 96 percent total. A full bottle is something of the order of 180 to 185 pounds, so there's plenty of oxygen in there. The pressure is not coming up and driving the oxygen out of the bottle and into the fuel cell itself.

Conrad reported -- in a rather cheery voice -- that the REP ejected several orbits earlier was "right out there beside us, about 2,000 feet away". He also reported that in a powered down configuration the spacecraft was pulling only 10.2 amps.

We'll have another discussion with the spacecraft on this next pass as it moves across the Corpus Christi station contact area. We do not expect any conversation from Hawaii or from the USS Wheeling, which is parked northwest of Hawaii.

We have the Carnarvon conversation racked up and ready to play for you at this time.

Carnarvon Gemini 5, Carnarvon. Would you place your Adapter C-band switch to 'Continuous', and your TM switch to 'real time' at ACQ 8.

Carnarvon Carnarvon has PCM solid. Would you bring up your UHF transmitter.

Flight What are your readouts?

Carnarvon Standby, Flight.

Carnarvon Gemini 5, we'd like a readout of fuel cell 02 quantity and the fuel cell 02 pressure.

Flight What do you read on the ground?

Conrad Roger, this is Gemini 5. The fuel cell quantity is 96 percent, and the pressure is 60. Sixty.

Carnarvon Roger, copy. 60 on pressure and 96 on quantity.

Conrad We further advise that the secondary power switch is 'Off', the secondary coolant loop is powered down, and the REP is right out here with us about 2,000 feet away.

Carnarvon Roger.

Carnarvon Flight, we're getting the PCM count on that measurement TM.

Flight Rog.

Carnarvon We have acknowledged C-Band track.

Conrad We also -- be advised that we have the C-Band Beacon 'Off', the TM 'Off', and in the powered down configuration we are pulling 10.2 amps.

Carnarvon Roger, copy. 10.2 amps in powered down configuration.

Carnarvon Flight, the -- standby, we're converting the binary count now.

Flight Binary count?

Carnarvon Binary count 71.2 percent -- ah, that's pressure, Flight, 71.2 pressure.

Flight We copy, 71.2 [psia] pressure.

Carnarvon Roger. Okay, you want him to have the real-time TM off?

Flight Carnarvon, Houston Flight.

Carnarvon Go ahead.

Houston Okay. We're satisfied with all of the data we've got. Tell him to power everything down to the same condition he had before -- except the C-Band, which we will want him to turn off at your LOS, and you should give him a call to get him to turn it 'Off'.

Carnarvon Roger, Flight.

Carnarvon Gemini 5, Carnarvon. Put your TM switch back to 'Command' and leave your [C-Band] Beacon 'On'. I'll advise you, when to turn the Beacon 'Off'.

Conrad Gemini 5.

Carnarvon And you can go back to UHF Standby.

Conrad Roger.

... is being instructed to turn on the Section 2 power switch again, and to bring the secondary coolant loop switch back on power. We'd like to see what the effect of this is, and we'll standby and come back to you at the conclusion of this pass -- which should be in a minute or two. This is Gemini Control, Houston.

This is Gemini Control, Houston, at 6 hours 7 minutes into the mission. We have just completed the Hawaii pass, and this is what happened. We turned back 'On' the power on Section 2 of the fuel cell. Pete Conrad was then instructed to cycle, or manually switch on-and-off, the recalcitrant heater switch. He did this four or five times, with no effect that he could note. The pilots were then instructed to leave the Section 2 power supply 'On', leave it in this configuration, as we approach the United States, at which point we will of course take another look. We have the tape of the Hawaii pass racked up for you, and available to play at this time.

Flight	Hawaii, Houston Flight.
Hawaii	Let's bring up the heater switch also to the -- no, not the OAMS -- the 'On' position on the fuel cell heater, 02.
Hawaii	Roger.
Flight	He has had that off.
Hawaii	Hawaii is at a Cape contact.
Flight	Okay, we also want you to cycle -- let him cycle that heater switch to the fuel cell 02 cell several times, to see if you see anything on the ground.
Hawaii	Roger.
Flight	Go ahead Hawaii.
Hawaii	Gemini 5, Hawaii CapCom. Place your TM switch to 'Real Time'... and turn on your UHF transmitter. Telemetry's solid.
Flight	Go ahead with your instructions.
Hawaii	Gemini 5, Hawaii CapCom.
Cooper	Hawaii CapCom, Gemini 5 here, over.
Hawaii	Roger, we'd like you to bring your Section 2 switch to 'On', and bring up Pump 'A' in the secondary cooling ...
Conrad	... this is Gemini 5. We've the number two power switch back 'On', and the 'A' secondary pump back 'On'.
Hawaii	Roger, we'd like to leave it there for the next orbit, and take a look at it.
Conrad	Okay.
Hawaii	Would you cycle fuel cell 02 heater switch 'Off' and 'On', and then leave it back 'On'.
Conrad	Okay, it's been cycled, and it's back on to the 'On' position.
Hawaii	Roger. Did you see anything?
Flight	Did you see anything?
Hawaii	Negative, Flight.
Flight	Have him cycle it two or three times.
Hawaii	I have a little TM dropouts here, Flight -- let me get it solid first.
Flight	Rog.
Hawaii	Gemini 5, Hawaii CapCorn. Would you cycle that fuel cell 02 heater switch three or four times.
Conrad	Roger, Gemini 5. Cycle it three or four times, and I am cycling it now -- and I get no reading on the amp meter.
Hawaii	Roger. Would you give me a fuel cell quantity and 02 tank pressure please.
Conrad	Roger. It's 96 percent. And it's about -- it's situated between 55 and 60, it's been... pretty steady.

Hawaii Roger.  
 Flight Okay, let's have him go back to the power down condition with the expectation of -- we want the two fuel cells left 'On' -- and tell him we'll contact him at California.  
 Hawaii Roger.

This is Gemini Control, Houston, at 6 hours 22 minutes into the mission. And we are just starting the fifth revolution. During the Texas pass, just a few minutes ago, the pilots brought up their IGS -- their Initial Guidance System -- power system inside the spacecraft and they received a DCS load, that's a Digital Command System load. This updated all of their instrumentation for a landing, should one be necessary, on the 6th revolution. It'd be premature at this time to say that we were going to come down during the 6th revolution - - in that area north of Hawaii that we've already identified -- because, during the course of the Texas pass, Flight Director Chris Kraft got on the loop and talked to Pete Conrad and Gordon Cooper and discussed the possibility of going another day in this powered down configuration. I emphasize that no decisions have been reached as yet, for terminating the mission or continuing it. We're still observing a very stable pressure in that oxygen bottle supplying the fuel cells. It's been at 60 pounds now for approximately an orbit and a half, and no change observed either here on the ground or in the spacecraft. The power to that fuel cell section too has been turned back on, and it will be left on for at least another half an orbit while the evaluation continues. We have the conversation between Jim McDivitt, Chris Kraft, and the crew. It's racked up, and we're ready to play it for you now.

Houston Gemini 5, Gemini 5, this is Houston here. We'd like to have you turn your DCS back 'On' at this time.  
 Houston Gemini 5, Gemini 5, Houston. We'd like to have you turn your DCS back 'On' at this time.  
 Houston Gemini 5, Gemini 5, this is Houston here. We'd like to have you turn on your IGS power, and power up your computer at this time.  
 Houston Gemini 5, Gemini 5, Houston here. I say again, we'd like to have you bring on your IGS power and turn your computer on at this time -- we want to send up a DCS load for the computer.  
 Conrad Houston, Gemini 5. [Computer] is on 'Prelaunch', and it came up okay.  
 Houston Roger, Gemini 5. Houston, here. It's nice to hear you again.  
 Conrad Thank you.  
 Houston Could you give us a fuel cell 02 pressure and quantity readout, please?  
 Conrad Okay, 60 seems to be what it is going to hang in it, and it seems... and when I hang it... 96 percent. It hasn't been right in a little bit, just a notch higher than that. The second fuel cell... is beginning to load okay. It looks real good...  
 Houston Roger. Understand that you got your computer on the line okay, and that you also got the second fuel cell on the line alright.  
 Conrad ... standing by for your [DCS] load.  
 Houston Roger. Texas go 'Remote'. California go 'Local'.  
 Texas Texas air-to-ground is remoted... and TM valid.  
 Flight Gemini 5, Houston Flight.

Conrad  
Flight                    Come in, Houston Flight. Gemini 5, here.  
Looks like we've got a situation here that's stabilized, Pete, and we've been discussing the problems associated with the purge -- it looks like we can go a fairly long time without any purge. Secondly, it looks like we can purge with the hydrogen without any problems. In terms of the O2 purge, we probably will do an on/off purge -- where we purge very briefly, to not drain off the pressure. I'd like your opinion on going through another day -- under those circumstances.

Conrad                    Well, it looks like to me -- and if my feeble memory serves me right -- we should have the used O2 quantity, plus getting a little pressure back, shouldn't we?

Flight                    That's affirmative -- if we can ever get the O2 quantity down to about 50 percent, we'll probably be in real good shape, but it's going to take a long time, and we're going to have to go a long while with you guys sitting up there doing nothing, taking the chance the fuel cells are going to operate under these conditions for a long period, because we don't have much main batteries. ... we also just got some DCS loads in.

Conrad                    Very good. That's a 6-4 load.

Flight                    Okay.

Conrad                    Okay, what do you think?

Conrad                    We might as well try it in that case.

Flight                    Okay. We will look at this thing for another orbit. Let's power down -- like you were before you came up over here, and let's also turn off that Section 2 power and turn off the clock again.

Conrad                    Will do.

Flight                    Leave the DCS up.

Conrad                    Okay, I'll put the computer 'Off' and leave the DCS up ... fuel cell.

Flight                    Roger.

This is Gemini Control, 6 hours 44 minutes into the mission. Department of Defense recovery people in our Recovery Room here at the Mission Control Center, have advised that there are now six airplanes on station in the 6-4 area some 500 miles north of Hawaii. The airplanes are as follows. Two HC-97. One located 50 miles uprange from the aiming point, another 50 miles downrange from the aiming point. In addition, two C-130 aircraft. One of these is 150 miles uprange and slightly north of the track, another about 200 miles downrange from the aiming point. In addition, two more aircraft, telemetry aircraft which will be used as communications points... will be operating within ten miles of the aiming point, should they become necessary. And these are identified as HC-121 aircraft, two in number.

We have had no change on our fuel cell situation here. The engineering detective game continues -- a lot of discussion here in the Control Center and with experts out at the Cape, also at the McDonnell Company in St. Louis. This is Gemini Control, at 46 minutes after the hour.

This is Gemini Control, 7 hours 2 minutes into the mission. We still are watching the pressure in the oxygen cell, and it's still standing at a firm sixty. The Flight Director, in consultation here, seems to indicate right now that he's leaning toward continuing this

flight for at least another day. That would mean that if he makes that determination, which will be made during this orbit, possibly over Hawaii, that the mission would continue in a powered down configuration -- which is a very low amp drain on the power system.

The engineering guess -- detective game continues. We've done things like orient the spacecraft toward the sun, in an effort to put additional heat on that oxygen cell. We have cycled the switch several times, which should start the heater which supplies the pressure which forces the oxygen into the cell itself. But all to no effect at this point. The engineers tell us that if the oxygen quantity were somewhere down the order of 50 percent -- that's a long way from where it is right now, it's been running at a fairly steady 95 and 96 percent full -- if it were down around 50 percent, the reduction in supply would generate a heating effect of its own that would be helpful in this situation. There is apparently no way to vent the oxygen to get down into the range of about 50 percent.

With the spacecraft now beginning a sweep up across the Pacific on the 5th revolution, this is Gemini Control at Houston.

This is Gemini Control, Houston, 7 hours 6 minutes into the mission. We've recycled our tape recorders, have a very brief conversation between the ground station at Tananarive and the spacecraft racked up and ready to play for you at this time.

Houston	Gemini 5, Gemini 5, this is Houston here. Bring up your UHF transmitter.
Houston	Gemini 5, Gemini 5, this is Houston here. Bring up your UHF transmitter.
Houston	Gemini 5, Gemini 5, Houston here. Do you read?
Conrad	We read you, Gemini 5.
Houston	Roger, Gemini 5. Houston here. You are coming through very garbled and weak. Can you give us your fuel cell O2 pressure and quantity.
Conrad	Roger. It is holding at 60 psi and 96 percent.
Houston	Roger, Gemini 5. Understand -- it's holding. You can turn your transmitter back to Standby. Thank you.

This is Gemini Control, Houston, 7 hours 25 minutes into the mission. We have just had a brief interchange with the spacecraft by the Coastal Sentry Quebec, parked in the far western Pacific. They're reporting no change in the pressure -- the oxygen pressure in the fuel cell area. The Flight Director advises that he will make a decision while the spacecraft is over Hawaii -- this should be in a very very few minutes. We have the tape of the CSQ Gemini 5 conversation racked up and we will play it for you now.

Houston	Gemini 5, Gemini 5, this is Houston here. Bring up your UHF transmitter. Gemini 5, Gemini 5, this is Houston here. Bring up your UHF transmitter. Gemini 5, Gemini 5. Houston here. Do you read?
Conrad	Roger Houston, Gemini 5.
Houston	Roger Gemini 5, Houston. You're coming through very garbled and weak. Can you give us your fuel cell O2 pressure and quantity.
Conrad	Roger, holding at 60 psi and 96 percent.
Houston	Roger, Gemini 5. Roger, Gemini 5. Understand -- it's holding. You can turn your transmitter back to Standby. Thank you.

CSQ Gemini 5, Gemini 5, CSQ CapCom. Turn up your UHF transmitter and report fuel cell 02 pressure please.

Conrad CSQ, Gemini 5. It's 96 percent, 60 psi, and we got your DCS update. Over.

CSQ Roger, copy. I transmitted a TM Command to Reset after Hawaii.

Conrad Roger.

Flight What do you read in 02 pressure?

CSQ Spacecraft readout is 60 psi.

Flight 6 what?

CSQ 60 psi. And ground readout is 80 psi.

Flight Roger, 80 psi. How many PCM counts is that?

CSQ Standby a moment.

CSQ I'll advise him to turn off his UHF transmitter. We have nothing further.

Flight Okay. That's okay.

CSQ Gemini 5, Gemini 5, CSQ CapCom.

Conrad Go ahead. Gemini 5.

CSQ Roger, we have you 'Go' on the ground, we've nothing further at this time. You can power down your UHF transmitter.

Conrad Roger.

This is Gemini Control, Houston, 7 hours 39 minutes into the mission. The spacecraft is now in contact with the Hawaii station. In the last minute and a half, the Command Pilot and the Pilot have performed what's known as a hydrogen purge of the fuel cell, the effect of which is to flush an extra amount of hydrogen through the fuel cell -- an operation that takes about 13 seconds on each section. We're not entirely sure if it had any effect, that is brought that 02 pressure up or had an effect on the fuel cell operation.

However, of major importance, is the fact that the decision was passed up to the crew that we are committing for another day -- I say again, we are committing for a flight of at least 18 orbits, and we would hope to terminate it not earlier than an 18-1, the landing area about 250 miles east of Bermuda. The time to retrofire for that 18th-orbit landing has been passed up. The spacecraft will remain in a powered down configuration, and of course the oxygen pressure will continue to be monitored very carefully throughout the night and into early tomorrow. This is Gemini Control in Houston. We are still in contact in Hawaii, and we will go back and listen there now. This is Gemini Control.

This is Gemini Control, Houston, 7 hours 49 minutes into the mission. We're in touch with the spacecraft, now over Guaymas, powering down.

As we advised earlier, the decision has been made that we would commit for at least a one-day mission. We could, and I want to emphasize, go well beyond a one-day mission, but we have no plans to terminate the mission short of a one-day mission. Hopefully, we will be able to solve our fuel cell oxygen source problem, and continue the mission.

We have the tape conversation where that commitment was made, over Hawaii, and its racked up and ready to play for you at this time.

Hawaii Gemini 5, Hawaii CapCom. Gemini 5, Hawaii CapCom. Would you bring up your UHF transmitter.

Conrad Roger, Hawaii. Gemini 5.

Hawaii Roger, we'd like to perform a purge on your fuel cell H2. We don't plan to purge O2. We won't purge O2 unless the pressure goes above 200 psi -- or if there's a degradation [in the fuel cell power output] in excess of 3/10th of a volt. Do you read?

Conrad Roger. I understand. You want to purge the H2, but not the O2.

Hawaii Roger. We're standing by for you to purge both sections of H2.

[\*\* DMH's note -- The hydrogen has to be purged -- vented to space -- because, as heat leaks into the tank, hydrogen boils off and the gas builds up the tank's pressure. If the fuel cells had been operating as expected, the hydrogen would be being consumed as a reactant for the fuel cell's process. It was also important to ensure that, as the hydrogen adopted a two-phase state, none of the gaseous phase was fed into the fuel cells, because this would disable the reaction.]

Conrad And you want me to leave the Section 2 powered down.

Hawaii That is affirmative. We're also going to copy your tape dump, Pete's too.

Hawaii Gemini 5, advise us when you start the purge.

Conrad I just purged the section one for 13 seconds. Standby on my mark for purging Section 2 -- Mark!

Conrad Hawaii, Gemini 5. Do you have any readings on our... CO2 down there?

Hawaii Standby one. That reading is 1. Repeat, one.

Conrad Ah roger. I suspected some ... got in the gauge. It was at zero, then bounced up to about 7 or 8, and then went down, bounced back to zero.

Hawaii Gemini 5, Hawaii CapCom. We have you 'Go' for 18-1. We would like you to go into only a zone-one [recovery] area. That will commit us to one day. I'm standing by to update your TR for 18-1, Gemini 5.

Conrad Roger, we'll bring up the compate.

Flight Negative. You don't need the computer for TR.

Hawaii Gemini 5, you've got a valid TR time. You're in sync.

Conrad Roger.

Hawaii Gemini 5, we'd like you to stay in the present power configuration -- that is, your Primary Coolant Pump on, one suit fan on, DCS on, UHF receiver on, dc-to-dc Converter on, your OAMS Heater Circuit Creaker off, and your Water Heater Circuit Breaker on. Do you read?

Conrad That is affirmative. And you want us to keep Section 2 powered down -- is that correct?

Hawaii That is affirmative. And we would like to purge the H2 in both sections about every 6 hours from now on.

Conrad Roger.

Hawaii Would you give me a fuel cell O2 quantity and a fuel cell O2 tank pressure.

Conrad Roger, that's 96 and 60.

Hawaii Roger.

Flight Hawaii CapCom, Houston Flight.

Hawaii Go ahead, Flight.

Flight Roger. He didn't bring his computer up there, did he?

Hawaii Negative, not that I know of.  
 Flight Okay.  
 Hawaii Flight, I've got about 30 seconds to LOS. I'm going to command a dump tape 'Off' -- I've got most of the dump.  
 Flight Okay. Check that.  
 Hawaii Gemini 5, this is Hawaii CapCom. I'm unable to turn off your tape recorder -- request you turn it off. Gemini 5, do you copy?  
 Flight Did you get your TX in, Bill?  
 Hawaii I couldn't get my tape dump in, and I lost it.  
 Flight Okay, i think CSQ got the TX and they should turn it off. CSQ CapCom, Houston Flight.  
 Hawaii Flight, I won't turn the tape recorder off.  
 Flight It should, Bill -- there is an interlock in there, Bill.  
 Hawaii Okay. Roger.  
 Guaymas (garble)  
 Flight Guaymas CapCom, Houston Flight.  
 Guaymas Guaymas CapCom.  
 Flight That medical pass is on the Pilot, and the Command Pilot has a medical pass over Hawaii on this next rev, so we'll get both of them, and we want also to get that message for them to turn -- make sure that the heater switch position is in 'Auto' on the 02.  
 Guaymas Roger, fuel cell 02 heater to 'Auto', and could you give me a Hawaii AOS.  
 Flight Hawaii LOS?  
 Guaymas No, AOS for the next pass.  
 Flight Next pass for Hawaii is 23:10:49.  
 Guaymas Okay, copy.

This is Gemini Control. The White Team -- or second shift -- of flight controllers, has taken over the direction of the flight from this Center. Flight Director Chris Kraft has been replaced by Director Eugene Kranz. Kraft, and a number of his team, have left the Control Center for a Press conference at the NASA News Center in a few minutes.

Just before leaving the Control Center, Kraft made a 'Go' decision for 18 revolutions. The fuel cell situation remains as reported for the spacecraft, with a low pressure situation. It is hoped, however, that we can continue this mission with a powered down spacecraft. Continuing in a powered down condition, means that some of the experiments will have to be foregone, in the interest of completing the primary mission, which, of course, is, in an 8-day flight, the medical experiment. The medical condition of the pilots during this flight is of paramount importance. This is Gemini Control.

This is Gemini Control. We are 9 hours and 2 minutes into the flight of Gemini 5. The spacecraft has just passed out of voice range with the Coastal Sentry Quebec, the tracking ship in the Pacific Ocean, south of Japan. The spacecraft is now in its 6th revolution of the earth.

There has been no change in the low pressure condition effecting the fuel cells. During the pass over the Coastal Sentry Quebec, the Flight Surgeon aboard ship took a medical pass from the Command Pilot aboard the spacecraft. This medical pass was complete with temperature, blood pressure, and an exercise session followed by another blood pressure check. The Command Pilot has had approximately 1 pound 6 ounces of water. The Pilot,

Charles Conrad, has had an intake of 14 ounces of water to date. Both are planning to eat now. This is Gemini Control.

CSQ This is CSQ CapCom. Gemini 5, Gemini 5, CSQ CapCom and you are 'Go' on the ground. What is your status?

Conrad We're 'Go' here ...

CSQ Would you give us a readout on your fuel cell O2 quantity, Gemini 5?

Conrad ... psi, pressure 60.

CSQ Gemini 5, as long as we have a valid temperature. Standing by for your blood pressure.

Surgeon Gemini 5, CSQ Surgeon. Cuff is not quite full scale. Gemini 5, this is CSQ Surgeon, your cuff is [now] full scale.

CSQ Houston Flight, this is CSQ.

Flight Go, CSQ.

CSQ Roger, we gave him a 'Go' for 18-1. His onboard readout fuel cell O2 pressure was 60, quantity 96...

Flight Okay, what's your PCM count?

Conrad Standby.

Surgeon ... CSQ Surgeon, we have a good blood pressure. Give me a mark when you begin exercise.

CSQ Houston Flight, CSQ advises still 17 -- Seventeen.

Flight Roger.

CSQ This is CSQ, Gemini 5 --

Conrad Be advised that [... start] exercise on the mark, 3, 2, 1, Mark!

Conrad [End] exercise. Standby for the blood pressure.

Surgeon Gemini 5, CSQ Surgeon -- Cuff full scale.

Surgeon Gemini 5, CSQ Surgeon -- we have a good blood pressure. Standing by for your food, water and sleep report.

Conrad Roger. The Command Pilot has drunk 1 pound and 6 ounces of water, and the Pilot has drunk 14 ounces of water. And we have [nothing] to eat other than we both ate the bacon squares and a little bit of the salad... and after leaving you, we'll eat our first meal.

Surgeon Roger. I read that 1 pound 6 ounces of water for the Command Pilot and 14 ounces for Pilot. Both ate bacon squares. Planning to eat now.

CSQ Gemini 5. We're approaching LOS. CSQ have nothing further.

Conrad Okay, CapCom.

That was the taped voice conversation between the Coastal Sentry Quebec tracking ship and Spacecraft Gemini 5. This is Gemini Control.

This is Gemini Control. We're now 9 hours 32 minutes into our flight. The spacecraft is now on its 6th revolution, and approaching the west coast of South America. Medical data was received from the pilot, Pete Conrad, over the Coastal Sentry Quebec, and from the Command Pilot, Gordon Cooper, over Hawaii. Flight Surgeon Dr. Dwayne Catterson

reports all medical sensors are working well. The flight crew... is in very good condition and their responses are excellent.

During the pass over Hawaii, the Command Pilot, Gordon Cooper, was asked if the Rendezvous Evaluation Pod was within visual range. He said yes, it's been with them all along. We'll now play back the taped voice conversation between spacecraft Gemini 5 and the Hawaii tracking station.

