Gemini 5 Mission Commentary Transcript

PART 4

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This is Gemini Control, at 105 hours 2 minutes into the flight of spacecraft Gemini 5, which is now approaching the west coast of South America on its 66th revolution. A short while ago, as the spacecraft passed over Hawaii, Pilot Pte Conrad sounded pretty cheerful. He greated Spacecraft Communicator, Bill Garvin, with a cheery "Hello Hawaii!" Garvin told Conrad he looked 'Green' from the ground. Conrad said, "We're the same up here." Garvin told Conrad that his orbital elements were 164.2 nautical miles apogee, and 106.9 nautical miles perigee, with a spacecraft orbital lifetime of 14 days. Conrad cracked, "Get serious!" We'll now play back that first communication between spacecraft Gemini 5 and the Hawaiian tracking station.

Hawaii	Gemini 5, Hawaii CapCom.
Conrad	Hello Hawaii CapCom! Gemini 5. Go.
Hawaii	Roger. We've got you 'Green' on the ground. How're you doing?
Conrad	'Green' up here.
Hawaii	Would you cycle your Quantity Read switch to fuel cell O2 ...
Hawaii	Flight, do you want him to leave that switch in ECS O2? He had it on coming over the hill.
Flight	Negative.
Hawaii	Okay, we'll have him turn it off.
Hawaii	Okay. You can place the switch to 'Off'. Be advised your orbit is 106.9 by 164.2 and your orbit lifetime is 14 days, from now.
Conrad	Get serious!

[** DMH's note -- Obviously, Conrad intends to return home long before then!]

Conrad	Roger, give me the orbi -- was it 164?
Hawaii	It was 106.9 by 164.2.
Conrad	Okay! Thank you!
Hawaii	It appears that all looks good, Flight.
Flight	Roger, Hawaii.
Conrad	How's the weather down there, today?
Hawaii	Real nice -- the sun's shining.
Conrad	We haven't been able to pick up the Islands yet -- we're in drifting flight.
Hawaii	How're you doing with that cabin lighting survey?
Conrad	Okay. I'm working on it, right now.

Hawaii	We completed the dump, Flight.
Flight	Roger, Hawaii.
Hawaii	Flight, those quantity readouts on the ground were -- ECS O2, 82; fuel cell O2 was 88.1; and fuel cell H2 was 59.
Flight	Standby, Bill. Okay. Give them to me again, please.
Hawaii	Okay -- 82, 88.1, and 59.
Flight	You'll have to try me again Bill. Fuel cell O2 is 88.1?
Hawaii	Fuel cell O2 is 88.1, ECS O2 was 82, and fuel cell H2 was 59.
Flight	I'ri going to talk to EECOM down here, Bill. We're not really plotting ECS O2 anymore, because that curve's been flat for so long that I think it's a waste of time to ask the crew to get measurements on it -- except for maybe once a day -- anymore.
Hawaii	Roger.
Flight	Are those PFS readings, or what, Bill? They look like --
Hawaii	Those are meter reading.
Flight	Those are your meter readings?
Hawaii	That's affirmative. Not just any full scale.
Hawaii	Hawaii has LOS.
Flight	Roger, Hawaii.

This is Gemini Control, at 105 hours 32 minutes into the flight of spacecraft Gemini 5, which, at this time, is in its 67th revolution around the earth, and just moving out over the Indian Ocean. It will shortly come up over the Coastal Sentry Quebec, our tracking ship in the Pacific. Our last voice communication was approximately 30 to 40 minutes ago. We do expect to have some communication with the Coastal Sentry Quebec. We have talked a lot about the Coastal Sentry Quebec, ... it might be a good idea to give you a little description of that ship -- it's a converted 'Liberty Ship' used to support various government projects, including tracking and communications of manned and unmanned NASA space programs. There are some 35 technical personnel aboard, along with 50 to 60 ship personnel. During manned flights the Manned Spacecraft Center sends a four-man team aboard. These folks are Arta J. Roy, Jr., Spacecraft Communicator; Ted A. White, and George W. Conway, Systems Engineer; and Joe R. Perry, who simulates the astronauts during NASA network simulations or test runs; during an actual flight Perry assists in other tasks. This is Gemini Control, at 105 hours 33 minutes into the flight of spacecraft Gemini 5.