Conrad Hawaii	Hello Hawaii, Gemini 5. Are you reading? Roger, read you loud and clear. We are standing by for an oral temp on the Pilot, we've got one on the Command Pilot.
Conrad	I just gave an oral -- this is the Pilot -- I just gave an oral temp to the CSQ and I sent the order for the Command Pilot to give you the next temp, and he's got his oral temp probe in now.
Hawaii	Good show Pete. Could you have him start the blood pressure?
Conrad	Okay. Want a blood pressure -- here it comes.
Conrad	Have you got the temp on him?
Hawaii	That's affirmative.
Conrad	Say again.
Hawaii	That's affirmative
Conrad	Okay.
Hawaii	I'm going to copy a tape now.
Conrad	Okay.
Flight	This is Flight, Hawaii. We read fuel cell 02 quantity at 94 percent, tank pressure 71.2 the PCM bit count is --
Surgeon Cooper	Gemini 5, this is Hawaii Surgeon. The cuff is full scale. Gemini 5.
Hawaii	We have good blood pressure, give me a mark when you begin your exercise.
Cooper Surgeon	Roger starting exercise, now. Beginning exercise -- now. Gemini 5, Hawaii Surgeon. The cuff is full scale.
Hawaii	We have good blood pressure. Standing by for your food and water report.
Cooper	We gave that over CSQ, and it hasn't changed since then. We're just getting ready to end it up here, and eat a big meal now.
Hawaii	Roger understand. You gave a report to CSQ and you're going to begin meal 1 for the day
Cooper	That's roger.
Hawaii Surgeon	Gemini 5, Hawaii CapCom. Hawaii Surgeon, out.
Hawaii	Gemini 5, Hawaii CapCom. Be advised that we'll update you on your landing areas, and your flight plan, on your next pass over Hawaii.
Cooper	Okay, mighty fine.
Hawaii	We'd also like to know if you've seen the flashing lights on the REP.
Cooper	Roger. That thing's right with us. It has been all along -- been right out in back of us.
Hawaii	Okay.
Flight	What does he estimate is the range?
Hawaii	What do you estimate your range is?

Cooper Well it varies, it's cycling back and forth slightly, but it's been in as close as about 1,000 feet to us.

Hawaii Roger.

Cooper Hawaii, Gemini 5.

Hawaii Go ahead.

Cooper We've seen it both in the daytime, and at night.

Hawaii Roger.

Flight Okay. And during the next rev, if he happens to see it again, we would --

Cooper From here, we can see the tumble rate, see the dipole and everything on it.

Hawaii Roger. Go ahead Flight.

Flight During the next rev, we'd like to get an indication -- some time indications -- as to when he thinks it's in max and min range... If he can give us some time hacks, when he estimates it at max range and min range -- certain times, and see if he can correlate range to it.

Hawaii Roger.

Hawaii I've had PCM LOS -- I couldn't get the tape dump off the dump transmitter.

Flight Okay. You got your TX in, right?

Hawaii That's affirmative.

Flight Okay.

This is Gemini Control. Spacecraft Gemini 5 is now passing over, approximately, the middle of South America, and is beginning its 7th revolution of the earth. This is Gemini Control.

This is Gemini Control. Spacecraft Gemini 5 is 10 hours 2 minutes into the mission. It is now passing over South America. Our next voice transmission with the spacecraft will take place over Hawaii, approximately 43 minutes from now.

Meanwhile, here in the Mission Control Center, the atmosphere is somewhat relaxed during this period of no-communication, and with the spacecraft in drifting flight. Chris Kraft, our Number One Flight Director, has returned to the Control Center. We also have three Spacecraft Communicators present. They are Deke Slayton, Buzz Aldrin, and Neil Armstrong.

Flight Director Gene Kranz, who is on duty now, along with Chris Kraft, Paul Haney, the Number One Voice of Gemini, and other of the flight control team, have been having their heads together discussing what they will tell the spacecraft Pilot and Command Pilot when we have our next voice communication over Hawaii. At that time they'll advise the flight crew as to what they would like them to do on a real-time flight plan basis. And this has been the subject of discussion for the past few minutes. I see that Dr. Charles Berry, our Medical Director, has also returned to the Control Center. Turning around and viewing the VIP viewing room, we find that there are very few people present. Dr. Robert Gilruth, our Center Director, and George Low, his Deputy, left approximately an hour ago. Some of the flight controllers are taking advantage of this relaxed time period to grab a quick bite to eat. At this time, there is nothing much going on, except discussion as to what will take place, and what to tell the flight crew on its next pass over Hawaii. This is Gemini Control.

This is Gemini Control, at 10 hours and 32 minutes into the Gemini 5 mission. Our spacecraft is now passing over the Pacific on its 7th revolution of the earth. The Coastal Sentry Quebec tracking ship has just passed along a 'Go' condition to the Gemini 5 flight crew. Flight Director Gene Kranz, a few minutes earlier, decided to initiate a remote voice communication with the flight crew as it passed over the Tananarive tracking station. The conversation concerned Gordon Cooper's reported sighting of the Rendezvous Evaluation Pod.

We will now play back the voice conversation between the spacecraft and the Mission Control Center which was remoted to the flight crew through the Tananarive station. This is Gemini Control.

Houston	Gemini 5, Gemini 5, Houston CapCom. Would you turn your UHF transmitter on.
S/C	... station calling Gemini 5.
Houston	Roger, Gemini 5, Gemini 5. This is Houston CapCom. How do you read? Over.
Conrad	Gemini 5 (garble) ... Hello Houston. Gemini 5
Houston	Roger Gemini 5, this is Houston. Could you give us some idea of the relative motion that you have with the REP, now. Over.
Conrad	Oh, good evening, Buzz -- how are you? I was just remarking that we ought to sight it for a while. It seems to have been describing a sort of a figure-8 around us. Most of the time when we have seen it, it's been upon us and on the night side is when it got fairly close, and when we came out into the day-side a few orbits ago, why, it was quite close to us, close enough for us to see the dipole on it when it was tumbling. I haven't seen it for a while. We're just excited, of course. We have some fairly good range and we're moving around, but I haven't located it ...
Houston	Okay, Gemini 5, this is Houston CapCom here. I was able to read you quite well on that for this site. What we'd like to do is to consider, perhaps in the next several orbits, bringing up your ACME power so that you can maneuver to keep it in sight a little bit more. And we are also considering various means by which you might be able to close on it during the day-side -- this is all based on your electrical power system, of course. Over.
Conrad	Roger. We're all for it. Power (garbled). Confirm do you want us to leave this number two fuel cell shut down. You want us to bring it back on at any time, just to put a little load on it then take it back off again?
Houston	Not yet Gemini. We're still considering this. Could you give us an idea what your projected crew rest cycle is going to be. Over.
Conrad	Well, we're just a little bit behind on that, we've finished eating. Gordo is taking a vision test right now, and then he's gonna go to sleep and I'm going to take the vision test and stay on station for 6 more hours.
Houston	Okay. Understand.

Houston Gemini 5, Gemini 5, Houston CapCom. On the last night pass, did you notice any diminishing intensity in the flashing light?  
Over.

Conrad Not that we could gather Buzz. I've not seen it this pass though. That doesn't mean that it's not out here, but it was so close to us before -- even though we couldn't see it -- it would illuminate the spacecraft with the flashes, and we knew it was around us all the time.

Houston Roger. Understand. The spec value on the battery lifetime for the lights expired about an hour, or two hours, ago.

Conrad Roger. Understand.

Houston Gemini 5, Houston. We're about to have LOS here. We'll work up something and give you an update over Hawaii. Over.

This is Gemini Control. We're now 11 hours 2 minutes into the flight of Gemini 5. The spacecraft is now over the Pacific Ocean, approaching the western coast of South America. During a voice communication with the Hawaiian tracking station about eight minutes ago, Flight Director Gene Kranz -- here in the Mission Control Center -- passed on through that station, instructions to the spacecraft crew for a limited test of the power system aboard the Gemini spacecraft. This test will consist of turning the power up on the spacecraft's attitude control system, and then checking carefully to see if a steady power level can be obtained. This test will not take place until the next pass over either the Coastal Sentry Quebec or the Hawaiian tracking station on the next revolution, which is approximately 90 minutes from now. The Hawaiian tracking station also gave the flight crew some routine data for various possible landing areas in the event that a contingency landing area becomes necessary. This is Gemini Control, at 11 minutes and 3 seconds into the flight.

This is Gemini Control, at 11 hours 15 minutes into the flight of spacecraft Gemini 5. Our spacecraft, at this time, is passing over South America -- the southern part of South America -- and is now beginning its... 8th revolution of the earth. This is Gemini Control.

This is Gemini Control. We are now 11 hours 32 minutes into the flight of Gemini 5. The spacecraft is approaching the west coast of southern Africa. And, here in the Control Center, things are in a relaxed mood. Many of the flight controllers have left their consoles briefly to pick up a sandwich and a cup of coffee, and they have brought them back to the console, and are partaking of an evening meal. Here, we are also awaiting the spacecraft, which will be approaching the Hawaii tracking station in approximately 20 or 30 minutes. We're awaiting the power-up test which has been decided upon by Flight Director Eugene Kranz, in an attempt to get a steady reading, and if this steady reading is obtained we may do some of the onboard experiments programmed. This is Gemini Control, at 11 hours 33 minutes.

This is Gemini Control, at 12 hours and 2 minutes into the flight of Gemini 5. And our flight crew is now passing over the continent of Asia, on its 8th revolution over the earth. In just a few minutes, the Coastal Sentry Quebec tracking ship, located in the Pacific south of Japan, will have voice contact with the spacecraft. Flight Director Gene Kranz has been receiving additional data from the ground tests of fuel cells that's going on in St Louis, and also more data from the engineers here in the Mission Control Center. He will very shortly

make a decision on his plan to power up the spacecraft's Orbit Attitude Maneuver System, to check the power level -- the pressure level around the fuel cells. This is Gemini Control.

This is Gemini Control, at 12 hours and 32 minutes into the mission. The spacecraft passed over the Hawaiian tracking station in its 8th revolution over the earth -- just a few minutes ago. During voice communication with the spacecraft, Hawaii advised Pilot Pete Conrad to power up the Orbital Attitude Maneuver System and then to do a 360 horizon sweep, turning his spacecraft completely around. He was advised that if he could see the Rendezvous Evaluation Pod he should stabilize the spacecraft at that attitude, and turn his power down. If he didn't see the REP, he should then choose an attitude and again power the spacecraft down. Conrad asked, jokingly, if anyone here had a suggestion as to where he should look for the REP. Flight Director Gene Kranz recommended that he look due south. At that time we had Loss Of Signal. The next voice communication will be with the Rose Knot Victor tracking ship -- coming up in about fifteen minutes -- we should have a report on whether Pilot Pete Conrad was able to spot the REP.

Here in the Mission Control Center, Bob Gilruth, Director of the Manned Spacecraft Center, and George Low, his Deputy Director, along with Chuck Mathews, the Gemini Project Manager, are back in the viewing room, and are interested spectators at this time. Everyone is awaiting the next pass over the Rose Knot Victor to see what results we have had with this latest attempt to stabilize the power aboard the spacecraft.

At this time, we'll play back the voice tape of the conversation between the Hawaiian tracking station and the Gemini 5 spacecraft. This is Gemini Control.

Hawaii	Gemini 5, Hawaii CapCom. Bring up your UHF transmitter and power down the D-4/D-7 experiment.
Conrad	Roger. We've powered down on that experiment. -- we'd just powered up.
Hawaii	Roger. We're going to scrub it. I'd like an open circuit readout of [fuel cell] stacks 2A, 2B, and 2C.
Conrad	Roger. They're clear of the peg -- I can't even read them.
Hawaii	Roger. Copy, Flight?
Flight	Roger, we copied. 2A, 2B --
Conrad	No, 1A, 1B, and 1C all dropped about two tenths of a volt.
Hawaii	What are they reading?
Conrad	They read 27.8.
Hawaii	Roger.
Conrad	We're ready to power up the ACME as instructed by RKV, if you're ready.
Hawaii	Okay. We'd like to do it -- but first would you bring up the AC Power switch to 'ACME'?
Conrad	Roger, AC Power switch is 'ACME'.
Hawaii	Okay. Bring up the ACME Bias Power switch to 'Primary'.
Conrad	Roger. It's 'Primary'.
Hawaii	Are you monitoring your fuel cell O2 tank pressure?
Conrad	Yep.
Hawaii	Okay. Let's watch it close, and if you see any decrease, power back down. We'd like your Attitude Mode switch to 'Pulse' at this time.
Conrad	Roger, it's in 'Pulse'.
Hawaii	How about your OAMS Attitude Control Power switch to 'On'?

Conrad  
Hawaii Okay -- it's on.  
Okay. We don't want to power up the secondary coolant loop -- we want to evaluate this configuration first. We'd like you to do a 360 [degree rotation], and take a look for the REP. If you see the REP, we recommend that you stabilize your rates, and then power down.

Conrad  
Hawaii Okay.  
If you don't see the REP -- go ahead, and stabilize in whatever attitude you'd like.

Conrad  
Hawaii Alright.  
Did you copy all that, Flight?  
That's affirmative, but whenever he picks his attitude to stabilize if he doesn't see the REP, he should pick an attitude -- and then power it up again.

Hawaii Roger, he's going to do that.  
Hawaii Houston Flight, Hawaii CapCom.  
Conrad Hawaii CapCom, Gemini 5.  
Hawaii Go ahead, Gemini 5.  
Conrad Have you got any suggestions as to where to look for it?  
Hawaii You're closer to it than we are.  
Conrad Thanks a lot, Bill.  
Hawaii Any time, Pete. Flight, Hawaii.  
Flight Roger. The REP would probably be to his south -- due south.  
Hawaii Flight recommends you look south for it -- due south.  
Conrad Okay.  
Hawaii Flight. We were reading 13.5 on main current; when we brought the AC Power switch up to 'ACME' we went to 14.5; when we brought the Bias Power to 'Primary' we were still at 14.5; when we brought the OAMS Attitude Control Power switch to 'On' we went to 15; and it remained at 15 when we went to Attitude Mode to 'Pulse'.

Flight Good report.  
Hawaii Okay. Did you get that thing on the off-the-scale voltages?  
Flight Affirmative. I assume they were off-scale high.  
Hawaii Off-scale high -- they were off the peg. 1A, 1B and 1C were reading 27.8. The bit count is 17 and 18 -- it's very similar to what the CSQ copied.

Flight Okay. You can advise the crew we would like the time at which he powers down his attitude control.

Hawaii Would you give us the time when you power down your attitude control?

Conrad Yeah, we haven't powered it down. We're still looking for the REP.

Flight He can give the time to us at the RKV -- in about 20 minutes.  
Hawaii Okay. You'll be over the RKV in about 20 minutes. You can pass the time along to them.

Conrad Okay. Do you want us to stay in this configuration as long as the pressure doesn't drop?

Flight That's negative.

Hawaii That's negative. We want you to power down as soon as you stabilize.

Conrad Okay.

Hawaii Okay, Flight. We copied the tape dump -- I've just turned the recorder off and the carrier off. We've got the TX in.

Flight Roger.

Flight Hawaii CapCom, Houston Flight.

Hawaii Roger.

This is Gemini Control, at 13 hours 2 minutes into our mission. Spacecraft Gemini 5 is now approaching the west coast of Africa, on its 9th revolution around the earth. Our last voice communication with the spacecraft took place about 10 minutes ago as the spacecraft passed over the Rose Knot Victor, a tracking ship off the west coast of Peru. At that time, Pilot Pete Conrad advised that he had performed a 360 degree horizon sweep by turning the spacecraft around. He failed to see the REP, which he was looking for, and so he powered down the spacecraft again. Conrad also performed a fuel cell hydrogen purge.

Flight Surgeon Dr Dwayne Catterson reports that the medical condition of the crew, at this time, is excellent.

This is Gemini Control. We'll now play back the voice tape communication between the Rose Knot Victor tracking ship and the Gemini 5 spacecraft.

RKV Gemini 5, RKV CapCom. Bring up your UHF transmitter.

Conrad RKV CapCom, Gemini 5 here.

RKV Roger. Your systems are 'Go' on the ground. We'd like to have the time of your attitude control power down.

Conrad 27:25.

RKV 27:25 -- understand.

Conrad Affirmative -- 02:27:25.

RKV Did you see the REP at any time?

Conrad That's negative.

RKV Roger, understand. Were you able to able to damp out your rates pretty well?

Conrad That's affirmative.

RKV Roger, understand. You have a medical data pass on the Pilot coming up over the CSQ on this rev -- the next rev, at a time of 03:30:11 Acquisition [Of Signal].

Conrad Roger. Medical data period 03:30:11 over the CSQ.

RKV Roger. That's the Acquisition at CSQ.

Conrad Right.

RKV We want to do a hydrogen purge on both sections [of the fuel cells] at 2:45:00 -- that's about 2 minutes from now.

Flight Why don't you let him start his hydrogen purge now, if he's ready.

Conrad Roger. Hydrogen purge, 02:45:00.

RKV Gemini 5, RKV CapCom. Flight said we can go ahead with it at this time, are you ready?

Conrad Okay. Crossover valve is 'Open'. Standby on my mark, I'll purge number one -- mark!

RKV Roger. We have it on the ground.

Conrad It now is terminated at 13 seconds. Standby on [number two] -- mark!

Conrad I've got number two was purged. Crossover valve is ['Closed'] - - mark.

Flight RKV CapCom, Houston Flight.  
 RKV Go, Houston Flight  
 Flight Roger, I gave you the wrong time on that CSQ Acquisition. That's 03:38:11

RKV Roger, understand. Gemini 5, RKV CapCom.  
 Conrad Go ahead, RKV.  
 RKV I have a correction for you on the Acquisition [Of Signal] time at the CSQ.

Conrad Okay, ready to copy.  
 RKV 03:38:11.  
 Conrad Okay. Acquisition at the CSQ is 03:38:11.  
 RKV Roger.  
 Flight Why don't you get an evaluation of his onboard systems at this time?

Conrad ... in our oxygen pressure.  
 RKV Roger, understand.  
 Flight How about the rest of his --  
 Conrad ... pressure is 400 now. It's built up and it has seemed to have stabilized at count rate of 400.

RKV Roger, understand  
 Flight How do the rest of his systems look onboard?  
 RKV Gemini 5, how do the other onboard systems look?  
 Conrad Everything else is 'Go'.  
 RKV Roger.  
 Flight Okay. You can advise him to power down his UHF transmitter.  
 RKV Roger.  
 RKV Gemini 5 you can turn your UHF transmitter to 'Standby' at this time, and we'll be standing by in case you need anything.

Conrad Roger.

This is Gemini Control, at 13 hours 37 minutes into the mission. Spacecraft Gemini 5 is approaching the Coastal Sentry Quebec, a tracking ship in the Pacific Ocean. Our orbital values are -- apogee 214 statute miles and perigee 105 statute miles, and the spacecraft is in drifting flight.

Command Pilot, Gordon Cooper, is still in a sleep period that started a little over two hours ago. Flight Surgeon Dr Dwayne Catterson tells us the crew is in excellent condition. They're on the scheduled flight plan with regard to medical experiments and data reporting.

We'll now feed you the live voice transmission between the spacecraft and the tracking ship Coastal Sentry Quebec.

CSQ Gemini 5, CSQ CapCom. Bring up your UHF transmitter.  
 C/S ...  
 CSQ Roger, Gemini 5 ... verify the fuel cell panel circuit breaker is closed.

Conrad Fuel cell circuit breaker switch is closed.  
CSQ Alright. We'd like you to turn 'On' the OAMS Heater circuit breaker, and leave it on until the pass.

Conrad (garbled)  
CSQ Roger, affirmative.  
CSQ Standby one.  
CSQ Gemini 5, if you notice any decrease in the fuel cell O2 pressure, turn 'Off' the OAMS Heater circuit breaker.

Conrad Roger.  
CSQ And Houston advises the EA curve on Section One indicates the performance is normal -- and Section Two also indicates normal from open-circuit voltages. The plan, at this time, is to keep all systems operating with the limited power available. Do you copy?

Conrad Gemini 5 -- we copy.  
CSQ Gemini 5 -- advise we have received temperatures. Standing by for blood pressures.

S/C ...  
CSQ Say again, you had a little background noise.  
Conrad I said it's much better with the temperature probes out.  
S/C (garbled)  
CSQ Gemini 5, we have a good blood pressure. Give me a mark when you begin exercise.

Conrad Roger, Gemini 5. Mark!  
Flight CSQ, this is Houston Flight.  
CSQ Flight, this is CSQ.  
Flight Roger, Ted. We need another main summary.  
CSQ Repeat that, Flight.  
Flight We need another main summary.  
CSQ Roger. Gemini 5, CSQ ... you cuff is full...

That was the live voice transmission conversation between spacecraft Gemini 5 and the Coastal Sentry Quebec tracking station in the Pacific. This is Gemini Control.

This is Gemini Control. Spacecraft Gemini 5 is now approaching the west coast of South America, and is beginning its 10th revolution around the earth. At the present time the Pilot Pete Conrad is in an eating period and Command Pilot Gordon Cooper is still in his sleep period. This is Gemini Control.

This is Gemini Control, at 14 hours 32 minutes into the mission. Our spacecraft at the present time is passing over the South Atlantic, and shortly will come up on the Ascension Island tracking station. We have had a food and water consumption report from the Pilot, Pete Conrad -- he said that he had taken four pounds of water approximately and is on his second meal.

In the Control Center, Flight Director Number One, Chris Kraft, and our present man on duty, Eugene Kranz, along with John Hodge -- who will shortly take over direction of this flight -- had a brief consultation. They decided to power up the spacecraft periodically and carefully monitor the pressure on the fuel cell -- if this pressure remains steady, while they're pulling additional amps, they will try to perform some of the onboard experiments. The decision on exactly which experiments are to be performed, will be made as the flight

progresses. At the present time, the pressure on fuel cells is 76.2 pounds per square inch, and we have 95.7 percent of oxygen aboard. This slight rise in pressure is contributing to the decision to try to pull a little bit of amperage out of the power supply. This is Gemini Control.

This is Gemini Control, at 15 hours 2 minutes after liftoff. The Gemini 5 spacecraft is now over west Pakistan, on a ground track that will take it over the Himalayan mountains, Chunking, China, and Taipai, Formosa. No contact was made with the spacecraft during the passes over the Ascension Island and Kano tracking stations. Here in Mission Control, the Blue Team of flight controllers, headed by Flight Director John Hodge has relieved the White Team led by Eugene Kranz. This is Gemini Control.

This is Gemini Control, at 16 hours 32 minutes after liftoff. The Gemini 5 spacecraft is now over northern Arabia midway through the 11th revolution. During a medical data pass for Command Pilot Cooper over the tracking ship Rose Knot Victor, Cooper reported that he'd had two hours of quite good sleep, that he was eating his first full meal and that he'd consumed three pounds of water. The surgeon aboard the ship also took telemetered blood pressure readings on Cooper. While over the Voice Remoting station on Ascension Island, the crew of Gemini 5 received the times for a visual acuity experiment from the Spacecraft Communicator here in Mission Control. The spacecraft will be in range of the tracking ship Coastal Sentry Quebec -- 14 minutes from now.

We now have the tape on the air-to-ground communications with the Ascension Island tracking station. This is Gemini Control.

Houston	Gemini 5, Houston CapCom. Do you read?
Cooper	This is Gemini 5, reading you loud and clear.
Houston	Roger. Put your AC Power to 'ACME', your ACME Bias to 'Primary', Attitude [Mode] to 'Pulse', and OAMS Attitude Power 'On'. Do you copy?
Cooper	Roger.
Houston	Roger. You ready to copy experiments?
Houston	Gemini 5, are you ready to copy the experiments?
Cooper	Roger. Go ahead.
Houston	Roger. S-8, D-13, at 01:06:20:00, sequence number two, cabin lighting at 01:06:40:00. And be advised, we will pass you more data over the CSQ -- which has an Acquisition [Of Signal] time of 01:06:46:21. Do you copy?
Cooper	Didn't get the Acquisition time 01:06 -- what?
Houston	01:06:40:21.
Cooper	46:01?
Houston	01 days, 06 hours, 46 minutes, 21 seconds
Cooper	Roger.
Houston	You can power down your UHF on the way -- we'll give you a call at the CSQ
Cooper	Roger.

This is Gemini Control, at 16 hours 50 minutes after liftoff. We have a tape recording of the Gemini 5 spacecraft pass over the Kano, Nigeria, Voice Remoting station in central Africa. Let's listen to that tape now. This is Gemini Control.

Cooper Gemini 5.  
Houston Gemini 5, this Houston CapCom. We'd like to give you a short briefing on what we think your status is -- are you ready?

Cooper Roger.  
Houston We believe you have a two-phase condition in the oxygen tank now, Gordo, and that the pressure will continue to rise slowly. We believe we can bring on more power without jeopardizing this, and we plan to do so gradually -- we'd appreciate it if you would keep us informed on that.

Cooper Roger. Will do.  
Houston This 'Pulse' Mode will give you a little something to work with there, for a change

Cooper Roger.  
Houston Gemini 5, could you verify your Agena Control circuit breaker is closed?

Cooper Roger. Agena Control is closed.  
Houston Roger. Thank you.  
Houston Gemini 5, Houston CapCom. If your OAMS gets sluggish, go ahead and turn it off. We'll watch it carefully, but if it's alright you can go ahead and use it.

Cooper Okay.  
Houston Gemini 5, Houston CapCom. You can turn your UHF transmitter 'Off', and we'll be standing by with the CSQ.

Houston Gemini 5, Houston. If you copy, you can turn your UHF transmitter 'Off'. We'll talk to you over the CSQ, and we're standing by. No need to acknowledge.

That concludes the tape between the spacecraft Gemini 5 and the Kano, Nigeria, Voice Remoting station out of Houston Mission Control. This is Gemini Control.

This is Gemini Control, at 17 hours 2 minutes after liftoff. The Gemini 5 spacecraft is now over the Solomon Islands in the southwest Pacific. In 24 minutes it will be in contact with the tracking ship Rose Knot Victor off the west coast of Peru, towards the end of the 11th revolution. This is Gemini Control.

This is Gemini Control, at 17 hours 32 minutes after liftoff. The Gemini 5 spacecraft is now almost directly over the tracking ship Rose Knot Victor at the end of the 11th rev. The next tracking station to acquire the spacecraft will be Canary Islands -- in 17 minutes from now. After passing the Canaries, it will be 1 hour 12 minutes before Gemini 5 is in contact with the tracking station -- the Rose Knot Victor -- again, at the end of the 12th rev. At this period of the flight, station contacts become farther apart because the earth's rotation moves the network east, and away from the spacecraft's inertially-fixed orbit. The network moves again under the orbital track starting with the 16th rev, or the beginning of the second day, and each day thereafter. The Command Pilot reported to the Rose Knot Victor that he'd not seen the REP lately. This is Gemini Control.

This is Gemini Control, at 18 hours 2 minutes after liftoff. The Gemini 5 spacecraft is not over Bengazi, Libya, in North Africa, on a track that'll carry it over the cities of Beirut, Lebanon, and Saigon, South Vietnam. The Spacecraft Communicator aboard the tracking ship Rose Knot Victor reported to Mission Control here in Houston that the

ship's captain visually sighted the Gemini 5 spacecraft at sunset yesterday as it came up over the western horizon.

During the pass over the Canary Island tracking station -- 13 minutes ago -- the crew received some flight plan updates from the Canary Island Spacecraft Communicator. This is Gemini Control.

This is Gemini Control, at 18 hours, 32 -minutes after liftoff. The Gemini 5 spacecraft is now crossing the north coast of Australia, just east of Darwin. Pilot Conrad is scheduled to be asleep at this time. The next station to be in contact with Gemini 5 is the tracking ship Rose Knot Victor -- 29 minutes from now. This will be the Rose Knot's last contact with Gemini 5 until this afternoon.

We now have a tape recording of the pass earlier in this rev over the Canary Island station. Let's listen to that tape now.

Canary	Flight, this is Canary CapCom. Is he going with the transmitter powered down?
Flight	Roger.
Canary	Okay.
Flight	Canaries, this is Houston Flight.
Canary	Roger, Flight.
Flight	Will you tell him that he can use the --
S/C	(garbled)
Flight	-- as he wants to. I'd like to turn them on over the site here, so that we can get another power point and then turn them off and use them when he wants to.
Canary	Roger. Flight, I didn't quite copy -- Gemini came in on top of you.
Flight	Roger.
S/C	(garbled)
Canary	Gemini 5, standby for one second here. Go ahead, Flight.
Flight	Tell him we want to turn the horizon scanners on so that you can get another power point, and from then on he can use them as he wants to.
Canary	Roger, copy. Gemini 5, Flight advises that you turn the horizon scanners on so we can get another power point. He also advises that you can use them as you wish.
Cooper	Roger, understand -- can turn on horizon scanners.
Canary	That's affirmative.
Cooper	Roger, thank you.
Canary	Okay. I also have a flight plan update for you -- when you're ready to copy.
Cooper	Okay.
Canary	We have a D-4/D-7, sequence... Remarks - if towering cumulus clouds appear, make D-4/D-7 scanner without the warm-up.

[\*\* DMH's note -- Experiment D-4/D-7 involved using a radiometer -- a scanner -- for spectral data.]

Cooper	Roger, I have that.
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Canary Okay. And then at 01 days 12 hours 10 minutes, on rev 14, at longitude 117.6 degrees west.

Cooper Roger. Will you give that one again -- I cut out on that one.

Canary Roger. That was 01 days 12 hours 01 minutest, that was rev 14, and longitude 117.6 degrees west.

Cooper Roger.

Canary Alright, Gemini 5. I've been advised here that I gave you incorrect numbers -- that was 12 hour, 10 minutes.

Cooper Roger. 12 hours and 10 minutes, understand.

Canary Roger. We've nothing else for you at this time. We're standing by.

Cooper Roger. Be advised flight plan sequence 08 of S-6 -- we had no success on it. Over.

Canary Roger.

[\*\* DMH's note -- Experiment S-6 is Synoptic Weather Photography.]

The Gemini 5 spacecraft is now over the south central Pacific, approaching acquisition by the tracking ship Rose Knot Victor -- at the end of the 12th revolution. Mission Control will be in contact with Gemini 5 through Voice Remoting with Antigua, ten minutes from now. Canary Islands will make contact with Gemini 5 eleven minutes later. A Rose Knot Victor Spacecraft Communicator will pass up, to the Gemini 5 crew, routine landing area updates. This is Gemini Control.

This is Gemini Control, at 20 hours 2 minutes after liftoff. The Gemini 5 spacecraft is now approaching the northwest coast of Australia on a track that will pass over the city of Brisbane. It is now in radio contact with the Carnarvon tracking station. During the recent pass over the Canary Islands, a Voice Remoting test was made through that station by the Spacecraft Communicator here in Mission Control.

We now have a tape of the voice communications during the Canary Island pass. Let's listen to that tape now.

Canary John wants to talk over the fuel cells with you -- here he is.

Houston I see you're real busy right now, Pete, have you got a minute?

Conrad Gordo is taking a picture here of the Apollo Landmark [site].

Houston Are you free to talk to me?

Conrad Go right ahead and talk.

Houston Electrical system -- it looks like the pressure is holding. We are trying to give you back the most useable functions as quickly as we can. We're trying to approach a normal status operationally. Want you to keep monitoring the pressure -- I'm sure you will. We believe your Attitude Indicator switch with FDI is 'On', we suggest you turn it 'Off' -- we think there are more useful ways to use that power. We're trying to get back -- to an essentially normal flight plan. We have some tracking on the REP. We're trying to cook up a possible rendezvous. Do you have visual contact with it at all? We believe it's about 75 miles ahead of you.

Conrad That's as maybe -- we haven't seen it. Both of our FDI switches are 'Off'.

Houston                    We're not going to purge the oxygen at this time. We're going to look at the voltages some more on that. We're planning ahead for a 33-1 'Go'/'No-Go' and we'll need the computer 'On' for update at that time so we're trying to build your current up to a level that we could use the computer -- we may trade off some items to get the computer on at that time. We hope to get the other fuel cell back on, eventually. Do you have any other questions, or comments?

Conrad                    No, my only one was when we were gonna get the fuel cell back.

Houston                    I'm working on it.

Conrad                    Thank you, buddy.

Houston                    See you.

Conrad                    Right, good show.

This is Gemini Control, at 20 hours 32 minutes after liftoff. The Gemini 5 spacecraft is now over the south central Pacific, on a track that will pass across the Republic of Panama. We now have the tape of voice communications between Gemini 5 and Carnarvon tracking station earlier in this 13th revolution -- let's hear the tape now.

Surgeon                    Gemini 5, Carnarvon Surgeon. Houston Surgeon is a little concerned about your lack of sleep. We'd like a status report on each of you at this time concerning fatigue level, over.

Conrad                    Roger. We have just been cat-napping, about 40 minutes on and 40 minutes off, and 40 minutes on and 40 minutes off.

Surgeon                    Roger. You have a busy flight plan ahead. We recommend you try to sleep during your programmed sleep periods if you can, so as not to get behind on the fatigue curve. Carnarvon Surgeon, out.

Conrad                    We're trying to, but you guys keep giving us something to do!

This is Gemini Control, at 21 hours 2 minutes since liftoff. The Gemini 5 Spacecraft is now over the Madeira Island group in the east Atlantic, just west of Casablanca, on a track that will pass over the Arabian city of Mecca, and directly over the Carnarvon station. The Command Pilot is scheduled to awaken the Pilot at this time, and brief him on spacecraft status and events occurring during his sleep period. The Canary Spacecraft Communicator reported to the spacecraft that all systems looked good on the ground during the recent pass over Canary Islands. This is Gemini Control.

This is Gemini Control, at 21 hours 32 minutes after liftoff. The Gemini 5 spacecraft is now over the eastern Indian Ocean, and should be in voice and telemetry contact with the Carnarvon, Australia, tracking station at this moment. Both pilots are scheduled to eat at this time, midway through the 14th revolution. This has been an exceptionally quiet night here in Mission Control, hopefully things will pick up somewhat during the next twelve hours. This is Gemini Control.

... is now over the Society Island group in the south central Pacific. During the pass over the Carnarvon, Australia, tracking station, Pilot Conrad reported seeing the lights of Perth, and jokingly said he could see the Carnarvon station itself. We have the tape of the

voice conversation between Gemini 5 and the Carnarvon station; let's hear the tape now.

Conrad Carnarvon, Gemini 5. How much time do we have over you?  
 Carnarvon We've got about 3 minutes to go.  
 Conrad Now are we supposed to be passing to the north of you now?  
 Carnarvon Standby one.  
 Flight That's affirmative.  
 Carnarvon That's affirmative, Gemini 5.  
 Conrad Are you guys clear [of cloud] down there.  
 Carnarvon We've got clear skies, and an optical sighting of the spacecraft.  
 Conrad Okay, we see you.  
 Carnarvon Very good.  
 Conrad We see you, and we see Perth, but I don't see Geraldton [some 200 miles north, up the coast] -- looks like it's under the clouds.

This is Gemini Control, at 22 hours 32 minutes after lift-off. The Gemini 5 spacecraft is over the central Atlantic, and will be in acquisition by the Canary Island tracking station momentarily. A medical data pass will be run on the Pilot over the Canaries.

Here in Mission Control, the Red Team of flight controllers, headed by Chris Kraft, is now taking over from the Blue Team headed by John Hodge. The Blue Team has been in the control room since 10 p.m. CST last night.

We now have a tape of the just-completed pass over the Stateside stations. Let's hear that tape now.

Houston Gemini 5, Gemini 5, Houston CapCom. If you read, place your Adapter C-Band to 'Continuous'.  
 Conrad We read you loud and clear, over.  
 Houston Roger, reading you five-square. Did you copy on the C-Band?  
 Conrad Roger. C-Band is in 'Continuous'.  
 Houston Roger, understand, thank you. And be advised that the Pilot has a medical data pass over the Canaries, and your Acquisition [Of Signal] time is 12:32:47.  
 Conrad Roger, 12:32:47.  
 Houston Roger, that's today. Morning, Gordo.  
 Cooper Morning.  
 Houston How are you feeling?  
 Cooper Fine.  
 Houston I'm going to talk to you about what we're going to do here, with the computer and the fuel cell.  
 Cooper ...  
 Houston Gemini 5, Houston. Would you put your fuel cell O2 Quantity 'On', please.  
 Cooper Roger -- will do.  
 Houston Gordo, on the next pass over the States, what we want to do is bring up the computer and give you a DCS load for 18-1, and then take a look at the computer's memory to make sure we've got the right numbers in there. We're a little bit concerned. Last time we had a poor telemetry readout of the numbers.  
 Cooper Okay.

Houston                    Then, after we've done that, and we're satisfied, what we'll do before we bring the computer up is drop some other things off the line, so that the total amperage is about the same. Then after we've checked the computer -- over one of the next sites you pass over -- we'll have you turn off the computer ... and we'll bring that second section [of the ailing fuel cell] back on the line and see how that works.

Cooper                    Okay.

This is Gemini Control Houston. Our weatherman, this morning, is giving us a good report for the next 24 hours. He says that in that period of time the West Atlantic area will be partly cloudy with light winds, less than 10 knots, and waves less than 3 feet. The East Atlantic area, about 300 miles west of the Canary Islands, normally steady trade winds of about 20 knots with waves of 5 to 7 feet will hold forth beneath partly cloudy skies and a hazy atmosphere. For possible landings in the mid-Pacific, 500 miles north of Honolulu, fair weather will continue except for isolated light showers. Winds will be from the east and average 10 to 15 knots. In the far western Pacific area, some 500 miles southwest of Tokyo, Typhoon Lucy is moving over the Japanese islands. Weather conditions will be improving in the western Pacific landing area during the day. During the next two hours, winds will subside to about 15 knots and waves to about 5 to 6 feet. Scattered heavy rain squalls will be diminishing. Significant other weather features, which the flight will pass over around the world in the next 24 hours, include a suspicious area of tropical weather in the Atlantic -- between Puerto Rico and West Africa -- that may yet evolve into something of more concern. And tropical storm Doreen is moving westward in the Pacific Ocean and is now about 1,000 miles south of San Diego.

As the Red Team took its places this morning, it found a very elated flight control team. The source of the elation, of course, was a successful purge of the oxygen supply tank ... which supplies the fuel cell. This purge was performed during the past over Carnarvon. It seemed to have no degrading effect at all on the fuel cell -- on the other hand, the pressure reading in the fuel cell went up 10 pounds -- a very favorable turn of events. We are now running with approximately twice the amp-load that we were using yesterday, during our maximum powered down period.

We have a taped conversation between the Canary Island and the Gemini 5 spacecraft. We're prepared to play for you now.

Canary                    Gemini 5, this is Canary CapCom. We're standing by for blood pressure on the Pilot.

Canary                    Flight, we have negative on the oral temp.

Flight                    Say again.

Canary                    We did not get an oral temp on the Pilot.

Flight                    Rog.

Surgeon                  Gemini 5, Canary Surgeon. Your temp is full scale.

Canary                    Flight, we have a solid C-Band track.

Flight                    Roger, solid C-Band track.

Surgeon                  Gemini 5, we have a good blood pressure. Give us a mark when you begin exercise.

Conrad                    Gemini 5. Mark!

Surgeon                  Standing by for blood pressure.

Conrad                    RCS [Reentry Control System] Ring 'D' source pressure. PCM count 150. We are still counting 19 on fuel cell 02.

Surgeon Gemini 5, we have a good blood pressure. Standing by for your water and sleep reports.

Conrad This is the Gemini 5 Pilot. My water's up around five and a half pounds now, total. I got to rest back about an hour ago -- when they told us to sleep. And I had a little cat-nap just a little while ago.

Canary Roger, Gemini 5. Everything is looking good, here on the ground. We have about two and a half minutes to LOS, and we are standing by.

This is Gemini Control, Houston, at 23 hours 44 minutes into the mission. In the last fifteen minutes, we had a good long pass over Canarvon. That tape is racked up now. We are ready to play it for you now.

Carnarvon Gemini 5, Carnarvon CapCom. Bring up your UHF transmitter.

Conrad Go ahead Carnarvon, Gemini 5 here.

Carnarvon Roger, Gemini 5. I have a briefing for you for your Stateside pass this orbit.

Conrad Okay. Is it experiments, or just briefing?

Carnarvon It's a briefing on a powerdown and power-up and ...

Flight Standby one. We're clichecking to see what's wrong with the tape.

Carnarvon ... started in Guaymas with an AOS time of about 13 hours 46 minutes, they want you to assume an attitude of 000 or 0180 -- whichever you prefer. Turn off the OAMS Heaters, ACME, the horizon scanners, and the C-Band Adapter Beacon. Okay, next power-up the IGS power supply and the computer [with this] in 'Prelaunch' mode. At Texas acquisition -- which is about two minutes after Guaymas contact -- they'll send up an [area] 18-1 computer load. The ground wants to take a look at the load on TM and check it, and they'll have you power down the IGS and the computer on a ground cue. After the IGS computer power-down is complete, they'll want you to bring up the secondary coolant loop and place the fuel cell section two power switch to 'On'. Okay? After section two is on line, power-up the ACME and horizon scanners. They want to complete this before LOS, to have a look at section two.

Conrad Okay. Let me see if I got all this. At Guaymas AOS -- at 13:46, approximately -- assume a 000 or 0180 attitude, OAMS Heater off, ACME off, scanners off, bring the IGS on, and bring the computer up -- on ground command. After receiving an upload, power-down, bring up the secondary coolant loop, the number two fuel cell, bring the ACME back on the line, and our horizon scanners.

Carnarvon Okay. On that power-down at Guaymas, also turn the C-Band Adapter to 'Command', in addition to the heaters, ACME, and horizon scanners.

Conrad Got it.

Carnarvon Okay. And on the IGS and computer power-down, wait for the ground cue.

Conrad Okay, now.

Carnarvon Go ahead.  
 Conrad I was just looking at the flight plan here -- we'll have to cancel that D-6 [Experiment].  
 Carnarvon That's affirmative.  
 Conrad And we'll have to cancel both D-6s, or, no, the D-6 and the D-4 -- no we might get the D-4/D-7 ...  
 Carnarvon Right, Flight advised to scrub the D-6 Experiment, at 13 hours 58 minutes.  
 Conrad Okay.  
 Carnarvon Okay. We're scheduled also for an H2 purge over this station at this time -- would you give me a mark when you start the purge?  
 Conrad Standby. Standby -- purging number one. Mark! Ten seconds -- didn't get it. Standby. Mark! Number one section purge complete. Standby. Mark. Number two's ready.  
 Carnarvon Roger.  
 Conrad Number twp complete. Both are 'Off'.  
 Carnarvon Roger. Okay, we ... on the ground, Gemini 5.  
 Conrad 'Go', up here.

This is Gemini Control, Houston, at 24 hours 2 minutes into the flight. We have just started the 16th revolution. We're still in contact with the spacecraft -- it's out on the edge of the Bermuda zone at this time. It's been a very cheery conversation during this first long duration pass across the United States this morning. Chris Kraft passed up the word that we're real happy with the fuel cells. and Pete Conrad, who is awake and talking -- Gordo, apparently, is asleep, concurred entirely. Among other events. Chris Kraft read to Pete a morning news summary in which he advised that the headline in a local paper this morning said the flight may splash down in the Pacific on the sixth orbit. This brought a big chuckle from Conrad -- he said to tell them they were sorry to disappoint the paper. He said he felt that the flight only had about seven more days to go. In a more serious vein, Pete advised that he's drunk a total of about six pounds of water, Cooper about six and a half pounds. He also indicated the oxygen source pressure [feeding the fuel cell] is now about 70 psi -- up about 10 pounds over our long stable period of yesterday. We're reading about 80 on the ground -- of course the difference between the ground gauge and the spacecraft is one of calibration.

It will be a few minutes before the tape is racked up -- when it is, we'll come back to play the conversation of this first Stateside pass this morning. This is Gemini Control.

Gemini Control, Houston, here, at 24 hours 10 minutes into the mission. We'd like to update you on the orbit -- apogee 212 statute miles, perigee 104.6, the revolution period is 94.5 minutes. And we began the 16th revolution at 23 hours 56 minutes 5 seconds into the mission.

We have the tape from the Stateside pass racked up, and we are prepared to play it for you at this time.

Conrad After this flight, maybe they can save some weight and remove the heaters [because they don't work!].  
 Houston Yeah, looks that way, doesn't it? I didn't realize that you were a heater test pilot.  
 Conrad I didn't either, yesterday.

Houston We've sure got a lot of fuel cell experts here on the ground this morning, Pete.

Conrad I'll bet you do.

Houston They had to put bars on the windows to keep them out.

Flight Gemini 5, Houston Flight.

Conrad Good morning.

Flight Good morning. The morning headline says your flight is -- may splash down in the Pacific on the sixth orbit.

Conrad I'm sorry to disappoint them. I just told Gordo a few minutes ago that we just passed a milestone -- we only have seven more days to go.

Flight Roger, Pete. They've got a clock down here that will give you the time to the end the mission. It's not running right now, but yesterday it said 198 hours. Your wives also made the front page this morning. Very good pictures, and they look very pretty.

Conrad Roger. You can tell them we are doing fine, and tell the doctors we are drinking lots of water, but neither one of us have been too hungry. We've had two meals, but we haven't eaten all of them.

Houston How much water have you drunk, Pete? I've got notes here from Neil [Armstrong], or Elliot [See], that say that your last drink was at 01:05, 01:04.

Conrad I've almost had six pounds, and Gordo's had about six and a half pounds, and we're being pretty generous with the gulps.

Houston Okay. You've had six, and Gordo's had six and a half.

Conrad That's a good number.

This is Gemini Control, Houston, at 24 hours 32 minutes into the mission on the 16th rev with the spacecraft just off the southeast coast of Africa. We've been out of touch with the spacecraft since the Canary -- Kano pass. We expect to contact again at Carnarvon.

On the 14th revolution, over Canarvon, a person manning the radar tracking device in that area reported sighting -- visually sighting -- the spacecraft. We're checking back with the Carnarvon station to get additional information on him, his name and citizenship. We have had reports of visual sightings in the past, but this is the first I recall on this flight.

Here in the Control Center, serious consideration is being given to a rendezvous with the [Radar Evaluation] Pod. This would be -- of course -- with the passive object, because the beacons are out: the lights are not flashing, and the radar beacon on the pod is out. At last reports, it was some 75 miles from the spacecraft. We're tracking the pod and hope to get a good fix on its position, and ... the elements of that fix will dictate the decision as to whether we'll attempt to rendezvous or not. We certainly have the fuel to attempt it. This is Gemini Control.

This is Gemini Control, at 25 hours 2 minutes into the mission. The spacecraft is on a swing up the Pacific. Over the Carnarvon station -- only a few minutes ago -- Pete Conrad performed a radiometer check on the star Vega. He aligned the spacecraft so that one of his infrared sensing devices looked at the star Vega, held it on the star for approximately three minutes while he read out the data on the spacecraft and it was, at the same time, telemetered to the ground station. The ground station reported that the telemetry was fairly noisy, but they that he got some data. Pete confirmed that he got some onboard.

It was a relatively quiet pass, and we regret that our recording here in Mission Control in our new support area failed to pick up the conversation. However, we're working on it, and we will get it fixed up for the next pass. Going across the United States this time, it is likely that a decision will be made on whether to commit for a 33-orbit flight -- retro times for the 33-1 [recovery area] may be passed up to the spacecraft during this next pass over the United States. This is Gemini Control in Houston.

This is Gemini Control Houston, at 25 hours 28 minutes into the mission. Within the last two minutes, we've acquired the spacecraft via the Guaymas station. Gordon Cooper was on the loop. He had been napping for the last hour or so and in his familiar soft slow Oklahoma drawl, he told the Guaymas station that the station was "looking mighty pretty down there." A very cheery Gordo. A doctor has just talked to him. He's a little concerned about the lack of sleep that the two pilots have had. They confirm that they have only had about two hour apiece and they haven't eaten a great deal. And, as we have been talking, a new time to retrofire for the 33-1 has been passed up to the pilots -- we're now committed for at least a 33-orbit flight.

Let's cut in now on that conversation live, as the spacecraft moves across the southeast United States.

Cooper	Hello down there. I can see all the towns and the highways.
Flight	Okay.
Cooper	Roger. We're coming in over the Cape now. We can see the Cape very clearly.
Flight	Can you see the [launch] pads [of Missile Row] pretty easily?
Cooper	Roger, we can see the pads, we can see the causeway [across the Banana River].
Flight	Roger, they really stand out don't they, with that contrast?
Cooper	They sure do.
Flight	Have you got the D-6 Experiment all set up?
Cooper	Ready to roll.
Flight	Okay. How's the weather over the Atlantic?
Cooper	Very nice. There's light scattered clouds.
Flight	Okay.
Cooper	The sun is shining.
Conrad	I'll tell you one other thing we noticed, it looks like our oxygen pressure may have gone back up just a skosh.
Flight	Okay. We've had it holding for a long time. We have a couple of extra PCM counts now, so we're all set.

This is Gemini Control, Houston, again. We're still in contact with the Bernada station. During that pass, you heard Pete Conrad's report, a very hopeful item. He said the oxygen pressure was up just a "skosh". That's Conrad-ese for up just a little bit. It's a comforting factor.

Earlier, the spacecraft was advised we have had some trouble reading out their TM data on their infrared measurements. They were advised to leave their infrared data transmitter on during this pass across the States, so we could evaluate it. They are out over the island of Bermuda now, and the flight plan calls for them to take some terrestrial photographs in area of Bermuda -- we assume they're doing that now. Conrad reported he'd a tremendous view from the use of the big lens -- a 1,270-mm lens mounted on his side in the spacecraft.

We've had no additional communication since Bermuda acquired. We are standing by, and we'll play it for you as it happens... the spacecraft is out on the edge of the Bermuda zone now -- we'll probably lose the signal within a minute from now.

We have new [orbital] elements on the [Radar Evaluation] Pod ejected yesterday. I can pass those on to you. We have an apogee on the Pod of 197.5 miles and a perigee of 102.6 miles -- those are both statute mile values. The period is very close to that of the spacecraft, at about ninety-five and a half minutes. The separation distance, at last report, is about 300 miles away, and, as I indicated earlier, serious consideration is being given to attempting some sort of a rendezvous maneuver with the Pod. A quick indication is that it would take something on the order of 5 or 6 revolutions to actually catch up with the Pod at this point. We have made no decision to undertake that maneuver but, as I say, serious consideration is being given to it. This is Gemini Control out, at 37 minutes after the hour.