This is Gemini Control, at 106 hours 2 minutes into the flight of spacecraft Gemini 5. Our flight crew, consisting of Command Pilot Gordon Cooper and Pilot Pete Conrad have just passed north of the Coastal Sentry Quebec tracking ship in the Pacific. Cooper is still in his sleep period. Pilot Pete Conrad, talking to Spacecraft Communicator Arta J. Roy on the Coastal Sentry Quebec, said he's getting a very good look at Japan, that this is the best weather so far, and that Japan looks very pretty. We are now on our 67th revolution over the earth. At this time, all systems, as reported by the tracking stations and tracking ships on the ground, are in a 'green' condition and the flight crew reports they are 'Go'. This is Gemini Control.

This is Gemini Control, at 106 hours 32 minutes into the flight of spacecraft Gemini 5, which, at the present time, is coming up over the Rose Knot Victor tracking ship, off the coast of Peru. We're in the 67th revolution over the earth, and, as a matter of fact, within minutes, we'll start the 68th. At the present time, our Command Pilot, Gordon Cooper, is

still in his sleep period. Pilot Pete Conrad is scheduled to make a medical data pass for the Rose Knot Victor. Like the CSQ, the Rose Knot is a converted 'Liberty' tracking ship that is assigned to US government tracking and communications projects including manned and unmanned space probes. During these NASA manned space flights the Manned Spacecraft Center sends a five-man team aboard the Rose Knot -- Gary B. Scott and James R. Fucci, Spacecraft Commicators; Herbert A. Harmon and Albert W. Barker, Systems Engineers; and George N. Bliss, who simulates the astronauts during the network tests and has other tasks during the manned space flights. We're within minutes now of picking up that 68th revolution. This is Gemini Control.

This is Gemini Control. We are at 107 hours 2 minutes into the flight of Gemini 5. The spacecraft is now on its 68th revolution around the earth -- at the present time passing over Africa. Our last voice communication with was about twenty minutes ago as the spacecraft passed over the Rose Knot Victor tracking ship off the coast of Peru. At that time, Gordon Cooper was still asleep, and Pilot Pete Conrad made a medical pass over that station. This consists of temperature, two blood pressures, one before, and one after an exercise period. He gave a report on his water intake, which he said was 22 pounds since the flight began. He reported that had taken a full two hour nap, and that he had just polished off a full meal and plus "some other goodies" that they had left over from other meals. The spacecraft's in a 'Go' condition, he reported, and the ground said "all systems are good". We'll now play back that voice tape made over the Rose Knot Victor tracking ship.

RKV	Gemini 5, this is RKV. We have a valid temperature. Standing by for your blood pressure.
Surgeon	Gemini 5, this is RKV Surgeon. Your cuff is full-scale.
Surgeon	Gemini 5, RKV Surgeon. We have a good blood pressure. Give me a mark when you start your exercise, please.
Conrad	Standby -- mark!
Surgeon	Gemini 5, RKV Surgeon. Your cuff is full-scale.
Surgeon	Gemini 5, RKV Surgeon. We have a good blood pressure. And standing by for your water report.
Conrad	Roger. This is the Pilot. And I've had 22 pounds of water, got a full two hours nap. And I've just polished off Meal 1-charlie at 04:22:00:00, plus some extra goodies we had left lying around.
Surgeon	That was Meal 1-charlie?
Conrad	That's affirmative.
Surgeon	Roger. Thank you. Back to our CapCom.
RKV	Gemini 5, this is RKV CapCom. All systems are good on the ground.
Conrad	Gemini 5's 'Go' up here.
RKV	Roger.

This is Gemini Control, at 107 hours 32 minutes into the flight of spacecraft Gemini 5, which is now on its 68th revolution over the earth. It's just passed over the Coastal Sentry Quebec, our tracking ship located in the Pacific, south of Japan. There was very little voice conversation during this pass. The tracking ship gave Conrad a 'Go' from the ground, and updated the star map aboard the spacecraft. Conrad reported that he'd purged the fuel cells, and that was the end of our voice conversation.

Everything is 'Go' in the Control Center, with our tracking network across the world, and with the gentlemen aboard the spacecraft Gemini 5. This is Gemini Control out at 107 hours 33 minutes.

This is Gemini Control, at 108 hours 6 minutes into the flight of spacecraft Gemini 5. We are at the end of the 68th revolution, and our flight crew is passing over the Rose Knot Victor, our tracking ship located off the coast of Peru. We will have voice contact between Pete Conrad, Pilot of Gemini 5, and Gary Scott, the Spacecraft Communicator aboard the RKV. Let's listen in now to this live conversation.