This is Gemini Control, at 25 hours 45 minutes into the mission, with the spacecraft swinging down across Africa. We have the tape ready for you on the early portion of the Stateside pass, which we think you'll find of interest.

In the course of the early discussion, as we indicated, they discussed the food situation. Dr. Berry is a little displeased. He doesn't think they have been eating as often or as much as they should have. They've indicated they've drunk a lot of water... slightly more than six pounds apiece. He's quite satisfied with that, but he's not completely satisfied with the amount of rest they've had, which totals out to something like about two hours, plus some napping in the first 24 hours. In the course of the discussion with Jim McDivitt, he asked them if they noticed any LiOH effects. This is the chemical formula for lithium hydroxide. It refers to the ingredient in the Environmental Control System that scrubs carbon dioxide from the atmosphere. The reference -- the question -- pertains to a suspicion we have that during the McDivitt-White flight, it might have been lithium hydroxide dust which caused some irritating effects on Jim McDivitt's eyes in the early portion of the flight -- before it cleared up. We cannot confirm that that was the case in Gemini 4, but that's the suspicion, whether founded or unfounded. Apparently it's no cause for any irritation at this time and they report no irritation to the eyes or to the nasal passages.

We have the tape for you, and we'll play it for you now.

Conrad	Bore-sight Kinley. I've got the big lens in here, and it's really fantastic.
CapCom	What did you say, Pete?
Conrad	I said I've got the big lens in here and I can see through it something fantastic -- if I could just find the point with it.
CapCom	Yeah. How're you doing with the tracking on that? Is it pretty easy? Or pretty difficult?
Conrad	Just got it all put together.
CapCom	Okay. We've got another person here who would like to talk to you for a couple of minutes.
Surgeon	Gemini 5, this is Surgeon. Gordo, tell me about this sleep story here for a second. We're having trouble trying to get straight on the ground what both of you have done with sleep. As we figure it from your report so far, it appears you have had roughly two hours apiece. Is that affirmed? Or have you had more than this?
Cooper	That's about right. Maybe a little bit again, in addition to that.

Surgeon Gordo, what seems to be bothering this sleep? Are you having trouble with the other guy's transmitting? Does this seem to be bothering the sleep?

Cooper The flight plans haven't been arranged where both guys, where one guy could sleep. It's where both of us have been having to do some of the easier tasks.

Surgeon Okay. Well, let's check the food parts and other areas that we seem to be having some trouble getting straight records here. Pete said on the last pass that you had had at least parts of two meals, and I take it that that's Meal-A and Meal-B from the first day. Is that all you have eaten today?

Cooper That's about it.

Surgeon Okay. Fine. One other question we ought to get some answers on -- are you using the exciser for any other times and over the medical data passes? Are you using it [the bungee cord] just for general exercise?

Cooper Haven't had time yet.

Surgeon Okay. Gee, I thought you were just loafing up there -- all this comfort and time to do nothing.

Cooper Been pumping the foot generator pretty hard, there.

Surgeon We should have one aboard.

CapCom Gemini 5, this is Houston here.

Cooper Roger.

CapCom Roger. You have a go now 33-1, and we've put the 33-1 TR time on your computer, so you are all set.

Cooper ...

CapCom Okay. Good luck on your D-6 [Experiment].

This is Gemini Control, Houston, at 26 hours 2 minutes into the mission. At this time, the Tananarive station ... should be establishing contact within a very few seconds.

The flight is progressing very nicely here. Our big clock's ... now show a new time, Ground Elapsed Time to retro-command, one for a 33-1 landing, should a landing become necessary. That time would be 24 hours and 38 minutes from now.

We also had data from the Department of Defense that a fourth object is being tracked along with the spacecraft, the [Titan's] second stage, and the Pod. It's identified as a piece of debris. We don't know whether it came from the second stage. It's very likely from the second stage in the act of separation. This is Gemini Control in Houston, 26 hours into the mission.

This is Gemini Control, Houston, at 26 hours 32 minutes into the mission, on the 17th revolution, with the spacecraft just off the northeast coast of Australia.

Since early this morning we've indicated that here in the Control Center, flight planners and engineers have been busy devising some sort of a rendezvous maneuver with the Pod. The mechanics have worked out whereby we might attempt such a catch-up maneuver with the Pod over a six-revolution period. They had actually gone so far as to brief the crew ... during the just-ended Carnarvon pass on what type of burn to perform over the States. We had initially thought of bringing the apogee down to about 165 miles, waiting several revs, and then performing other maneuvers to make a close approach on the dead Pod. However, in just the last few minutes, the Flight Director has reconsidered the plan. He doesn't want to put the overall lifetime of the mission in jeopardy -- we're still striving

for the full 8-day mission. Also he'd like to see ... a little more power available in the electrical system. He's decided not to attempt any rendezvous today, he's postponing any rendezvous attempts for at least several days, by which time hopefully we will be able to use the [inertial] platform, the other guidance instrumentation available in the spacecraft for any maneuvers that might be attempted then. So, we'll say again, we'll not attempt any rendezvous maneuvers with the Pod today, and at this time we're proceeding across the Pacific. This is Gemini Control signing off at 35 minutes after the hour.

This is Gemini Control, Houston, at 26 hours 49 minutes into the flight. At this time, the Hawaii station is in contact with the spacecraft, making comparisons between ground readings and spacecraft readings on the various instruments and gauges. It was during the Canton pass just a few minutes ago that Jim McDivitt, remoting through Canton, advised the crew that we won't attempt a rendezvous maneuver with the Pod today. This had been the plan -- that over the States we might put in motion a series of maneuvers which would bring us in close proximity with the Pod, five or six revs later. However, it was decided not to attempt these maneuvers, and put prime emphasis on attaining long-duration time in orbit, something on the order of 8 days. For your information, the second stage booster of the Gemini Launch Vehicle has about two more days to go in orbit before it will decay and burn in. We don't have a predicted impact point for you at this time. The Pod's trailing the booster by about five and one-half minutes. It's some 375 nautical miles out in front of the spacecraft. Gordon Cooper has advised that he hasn't seen it for some time. We presume the lights -- the blinking lights on the Pod -- are now extinguished, the battery power out.

In the parade of Gemini and its entourage, the third item in the parade is the spacecraft itself, trailing the Pod by some 35 seconds. And the fourth item in the line-up is a piece of debris. The scrap is about two by three feet. We can't identify it precisely but it could be a piece of a skirt off the second stage. It's trailing the spacecraft by about eight minutes. We have no estimate on its lifetime. We have the Canton Island tape racked up and are prepared to play it for you now.

Flight	Gemini 5, Gemini 5, this is Houston Flight, over.
Conrad	Roger, Houston. We hear you fine.
Flight	Roger, Gemini 5. This is Houston Flight. Be advised that there will be no, I say again, there will be no OAMS burns over the States. We will not attempt to rendezvous with the REP.
Conrad	Roger, understand. No rendezvous, and there'll be no burn.
Flight,	That is affirmative. Later on in the mission we expect to do some burns. When we can bring the platform up, we will run through some exercises, using the fuel for that.
Conrad	Okay.
Flight	Gemini 5, this is Houston.
Conrad	Go ahead, this is Gemini 5.
Flight	Roger. For your information, the REP is about 375 miles out in front of you at the present time.
Conrad	Oh, is that right?
Flight	Roger. Can you still see the lights.
Conrad	...
Flight	Okay, you'd better take your vision test again.
Flight	Would you put your ECS 02 Heater to 'Auto' please.
Conrad	You're fading out on your ... transmitter.

Flight Roger, I say again -- would you put your ECS 02 heater to 'Auto'. Your ECS 02 Heater to 'Auto'.

Conrad Roger. Going to 'Auto' ECS 02.

Flight Roger .

Flight Be advised that the flight plan updates that you had for your pass across the States will remain the same.

Conrad. Roger, understand.

Flight Okay.

This is Gemini Control Houston at 27 hours 2 minutes into the flight. The spacecraft is directly overhead us here at Houston, and Jim McDivitt just ask Pete Conrad if he saw him wave, a joking reference of course, and Pete said no, it was a little cloudy. He also said he couldn't quite see the Domed Stadium, although he was looking. West Texas must be clear because they gave us a beautiful description of the El Paso area.

In the course of this pass, they have turned their radar on, they have powered up their computer, and they've also turned on what is identified as the MDIU -- that's the Manual Data Insertion Unit, a piece of associated electronics that goes with the computer and into which data can be inserted manually.

We're still on an open line to the spacecraft -- which is now over the state of Alabama. Let's tune in live to see if there is any further discussion.

Gemini Control again -- apparently they have nothing to report right now! We'll stand by. In the course of the pass, our environmental systems man, who watches the fuel cell area, says it is looking good on the fuel cell situation. Here we are again.

Conrad ... 222.48, as we go by the Cape.

Houston Roger. You think you can make a REP out on that?

Conrad You bet. Not only that, but I wish we hadn't had those little problems, because I think we would have caught the REP.

Houston Yep.

Conrad We just went by the Cape, 166.92.

Houston Roger.

Conrad Closest approach is 164 miles.

Houston Gemini 5, you have completed your radar pass. Gemini 5, you have completed your radar pass. We'd like to have you turn off your radar again, turn your computer off, and bring your horizon scanners back up.

Conrad Roger.

Conrad We're still getting readouts; 248 miles.

Houston Roger.

Conrad That is it? Yeah -- lost the Pod.

This is Gemini Control again. In the course of that pass you heard Pete Conrad talking about the radar. Here we go again, standby.

Conrad This is Gemini 5. We're powered back down now, Jim.

Houston Okay, fine. Listen, for your information we would like to have you complete that Laredo pass on that next pass, and then it's time to get some sleep -- don't you think?

[\*\* DMH's note -- The reference to the Laredo pass is to a large chart that was marked out on the ground, 40 miles north of Laredo, Texas, in the hope that the astronauts would be able to resolve the patterns on it using the naked eye. This was a direct follow-up to claims made by Cooper during his Mercury mission that he could see a remarkable amount of fine detail.]

Conrad	We heartily concur.
Houston	Oh, yawn.
Conrad	I got pretty sleepy on that last night-side.
Houston	Roger, and listen, if you are getting sleepy go ahead and cat-nap around there.
Conrad	Say again.
Houston	Don't forget the good old cat-naps now, when you are floating around.
Conrad	...

Gemini Control, Houston, here again. Jim McDivitt passing on some advice about catching cat-naps -- advice which he didn't follow to closely during his 4-day flight -- but he's certainly an expert in that department now. The reference to the sighting over the Cape is this -- there's a spare Pod, or REP as it is referred to in the flight, on a tower at the Cape, which is still live. It was powered up at this time. The boys [in space] turned their radar on, and they caught some measurements with it, so their radar is effective, and it apparently is quite accurate. The Pod is broadcasting in L-Band signal and -- Now we are getting more transmission, we'll go back to the crew.

Conrad	The thing that really makes the most noise, and I was wrong and Gordo was right, is the M-1 Experiment. It keeps clicking away merrily.
Houston	Oh? It makes a lot of noise, huh?
Conrad	Every time it cycles, the valves really thump.
Houston	Gemini 5, the Flight Director suggests that if you start liking the M-1 maybe it'll put you to sleep.

[\*\* DMH's note -- The M-1 Experiment involved Conrad wearing a set of 'cuffs' on his thighs which automatically inflated every few minutes to apply a force that, it was hoped, would serve to condition his cardiovascular system in weightlessness. Cooper didn't have the cuffs, he was acting as the in-situ 'control' for the test. Obviously, Conrad found the pulsations relaxing.]

Conrad	I like it! I like it!
Houston	Not that much.

Gemini Control, here. The spacecraft's down on the lower edge of the Bermuda area and the upper right edge of the Antigua acquisition area, and we probably reached the end of our communication ability for this pass. The most informative pass, I think, and we'll rack up this tape and play it in its entirety for you as soon as it's available. This is Gemini Control out, at 12 minutes after the hour.

This is Gemini Control, Houston, at 27 hours 35 minutes into the mission and with the spacecraft down over South Africa. We've had no contact since the Stateside pass, the tape of which we've racked up and are prepared to play for you.

But, before we get into that, I want to call your attention to an announcement we made early yesterday before launch. We indicated that we had information from the Department of Defense that a crewman aboard the Chipola, that ship parked about 500 miles northeast of Hawaii, had suffered a serious illness, an apparent heart attack, and a destroyer there, the Taylor, had been sent from Pearl Harbor to the ship to take him back to Pearl Harbor for additional medical care. Later in the day, the crewman died. We have confirmed that it was a heart attack and the Department of Defense has gone through its normal notification process. The name of the crewman was Boatswain Mate Second Class Gustov Krauss, 32 years old. Boatswain Mate Krauss is the son of August Theodore Krauss of Lindenhurst, New York. Apparently, he suffered a fatal heart attack on the Chipola yesterday morning, was ill for some hours, and died in the morning.

We are now prepared to play for you the tape of the Stateside pass, some eight to nine minutes in duration. Let's have the tape now, please.

Guaymas	Gemini 5, Guaymas CapCom standing by.
Cooper	All right, Gemini 5 here.
Guaymas	How're you doing?
Conrad	Our status is green. I think we got some good D-4/D-7 [data] on the moon this last pass, and we've been all the gear down now. We got four pictures of the moon each magazine ...
Guaymas	You say you got four pictures of the moon, and what else?
Conrad	Got four pictures of the moon with each magazine -- 12 pictures, total.
Guaymas	Okay, I got that.
Conrad	We continually have had these RCS Heater lights, so we've just turned the RCS Heaters 'On' and left them on.
Guaymas	Ah, roger.
Houston	Gemini 5, Houston here.
Conrad	Hello, Houston. Gemini 5 coming up on El Paso.
Houston	Roger. Say when you make this pass across the Cape, that radar test -- we'd like to have you power down your horizon scanners and bring your computer up in 'Catch-Up' Mode.
Conrad	Okay. Put the radar to 'On' and turn the scanners 'Off', and we'll bring the computer up in the 'Catch-Up' Mode.
Houston	Roger. And if you have any problem with Delta-P lights -- or anything -- we want you to turn the computer back off again, of course.
Ccnrad	Roger. The computer is 'On'. I'd like to bring the MDIU on.
Houston	Well we're trying to keep the power down here, Pete, and the only reason we are bringing the compter up is we can't get the data out of the radar unless we've got the computer on.
Conrad	Okay, we just crossed El Paso International and Biggs.
Houston	Very good.
Conrad	Boy, it's a pretty day out there. You can really see well.
Houston	Gemini 5, this is Houston.
Conrad	Go ahead, Houston.
Houston	Why don't you go ahead and power up the MDIU -- it's only a quarter of an amp and maybe you can read something out on the range or range-rate.
Conrad	Roger. We got a computer light on in the 'Catch-Up' Mode.

Houston Okay.  
 Conrad We just passed Houston, a couple of seconds ago.  
 Houston Could you see me wave?  
 Conrad ....  
 Houston Okay.  
 Houston Gemini 5. This is Houston. Could you see the Domed Stadium when you went over?  
 Conrad You could just see Galveston Bay, there's some clouds between us and we are north of it.  
 Houston Okay.  
 Conrad ... tracking right down there, 222.48, as we go by the Cape.  
 Houston Roger. Do you think you can make a REP out on that?  
 Conrad You bet. Not only that, but I wish we hadn't had our little problem, because I think we would have caught the REP.  
 Houston Yep.  
 Conrad We just went by the Cape, 166.92.  
 Houston Roger.  
 Conrad Closest approach is 164 miles.  
 Houston Gemini 5. When you have completed your radar pass, we'd like to have you turn off your radar again, turn your computer off, and bring your horizon scanners back up.  
 Conrad Roger. We're still getting readouts; 248 miles.  
 Houston Roger.  
 Conrad That is it? Yeah -- lost the Pod.  
 Houston Gemini 5, Houston. Give us a call when you get powered back down again.  
 Conrad Roger, Gemini 5. We're powered back down now, Jim.  
 Houston Okay. Fine. Listen, for your information we'd like to have you complete that Laredo pass on the next pass and then it's time to get some sleep -- don't you think?  
 Conrad We heartily concur.  
 Houston Oh, yawn.  
 Conrad I got pretty sleepy on that last night-side pass.  
 Houston Roger, and listen, if you are getting sleepy go ahead and cat-nap around there.  
 Conrad Say again.  
 Houston Don't forget the good old cat-naps now, when you are floating around.  
 Conrad ...  
 Houston Gemini 5, Houston here. Have the thrusters been making enough noise to keep you awake?  
 Conrad The thing that really makes the most noise, and I was wrong and Gordo was right, is the M-1 experiment. It keeps clicking away merrily.  
 Houston Oh? It makes a lot of noise, huh?  
 Conrad Everytime it cycles, the valves really thump.  
 Houston Gemini 5, the Flight Director suggests that if you start liking the M-1, maybe it'll put you to sleep.  
 Conrad I like it! I like it!

This is Gemini Control, Houston, at 28 hours into the mission on the 18th orbit, with the spacecraft on the northern coast of Australia. During the last Stateside pass -- forty to fifty minutes ago now -- we brought equipment up which created a total power drain of 28 amps. This is by far the highest power load we've put on the spacecraft since very early in the flight -- in fact, since the second revolution. We had no difficulty with that power drain at all, and the oxygen reactant supply to the fuel cell continues to build up in pressure. We presently estimate the pressure within the tank at about 80 pounds. This has been a steady climb from a low value yesterday, or some twelve to fifteen hours ago, of the order of 65 pounds.

Among the visitors here in the Control Center this morning, is Mr. J. S. McDonnell -- Chairman of the Board of the McDonnell Aircraft Company of St Louis, prime contractor for the Gemini spacecraft -- watching with interest.

We have ready for you at this time a taped conversation between the crew and the Carnarvon station, which just ended a minute or two ago.

Carnarvon	Gemini 5, Carnarvon CapCom.
Conrad	Carnarvon, Gemini 5.
Carnarvon	Roger, I have some PLA and CLA updates -- are you prepared to copy?
Conrad	...
Flight	Update only the PLAs.
Conrad	....
Carnarvon	Roger, Flight. Area 20-4, first day, 21:14:40, 8+38, 15+09, roll left 51, roll right 69. The bank angles of all these are roll left 51, roll right 69. Area 21-4, first day, 04:08:28, 8+19, 15+39. Area 22-3, second day 00:09:13, 09+29, 15+28. Area.23-3, second day, 01:43:32, 8+33, 14+58. Area 24-3, second day, 03:17:20, 8+17, 15+41. Do you copy?
Conrad	...
Carnarvon	That last one was 03 hours, 17 minutes, 20 seconds.
Conrad	Roger, I'm copying them. Our status is 'green'?
Carnarvon	Roger, you look good on the ground.
Flight	Carnarvon, Houston Flight.
Carnarvon	Flight, Carnarvon.
Flight	The 22-3 and 23-3 recovery areas are marginal weather ...
Carnarvon	Roger. Gemini 5, Carnarvon. Areas 22-3 and 23-3 are marginal weather conditions; all the other weather conditions are good.
Conrad	Did I understand areas 22-3 and 23-3 are marginal weather?
Carnarvon	Roger.

Gemini Control, Houston, at 28 hours, 28 minutes into the flight, with the spacecraft rapidly approaching the coast of California. In the Hawaii pass -- just a very few minutes ago -- the Pilot Pete Conrad received updating on his star charts aboard, advice as to where and when to look for certain stars... Gordon Cooper, we suspect, is sleeping this time, the Surgeon isn't sure whether the lowered rates are an indication of sleep. He says sometimes Gordo just gives us these low heart rates down in the 50's just when he is relaxing, but the suspicion is that he may be sleeping. Earlier this morning, the crew breakfasted on a meal that included a grapefruit drink, six bites of chicken in the bite-size form -- that is, about a half an inch square -- and they also had corn chowder, peaches, and some small brownies. The total calories in such a meal is 932. As we swing across the

United States, the pilots will be looking down at that big eye-chart over, just north of Laredo. And, as we've been talking, the TM contact has been established with Guaymas. Let's cut in now live, on the Guaymas-Gemini 5 conversation.

Guaymas	Okay. We're looking pretty good here. We'll be standing by for you.
Conrad	Okay. Thank you.
Guaymas	Flight, Guaymas.
Flight	Go ahead.
Guaymas	Okay. Whenever ... drop out, the TM was on Acquisition. Did Hawaii send the TX?
Flight	Negative.
Guaymas	Okay.
Flight	Guaymas, we'd like to know the summary when you get solid TM.
Guaymas	Roger. We're getting good solid TM at this time ...

Gemini Control here. For some reason he had some bad TM at the start of the Guaymas pass -- perhaps they were out of range. However, the TM is solid now. Flight controllers didn't like the looks of the early summary, they asked for another one, and they are getting it now. It's cleaner data. Let's stand by and listen again.

???	Texas -- go Remote [Voice].
Texas	We did it, Jim.
???	Texas is Remoting.

Gemini Control here. In just a second or two, we should hear CapCom Jim McDivitt calling the spacecraft as the Texas site has been Remoted. Our Corpus Christi station now has TM solid.

???	Houston Texas let me know. We need a station for our air-to-ground Remoting.
-----	--

Gemini Control here. Still standing by. A rather untypical pass -- untypical in the sense of lack of conversation! We do expect Jim McDivitt to come up momentarily. Our Surgeon reports he's very satisfied with the medical telemetry he's receiving here. In just a very few seconds the spacecraft should be directly over Laredo, and ready to start that eye test.

Conrad	Houston, Gemini 5.
Houston	Go ahead.
Conrad	Now ... we could see Corpus alright. Our yaw angles weren't too good -- that you have us -- for that airfield under our nose, and we'd already gotten by it by the time we had picked up the airfield.
Houston	Okay. You were supposed to be [passing] quite away up north of the thing there, Pete -- it wasn't the best pass, but it was the best pass we'll have today.
Conrad	Okay.

Houston Say, I would like some information from your vision tester. Can you tell me what your scores were? You know -- the inside-the-spacecraft vision test?

Conrad Well, they are stored in the vision tester. We took them yesterday, and I would have to get them out for you. Do you want me to get them out?

Houston Oh, no. It's not necessary right now. I'll tell you what -- from now, we'd like to get back on the sleep cycle that we've got on our flight plan, and we really want you to get to sleep now.

Conrad We both got some, the last night-time.

Houston Say again.

Conrad We both got some, the last night-time.

Houston Okay, very good. Let me ask you a question -- did you pick up any good acquisition aids for that Laredo thing?

Conrad We had Houston in sight very clearly.

Houston Roget, Gemini 5, Houston here again. We'd like a summary of your experiments you've accomplished and where you think we stand. We'd like to have you prepare this, and then give it to us at some later time.

Conrad I'll give it to you right now!

Houston Okay, if you want to do that.

Conrad I'll read them down in the order that you sent them up -- on the first D-4s we deleted, both of them in Hawaii.

Houston Just a second -- say that again.

Conrad Two S-6s at 01:07:48, 01:09:22

Houston Pete, standby. Let me get that thing we read up to you. Okay, go ahead now.

Conrad Then we missed the first Apollo Landmark at the UHF test, got the second Apollo Landmark,

Houston Okay.

Conrad I believe -- yeah -- we missed the D-4, at 01:12:10.

Houston Okay, What was the time on it again?

Conrad 01:12:10.

Houston Okay.

Conrad Then we got the D-4 at sequence 4-11 and 4-12.

Houston Okay.

Conrad We deleted the D-6 sequence 134.

Houston Roger.

Conrad We did not do the D-4/D-7 at 420, but we did get the 4-10A, and the 405. We got the D-1 sequence 01, and D-4, sequence 422.

Houston Okay.

Conrad We got the radar sequence test 8.

Houston Okay.

Conrad We got the S-6, sequence 8. We're standing by for the S-7. Copy?

Houston Roger. You got the S-6, sequence 8. I missed the --

Conrad We had a view of a large storm at 03:17:20 to photograph, and we got it.

Houston Okay. That was an S-7 there -- right.

Conrad I'm sorry -- S-7.  
Houston 9-1 telemetry, at ...  
Houston Another thing here, Gemini 5 --I,O  
Conrad ...  
Houston Yes, I misread myself. We had it listed as D-6, and I meant to say D-6. Can you go through the first part of your thing again, the S-8?

Conrad Yeah, we deleted the first D-4/D-7, at Hawaii.  
Houston Okay.  
Conrad We got the two S-6 sequence 8's, at day one 07:48:26 and day one 09:22:49.

Houston Okay.  
Conrad We didn't get the Apollo 208 the first time.  
Houston Okay. I got that part of it, Pete. How about the S-8/D-13 at 01:06:20?

Conrad Say again, Houston.  
Houston Roger. How about the S-8/D-13 at 01:06:20?  
Conrad The vision test?  
Houston Yes.  
Conrad It was in the flight plan?  
Houston Yes -- actually we added it to the flight plan right there, Pete. It wasn't in the printed flight plan. I guess, though, they're part of the vision test that you did onboard, aren't they?

Conrad That's affirmative. We've just done one of those, and I also did the photometer window scan for the first day. I just did that before the Laredo pass just now.  
Houston Okay. You did the photometer window scan. Roger.  
Conrad Yeah -- first day window scan.  
Houston Okay.  
Conrad Now -- for photography -- we've taken about 85 S-5 and S-6 pictures.  
Houston You say you have taken about 85 S-5 and S-6. Is that right?

Gemini Control here. That apparently wraps up the conversation between the spacecraft and Jim McDivitt -- you heard Pete Conrad read off all the experiments they'd completed to date. And earlier I believe we heard references -- perhaps on the Hawaii tape that you may not have heard, as yet, which we will play for you at the conclusion of this pass -- some of the Planned Landing Areas (PLAs) in the early 20 revolution series. I caution that that was just a standard updating -- we have no plans to come down on orbits 20 or 24 though, the numbers for those orbits were passed along as a matter of flight planning routine. This is Gemini Control out, at 46 minutes pass the hour.

This is Gemini Control, Houston. We now are 29 hours 2 minutes into the mission, on the 19th revolution, down over the South Atlantic. We have ready for you at this time some tape that preceded the live portion on the last Stateside pass, and we'll break that and come back with about two minutes of additional conservation that followed a long drop in the live portion, at the point we broke over the States. So, with the tape racked up on Hawaii, we'll play that for you now.

Hawaii Gemini 5., Hawaii CapCom.

Conrad  
Hawaii Go ahead Hawaii, Gemini 5.  
Roger, I've got a flight plan update for you when you are ready to copy.

Conrad  
Hawaii Roger, wait one. Roger, go ahead.  
Roger. Sierra-7, first day, 20:04:43, sequence 03, Command Pilot only, followed immediately with a 04 -- that is, a sequence 04.

Conrad  
Hawaii Roger, understand -- S-7, 01, 01:20:43, Command Pilot only, sequence 03, immediately followed by 04.  
Roger. Also Sierra-8/Delta-13, first day, 18:34:38, sequence 03, pitch down 30 degrees, yaw right, 37 degrees.

Conrad  
Hawaii Okay -- 01, 18:34:38, sequence 03, for a S-8/D-13, pitch down 30, yaw right 37.  
Roger. We have a map update -- the first day at 19:36:48, under remarks it says: 128.1 degrees east, on rev 19.

Conrad  
Hawaii 09:36:49, 128.1 east, rev 19.  
Roger ... It's Right Ascension 2 hours plus 12 minutes

Conrad  
Hawaii Roger. Right Ascension, 2+12.  
Roger. Be advised you have a UHF 6 over the States.

Hawaii All systems look good, Flight.  
Flight Rog.

Gemini Control here. The updates Pete Conrad was receiving there from Hawaii, were for star chart look-angles and the like. As this 19th rev progresses, the flight plan calls for Pete Conrad to start a nap right now with the spacecraft down on the southern tip of Africa -- this nap to go on for several hours. And slightly before Carnarvon's acquisition Gordon Cooper is to purge both the hydrogen side and the oxygen side of the fuel cell, operation of which has shown steady improvement throughout the day. He'll purge it by flushing extra amounts of hydrogen and oxygen through the cell. A little later, there will be a medical data pass over Hawaii, and then as the spacecraft swings down off the western coast of Mexico Cooper will attempt to get some photographs of the tropical storm Doreen -- which is now located somewhere south of San Diego.

We have the tape now on the last two minutes of conversation from the Stateside pass, and we're prepared play it for you now.

Cooper We're sliding right down the coast of South America, and it looks pretty nice down there.

Houston Many clouds down there?

Cooper Quite a few big thunderstorms.

Houston I understand we've got a great big thunderstorm over Antigua, right now.

Cooper I believe we're already by that.

Houston Yep.

Cooper I didn't take a picture of that big thunderstorm over Antigua.

Houston Okay. Say, did you pick up any good landmarks over Laredo, that might help you acquire it ... in the next couple of days.

Cooper Yeah -- there's a big lake out there and we've got to get the lake boresighted with the Laredo airfield.

Houston Okay. One thing that you might keep in mind, the next time you go by there, and look at it -- there are some roads leading out to

those things that you are supposed to look at there, and there is some concern that you might mistake the roads for canals, so if you see that the road is misleading you, give us a call and we'll see if we can get the thing fixed up so it doesn't look like canals.

Cooper                    Okay. It looks like they had about as good weather as we could expect there.

Houston                    Okay.

Houston                    Gemini 5, we'd like to have you delete the Aeromed pass over Carnarvon -- we'll pick it up over Hawaii.

Cooper                    Okay, I understand -- skip the Aeromed pass over Carnarvon, pick it up at Hawaii.

Houston                    Roger. Your Primary O2 pressure looks very good -- we'll just leave it right in 'Auto' Heater.

Cooper                    Okay.

Gemini Control here, at 29 hours 32 minutes into the mission on the 19th revolution, with the spacecraft in touch with the Carnarvon station. Gordon Cooper's just completed a purge of the hydrogen side of the fuel cell, followed by a purge of the oxygen side of the fuel cell. It should be a relative brief pass, because we're on the 'high' side of Carnarvon.

We have been furnished some additional tracking on the REP from the NORAD people at Colorado Springs. They now estimate the REP is ahead of the spacecraft by a little more than 200 nautical miles, or 230 statute miles, the REP preceding the spacecraft. All's quite here, going very routinely. This is Gemini Control.

Gemini Control here, at 29 hours 46 minutes into the mission on the 19th revolution. We have the brief Carnarvon discussion racked up for you. In this discussion you'll note that half way through the purge on the oxygen side, Pete Conrad wakes up -- he had been sleeping for about an hour -- and he noticed that the crossover switch, as he referred to it, as the crossover valve, was not in the proper place for the purge. This needs a little bit of explanation. This switch has to be in an 'On' position so that the oxygen from both tanks can flow through the oxygen side of the fuel cell and this is what increases the flow which provides the purging action. It was not in the proper position on the first one so it was an invalid purge. However, it was repeated, and everything is moving along smoothly. Now Pete presumably has gone back to sleep.

Carnarvon                    Gemini 5, Carnarvon CapCom.

Cooper                    Go ahead Carnarvon, Gemini 5.

Carnarvon                    Roger. We'd like a purge on fuel cell Section One -- the O2 and the H2 -- exercising the same precautions on the O2.

Cooper                    Roger. You want a purge on Section One, O2 and H2, right?

Carnarvon                    Roger. Would you give us a mark on the start and stop times.

Cooper                    Roger, standby one.

Carnarvon                    Roger.

Cooper                    Crossover is 'On'.

Carnarvon                    Roger.

Cooper                    Purging H2 -- starting.

Carnarvon                    Roger.

Cooper                    Roger. We had a fuel cell Delta-P light, Section One.

Carnarvon                    Roger, we copy.

Flight                    Was that hydrogen, or oxygen?

Carnarvon That was hydrogen.  
 Cooper Are you ready for the oxygen purge?  
 Carnarvon Roger, go ahead.  
 Cooper Roger, oxygen purge -- starting now. Conrad's still asleep. We got a Delta-P light.  
 Carnarvon Stop the purge.  
 Cooper Roger, we've stopped.  
 Carnarvon Flight, we've got a Delta-P light on the O2.  
 Flight Roger.  
 Carnarvon Purge has stopped.  
 Flight Roger. Wha's your pressure readout on the ground?  
 Carnarvon Standby, we're getting it now -- that binary count is 19.00.  
 Conrad Carnarvon, this is Gemini 5.  
 Carnarvon Go ahead.  
 Conrad I didn't have the crossover on -- I woke up out of a sound sleep to ... so, let's try it again, I didn't have the crossover open.  
 Carnarvon That explains it.  
 Conrad Standby, Mark! Starting off the purge.  
 Carnarvon Roger.  
 Conrad Pressure is holding good, and no Delta-P light.  
 Carnarvon Roger, we concur.

This is Gemini Control, at 30 hours 2 minutes into the mission, on the 19th revolution. We just completed a medical data pass over Hawaii, in which the Command Pilot, Gordon Cooper, filled in the Surgeon with all of the medical quantities -- took the blood pressures and associate readings. Among other items that he reported, apparently the cuffs, the cuffs on Pete Conrad's legs, are not working as they should. Cooper reports that the little drive mechanism is actuating, but the cuffs are not inflating. The system is so designed that the cuff inflates just like a blood pressure cuff on your arm, and then it deflates, it stays down for four minutes, and then it inflates for a period of two minutes. The cycle continues, but apparently the inflation process is not going on. Apparent malfunction in the cuff. Conrad is leaving the cuffs on his legs, and we will see what develops there. We have the tape of the Hawaii conversation ready to play for you at this time.

Houston Gemini 5, Gemini 5, this is Houston here.  
 Hawaii Hawaii has TM solid.  
 Cooper Go ahead Houston, Gemini 5.  
 Houston Roger, Gemini 5, Houston here. We were trying to get you earlier. I just wanted to check out the Wheeling's voice loop. We've taken care of the situation.  
 Cooper Roger.  
 Houston Roger. How do you read us through the Wheeling?

[\*\* DMH's note -- The USS Wheeling, a relay ship stationed north of Midway Island, in the Pacific, had been having problems with its communications equipment.]

Hawaii Gemini 5, this is Hawaii.  
 Cooper Roger Hawaii, Gemini 5.  
 Hawaii Roger. We have your temperature. Standing by for your blood pressure.

Cooper Roger, sending blood pressure now.  
Hawaii Did you copy, Flight.  
Surgeon Gemini 5, this is Hawaii Surgeon. Your cuff is full-scale. We have a good blood pressure. Give me a mark when you begin your exercise.

Cooper Roger, starting exercise now.  
Cooper Ending exercise now. Sending blood pressure now.  
Surgeon Roger. Cuff is full-scale. We got a real fine blood pressure that time. Standing by for your water and sleep report.

Cooper Okay, one moment. Roger, on water -- the Command Pilot has had one ounce over seven pounds, and the Pilot has drunk not quite an ounce over six pounds.

Surgeon Understand. One ounce plus seven for the Command Pilot, one ounce plus six pounds for Pilot. How about sleep report?

Cooper Roger. The Pilot has been asleep here on and off. He has gotten a couple of real good naps, here and there. I've had about forty-five minutes of sleep on the previous night-side. The Pilot's M-1 cuffs appear to have quit working -- we can hear the little motor still actuating, but apparently the cuffs are no longer actuating.

Surgeon Roger, understand. Pilot's M-1 cuffs are actuating, but are not inflating.

Cooper That's affirmative.  
Surgeon Thank you Gemini 5, Hawaii Surgeon out.

This is Gemini Control, at 30 hours 32 minutes. Spacecraft Gemini 5 is now passing off the west coast of South America.

At this time, in the Control Center, the second shift controllers -- the White Team -- has taken over. Flight Director Chris Kraft and several of his controllers on the Red Team have left the building and are on their way to Building 6, the Press Center, for an interview with the newspaper and news media representatives.

Our new Flight Director, Gene Kranz, is making a status check, and we expect to have an up-to-date summary of the flight as it is right now during our next transmission. This is Gemini Control.

This is Gemini Control, at 31 hours and 41 minutes into the mission. The spacecraft is now passing over Guaymas, Mexico, on its 20th revolution around the earth. We've had a status check here in the Mission Control Center -- conducted by our Flight Director, Gene Kranz -- as follows. Aboard the spacecraft, the power situation continues to improve, the crew's able to consume more power, drawing something like 20 to 25 amperes, while the fuel cell pressure holds steady above 80 psi. From a medical point of view, the crew's in excellent shape after 31 hours of flight, there're no physical problems evident. Dr Dwayne Catterson, our Flight Surgeon, says the crew should have a little more sleep. He feels this will be taken care of naturally. At this time, in the spacecraft, Pilot Pete Conrad's in a sleep period -- he's due to awaken shortly, and Comand Pilot Gordon.Cooper will begin a sleep period. Cooper's also finished his second meal -- that's Meal-B for the second day. There is very little prograded activity slated for the crew for the next couple of hours. The flight crew has been performing some of the experiments that were prograded -- photographic experiments and visual experiments. They've been doing this activity, except when cloud cover and fuel cell checks interferred with this activity.

The controllers here in the Control Center appear to be settling down for a routine long-haul operation. Our last voice communication with the spacecraft -- we had two, one at 31 hours 31 minutes over Hawaii, at which time Hawaii advised the spacecraft crew that they were 'green' from the ground, and Cooper replied, "Everything is 'Go' up here," and then essentially the same thing happened when the spacecraft passed over the Guaymas tracking station. This is Gemini Control.

This is Gemini Control, at 32 hours 2 minutes into the mission. Spacecraft Gemini 5 is now passing over South America, and has started its 21st revolution over the earth.

The power situation aboard the spacecraft continues to improve. The pressure reading, the last one we had, showed 86.2 psi. Chris Kraft, the Number One Flight Director, has returned to the Control Center, and with him is Jim McDivitt. At this time, we've a cluster of three astronauts around the Spacecraft Communicator's console -- Jim McDivitt, Buzz Alin, who is on duty, and Neil Armstrong.

Our last voice communication with the spacecraft was over the Guaymas tracking station. The conversation was very brief, and we'll now play be that tape.

Conrad	Hi, Guaymas, this is Gemini 5.
Guaymas	Okay. How're you doing up there?
Conrad	Roger. Doing fine.
Guaymas	Okay. You're looking real good here on the ground. We would like you to turn the ECS O2 Heater switch to the 'Off' position.
Conrad	Roger. ECS O2 Heater to 'Off'.
Guaymas	Roger.
Conrad	It's 'Off'.
Guaymas	Roger. Are you all squared away? Do you need anything at all?
Conrad	Not at all, I don't believe so -- we're in pretty good shape.
Guaymas	Okay.
Conrad	Thank you.

This is Gemini Control, at 32 hours 32 minutes into the mission. Spacecraft Gemini 5 is on its 21st revolution of the earth, and is approaching the continent of Asia. At this time, in the Control Center, everything's quiet -- we have had no voice communication with the flight crew for approximately 30 minutes.

According to our flight plan, Command Pilot Gordon Cooper is asleep, and Pilot Pete Conrad will shortly be performing some checks aboard his spacecraft one -- of which will be a thruster illumination check, but that is sometime off. Our next voice transmission with the spacecraft is expected to take place over the Coastal Sentry Quebec tracking ship, south of Japan in the Pacific Ocean. This is Gemini Control, now at 32 hours 33 minutes into the mission.

This is Gemini Control, at 33 hours and 2 minutes into our mission. The spacecraft is now approaching the Hawaiian tracking station on its 21st revolution over the earth. Our last voice communication with the flight crew came a few minutes ago as Gemini 5 passed over the Coastal Sentry Quebec tracking ship. At that time, Pilot Pete Conrad reported that Gordon Cooper is in a sleep period. He also reported that the blood pressure cuffs -- built into his flight suit -- are working again; he said a kink had blocked the suit attachment and that he'd been able to fix it. The Coastal Sentry Quebec advised him to do a cabin lighting survey experiment -- this is a measurement with a photometer, to

determine the amount of light at various points inside the spacecraft. The conversation was somewhat garbled. This is Gemini Control.

This is Gemini Control, at 33 hours and 32 minutes into the mission. Our spacecraft is now passing over South America and has just begun its 22nd revolution over the earth.

Our last voice communication with the spacecraft was over Hawaii. At that time, Pilot Pete Conrad was advised to make a thruster illumination experiment over the Rose Knot Victor tracking ship located on the west coast of Peru. This particular experiment consists of pulse-firing the yaw thrusters and measuring the amount of light with a photometer. He will also take pictures of the thruster firing. The Hawaii CapCom observed that Conrad's voice sounded a little hoarse. Dr. Dwayne Catterson, here in Mission Control, expressed no concern over this, as his medical data indicates both members of the flight crew are in excellent physical condition. We'll now play back the taped voice communication between the spacecraft and the Hawaiian tracking station.

Hawaii	Gemini 5, this is Hawaii.
Conrad	Hello, Hawaii, Gemini 5.
Hawaii	Roger. I have a tracking test update when you are ready to copy.
Conrad	Garbled
Flight	Hawaii, that's a map update.
Hawaii	Roger. Go ahead, Flight.
Flight	That's a map update, Hawaii.
Hawaii	Roger. Gemini 5, this is Hawaii -- it's a map update, 2000559 degrees east. Copy?
Conrad	Roger, I understand map update 02000559 degrees east.
Hawaii	Roger. Star update, 20005, 2 hours 4 minutes 40 seconds. Got it?
Cooper	Star, 020005, 2 hours 4 minutes 40 seconds.
Hawaii	Roger.
Cooper	Did you get the tape dump okay?
Hawaii	That's affirmative. Gemini 5, this is Hawaii, we're standing by.
Cooper	Gemini 5's 'green' up here.
Hawaii	Roger.
Cooper	One thing Hawaii -- it looks like our hydrogen pressure is building up ... the point if any, you're getting close to it. Can you check on that?
Hawaii	Roger, Gemini 5.
Hawaii	Gemini 5, could you give me a readout. We hold 275 pounds.
Conrad	Okay, I read up here that my quantity is 95 percent and pressure is 630.
Hawaii	Roger.

This is Gemini Control, at 34 hours 2 minutes into our mission. Spacecraft Gemini 5 is passing over the Tananarive tracking station, [on Madagascar, just] off the southeast coast of Africa. Command Pilot Gordon Cooper is still in his sleep period, and in approximately 17 minutes he will have exceeded his own record of traveling in space. As you may recall, on May 15, 1963, in spacecraft 'Faith 7', Gordon Cooper went 22 revolutions, for a total time in space of 34 hours 20 minutes. Although he's asleep at this time and is scheduled to be asleep for another hour, we think he will be awake approximately 60 minutes from now

and we'll attempt to advise him as the spacecraft approaches the Rose Knot Victor, located off the west coast of South America. And we hope, at that time, he will be awake and we can get some comment from him. However, if he's still asleep, we will advise Pilot Pete Conrad, and I'm sure we'll get some comment from Pete. At this time, the spacecraft is in drifting flight, all systems appear to be in very good condition, and there are no immediate experiments coming up. This is Gemini Control.

This is Gemini Control, at 34 hours 20 minutes 4 seconds into the mission. Spacecraft Gemini 5 is passing just south of Okinawa, on the 22 revolution over the earth. Command Pilot Gordon Cooper's still in his sleep period as he surpasses his own previous record for spaceflight -- it was just a little over two years ago that Cooper, in his 'Faith 7' spacecraft, closed out the Mercury Program with a 22-revolution flight that lasted 34 hours 20 minutes. Here are some additional figures on our spaceflight program: the total American spacecraft flight hours has now reached more than 191 hours, and total time in space for all American astronauts since we are now flying with multiple crews is more than 338 hours. We expect to advise Cooper of his new personal record in about 40 minutes, as spacecraft Gemini 5 passes over the Rose Knot Victor, our tracking ship located off the coast of Peru. This is Gemini Control.

This is Gemini Control, at 34 hours 32 minutes into the mission. Spacecraft Gemini 5 is now over the Pacific Ocean, approaching the Hawaiian tracking station. Activity aboard Gemini 5 at the present time is in a very low key. Command Pilot Gordon Cooper is in his sleep period, and the Flight Surgeon aboard the Coastal Sentry Quebec said data received on the ground just a few minutes ago indicates that Cooper's sleeping soundly at this time. The Hawaiian station reported, I mean the Coastal Sentry Quebec reported again that Pilot Pete Conrad sounded a little hoarse but Dr Dwavne Catterson, our Flight Surgeon here in the Mission Control Center, said the Pilot's condition is excellent and he feels no concern, and will make no special moves at this time. This is Gemini Control.

This is Gemini Control, at 34 hours 57 minutes into the mission. Spacecraft Gemini 5 is approaching the Rose Knot Victor, our tracking ship located off the west coast of Peru, and is approaching the end of its 22nd revolution over the earth. Pilot Pete Conrad has just advised -- over Hawaii -- that his flight commander, Gordon Cooper, awakened from his sleep while passing over Hawaii. We plan a voice communication with the spacecraft over this tracking ship, and we'll transmit to you now live.

RKV	Gemini 5, Gemini 5, this is RKV CapCom, over.
S/C	....
RKV	Roger, Gemini 5.
S/C	...
RKV	Gemini 5 this is RKV CapCom. We have your systems 'Go' on the ground. We have the PLA update for you -- acknowledge when ready to copy.
S/C	...
RKV	Gemini 5 this is RKV, for a short count -- 1, 2, 3, 4, 5, 5, 4, 3, 2, 1. How do you read?
S/C	...
RKV	Roger. Are you ready to copy?
S/C	...

RKV Area 25-delta, 04:09:27, 18+56, 23+17, roll left 51, roll right 69. Area 26-delta, 05:44:32, 16+53, 21+13, roll left 51, roll right 69. Area 27-delta, 07:23:03, 13+38, 18+ 07, roll left 51, roll right 69. Area 28-2, 08:58:17, 11+21, 16+23, roll left 51, roll right 69. Area 29-2, 10:33:39, 9+57, 15+27, roll left 51, roll right 69.

Conrad Okay, give me area 25-delta again.

RKV Roger, area 25-delta, 04:09:27, 18+56, 23+17, roll left 51, roll right 69.

Conrad Okay, this is Gemini 5 here. We got them all.

RKV Roger. The weather in 26-delta and 27-delta is marginal, but all other areas are good.

Conrad Roger. 26- and 27-delta marginal areas.

RKV That's affirmative.

RKV Gemini 5 this is RKV CapCom. Is the Command Pilot sleeping at this time?

Conrad He woke up a few minutes ago. He's gone back to sleep again.

RKV When he wakes up, we'd like to pass on our congratulations to Gordo for surpassing his previous flight record.

Conrad Sure will. Have another look at the flight plan.

RKV Roger. Flight, this is RKV CapCom, did you copy?.

Flight That's affirmative, RKV.

RKV Roger. Do you have anything else.

Flight Negative, not at this time.

RKV Roger. Standing by.

Conrad RKV, Gemini 5.

RKV Roger. Go ahead, Gemini 5. This is RKV.

Conrad How's the weather down there?

RKV Well, we're rocking and rolling!

Conrad What's your position off Lima [Peru].

RKV Our position off Lima -- we're 21 south 85.

Conrad Roger.

RKV We're about 700 miles off the coast at the present time. We've got someone on deck trying to find you [visually].

Conrad Okay, we hit sunset a while back. There's no sun shining on the spacecraft right now, so I doubt if you can see it.

RKV Roger. We saw you last night.

Conrad Oh, you did?

RKV Affirmative.

That was live voice communication between the Rose Knot Victor tracking ship and the Gemini 5 spacecraft, which is already on its 23rd revolution over the earth. This is Gemini Control, at 35 hours 6 minutes into our mission.

This is Gemini Control. We're 35 hours 32 minutes into our mission. At this time, the spacecraft is passing over south-central Africa. We've had no voice communication with the crew since we gave you the live-voice communication over the Rose Knot Victor tracking ship, quite some time ago. At the present time, our spacecraft is in an orbit with an apogee of 210 statute miles, a perigee of 103 statute mile, and an orbital lifetime is approximately eight days -- based on standard atmosphere. Aboard the Gemini 5 spacecraft, activity is at

low key. According to our flight plan, Command Pilot Gordon Cooper is still in a sleep period. The Pilot Pete Conrad is about to perform a hydrogen purge and on the next pass, the next revolution over the RKV, he'll give a medical data pass. This is Gemini Control.

This is Gemini Control. Spacecraft Gemini 5 is now 36 hours 2 minutes into its flight, on the 23rd revolution, and now is passing over the Pacific Ocean -- having just left voice range of the Coastal Sentry Quebec, our tracking ship located just south of Japan.

Flight Director Gene Kranz is keeping the spacecraft crew tasks to a minimum, so they can get a maximum amount of rest. The only activity slated, was a fuel cell purge over the Coastal Sentry Quebec and we lost voice communication before the Pilot could report results. The only other activity slated in the upcoming hour or so, is a medical pass over the Rose Knot Victor, a tracking ship located off the west coast of Peru. The Coastal Sentry Quebec reported that the spacecraft's systems looked normal on the telemetry data. This is Gemini Control.

This is Gemini Control, at 36 hours 32 minutes into the flight. The Gemini 5 spacecraft is approaching the Rose Knot Victor tracking ship, located off the coast of Peru, and about to begin the 24th revolution of the earth.

Flight Surgeon Dr Dwayne Catterson reports both flight crew members in top physical condition. He is satisfied with the food and water intake reports that have been made since the flight began, and he anticipates no difficulties at this time from the medical standpoint.