RKV	Gemini 5, RKV CapCom. How do you read?
Conrad	... Gemini 5 here.
RKV	Roger. All systems are 'Go' on the ground, and I have some landing area updates for you.
Conrad	Okay. Standby -- Okay, ready to copy.
RKV	Roger. For these updates, all bank angles will remain the same, that is roll left 51, roll right 69.
Conrad	Okay.
RKV	[Area] ... 7-delta, 05:15:56, 17+39, 22+17; 72-2, 06:52:39, 15+51, 20+41; 73-2, 08:28:11, 14+25, 19+25; 74-1, 09:51:11, 15+56, 20+50; 75-1, 11:26:35, 14+31, 19:33. Do you copy?
Conrad	Roger. Would you give GMTRC on 73-dash-2 again, please?
RKV	Roger. 73-2, 08:28:11.
Conrad	Roger. We copy.
RKV	Roger. The weather is good in all areas.
Conrad	Roger. Very good.
RKV	Roger. We'd like to remind the Command Pilot that he has a medical data pass over the CSQ on rev 69 -- I have a time [of Acquisition Of Signal] for you.
Conrad	Roger.
RKV	03:01:07
Conrad	Roger. 03:01:07.
RKV	Roger.
Conrad	RKV, Gemini 5.
RKV	That's us.
Conrad	We just had one of our more spectacular sights of our flight -- coming into sunset just before you acquired us. Either our cryo hydrogen or our cryo oxygen tank vented, and it just all froze when it came out and it looked like we had seven billion stars passing by the windows, which was really a sight!
RKV	Roger. Did you recognise any of the stars?
Conrad	I didn't recognise any.
RKV	Roger. Copy.
RKV	Gemini 5, RKV. We have just received your tape dump.
Conrad	Roger. Very good. Everything looks good here.
RKV	We have about one minute before LOS. We'll be standing by.
Conrad	Okay, that's fine, thank you.
RKV	You're welcome, over.

That was live conversation between Gemini 5 and our Spacecraft Communicator aboad the Rose Knot Victor. And I understand we were in error -- that was not Gary Scott, our prime communicator, but James R. Fucci, who helps out in that capacity. This is Gemini Control.

This is Gemini Control, at 108 hours 32 minutes into the flight of spacecraft Gemini 5, now on its 69th revolution over the earth, approaching the west coast of Africa. We've had no voice communications with the spacecraft since the Rose Knot Victor, which we carried live. From our ground stations, all reports are that the spacecraft's systems are 'Go'. Here in Mission Control, we are also 'Go'. This flight is settling down now, for the 'long haul' through the night. There is very little activity aboard -- Command Pilot Gordon Cooper is scheduled to make a medical data pass over the Coastal Sentry Quebec tracking ship in the Pacific, and our Pilot, Pete Conrad, is entering a sleep period. This is Gemini Control.

This is Gemini Control. We are now at 109 hours 2 minutes into the flight of Gemini 5. At the present time, our spacecraft is coming up on the Coastal Sentry Quebec, our tracking ship located in the Pacific Ocean south of Japan. On the ground -- or aboard the CSQ -- it's Thursday noon. Here in Mission Control in Houston, it's still Wednesday evening.

The activities slated for this pass will consist of a medical data pass on Command Pilot Gordon Cooper, while his partner, Pilot Pete Conrad, is in a sleep period. Cooper is also expected to give a food report. And there will be taped transmission of data the spacecraft has been gathering -- this will be passed on to that tracking ship by telemetry. The flight is now in a very uneventual phase, and the pilot and co-pilot are getting a maximum amount of rest, and we have no further experiments programed for the next couple of revolutions. This is Gemini Control.

This is Gemini Control. We are at 109 hours 32 minutes into the flight of Gemini 5. At the present time, our spacecraft is over the south Pacific. Coming up, it will skirt the Rose Knot Victor tracking ship and will pass just within voice range. We have not had any voice communication with the spacecraft for quite some time. Our flight plan indicates that this is a period of inactivity. Pilot Pete Conrad is asleep. Command Pilot Gordon Cooper has just finished an eat period, and he has one experiment coming up -- a cabin lighting survey that he will perform within the next hour. This is an experiment in which they measure the light in various portions of the spacecraft, using a photometer. This is Gemini Control.

This is Gemini Control, at 110 hours 2 minutes into the flight of spacecraft Gemini 5, which has just -- shortly ago -- begun its 70th revolution around the earth. At the present time, the spacecraft is coming up on the west coast of Africa.

We have some information here on the orbital elements of the REP [Radar Evaluation Pod]. Its apogee is 141.8 nautical miles and perigee 88.67, and we figure it has a 5 day 2 hour 44 minutes lifetime -- as of this moment.

In our spacecraft, Command Pilot Gordon Cooper is awake and Pilot Pete Conrad is in a sleep period. We have had very little communication with the spacecraft recently, but we expect that we will have some voice communication over either the Kano, Higeria, site, or the Coastal Sentry Quebec. This is Gemini Control, at 110 hours 3 minutes into the flight.

This is Gemini Control, at 110 hours 32 minutes into the flight of spacecraft Gemini 5. It is on its 70th revolution over the earth, and is coming up very shortly -- within the next five minutes -- on the Coastal Sentry Quebec, our tracking ship located in the Pacific, just south of Japan. We are in the midst, here at the Mission Control Center, of a shift change. The Blue Team of flight controllers have just reported for duty, and are being briefed prior to taking over direction of this flight. At last check with Dr Dwayne Catterson, our Flight Surgeon, he said that all indications that he has at this time indicate that the Command Pilot and Pilot of spacecraft Gemini 6 are both in excellent condition. At this point, Pete Conrad is asleep. Gordon Cooper is awake. He is to perform a few experiments -- a cabin lighting survey and some photographic experiments -- as he passes over Hawaii. This is Gemini Control, at 110 hours 33 minutes.

This is Gemini Control, 111 hours 2 minutes after liftoff. Spacecraft Gemini 5 is over the south-central Pacific, nearing the end of the 70th revolution. Just now, it went into the night side of the orbit. Around the world, people have their eyes peeled for Gemini 5. Our latest report is from Senor Camile Flamario in Guadalajara, Mexico, who visually sighted Gemini 5 at 5:49 this morning, 25 August. He said it was the equivalent in brightness to a third-magnitude star. The next station to acquire Gemini 5 will be the tracking ship Rose Knot Victor -- approximately 13 minutes from now.

We have a tape recording of the air-to-ground transmission between Gemini 5 and the tracking ship Coastal Sentry Quebec just north of Okinawa. We'll play this tape now.

CSQ	Gemini 5, CSQ
Cooper	...
CSQ	We want you to cycle your cryo Quantity Read switch through the positions, please. About 10 seconds in each position. And we would also like to get your ... out.
Cooper	...
CSQ	... your power, CSQ.
Cooper	... 81 percent, 350 psi, fuel cell ... 130 psi.
CSQ	Copy.
Cooper	Fuel cell hydrogen 55 -- a shade under 55 -- percent, 780 psi.
CSQ	CSQ copy. Houston also wants to know if you purged the fuel cells between the CSQ and the RKV in the last rev.
Cooper	... fuel cells were purged at 01:00.
CSQ	Roger, understand. There is one in the flight plan between CSQ and RKV, they thought you might've picked up, without being notified to do.
Cooper	Negative.
CSQ	Roger.
Cooper	We did have one short of the CSQ last time. The ... over large amount of venting. We checked the pressures of what appeared to be the ECS O2, which was up to a very high vent pressure.
CSQ	Roger, copy. Houston would also like to know if the venting report to the RKV on the last rev looked like -- correction that was 062 -- if it looked like a lot of stars. When it looked like a lot of stars, was that at sunset or several hours after the purge?
Cooper	That was just at sunset. ...powered off getting ready for the purge. It appeared to be that we just hit a very large amount of things going on about there. We assumed they must have been

	ECS O2. They looked like a lot of stars, like several million of them.
CSQ	That's the same one you reported previously, then.
Cooper	That's right. We haven't seen them since.
CSQ	Roger, copy.

This is Gemini Control, at 111 hours 32 minutes after liftoff. Gemini 5 is just crossing the South American coast, heading out over the South Atlantic, and will be acquired in five minutes by the Canary Island tracking station. During the pass -- just completed -- over the tracking ship Rose Knot Victor, the systems telemetry all looked nominal, according to the Spacecraft Communicator in his report back to the Flight Director here in Mission Control. This is Gemini Control.