The fuel cell oxygen pressure situation aboard Gemini 5 continues to show a slow but steady improvement. Pressure was up to 91.3 psi -- this was reported during the last pass over the Coastal Sentry Quebec tracking ship, a few minutes ago.

Here in the Mission Control Center, there is a relaxed atmosphere as Command Pilot Gordon Cooper continues his sleep period. Pilot Pete Conrad has the spacecraft powered down and in drifting flight. The flight controllers are taking advantage of this lull to talk over the mission, and also to take a coffee break. This is Gemini Control.

This is Gemini Control, at 37 hours 2 minutes into our mission. Spacecraft Gemini 5 is now on the 24th revolution, and is passing over west-central Africa.

We had voice communication with Pilot Pete Conrad as the spacecraft passed over the Rose Knot Victor tracking ship, about ten minutes ago. He reported on the food and water intake for himself and for Command Pilot Gordon Cooper. And a sleep report. Our Flight Surgeon, Dr Catterson, indicated great satisfaction with the report and said both men are in good physical shape. Conrad said that the suit temperatures had settled at a low 49 degrees for some time, but that he had recently warmed them up a bit. This is Gemini Control.

This is Gemini Control, after 37 hours 32 minutes of flight by the Gemini 5 spacecraft. Our flight crew is now passing over the Coastal Sentry Quebec tracking ship in the Pacific Ocean, on its 24th revolution around the earth. Both crew members are awake at this time, and soon they'll be ready to perform the Human Otolith Function Experiment, designed to check the astronaut's ability to orient themselves in flight without normal visual assistance. The tester used, is a pair of special lightproof goggles. In one eyepiece is a light source, in the form of a moveable white line. The astronauts will rotate this line and then position it. A readout scale on the eyepiece then tells them how accurately they were able to place the white line with respect to the horizon.

We have voice communication with the Coastal Sentry Quebec at this time, and we'll attempt to play back the tape as soon as the contact is completed. This is Gemini Control.

This is Gemini Control. Spacecraft Gemini 5 is on its 24th revolution, passing over the Pacific Ocean, after 38 hours 2 minutes of flight. A few minutes ago, while the spacecraft passed over Canton Island, astronaut Buzz Aldrin in Mission Control, by a Remote Voice transmission through the Canton Island station, briefed Pilot Pete Conrad on the status of spacecraft's systems as they read-out on the ground. He also discussed some of the plans for spacecraft maneuvers to come.

We'll now play back the tape between Spacecraft Communicator astronaut Buzz Aldrin and pilot Pete Conrad aboard the spacecraft Gemini 5.

Houston	Gemini 5, Gemini 5, Houston CapCom, over.
Conrad	Houston CapCom, Gemini 5. Go ahead.
Houston	Roger, Pete. Got some up-dates on Primary Landing Areas. Are you ready to copy?
Conrad	... ready to copy.
Houston	Area 26-charlie-1, second day, 05:15:22, 25+18, 31+11, roll left 51 degrees, roll right 69 degrees, weather is good. Area 26-C2, second day, 06:53:01, 23:48, 29:58, roll left 51 degrees, roll right 69 degrees, weather good. These areas replace 26-delta and 27-delta.
Conrad	Roger, copied. And understand, they replace 26- and 27-delta.
Houston	Roger. These are both area 26. However, they'e about one rev apart -- we changed revs right between the two areas.
Conrad	Okay.
Houston	Could I get a run-down from you on the spacecraft systems, as you see them now?
Conrad	All systems are 'green'. We just took a cabin temperature reading of 72, with a 58, uh 56 percent cabin -- it's dry as a bone in here.

That was the taped communication between astronaut Buzz Aldrin in Mission Control and Pilot Pete Conrad aboard the Gemini 5 spacecraft.

In our Gemini - NASA News Room here in Houston, we've been receiving calls from various parts of the United States throughout the evening from people who report that they may have seen Gemini 5 pass over the United States. As a matter of fact, since this White Team of controllers came on duty at 2 p.m. this afternoon, the Gemini 5 spacecraft has not passed over the United States. It has passed well below [that is south of] the United States throughout this day. This is Gemini Control.

This is Gemini Control, at 38 hours 32 minutes into the flight. Spacecraft Gemini 5 is now approaching Kano, Nigeria, on its 25th revolution around the earth. About twenty minutes ago, as the spacecraft passed over the Rose Knot Victor, our tracking ship off the coast of Peru, Command Pilot Gordon Cooper made a Type 1 medical report, comprising an oral temperature, a blood pressure check, thirty seconds of exercise with a Bungee cord exerciser, followed by a second blood pressure. The Flight Surgeon on the RKV, or Rose Knot Victor, reported his data good. He asked Cooper if he or Conrad were experiencing any physical discomforts -- Cooper gave a negative reply. The Rose Knot Victor reported to Cooper that all the spacecraft systems looked good from that tracking station.

Here in the Mission Control Center, the Blue Team of flight controllers has reported in for duty. The shift change is due to take place in approximately one-half hour, and the new

controllers coming on duty are being briefed on the status of the flight. This is Gemini Control.

This is Gemini Control, at 39 hours 2 minutes after liftoff. Spacecraft Gemini 5 is now over central China, and one minute from acquisition by the tracking vessel Coastal Sentry Quebec, near Okinawa. During the pass over the CSQ, Command Pilot Gordon Cooper is scheduled to conduct a routine purge of the liquid hydrogen and liquid oxygen systems of the Section Two of the fuel cells. Also, a delayed-time playback of a TM tape is scheduled during this pass. Pilot Conrad is still sleeping at this time. This is Gemini Control.

This is Gemini Control, at 40 hours 32 minutes after liftoff, and Spacecraft Gemini 5 is now over south-central Asia, on a track that'll carry it over the Philippine Islands. The next station contact will be with the tracking vessel Coastal Sentry Quebec, in 6 minutes. While Pilot Conrad still sleeps, Command Pilot Cooper is scheduled to do a cabin lighting survey in the heads-down attitude -- that is, with the spacecraft flying inverted. This is Gemini Control.

This is Gemini Control, at 41 hours 2 minutes after liftoff. Spacecraft Gemini 5 is now over the south-central Pacific, near the end of the 26th revolution, and just now going into darkness. The spacecraft will be in contact with the tracking ship Rose Knot Victor in about 15 minutes from this time. Right now, it is assumed that Pilot Conrad is still asleep.

Spacecraft Communicator Arda Roy aboard the tracking vessel Coastal Sentry Quebec reported to Flight Director John Hodge, here in Mission Control, that Gemini 5 looked real good on his telemetry readouts during the pass over that station some 19 minutes ago. This is Gemini Control.

This is Gemini Control, at 41 hours 32 minutes after liftoff, and spacecraft Gemini 5 is now crossing the South American coast, just at about the equator. It should be in voice and telemetry contact with the Canary Island tracking station in eight minutes from now. During the pass over the Canaries, Command Pilot Cooper will conduct a purge of the Section One fuel cell oxygen and hydrogen systems. He'll also conduct a routine run of the electrostatic charge experiment, in which measurements are made of the electron and ion flux interaction with the spacecraft. This is Gemini Control.

This is Gemini Control, at 42 hours 2 minutes after liftoff. Spacecraft Gemini 5 is now passing across northern India, on a ground track that will carry it over the city of Bangkok, Thailand, and Townsville, Australia. The next station to be in contact with Gemini 5 will be the tracking ship Rose Knot Victor, some fifty-one minutes from now.

We have a tape recording of the pass over the Canary Islands tracking station earlier in this, the 27th, revolution. Let's hear that tape now.

Canary	Gemini 5, this is Canary CapCom.
Cooper	Roger Canary, this is Gemini 5.
Canary	Roger. We're expecting a fuel cell purge from you on Section One, on both hydrogen and oxygen.
Cooper	Roger. Section One, hydrogen and oxygen purge.
Canary	That's affirmative.
Cooper	Roger, stand by one...
Canary	Roger.
Flight	How does that purge look?

Canary Okay. We don't have any indication on it yet. We're doing a bit count at 21 on EA 02.

Canary Gemini 5, Canary, have you started your purge as yet?  
Cooper ... switch on now. Getting ready to start.

Canary Roger  
Cooper Actuator ... now ... hydrogen off. Reading 91 percent quantity on hydrogen. Going to purge oxygen now.

Canary Do you copy, Flight?  
Flight Roger, Canaries.  
Canary He's purging now.  
Flight Roger  
Canary Quantity is running roughly 88 percent and pressure is still holding. Roger, Gemini 5, it's looking good on your pass.

Cooper Roger. It looks good here. Canaries, did you ever find out from Houston why they wanted us to turn our OAMS Heater 'Off'?

Canary Roger, standby one.  
Cooper Okay.  
Canary Houston, did you copy?  
Flight Say again.  
Canary He wanted to know why you wanted the OAMS Heater 'Off'.  
Cooper ... on account of we still have our RCS Heater on ... and the warning light's on it.

Canary He reports the RCS Heater light's on ... Was he requested to turn the OAMS Heater 'Off'?

Flight Yeah, we turned it off because the temperature is ample, and we just wanted to save the power.

Canary Flight advises that the reason for turning the OAMS Heater 'Off' was that the temperature was ample and they wanted to conserve on power.

Cooper Okay, Flight.  
Cooper ... is off on Section One.  
Canary Roger, thank you. Everything still looks good here on the ground.

Flight Is your dump done, Canaries?  
Canary I've got a flight plan update for you.  
Cooper Roger.  
Canary Are you ready to copy?  
Cooper Roger, go ahead.  
Canary Okay. It'll be a UHF pass at 10 hours 39 minutes 40 seconds, sequence number 04. It will be Delta-V, 5 minutes 10 seconds. Do you copy?

Cooper Roger. Got that.  
Canary Okay, we've got about thirty seconds left of pass-time here.  
Cooper Roger. We got that.  
Canary Okay, you're looking good.  
Cooper That's very good.  
Canary Flight, we've got twenty seconds to go. Do you have anything else?

Flight Negative.  
Canary Rog.

Flight	How's he look?
Canary	Looks real good. Pressure stayed up. We're running ... for [Experiment] MSC-1.
Canary	Flight, we just had LOS, and we were getting modulation on dump right up until LOS.
Flight	Very good.

That was a tape of Gemini 5's pass over the Canary Islands tracking station up through Loss Of Signal. This is Gemini Control.

This is Gemini Control, at 42 hours 32 minutes after liftoff. Gemini 5 is now over the south-central Pacific, east of the Australian city of Brisbane and due north of New Zealand. Gemini 5 is still 21 minutes from contact by the tracking ship Rose Knot Victor. There has been no contact with Gemini 5 since the pass over the Canary Island station earlier this rev. Gemini 5 has just entered darkness, toward the end of the 27th revolution. This is Gemini Control.

This is Gemini Control, at 43 hours 2 minutes after liftoff. Gemini 5 is now crossing the Venezuelan coast, at the beginning of its 28th revolution. The spacecraft will be picked up by the Antigua tracking station in about a minute. The Spacecraft Communicator here in Mission Control will be able -- through the Voice Remoting -- to talk to the spacecraft. We have a delayed-time playback of telemetry data scheduled for the Antigua pass.

Pilot Conrad is still sleeping, and Command Pilot Cooper is scheduled to have a meal consisting of chicken and gravy, bacon and egg bites, beef sandwiches, finished of with a chocolate pudding. This is Gemini.Control.

This is Gemini Control, at 44 hours 2 minutes alter liftoff. Spacecraft Gemini 5 is now crossing the east coast of Australia, and has just had Loss Of Signal at Carnarvon. Routine Planned Landing Area (PLA) updates for revolutions 30 through 34 were passed up to the spacecraft.by the Carnarvon Spacecraft Communicator Charles R "Chuck" Lewis.

The Pilot is scheduled to be awakened shortly and be briefed by the Command Pilot on the status of the spacecraft systems and flight plan activities. During the pass earlier on this 28th revolution over Antigua, the Command Pilot made a food and water usage report, and the Canary Island Spacecraft Communicator reported that the spacecraft looked good on his telemetry readouts. This is Gemini Control.

This is Gemini Control, at 44 hours 32 minutes after liftoff. Gemini 5 is now near the and of the 28th rev and will be within telemetry and voice range of the Eastern Test Range stations... starting in about four minutes. During this pass, tests of the various spacecraft UHF antennas will be made, primarily to determine the antenna efficiency at low elevation angles. This is also a scheduled meal time for the Pilot, and a nap period for the Command Pilot. The Canary Island tracking station should acquire the spacecraft in 17 minutes from now -- a medical data pass is scheduled for the Pilot on the Canaries pass. This is Gemini Control.

This is Gemini Control, at 45 hours 2 minutes after liftoff. Gemini 5 is now over the Libyan desert in north Africa, well into its 29th revolution. The Carnarvon tracking station in Australia should acquire the spacecraft in 21 minutes. During the Carnarvon pass, flight plan updates will be passed up to the crew.

We now have a tape of the pass of Gemini 5 over the Grand Turk Island, Antigua, and Bermuda stations. Let's hear that tape now.

Houston	Gemini 5, Gemini 5, Houston CapCom.
Cooper	Good morning. Gemini 5 here. Go ahead.
Houston	Rog, Gemini 5. You're looking good here on the ground. Be advised that there's a medical data pass on the Pilot at Canaries, with an acquisition time of 10:49:29. Copy?
Cooper	Affirmative.
Houston	And we've got a couple questions here for you. Elliot [See] will ask you.
See	We're interested in what you might have seen -- or whether you saw -- D-4/D-7 deflections during the time you had the REP out and were looking at it right after putting it out. We would like to know if you saw a cool infrared indications on the ... meter.
Cooper	Yeah, I think I did, Elliot, but it was fairly low. And I didn't get to look at it until rather late in the game. We had a couple of problems when we put the REP out which we'll discuss when we get back [to Earth].
See	Roger. Then you'd say you think you got some data on it, but you don't know just how much.
Cooper	I think we did, and I don't know how much.
See	Okay. I've got one other real quick comment -- we're about to LOS here -- we think the hydrogen tank is real close to venting, so you should see its pressure level-off pretty quickly.
Cooper	Okay.
See	They've a question here for you on the secondary scanner -- did you have a problem with the primary?
Cooper	No, I just put it over there awhile ago to see how it was working and also we were passing over a vast amount of clouds coverage -- more than we had seen before -- and it seemed to be firing the thrusters quite a lot, so I just took a look at the secondary... and left it there.
See	Okay. Well, I guess we're about to lose you now.

This is Gemini Control, at 45 hours 32 minutes after liftoff. Gemini 5 is now nearing Loss Of Signal at the Carnarvon, Australia, tracking station midway through the 29th rev. The Command Pilot is scheduled for a nap at this time. The next contact will be with the Stateside stations -- starting about 34 minutes from now.

We now have a tape recording of a Canary Islands pass earlier in this revolution. Let's hear this tape now.

Canary	Gemini 5, this is Canary CapCom. We have a good oral temp with you ... would you pump us the blood pressure. Gemini 5, Canary station, you've got the full-scale. We have a good blood pressure. Give me a mark when you begin exercise.
S/C	...
Canary	Say it again.
Cooper	We're on primary horizon scanner, now.

Canary Roger. Gemini 5, Canary station, we've got the full-scale. We have a good blood pressure. Standing by for a water and food report.

Cooper The Command Pilot's taking his two hour nap-period now. The Pilot slept about 4 hours 45 minutes ... over a six hour period, very soundly. And I'll get you the water in just a second. Total water to date on the Command Pilot is 12 pounds, and on the Pilot, 11 pounds 3 ounces.

Canary Roger. We'd also like to find out if you've completed meals 'A' and 'B' of day one.

Cooper No, we left a fair amount of that, and we're into, or just getting ready to eat, oh, let me see, just getting day two meal 'Charlie'.

Canary Roger, Canary Surgeon, out.

Canary Gemini 5, this is Canary CapCom. We have about a minute and a half left in this pass. All systems are 'Go' from the ground. We're showing that you have fuel cell H2 Quantity Read 'On'.

Cooper Yeah, it's affirmative -- standing by to see if it'll vent.

Canary Roger.

Cooper What do you show on the ground?

Canary Roger, we're reading 360 psi on the ground.

Flight Canary, this is Houston Flight.

Cooper Okay, my scale is sitting right at -- a little below 800.

Canary Roger

Cooper About 795.

Flight Canary CapCom, this is Houston Flight.

Canary Go ahead Flight.

Flight We believe that's been venting for the last couple of hours.

Canary Flight advises that they agree that it has been venting off-and-on for the last three hours.

Cooper Okay, roger. I can't seem to pick it up on this gauge.

Canary Roger.

Canary Flight, we have about twenty seconds,

Flight Roger.

Canary He's also turned that Quantity Read 'Off'.

Canary We've has LOS.

Flight Roger.

Canary Is there any information that you'd like?

Flight No, how did it look, good pulse?

Canary Real good again.

Flight Okay. Standby.

This is Gemini Control, at 46 hours 2 minutes after liftoff. Gemini 5's approaching the southwest coast of Mexico. It will be acquired by the tracking stations of the Eastern Test Range in about four minutes, for a pass lasting thirteen minutes. During the pass over the ETR, astronaut David Scott, Spacecraft Communicator here in Mission Control, will pass up to the crew the maneuver-data for the so-called 'Phantom Agena' rendezvous exercise planned for the next three to four hours of the mission. This is Gemini Control.

This is Gemini Control, at 46 hours 32 minutes after liftoff. Spacecraft Gemini 5 is now over central Africa, early in its 30th revolution. Here in Mission Control, a handover

from the Blue Team to the Red Team is underway -- each flight controller briefs his relief man on the events of the past eight hours. We have now a recording of the recent Stateside pass, let's hear that tape now.

Houston Gemini 5, Gemini 5, Houston CapCom.  
 Cooper Hello Houston CapCom, Gemini 5. Go ahead.  
 Houston Rog. We have a continuation of your flight plan. It's a lengthy one. It'll take us probably about eight or ten minutes to read it out. I'll release the [transmission] key after each update, and if you have a question come back at me right then, okay?

Cooper Okay. Give it to me by the times, and I'll have to turn the pages too, so take it slow.

Houston Okay, it's sequential all the way. It includes all the experiments, plus the maneuvers for this 'phantom' rendezvous [plan], copy?

Cooper Rog.  
 Houston Okay, all set to copy?  
 Cooper Rog.  
 Houston Okay, all set to copy?  
 Cooper Rog. All set to go.  
 Houston Ah, rog. The first one is a power up for your UHF number one, the time is 13:00:00, and all the times are for day number two. Copy?

Cooper Roger power-up, 13:00:00 for UHF-1.  
 Houston Roger. D-1, 13:10:00, sequence 02, remarks -- Venus, speed 30.

Cooper That's D-1, say again the sequence.  
 Houston 02.  
 Cooper Okay, 13:00:00 sequence 02, Venus.  
 Houston Rog. Speed 30.  
 Cooper Okay.  
 Houston D-1, 13:20:00, sequence 03. Alpha Centaurus, speed 60.  
 Cooper Okay.  
 Houston D-6, 13:41:46, sequence 012, mode 019, pitch 30 degrees down, yaw 02 degrees right, speed 1000 -- one thousand, F-4.  
 Cooper Roger.  
 Houston UHF test, 13:47:05, sequence 01, pitch 20 up, roll 0, yaw 14 left/

Cooper Give me that one again please.  
 Houston Roger. UHF test, 13:47:05, sequence 01, pitch 20 up, roll 0, yaw 14 left.

Cooper Okay.  
 Houston S-5 and s-6, 14:01:00, during African pass.  
 Cooper Say the remarks.  
 Houston That's -- during the African pass.  
 Cooper Go ahead.  
 Houston Okay, backup. One on your UHF test that you just copied has a delta-T of 6+42.

Cooper Roger, delta-T, 6+42.  
 Houston Roger, okay. Next test, D-4/D-7, 14:04:00, sequence 420, over Kano.

Cooper Roger.  
Houston S-1, 14:26:12, remarks -- sunset time.  
Cooper Roger.  
Houston Then power up, this is for UHF number two, 14:10:00. That's to power up your [inertial] platform.  
Cooper That's the time to power it up? Or the time to test?  
Houston That's the time to power up the platform.  
Cooper Roger.  
Houston D-6, 15:16:59, sequence 20, mode 09, pitch 30 down, yaw 09 right.  
Cooper Say again the pitch -- you faded.  
Houston Pitch 30 down.  
Cooper Roger -- 30 down.  
Houston Speed 60 on that last one.  
Cooper Speed 60.  
Houston UHF test, 15:21:19, sequence 02, delta-T 6+43; pitch 0; roll 139 left, yaw 0.  
Cooper Roger.  
Houston S-6, 15:45:00, sequence 07, no remarks.  
Cooper Roger.  
Houston Maneuver -- this is a preparation for your maneuvers. 15:50:00, platform 'On', cage [Big-End Forward] BEF.  
Cooper 15:50:00, platform cage BEF.  
Houston That's affirmative. This next one is another maneuver. 16:15:00, aline BEF, rate gyros 'On'.  
Cooper Roger.  
Houston Next one is another maneuver preparation. 16:45:00, computer on, address 25 90 201.  
Cooper Roger, computer on, address 25 90 201.  
Houston That's affirmative. The next one is for apogee adjust, 16:50:17, translate forward to zero the [Incremental Velocity Indicators] IVIs.  
Cooper Run me the time again.  
Houston 16:50:17.  
Cooper Roger, translate forward.  
Houston That's affirmative. Next one is D-6, 16:56:49, sequence 134, mode 09, pitch 30 down, yaw 0 degrees, speed 125.  
Cooper Roger, say again the time.  
Houston 16:56:49.  
Cooper Okay.  
Houston Next one's a maneuver preparation. 17:20:00, aline platform [Small-End Forwrd] SEF, computer on address 25 00 158.  
Cooper Okay, maneuver prep, 17:20:00, aline platform SEF, computer 25 00 158.  
Houston That's affirmative. Next is a phase adjust, 17:34:58, translate forward to zero the IVIs.  
Cooper What kind... was it?  
Houston That's your phase adjust.  
Cooper Go ahead.

Houston D-4/D-7, 17:42:00, sequence 410-bravo, and 407, over Carnarvon.

Cooper Go ahead.

Houston Another maneuver preparation, 17:50:00, aline platform SEF, computer on, address 27 00 150, yaw 90 left.

Cooper Okay, maneuver prep, 17:50:00, aline platform SEF, address 27 00 150, yaw left 90.

Houston That's affirmative. The next one is a plane maneuver, 18:06:50, translate forward to zero the IVIs.

Cooper Okay, go ahead.

Houston Okay, we've about three more. If I don't get to them, we'd like to advise you to power up as necessary to minimise your power usage, and power down in between the various maneuvers and experiments. We estimate that your maximum power during the burns will be about 40 amps. With the platform on only, about 30 amps, and otherwise about 20.

Cooper Okay.

Houston Okay, then you can turn your platform off after each UHF test, but I think you'll see that in the sequence. Platform on during all the simulated maneuvers and rendezvous exercises.

Cooper ...

Houston Gemini 5, I think we have LOS, if you copy, we'll pick you up over the Canaries.

Good morning. This is Gemini Control, at 47 hours 2 minutes into the mission. We're over Carnarvon on the 30th revolution.

It's been determined that we'll attempt the a manoeuvre adjustment this morning. This is the exercise that Chris Kraft outlined yesterday afternoon, where we'll assume a 'Phantom Agena' and make four or more maneuvers to catch up with it.

These maneuvers are to begin at 32nd perigee. The first maneuver will be a retrograde 20 foot-per-second firing maneuver. This'll have the effect of adjusting the orbit down to 168 nautical miles in a 90 mile perigee. At the 33rd apogee we plan a posigrade maneuver of 15.8 feet-per-second which will make another orbital adjustment to 99.1 nautical miles on the perigee, 168.4 on apogee. We'll do a slight out-of-plane burn at the 33rd perigee, a 15 feet-per-second burn using aft thrusters, ... followed by a 'co-elliptic' maneuver on the 34th apogee, leaving us with an orbit of 107 nautical perigee and 168.2 apogee. They will bring up the platform to perform these maneuvers. They'll use their Incremental Velocity Indicators onboard, setting up the desired feet-per-second burn on them, and then burning those numbers off the indicators, so we can't give you a percentage time of the duration of the burns right now.

Within the last half hour, the Red Team has come into the Control Center. They are all in place now. And at 47 hours 4 minutes into the mission, that's our status. This is Gemini Control. We do have for you a taped conversation of the Carnarvon pass completed about twenty minutes ago, and we are ready to play it for you at this time.

Canary This is Canary CapCom.

Cooper Come in Canary, this is Gemini 5 here.

Canary Roger. We're expecting a purge on Section Two of the fuel cell on this pass. We'd like to get a Quantity Read... before we start the purges.

Cooper Flight  
Canary CapCom, this is Houston Flight.  
Fuel cell hydrogen is 93 percent, the cell is 800 psia.

Cooper Flight  
Canary CapCom, this is Houston Flight.

Canary Flight  
Roger, Flight.  
Before you do that purge, we have some flight plan updates we would like to relay through your site.

Canary  
You want to get the flight plan updates completed prior to the purge?

Flight  
Roger -- no remarks on your line.

Canary  
Okay. Go ahead, update.

Houston  
Gemini 5, Houston CapCom. Do you read?

Conrad  
Go ahead.

Houston  
Roger. We'll pick up where we left off on the maneuvers. Are you ready to copy?

Conrad  
Yeah. I've got 180650 planning, planning maneuver.

Houston  
Roger. Affirmative. The next one is S-8/D-13, 18:24:58, sequence 03, pitch 30 down, yaw 08 right.

Conrad  
Roger.

Houston  
Next is a maneuver preparation, 185000, align platform SEF, computer on, address 25 00 164.

Conrad  
Roger. 185000, align platform SEF, computer on, 25 00 164.

Houston  
That's affirmative. Next one is reverse co-elliptic, 19:04:18, translate forward to zero the IVIs.

Conrad  
Roger.

Houston  
And there's a correction on your UHF testnumber one, which was at 13:47:05. If you'll go back to it, I'll pass you the correction.

Conrad  
Go ahead.

Houston  
It's pitch 90 up -- vice 20 up.

Conrad  
Roger. Pitch up 90 degrees.

Houston  
That's affirmative. And did you copy the rest of the instructions relative to keeping the power down and powering off after the UHF test?

Conrad  
Yeah. With initial platform power, you wanted 1300. Right?

Houston  
That's affirmative.

Conrad  
Okay. We got it. I don't know whether we'll get it all done or not (chuckle).

Houston  
Well give it a try. And be advised -- do not use the aft-firing thrusters at any time. Copy? Forward-firing thrusters.

Conrad  
Just the forward-firing thrusters?

Houston  
No, negative. Do not use the forward-firing thrusters at any time, forward.

Conrad  
Roger. Do not use the forward firing thrusters.

Houston  
This is because we don't want to use the oxygen in the fuel cell oxygen tank.

Conrad  
Okay.

Houston  
We don't want to disturb it. And all the thrusting will be done with the aft-firing thrusters.

Conrad  
Roger.

Houston                    Okay. And then observe the fuel cell O2 pressure and don't let it drop much at the high power loads -- when you are all powered up and thrusting.

Conrad                    Okay. Canary, standby for the H2 purge commencing right now on Section Two.

Canary                    Flight, we're not going to be able to get quite all our purge in -- we've got a minute and thirty seconds.

Conrad                    Purge. Going to O2.

Flight                    Roger. Tell him to go ahead and finish it. It doesn't matter if it's beyond your pass. Tell him to just keep an eye on that pressure drop. Canaries?

Canary                    That's affirmative. Gemini 5, Canary CapCom. We'll be unable to monitor the end of your purge. We have approximately one minute. Continue your purge to completion, and continue to monitor that pressure.

Conrad                    We have a minute and twenty seconds to go. Everything looks fine.

Canary                    Roger. Everything looks fine here, so far.

This is Gemini Control again. For a recap on our weather this morning, the Weather Bureau is supporting us here in the Gemini Control Center, and advises that the weather conditions around the world remain very good for at least two additional days of orbital operations, since Typhoon Lucy has moderated and moved completely out from the west Pacific recovery area. A recovery ship will be available on nearly every revolution during the next 24 hours or more. The west Atlantic landing area between Florida and Bermuda has ideal weather -- scattered clouds, winds mainly less than 10 knots, and waves of no more than 3 feet -- will continue into Tuesday morning. In the eastern Atlantic areas, 300 miles west of the Canary Islands, clouds will be scattered and normal trade winds of 15 to 20 knots will raise waves of between 4 to 6 feet.

For possible landing areas in the mid-Pacific, 500 miles north of Honolulu, the skies remain partly cloudy, winds have increased somewhat in the last 24-hours, reportedly as high as 24 knots, raising seas to heights of 5 to 6 feet. The wind in the western Pacific area has decreased to about 15 knots, the sea has subsided to around 4 or 5 feet, and probably will decrease even further. Some cloudiness remains, but showers will end during the day. About the only large scale weather phenomenon to be over-flown during the next 24 hours is tropical storm Doreen, in the eastern Pacific about 1000 miles south, and a little west, of San Diego. A whole family of cold fronts have moved up near the 30th parallel of latitude in all three oceans of the southern hemisphere. This is Gemini Control, at 15 minutes after the hour.

This is Gemini Control, at 47 hours 19 minutes into the mission. Let me recap on that rendezvous maneuver sequence -- four principal maneuvers; the first a height adjustment, the second, a phasing adjustment, the third, a very slight plane change; and the fourth, the co-elliptic maneuver. We have the recorded conversation between the Gemini 5 spacecraft and the Kano ground station ready to play for you at this time.

Houston                    Gemini 5, Gemini 5, this is Houston.

Cooper                    Go ahead, Houston, this is Gemini 5.

Houston                    Roger. We've a medical data pass over Carnarvon that's going to conflict with a couple of your experiments. It's coming up in

just a few minutes. We'd like for you to scrub the medical pass over Carnarvon -- we'll do it over Canaries.

Cooper Scrub the medical data pass over Carnarvan.

Houston Gemini 5, Gemini 5, this is Houston here. That's correct, scrub the medical data pass over Carnarvon and we will pick it up over Canaries.

Cooper Okay. Can you get a verification on the shutter speed on the D-2 experiment ...

Houston The speed of the D-2 is 1/25th.

Cooper And what is the ...

Houston Say again.

Cooper What's the lens?

Houston Gemini 5, Gemini 5, this is Houston here.

Cooper Go ahead, Houston, Gemini 5.

Houston Roger. That's the Questar lens.

This is Gemini Control, at 47 hours 32 minutes into the mission. In the last 24 hours, each of the men, apparently, has slept a total of about ten hours -- that's in contrast to the first day's operation when each man slept a total of only two hours. Obviously the Flight Surgeons are very happy over this pick-up. They indicate, however, the Flight Surgeons indicate, that the men still aren't eating quite as much as is expected. They are eating each of the meals, but apparently not all of the meal, so their calorie intake is somewhat down. The doctors are completely satisfied that the men're getting their share of water, however.

The fuel cell oxygen reactant supply pressure has climbed to something over 91 psi -- this is a 10 psi increase over this time yesterday which, in turn, was a 10 psi increase over that time the day before. So things are looking up, in that department. The raising pressure is generally attributed to the repeated purges. This is slightly reducing the reactant supply quantity. We're on the 30th revolution with a pass coming up across the United States and everything is looking very nice at 47 hours 33 minutes into the mission.

This is Gemini Control, Houston, at 48 hours 34 minutes into the mission. Within the last 60 seconds, the spacecraft has gotten in touch with the Carnarvon Station. They are in discussion now -- they will be discussing the maneuvers that are presently planned for the 32nd, 33rd, and 34th revolutions.

In the course of the last pass across the States, Gordon Cooper and Pete Conrad were both awake. We had a visitor here in the Control Center. Mrs Conrad was here and at one point during that pass, the Flight Director said that Pete might say "Hello" to his wife. He did, of course, and ask his only question -- how're the boys doing. Mrs. Conrad, behind the glass here in the viewing area waved back and by lip reading, we understood that she meant to convey to him the word "fine", and Jim Mcdivitt passed this up. The crew made a rather intricate UHF test -- a test of their various antennas -- over the Bermuda area. A test wherein they oriented the spacecraft antennas directly to the ground and then read them out on the ground station. We anticipate that -- at some point in this next hour and a half -- the spacecraft will be given a 'Go' for a 47-rev flight. They have not yet been given that 'Go'. When they do, we will break in and advise you.

This is Gemini Control, at 48 hours 36 minutes into the mission. We've several tapes racked up which we can play for you at this time, beginning with the Stateside pass. Let's have the tape now.

Houston Gemini 5, Houston here, standing by.

Cooper Roger Houston, Gemini 5. We've burned out the boresight reticle ...

Cooper You ought to have a little talk with the flight planning people -- the timeline's just a little bit too full. We can't get the equipment [for experiments] put together and torn apart by the time they're putting these things together [with one experiment straight after the other].

Houston Okay, Gordo, I'll take a check on that. Let me ask you one thing -- have you tried all the combinations of cords and utility outlets that go along with the sight just in case it's not the sight, but one of the cords instead.

Cooper Roger.

Houston Okay, I sort of suspected you had.

Houston I think one of the flight planning problems, Gordo, is that we're not blessed with too, uh, the weather's not too good today, so they're trying to stick them in where they have good weather. I think it's putting a bunch of them together.

Cooper Yeah, well some of these, like on our time, there were just bang, bang, bang, right together. We just can't do them that close together. That's rather poor planning.

Houston Okay.

Cooper Yeah, we've got to watch these lens changes, we got every piece of gear in the spacecraft floating around in here trying to keep up with it.

Houston Roger, roger.

Houston Hey, Pete. Gemini 5, Houston here. Why don't you make a few comments for the better sex.

Cooper Hello there! We just passed over Tampeco, Mexico.

Houston Pete, Jane's up here -- why don't you say something.

Conrad Hello there! How're the boys doing?

Houston She says -- "fine".

Conrad That's good. We just passed Monterray which seemed to be under the overcast, and I tried to get the area around Tampeco, and I got one quick picture of it.

Houston Say, listen, you know you might sort of be thinking about that Loreda pass, and what the weather is. If you don't think you can hack that -- it looks like you've already gone by that area -- but if it looks to cloudy up there, why don't you let us know.

Conrad Okay.

Conrad We may not get this UHF test either, because we never did get the platform fully alined before the D-6 run.,

Houston Okay, understand -- you're not going to be able to do the UHF test. Is that correct?

Conrad We'll give it a try here. We're trying to get back back in here and get the platform alined -- a little bit anyhow -- just so we can do it.

Houston Okay.

Houston Gemini 5, Houston here. I believe, if you can't get the platform alined completely, when you get there, just put it in Orbit Rate, and then, when you're through, come back down, if you have

the horizon scanners on, maybe we can get an idea from what the horizon scanner output is and what the platform angles are, and what the difference between the real angles were and what your indicated ones were.

Conrad We'll throw it in here real quick. We just -- just a second until it gets caged.

Houston Rog.

This is Gemini Control again. In that conversation you heard Gordon Cooper advise that the boresight reticle on his side of the spacecraft -- in his window -- apparently is no longer operative. This is a standard telescopic sight. It uses a light in a prism affair where the light is reflected and magnified and a series of crosshairs. It helps them in the various experiments to sight on various objects. The indication here, is that he will probably just make on his window another 'X' mark with a grease pencil, or devise some other way to arrange a sight on his window for the other experiments as we progress through the flight. The reticle has two elements within -- he has tried both and neither is operative.

We also heard some moderate complaints about the pace of the flight plan. Pete Conrad indicated that there was a lot of gear loose in the spacecraft, a lot of lenses -- much activity in there. They suggested a general slowing down of the flight plan activities, and this will probably be the case. We will not do all of the experiments, should we proceed with these maneuvers. We've been talking with the flight plan back room here in the last few minutes and they generally agreed that during the maneuvering time, we'd slow down the pace of some of the camera experiments and other measurements. Up coming now, we're running with a fairly high power drain. With the computer on and the platform up the power drain should be well up in the 30-amp area. Over Texas, we are planning a D-6, that is, a terrain picture-taking exercise. And, somewhere between Texas and the Cape, we should reach a decision point on a 47-revolution flight. Now, we have the tape racked up on the Canary conversation on this last half orbit, and we'll play it for you now.

Canary Roger, Gemini 5. Would you give us a Quantity reading on the fuel cell H2 please.

Canary We have a good blood pressure, standing by for your water and sleep report.

Conrad Roger, on the sleep we both slept. The Pilot slept for about a full six hours last night. The Command Pilot, during that same time, slept for a good three hours. Just a moment and I'll read you the water report.

Canary Would you switch fuel cell Quantity Read to H2 please.

Canary Quantity read to ECS O2 please.

Conrad Roger. And right now, the Command Pilot has drunk 11 pounds of water, the Pilot has drunk 10 pounds 3 ounces.

Canary Surgeon Gemini 5, Canary Surgeon, understand, 11 pounds, Command Pilot, 10 pounds 3 ounces, Pilot. Is there any indication on the degree of depth of sleep for the Command Pilot?

Cooper Pretty deep.

Canary Surgeon Roger, Canary Surgeon, out.

This is Gemini Control in Houston, at 49 hours 2 minutes into the mission. We've just completed a Canton Island pass, a swing across the Pacific. During the course of that pass,

our Flight Surgeon, Doctor Berry, talked with the Command Pilot. He wanted to check on the sleep cycle. Cooper replied: "We're both well rested, we slept all last night; got a good night's sleep". Cooper also advised that they were doing some extra exercise in addition to that associated with pulling on the bungee cord during the medical data passes -- he didn't elaborate on the type of exercise, he simply affirmed that they're doing additional exercise. Other conversation involved checking the reticle which, apparently, is no longer operative on Gordon Cooper's side of the side of the spacecraft. That's the little prism which is used for sitting and magnifying ground-sited objects. It apparently is no longer functioning. We also queried him about the food intake, but the transmissions got ragged at that point, and we couldn't determine exactly how much of the Day Two rations the crew has eaten. This is Gemini Control out, at 4 minutes after the hour.

Gemini Control, Houston, here, at 49 hours 17 minutes into the mission of Gemini 5. Within the past 30 seconds CapCom Jim McDivitt has passed up the decision of the Flight Director that we're 'Go' for at least a 47-revolution flight. I repeat, he's been given a 'Go' for a 47-1 area, and the new values for a landing in that area are being set up by the Digital Command System. The spacecraft is currently over the southern United States, and we're proceeding now to undertake the planned maneuvers -- coming up on the next revolution. This is Gemini Control out.

Gemini Control, Houston, here, at 49 hours 32 minutes into the mission of Gemini 5. The spacecraft is now out over the central Atlantic. At the conclusion of that last pass, Pete Conrad was going through a series of antenna checks over Bermuda, switching from one antenna to the other, probably using a total of a half a dozen or more -- this involved a lot of test counts and that sort of thing. At the end of that, Jim McDivitt, in one of the lighter touches that we've noted during the flight, said that he reminded Conrad that he certainly did like to talk a lot -- at this point, Conrad came back with what would he like him to do, "sing a song?" and he promptly launched into a song that went like this: "Over the ocean, over the blue, here's Gemini 5 singing to you." At the conclusion of that brief song, the Command Pilot advised that Conrad sings slightly off-key.

We'll be coming up on the first rendezvous maneuver at 10:50 Central Standard Time. Everything is progressing very nicely. This is Gemini Control.

This is Gemini Control, at 49 hours 57 minutes into the flight, on the 32nd revolution. The oxygen supply pressure is presently reading -- at the last check -- 98 pounds, another rise from the figure quoted to you this morning. And the quantity in the fuel cell's oxygen supply shows 92.8 percent. We're estimating that we have onboard about 270 pounds of maneuvering fuel, as opposed to approximately 360 pounds of liftoff. We estimate that the series of maneuvers we'll perform in chasing the 'Phantom Agena' today will use another 50 to 60 pounds of fuel -- about 25 percent of the onboard supply.

At this time, we've the tape of the latter portion of the last Stateside pass racked up and ready to play for you now.

Houston	Gemini 5, this is Houston, here. You needn't acknowledge this message -- be advised, you have a 'Go' for 47-1. We'll send up the TR's and the retro loads for your computer -- so you will be getting some ... lights.
Conrad	Gemini 5, roger. Waco was under the clouds, so we did look at Dallas -- the Dallas airport there.
Houston	Okay. You did Dallas instead of Waco, right?

Conrad Affirmative.  
Houston Are you all done?  
Houston Gemini 5, Houston -- have you completed your pass there?  
Conrad Roger.  
Houston We've got a couple of messages for you. We'd like to have you turn your computer 'Off' at this time -- just power the computer down.  
Conrad Roger. Computer is 'Off'.  
Houston We'd like to have you leave your platform 'On' after your UHF test, rather than powering it down. We'd like to have you leave the platform 'On' throughout the rendezvous -- from this point on.  
Conrad Check.  
Houston The roll angle for the UHF test has been changed from 139 to 132, so your new roll angle should be 132 -- I say again 132 degrees roll left.  
Conrad 132 degrees roll left.  
Houston Roger. And you got your 'Go' for 47-1, right?  
Conrad Roger.  
Houston Okay. You sure do talk a lot.  
Conrad Say again.  
Houston I said you sure do talk a lot.  
Conrad What did I say?  
Houston Shifting antennas.  
Conrad What do you want me to do -- sing you a song?  
Houston Think you can?  
Cooper He sings off-key.  
Conrad "Over the ocean, over the blue, here's Gemini 5 singing to you."  
Houston Now, by God, back to talking!  
Conrad That's a good idea.  
Houston Get you a job with the Houston Astros.

Gemini Control here, at 50 hours 32 minutes into the mission, on the 32nd revolution. During the last pass, there was further discussion on the amount of food eaten. The crew confirmed that they were then in the process of eating Meal 2-charlie of the second day's ration. This comprised orange/grapefruit drink, tuna salad, apricot pudding, toasted bread cubes, and date fruit cake, for a total calorie intake of 923 calories. They indicated they're not eating all of the meals, they're just not that hungry. The Surgeon apparently is satisfied with that estimate.

This first maneuver burn is presently planned for fifty minutes after the hour, or about fifteen minutes from now. It'll take place at 32.7 degrees north 105.3 degrees west, about 10:50 Central Standard Time. That would be at a point out somewhere in West Texas, we would estimate, perhaps in New Mexico. We've the Carnarvon conversation ready to play for you at this time.

Carnarvon Gemini 5, Carnarvon CapCom.  
Cooper Go ahead Carnarvon, Gemini 5.  
Carnarvon Does the Pilot have the oral temp probe in his mouth for the data pass this trip?  
Cooper Coming down now. Blood pressures full-scale.

Carnarvon Surgeon Your cuff is full-scale.  
 Gemini 5, Carnarvon Surgeon. We have a good blood pressure, and we have a good oral temp. Standing by for exercise on your mark.

Conrad Surgeon Standby. Mark!  
 Your cuff is full-scale. We've a good second blood pressure. I assume neither of you has had any sleep since your last report, but I will take a water update, if you have it.

Conrad Surgeon Alright.  
 Gemini 5, Carnarvon Surgeon. Standing by for your water report.

Conrad Surgeon Roger. We don't have any further water report since the one we gave MCC.

Carnarvon Surgeon Roger.  
 Gemini 5, Carnarvon CapCom. What's your status for [landing] area 47-1.

Conrad Carnarvon Everything still looks good.  
 Roger. You're 'Go' on the ground -- I'll update your TR clock for a 47-1.

Cooper Just a minute. Carnarvon are you ready to copy our readouts for the 47-1?

Carnarvon Cooper Roger, go ahead.  
 IA reads 7 amps; 1B reads 7; 1C reads 8; 2A reads 6.5; 2B reads 6.0; 2C reads 6.9; 'A' bus voltage 26, RCS [Ring] 'A' pressure 290, temp 70; Ring 'B', 280, temp 60; left secondary O2, 54 00; right secondary O2, 52 50.

Carnarvon Roger, I copied. And that data was read passing the East Coast at about ...

Flight Carnarvon I want to speak to [Carnarvon] Surgeon.  
 You said you read that data on the East Coast?

Flight Surgeon ...

Surgeon Carnarvon Surgeon ...

Conrad Carnarvon I should ... time for that data in just a second.

Flight Roger.  
 How about talking to both the Pilot and the Command Pilot and getting how much food they've eaten and what meals they had.

Conrad Surgeon That was read at about 15:18:00.  
 Roger -- you want how much food, and which meals.

Flight Confirm that they had three meals on the first day, what meals they've eaten, and how much they've eaten out of each one of the meals that they've had.

Carnarvon Roger, I'm transmitting your TR.

Carnarvon Roger. You've got it for 47-1.

Conrad We've received it.

Carnarvon Gemini 5, Carnarvon CapCom. Standby for Carnarvon Surgeon.

Surgeon Gemini 5, Carnarvon Surgeon. We're still trying to get the precise handle on your food consumption. Would you confirm for us that Command Pilot and Pilot both had three meals on day one. Over.

Cooper                    You know the MCC Surgeon just questioned us on that last time over the States, and we gave him a complete, detailed report. Maybe they haven't gotten the word out yet.

Surgeon                    Negative. We didn't get it.

Carnarvon                That's negative -- Flight said that they didn't get it.

Cooper                    Tell him to ask the Surgeon back there.

Carnarvon                Gordo, they had trouble receiving through Canton when you were giving that report, and they're asking for it again.

Cooper                    We've had four meals to date. Now we are on Meal 2-charlie. We had two meals on the first day and two yesterday. Now, we are not eating all of it, ... we feel fine, but we didn't eat all of it.

Flight                     Okay, that's very good -- that's the information we wanted.

Carnarvon                Gemini 5, Carnarvon CapCom. We're standing by.

Cooper                    Roger. Did you get that report on the food.

Carnarvon                Roger -- loud and clear.

This is Gemini Control, at 50 hours 46 minutes into the mission, and we're coming up on the first burn. This will be performed in about ten minutes. The burn duration has been set at 28 seconds. It'll be in a retrograde position and will reduce the velocity by 21.1 feet-per-second. Pete Conrad is to give us a mark, at the start of the burn, and at the end of the burn, and the Guaymas station has been declared the prime for the exercise. They've been in contact for about a minute now. Let's tune in live now, and see how the burn goes.

Conrad                    I checked the accelerometer bias here. I have a little drift, so I'm waiting until the last minute, and I'm going to catch up.

Guaymas                 Okay. You did catch up now, right?

Conrad                    Confirmed.

Guaymas                 Okay.

This is Gemini Control. The ground voice you're hearing is that of Ed Fendell, the CapCom at the Guaymas station. Stand by for additional conversation. The burn should start within this minute.

Conrad                    5, 4, 3, 2, 1, Burn! Copy?

Guaymas                 Okay. I got all that. Give me your IVI readout. Starting the TM.

Conrad                    Roger. They are all zeros.

Guaymas                 Okay. Before and after, alright? What's your attitude hold?

Conrad                    Right on the money.

Guaymas                 Okay. Wnat thrusters did you use?

Conrad                    The aft-firing thrusters.

Guaymas                 Very good. Attitudes look real solid right now on the ground.

Conrad                    Roger.

Guaymas                 Flight, Guaymas, did you copy all that?

Flight                     Roger.

Houston                  Gemini 5, Houston CapCom.

Conrad                    Roger, Houston, Gemini 5. Burn's complete.

Houston                  Roger. Will you read out 80, 81, and 82 for us, please?

Conrad                    Roger. At 80 was 00004.

Houston                  Roger.

Conrad At 81 was zero, and at 82 was zero.  
Houston Roger. Thank you.  
Conrad I take that back -- 82 was 00007.  
Houston Okay. Four zeros and a seven.  
Conrad We're swinging around to [attitude] 000, and getting ready for the D-6 sequence 134165649. Is that time still good?  
Houston Roger, but be advised that the target will be slightly downrange from -- when using those pointing angles that we gave you, and the start will be somewhat behind.  
Conrad Roger. We got a real good look at Houston today.  
Houston Roger. Was it raining down here?  
Cooper Yeah -- we could see Clear Lake and Taylor Lake.  
Houston How about the [Mission Control] Center? Could you see the Center?  
Cooper No -- there's a cloud right there some place over you, I think. I can't quite make it out.  
Houston Okay.  
Cooper I see a big long white trail of smoke down the center of the bay, though.  
Houston Gemini 5, Houston here. We'd like to send up your DCS load now for your next maneuver -- anytime you are ready.  
Conrad Roger. Do you want to wait one. Okay. You can send it up any time.  
Houston Roger -- understand you are ready now.  
Houston Gemini 5, Houston. You needn't answer this transmission, but we sent the DCS load, and we will give you an update based on tracking over Ascension. White Sands confirms you maneuver, we've gotten their tracking already.  
Conrad Got the ships in sight. We're pitching on now.  
Cooper Houston, Gemini 5. We didn't get him. It's pretty hard to --  
Conrad There he is! There he is!  
Cooper -- but we have a ship's wake in sight.  
Houston Okay. Go ahead and do it on that then. The target that you're looking for should have a pair of wakes. He should have the destroyer guard out there with him.  
Cooper Unfortunately, ... the field of view on the scope and the camera are too small, and I can't find him in it.  
Houston Roger. I'm sure the water complicates, because one piece of water looks like another piece.  
Conrad Yeah. Well it's amazing how well I can see through this crust on our lens, but I can't get it on the track with it because the field of view is too narrow.  
Houston How about the full-powered telescope, Pete?  
Conrad No, the field of view's too narrow on it.  
Houston Okay. Listen -- I've got an update for you on the time of this burn.  
Conrad ... if Gordo could stick it right on him, then I'd have it.  
Houston Roger. I've got an updated time for your next maneuver.  
Conrad Say again.