This is Gemini Control, 113 hours 2 minutes after liftoff. The spacecraft is passing the north-eastern shore of the continent of South America, heading out over the Atlantic, at the beginning of the 72nd revolution. It recently made a pass over the tracking ship Rose Knot Victor, in which a brief contact was made, whose Spacecraft Communicator said all looked good on the ground. This will be the RKVs final pass for the night. They will be dismissed until several orbits. The flight plan activities for the coming day are presently being sent out to the Carnarvon station for updating to the spacecraft. This includes an Apollo Landmark tracking task somewhere in east Africa, near the Arabian peninsula. In fact all three of these experiments take place in almost the same part of the world. The Apollo Landmark tracking task is at 4:25 Central Standard Time. Followed 2 minutes later one of the synoptic terrain photography experiments of east Africa and the Arabian peninsula at 4:27. Synoptic terrain photography captures broad areas of land masses, with a Hasselblad camera. Concurrently with that experiment, also at 4:27, they will be making desert land measurements using the radiometric sensors. At 4:50 they'll power-up the spacecraft and align the inertial platform, and at 5:20 they'll align the platform with the Small-End Forward, for a later task that will be done today an additional radar test. Further details on this radar test will be forthcoming. This is Gemini Control.

This is Gemini Control, at 113 hours 32 minutes after liftoff. Gemini 5 is one-third of the way through the 72nd revolution. It'll be acquired by Carnarvon in 46 minutes. While passing over the Canary Island station, there was a brief exchange with Command Pilot Gordon Cooper. The telemetry readouts on the ground at Canary, looked real good. They made a telemetry Delayed-Time dump, then went on standby for further contact, but there was none. This is Gemini Control.

This in Gemini Control, at 114 hours 2 minutes into the flight. Gemini 5 is nearing the end of the 72nd revolution, just crossing north of the tip of the island New Zealand. At this time, Pilot Pete Conrad is scheduled for sleep, and during the next few minutes Command Pilot Gordon Cooper is scheduled to run a vision test on himself using the onboard vision tester, then, using the same device, he'll perform one of the vestibular-effects experiments to determine the changes in his vestibular functions, and also determine his ability to judge the pitch axis of the spacecraft. This experiment involvs the so-called otolith function in the inner ear. When Conrad wakes up, at about the time of the pass over the Antigua station, he'll be briefed by Cooper on activities while he was asleep. This is Gemini Control.

This is Gemini Control, at 114 hours 32 minutes after liftoff. The spacecraft is now almost through the end of the 72nd revolution. It will be in contact with the stations in the Eastern Test Range within about one minute. There's been no contact with the spacecraft since the Canary Island station, almost 80 minutes ago. This is Gemini Control.

This is Gemini Control, at 115 hours 14 minutes after liftoff. Gemini 5 is one-third of the way through the 73rd rev, and it will be acquired by the Carnarvon station in Australia at 21 minutes past the hour. We have the tape of the Canary Island tracking station pass at the beginning of this 73rd revolution. Let's hear that tape now.

Canary	Gemini 5, this is Canary CapCom.
Cooper	Go ahead Canary, Gemini 5.
Canary	Roger Gemini 5. If the Pilot is awake, we would like to do a purge.
Cooper	Alright.
Canary	Okay. We'd like to start out with the Quantity readings first. We will need about 15 seconds in each position.
Cooper	...
Canary	Would you give me a readout? We'd like to get a spacecraft readout on these quantities.
Cooper	ECS O2 is reading 80 percent quantity, 845 psia.
Canary	Roger.
Cooper	Fuel cell O2 is reading 88 percent, 140 psia.
Canary	Okay.
Cooper	Fuel cell hydrogen, is reading 52 percent, 770 psia.
Canary	Roger. Okay, we're ready for your purge.
Cooper	Standby for hydrogen on cell 1 on my mark -- Mark!
Cooper	Complete. Standby for hydrogen on cell 2- Mark!
Flight	Canary, is this Houston Flight.
Cooper	Complete with hydrogen on section 1.
Flight	We'd like an LOS summary.
Canary	Right.
Cooper	Starting oxygen on section 1 -- starting now!
Canary	While your purging on the oxygen, Flight's advised that they're keeping an eye on the fuel cell water production, and they shoud have a good hack on that within the next day or so. They think its progressing approximately nominally.

This is Gemini Control, at 115 hours 32 minutes after liftoff. Gemini 5 is now over eastern Australia, midway through its 73rd revolution.