Houston I've got an updated time for your next maneuver. Are you ready to copy?

Conrad We're ready to copy, Houston, go ahead.

Houston Okay. 02173435 -- I say again 02173435.

Conrad Roger. And you've loaded this into the computer -- correct?

Houston We've loaded the delta-V in the computer. We have to relay the times by voice.

Conrad Roger. I understand that, but you've loaded the maneuver load?

Houston Roger. It's been loaded and verified. We'll check the Stateside tracking data and give you any further updates that're necessary over Ascension.

Conrad Roger.

Houston Gemini 5, Houston.

Conrad Go ahead Houston, Gemini 5.

Houston We have a Section Two purge at this time also. Will you be able to handle that?

Conrad Over Ascension? Or right now?

Houston Right now.

Conrad Okay.

Houston Pretty busy, isn't it?

Conrad Fairly! Stand by for hydrogen purge -- mark!

Houston Roger.

Conrad Hydrogen purge complete. Stand by for O2 purge on my mark. Mark!

This is Gemini Control, at 51 hours 2 minutes after liftoff. We're out on the edge of the Antigua acquisition area. Pilot Pete Conrad just reported that the oxygen purge is complete. We're out on the edge of the Antigua acquisition area.

The burn performed over Mexico and Texas, based on the White Sands radar tracking, was successful. It would appear that we brought the apogee down from 207 statute miles down to about 194 statute miles. The perigee remains at 103.9.

Shortly after the burn, you heard discussions which involved requests for a readout of 80, 81, and 82. Those are computer addresses that are used to check the effect of the burn with the ground data versus the onboard computer data, and a series of zeros and several other numbers were read out.

As the spacecraft swung east over the Cape and out over the ocean, the pilots attempted to get a picture of the prime recovery carrier, the Lake Champlain, parked some 600 miles off the Cape. Apparently, they were not successful in getting a picture with the big Questar lens. They primarily blamed the loss of the retical on Cooper's window, as the reason for not getting it. We're continuing to swing down across the Atlantic. This is Gemini Control out at 51 hours 4 minutes into the mission.

This is Gemini Control, at 51 hours 32 minutes into the mission. In about two minutes from now, Gemini 5 will attempt another maneuver burn. It has to be performed precisely 34 minutes 31 seconds after the hour. It will be a posigrade maneuver. They'll use the aft-firing thrusters. They'll be oriented Small-End-Forward, in zero pitch and zero yaw. They will be trying to achieve a delta velocity, or velocity increment of 15.2 feet per second. The burn will require 20 seconds duration. If successful, it'll raise the perigee to 113.5 statute miles, that's an estimate, and it would leave the apogee where it is right now at 194 statute miles. Again, if successful, we'll have a new period of 94.9 minutes -- that's a

revolution period. The burn has to take place at 32.7 degrees south, 63.9 degrees east, at the apogee point, in terms of orbital mechanics. We won't be in contact with the spacecraft during the period of this burn, but Carnarvon will pick it up about five minutes later. We'll bring you additional information when Carnarvon acquires. The pressure in the fuel cell O2 bottle is, at our last reading, 101.3 pounds, which represents a steady increase, shown throughout today. This is Gemini Control, out.

This is Gemini Control, Houston, at 51 hours 56 minutes into the mission. We have confirmed, based on the Carnarvon contact within the last few minutes, that the required burn was performed over the Indian Ocean as scheduled. The burn was performed in the platform mode. The exact delta-V achieved was 15.7, instead of 15.2, but this should put us very close to the 113 mile perigee and 194 mile apogee. We've no further information for you at this time. Earlier, we heard references to computer address 80, 81, and 82. This is a reference to the addresses in the computer which read out velocity increments in tenths of a foot per second -- as opposed to the Incremental Velocity Indicator windows on the left side of the spacecraft, which readout the velocity changes in merely feet per second -- for a more precise check on the burn.

Just after the Carnarvon contact, the crew was to perform several deep space exercises with their infrared sensors onboard -- they were to look at the Milky Way. They were also to look at the star Deneb [in Cygnus]. They found that they couldn't get a proper setting on the star Deneb without that reticle on the left window, however, they were going ahead and attempting to orient toward the Milky Way.

They also showed over Carnarvon, according to ground readouts, that the spacecraft was pulling something over 40 amps, slightly over 40 amps. This is the peak power load that's been on since probably this second revolution, with no apparent degradation to any of the electrical systems. That would have been created by the fact that the computer was on, the platform was up, very likely the cabin lights were up along with, perhaps another dozen systems. We have the Carnarvon tape racked up for you, and ready to play at this time.

Carnarvon	Gemini 5, Carnarvon CapCom.
Conrad	Gemini 5. Go ahead.
Carnarvon	Roger. Would you give me a time of your burn and the readouts for 80, 81, and 82.
Conrad	Be advised that the time of the burn was 17:34 :31, and that 81 and 82 were zero, but in getting them to zero we wound up with a half-foot more burn -- we burned 15.7.
Carnarvon	Okay, what's 80 -- 15.7?
Conrad	No, 80 was minus 0005.
Carnarvon	Roger.
Conrad	Okay, the reason for that was we burned in the 'Platform' Mode to see how well it would do, and it got just a little sloppy, and we got some up, down, left and right in, which we had to take out..
Carnarvon	Roger, I understand.
Conrad	Next time, I'll put it in 'Rate Command'.
Carnarvon	You say next time you would try 'Rate Command'.
Conrad	Yeah, we did that before and that's much better than this 'Platform' run.
Carnarvon	Roger. Okay. I've got enough data for your next maneuver ...

Conrad Okay, ready to copy.  
Carnarvon Okay. Time of burn is 18 hours 06 minutes 26 seconds, delta-V is 14.6, time of burn delta-V is 19 seconds, pitch 0, yaw minus 90, aft-thrusters for 25 all zeros, for 26 all zeros, for 27 00146. This is maneuver number three now playing. Do you copy?

Conrad Affirmative.  
Carnarvon Roger.  
Conrad Okay.  
Carnarvon We have some trouble with your tape dumps. At this time, we'd like for you to switch your dc-to-dc Converter to 'Secondary'.  
Conrad Roger -- dc-to-dc Converter to 'Secondary'.  
Carnarvon Roger. Leave it in that position, and we'll take a tape dump over the States this pass and evaluate ...  
Conrad Roger. Be advised that at the ... site we're unable to ... the D-4, we'll get the D-4 410-bravo -- we'll get the 407 if we have time.  
Carnarvon Did you say you'd get 410-bravo?  
Conrad No, we can't get that one, we've been trying with the telescope over here, and we haven't been successful. We'll do 407, if possible.  
Carnarvon Roger. Flight, did you copy air-to-ground?  
Flight Roger. We'd like to ask an estimate of how much he used the lateral thrusters.  
Carnarvon Gemini 5. Could you give us an estimate on how much you used the lateral thrusters?  
Conrad Well, we kept one foot ... down and we were 4 tenths of a foot right.  
Carnarvon Roger.  
Flight We copied.

This is Gemini Control, at 52 hours 22 minutes into the mission of Gemini 5. Out over the Wheeling, at a point 20.4 degrees north, 178.2 degrees east -- that would be roughly a thousand miles west of Hawaii -- the crew did perform that plane-change maneuver. They changed the plane of their orbit approximately two-hundredths of a degree. The burn was reported at 15.4 feet per second, total duration about 19 seconds. They've been in contact with the States now for several minutes, and we expect a quiet pass. They will pitch down thirty degrees and will attempt the vision testing experiment, reading out the ground charts north of Laredo, Texas. Back over Hawaii, Cooper reported that to date both the Pilot and the Command Pilot have consumed a total of about twelve pounds of drinking water. We expect a quiet pass this time because of the eye check, and we'll come back with anything significant. This is Gemini Control, out.

This is Gemini Control, Houston, at 52 hours 32 minutes into the mission. During the Laredo eye chart test, apparently Pete Conrad couldn't get a reading from his side. He was to make a reading with his eye tester, and so forth. However, Gordon Cooper reported he could see the squares. He did not attempt to make any read outs. He said he could see the squares and could see the lines inside the squares. Apparently they're having difficulty in lining up that eye chart out there, because of the lack of land contrast around, the lack of sighting points to come up on the exact square targets. Continuing on from there, Conrad reported that the skies are quite clear over the Caribbean, and the Gulf of Mexico. He said: "We're getting an awfully good look at Florida, the Bahamas, and Cuba today."

At this time, Jim McDivitt, Capsule Communicator here in the Mission Control Center, is still in conversation with the spacecraft, which is now down on the far end of the island chain, in generally the Antigua area.

The next maneuver they're to perform will occur 30 minutes from now, at 31 minutes after the hour. This will be a co-elliptic maneuver. They're to fire the aft-firing thrusters to achieve a velocity change of 19.8 feet per second. The duration will be 25 seconds. They will be pitched down 14.5 degrees and zero degrees in yaw. This final burn will take place at 32.7 degrees south, 41.6 degrees east. This is Gemini Control at Houston.

This is Gemini Control, Houston, at 52 hours 43 minutes into the mission. We have a Stateside pass racked up and ready to play for you now.

Conrad	Houston, Gemini 5.
Houston	Go ahead Gemini 5, this is Houston here.
Conrad	Gordo spotted it, but I never did pick it up. The weather wasn't clear there, and I just couldn't see.
Houston	Okay. There's still -- like I said, yesterday -- there aren't a lot of contrasting landmarks. Did you get any of the readings?
Conrad	No.
Houston	Was that negative?
Conrad	That's right, that's negative. We got the spot pinned down but, boy, it sure is hard to see.
Cooper	You might tell them that I could see the figures on the squares. I didn't try to take any readings -- I was trying to get the position for Pete to take his readings, but I could see several of the figures quite clearly.
Houston	Okay.
Cooper	You might also tell him it is just like we suspected from the [test] airplane -- that they increase and decrease with light angle.
Houston	Okay, your visibility of the target varied with your light angle, is that correct?
Cooper	The figure inside the target.
Houston	Right.
Houston	I have some information here for you, Gemini 5.
Conrad	Roger, go ahead.
Houston	Okay, be advised that you have approximately 40 pounds of drinking water in your Adapter, in case you need it. Your fuel cells are working fine, and I've got an update for your reverse co-elliptic maneuver here.
Conrad	Roger, go ahead.
Houston	The GMTB is 02:19:03:41 -- that's 02:19:03:41. The delta-V is 19.8 -- that's 19.8. With a burn time of 25 -- that's a time of 25 seconds. Pitch angle is minus 14.5 -- that's minus 14.5. Yaw is zero. Thrusters are aft. Address 25 is 00 192 -- that's address 25, 00 192. Address 26 is 000 50 -- address 26 again is 000 50. Address 27 is all zeros. That's all.
Conrad	Roger. GMT of burn is 02:19:03:41, delta-V 19.8, 25 seconds, pitch down 14.5, 00 yaw, 25 00 192, 26 000 50, 27 000 000.
Houston	Roger.

Conrad We're getting an real good look at Florida ...  
Houston Gemini 5, Houston, say again -- you were pretty garbled that time.

Conrad Roger, I say we're getting a good look at Florida and the Bahamas and Cuba today.

Houston Roger.  
Houston Gemini 5, also be advised that we'll update this data I just gave you, over Ascension, based on US timings.

Conrad Roger.

This is Gemini Control, at 53 hours 2 minutes into the mission. In two minutes from now, our present flight plan calls for the Gemini 5 spacecraft to perform the 4th maneuver in the last two revolutions. It is to occur at an apogee of 32.7 degrees south 41.6 degrees east longitude. The delta-V hoped for is 17.3 feet per second, and the duration of the burn is to be 22 seconds. They'll be pitched down 15.8 degrees, and use the aft-firing thrusters. This should have the effect of bringing the perigee up some 6 or 7 miles. Immediately after the co-elliptic maneuver, they'll go through a purge of the Section One side of the fuel cell, hydrogen and oxygen. After that, the Pilot is to take a nap, and... the Command Pilot is to have another meal. We have no tape for you at this time. This is Gemini Control out, at 53 hours and 3 minutes into the mission.

This is Gemini Control Houston, at 53 hours 10 minutes into the mission. As we were talking to you on that earlier report, we did establish contact via Tananarive. The crew was advised to purge both fuel cell sections, not just Section One, as had been planned earlier. They will purge both cell sections, and then power down the spacecraft. They should've completed their maneuver burns by this time, although the communication was so ragged we couldn't exactly establish whether that had been performed. The next scheduled report should come some ten minutes from now, when the spacecraft is over the mid-Pacific, in the area of Hawaii. We have that Tananarive tape for you now.

Houston Gemini 5, Gemini 5, this is Houston here, over.  
Conrad Houston, Gemini 5.  
Houston Roger, Gemini 5, this is Houston here. Can you give us your residuals in [addresses] 80, 81, and 82?  
Conrad ... 00001. I repeat 00001 ... is 00002.  
Houston Roger, understand. We got that. I won't bother repeating it. Be advised that we want you to purge both sections -- I say again, both sections right after the co-elliptic burn, and then we want you to get to sleep. Over.

Conrad ... I thought you said to purge both sections, is that correct?  
Houston Roger. That's affirmative. Purge both sections before powering down. The we want the Pilot to get to sleep.

Conrad Roger, purge before powering down. Pilot go to sleep.  
Houston Affirmative. Be advised that we're going to slip the sleep periods approximately one hour, so that you'll still get the same amount of sleep but just start an hour later.

Conrad ...  
Houston Gemini 5, Gemini 5, Houston here. You're unreadable. We've gotten the important messages across.

This is Gemini Control, Houston, at 53 hours 32 minutes into the mission. And on the basis of that last maneuver, we're now estimating a perigee of 124 statute miles, an apogee of 194 statute miles, and a revolution period of about 95 minutes. All three of those values are going to stand an additional check, as soon as we get some more data from the last two sites, and we will have to confirm them for you a little bit later. We are also assuming, at this point, a 'Phantom Agena' orbit of 141 statute miles perigee, 210 statute miles apogee.

We've had no communication with the spacecraft since the Tananarive acquisition. We expect Hawaii acquisition in about five minutes from now. This is Gemini Control.

This is Gemini Control, at 10 minutes after the hour. The spacecraft is swinging down across the Mexican Peninsula. We have ignition of a Minuteman [missile] at the Cape. It's lifted off. It's about three seconds off the ground, and it looks good. We are advised from the Cape that it's a beautiful shot -- it's lifting, and rising up nicely. The spacecraft's about 1,000 miles to the south and they're looking for it. We'll try to keep up a running count on how it looks from the Cape. We're on a line with them. It's programing -- it's in its pitch program. Looks good, all the values are right in sync. No word yet from the spacecraft, on whether they are seeing it. Still looks good. Gordon Cooper just came up on the line and he said: "We don't see anything down Florida way." But it's a little cloudy down where they are. Plus-90 seconds on the Minuteman, but still no report on a sighting in the spacecraft. Plus 100 seconds. "On time and on the line," is the report from the Cape. Everything still looks good on that Minuteman launch, but we've no sighting reported from the spacecraft. Still on time and on the line. This isn't one of the planned infrared experiments we referred to earlier on missile launchings -- it's just an R&D missile launch from the Cape. Standing by -- we should be coming up on burnout... The word on the Minuteman: still everything looks good. Still everything quite normal. First stage's entirely okay. Houston Recovery, would you give us a mark please on the burnout please, we'd appreciate it. Booster's well out of range, by now, of the spacecraft, which is approximately over Nicaragua, about to begin its 35th revolution of the earth. We're advised that the second stage of the Minuteman has ignited. It's right on the normal values. The first stage burnout occurred on time. We're crossing the 80th parallel at this time, now 54 hours and 5 minutes into the mission. We're sanding by for a burnout on that second stage. We expect word any second on burnout on that second stage. The spacecraft itself - - is well out of range of both our Texas station and our downrange Antigua station. I rather imagine the Antigua station, along with the rest of the [ETR] island chain is busy tracking that Minuteman. We'll come back to you with the times, as more information occurs on the Minuteman. This is Gemini Control, at 54 hours and 7 minutes into the mission.

This is Gemini Control in Houston, at 54 hours 9 minutes into the Gemini 5 mission. The Department of Defense advises that all three stages of the Minuteman burned "on time and on the line," as they put it. I want to emphasize that this particular launch had nothing to do with the Gemini 5 flight. We really didn't expect the pilots to see it, although they did yaw around and take a look, but they saw nothing. The range on this particular Minuteman flight was quoted at about 4,000 nautical miles down the Eastern Test Range. It's the ninth straight successful Minuteman launch from the Cape.

The spacecraft was in contact briefly with our Guaymas and our Texas stations. We've the tape racked up and ready to play for you now.

Houston

Gemini 5, Gemini 5, this is Houston.

Conrad  
Houston ...  
Roger. Would you put your C-Band Adapter switch to 'Command', please.

Conrad  
Houston Roger.  
And Gemini 5, be advised that there's going to be a Minuteman launch down at the Cape here in a couple more minutes. I'll get you a time hack on that. See if you can see it.

Conrad  
Houston Roger.  
I've got some news for you here. It says here in the headlines of the Houston Post this morning that Gemini 5's going to chase an imaginary spacecraft.

Conrad  
Houston Very good. Did we catch it?  
Yeah, I guess you did. Okay, Gemini 5, we'll give you marks in 60 seconds and 30 seconds. You might look out over toward the Cape and see if you can see anything out that way.

Conrad  
Houston Okay.  
Sixty seconds now. Gordo, if you're fooling around at all with that sight, you might give us a call if and when you get it fixed, so that we can plan some of our experiments for tomorrow.

Cooper  
Houston Okay.  
Minus 30 seconds -- mark. Fifteen seconds. Can you see the Cape at all?

Cooper  
Houston No, not yet. There's a cloud cover from here.  
Five seconds. Three, two -- they're holding, Gordo.

Cooper  
Houston Okay.  
Got you excited, didn't we?

Cooper  
Houston Yeah.  
Go -- they just lifted-off.

Cooper  
Houston Okay.  
Keep looking. Gemini 5, Houston here. You're looking very good from the ground. We really don't have much for you this time.

Cooper  
Houston We still don't see anything down Florida way; it's pretty cloudy from here.

Houston Say, how's the weather ... out today? Have you seen much of the ground?

Cooper  
Houston Yeah, quite a bit.  
Say, what do you think about the S-8/D13 tomorrow? Do you think you've picked up enough knowledge about the area to help you find it?

Cooper  
Houston I think so.  
Okay. Plan on doing it tomorrow such that whoever sees it first goes ahead and takes the measurements.

Cooper  
Houston Got it. I was wearing my reading glasses.  
Oh, very good! Very good! The contacts? Or the ones with the horn rims?

Cooper  
Houston The big horn rims.  
Okay.

This is Gemini Control, at 54 hours 32 minutes into the mission of Gemini 5. At the present time our spacecraft is on its 35th revolution over the earth, and is approaching the southern tip of Africa. Here, in the Mission Control Center, we are having a shift change. The Red Team of flight controllers, headed by Chris Kraft, will shortly be leaving their consoles, to be replaced by the White Team -- our Flight Director for the next eight hours will be Eugene Kranz. Chris Kraft, and selected members of his flight controllers' team, will be going over to the NASA News Center in Building 6 in just a few moments to give their daily press conference. This is Gemini Control.

This is Gemini Control, at 56 hours 2 minutes into the flight. At the present time, the spacecraft has passed over the South American continent on its 36th revolution around the earth.

As it approached South America from the west, the Command Pilot, Gordon Cooper, reported that he had started his Apollo Landmark photography. The attempt here is to take pictures of selected landmarks as the spacecraft passes over the ground areas, and these landmarks will be used for navigation studies, for the navigation system that will be used for the Apollo program.

At that time Conrad was programed for an eating period. Dr Dwayne Catterson, our Flight Surgeon here in Mission Control Center, said that from a medical stand point the health of the crew is excellent. They're eating enough food, drinking enough water, and getting enough sleep, and he has no problems as far as the medical program is concerned.

As far as the flight status of the spacecraft is concerned, all systems are operating in a normal fashion. The oxygen pressure on the fuel cells stands steady at 101.3 psi. Mr John Aaron, our Electrical and Environmental Communications expert [EECOM], said that they have powered up the spacecraft and have pulled as high as 40 amps off the fuel cells, and the cells are operating, as he put it, "beautifully". During the recent pass over the Pacific, the Coastal Sentry Quebec tracking ship updated our spacecraft for Contingency Landing Areas [CLAs], and reported that all the spacecraft systems looked good from the tracking station. The weather around the world is also good. This is Gemini Control at 56 hours 4 minutes into the mission.

... now approaching its start over the Coastal Sentry Quebec, our tracking ship located south of Japan. It's on it's 36th revolution over the earth. We've had no voice contact with the spacecraft since their last pass over the Coastal Sentry Quebec, on the 35th revolution. The time in between has been occupied here in Mission Control Center by Flight Director Eugene Kranz continuing to make the very careful check of all systems... as the spacecraft moves over the Coastal Sentry Quebec, and then over the Hawaiian tracking station. And I believe that Flight Director Kranz intends to make voice contact with the crew through that tracking station and will update their flight plan. This is Gemini Control at 56 hours and 33 minutes into the flight.

This is Gemini Control, at 57 hours 2 minutes into the mission of spacecraft Gemini 5. The spacecraft has just passed out of voice-range of our Hawaiian tracking station, on its 36th revolution over the earth. A few minutes earlier, it had passed over the Coastal Sentry Quebec. We had voice communication from both stations. Over the Coastal Sentry Quebec, the spacecraft map -- the star map -- was updated. And pilot Pete Conrad reported that they had lost the cabin temperature gauge -- it was not working, but that they did have the hand temperature gauge. The temperature reading in the spacecraft -- from the ground -- was 74 degrees. Over Hawaii, Command Pilot Gordon Cooper listed all the experiments that they had been able to accomplish during the last 24 hours. This

included 2 medical tests, cabin lighting tests, UHF tests, a series of Department of Defense experiments, including visual and photographic exercises. They also photographed a typhoon and the Apollo Landmark experiment, which is tied in with the study of navigation for the Apollo spacecraft system. Cooper also reported they had two full magazines of terrestrial object photography. At this time, the spacecraft is heading for the coast of South America. It will shortly pass over the Rose Knot Victor, our tracking ship off the coast of Peru. The next transmission will be over the Rose Knot Victor, and we expect to have a further update of our flight plan at that time. This is Gemini Control.

S/C ...  
 CSQ Roger. We have you 'Go' on the ground. I have a map update for you -- are you ready to copy?  
 Conrad Roger. Go Ahead  
 CSQ Roger. Map - 22+25+00, rev 36, longitude 77 degrees east. Star - 22+25+00, 01+40+16. Did you copy?  
 Conrad Affirmative.  
 CSQ Roger. And we advise that your ephemeris is now 107.8 by 168.1 nautical miles.  
 Conrad Say again the ephemeris.  
 CSQ Roger -- 107.8 by 168.1 nautical miles.  
 Conrad Roger. We've one slight discrepancy in that we've lost the cabin temperature gauge. However, we have a hand temperature gauge to use.  
 CSQ Roger, copy.  
 Flight Are you getting a reading on the ground out there, CSQ?  
 CSQ Standby -- I'm trying to get it now. Gemini 5, CSQ, be advised your cabin heat exchanger outlet air temp is 74 degrees.  
 Conrad Roger. Thank you.  
 Conrad CSQ, Gemini 5.  
 CSQ CSQ. Go ahead.  
 Conrad What's your position?  
 CSQ Roger. CSQ's position is 21 degrees north, 125 degrees east.  
 Conrad Roger. You're not in the position you're supposed to be, are you?  
 CSQ Affirmative -- that's our assigned position.  
 Conrad Oh, I see. Did you move for the typhoon a while ago?  
 CSQ The only movement we have is some drift, possibly 20 miles and then back to the east.  
 Conrad Roger. So it's 21 north, 125 east. Right?  
 CSQ That's affirmative.  
 Conrad Thank you.

This is Gemini Control, at 57 hours 32 minutes into the flight of spacecraft Gemini 5, which is now passing over the South American continent on the 37th revolution -- which started just a few minutes ago.

Flight Director Gene Kranz, upon being informed about 20 to 25 minutes ago that the onboard radar system appeared to be running a little cold -- it's temperature was something like 16 degrees -- decided that they'd better turn it on and put it in standby so as to warm it up. They did this over the Coastal Sentry Quebec tracking ship and left it on

throughout the pass over the Pacific, and the Rose Knot Victor tracking ship off the coast of Peru gave us a temperature reading at that point. The temperature had risen to approximately 26 degrees. It was about a 10 degree rise, and Flight Director Gene Kranz considered this an adequate temperature. The RKV reported that all spacecraft systems on that pass over that tracking ship appeared nominal. Their ground data indicated the flight crew was activating the pitch and yaw thrusters. There was no voice communication with the spacecraft Gemini 5 at that time. This is Gemini Control.

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