To give you an idea of what the crew of Gemini 5 has in store for them today, I'll run over the experiments that will be passed up to them later on today. They have several tasks in surface photography. One at 6:05 CST in the Kenya area of east Africa. Associated with that, will be an infrared measurement. Other surface photography assignments are at 7:14, in the southwestern United States; 7:21 in the Bermuda area; 7:33 in east Afica; 8.55 is the prime recovery vessel, Lake Champlain, in the west Atlantic; and at 10:32, off the coast of Brazil. They will be making infrared measurements of the star Sigma Saggitarius, at 8:05. Also the Milky Way, in the same timeframe. At 8:34 they'll take infrared measurements of volcanoes in Hawaii. The so-called synoptic terrain

experiment, which is large land mass photography, continues at 9:19 this morning with a photographic assignment in east Africa and the Arabian peninsula. At 10:26, they have a cloud-top spectrometer experiment in the Key West area of cloud build-ups there. That just about summarises what the crew has on their schedule today. There is a test of the onboard radar. The plans for that are still being formulated here in Mission Control. Details will be forthcoming. This is Gemini Control.

This is Gemini Centrol, at 116 hours 2 minutes after liftoff. Gemini 5 is approaching the west coast of Mexico, toward the end of the 73rd revolution. The next stations which will acquire the spacecraft are some of the Stateside stations and those in the Eastern Test Range. The first one to acquire will be in two minutes.

We have a tape of the Carnarvon pass, about 20 minutes earlier in this rev. Why don't we listen to this tape right now?

Carnarvon	Gemini 5, Carnarvon. We have a valid oral temp. Standby for surgeon.
Surgeon	Gemini 5, this is Carnarvon Surgeon,. We're standing by for your first blood pressure.
Surgeon	Gemini 5, we have a good blood pressure. Would you give a mark when you begin your exercise?
Conrad	Mark!
Surgeon	We have a good blood pressure, Gemini 5. Would you give us your water and sleep reports, please.
Conrad	Pilot's water is 24 pounds, last meal was 3-bravo, 05:09:00:00, and I slep about four and a half hours, I think.
Surgeon	Roger. Copied that. Thank you, Gemini 5. Carnarvon Surgeon out.
Carnarvon	Gemini 5, Carnarvon CapCom. We have a flight plan update. Are you prepared to copy?
Conrad	Ready to copy.
Carnarvon	Are you ready to go?
Conrad	Ready to copy.
Carnarvon	Roger. Apollo Landmarks. All these are on the fifth day. First is 10:25:02, sequence number 208, pitch down 30, yaw left 8 degrees. Next item is S-5 --Sierra 5, 10:27:00, sequence 02. Next item is D-4/D-7, 10:27:00, sequence 414, remarks ... S-5. Next item is platform, 10:50:00, remarks -- power up. Next item is radar 11:13:00, remarks -- radar on for warm up. Next item is platform, 11:20:00, remarks align SEF. Next item is map update, 11:27:52, remarks -- rev 74, 140.1 degrees west, Right Ascension 0 hours 24 minutes. Do you copy?
Conrad	Got it all.
Carnarvon	Okay. Next item is radar test, 11:43:41, sequence 10, remarks -- pitch down 30, yaw right 23. Next item is D-6 -- Delta-6, 12:05:16, sequence 74, mode number 01, remarks -- pitch down 30, yaw right 19, speed 60. Next item is D-4/D-7, 12:05:16, sequence 415. Next item is platform, 12:15:00, remarks -- align SEF. Do you copy?
Conrad	Affirmative.

Delta-6,	Okay. Next item is radar test, 12:34:20, sequence 10, remarks -- star photos. Next item is power down, 12:50:00, remarks -- radar, platform, rate gyros, and computer 'Off'. Do you copy?
Conrad	Affirmative.
Carnarvon	Okay. We've got about 20 seconds to LOS. We'll get the rest of this up to you on the next pass.
Conrad	Roger.
Carnarvon	Everything looks good down here, and we're standing by.
Conrad	'Green' up here.
Carnarvon	Flight, we've had LOS.
Flight	Roger Carnarvon, good pass.

This is Gemini Control, at 116 hours 32 minutes after liftoff. Gemini 5 is now passing over central Africa, about one-fourth of the way into the 74th revolution. The next station to acquire Gemini 5 will be Carnarvon station -- that'll be in 23 minutes. Over Carnarvon, Planned Landing Area updates will be routinely passed up to the spacecraft for revolutions 76 through 80. Also, flight plan updates will be passed up to the crew. At the present time, the flight plan calls for terrain photography and infrared measurements over east Africa and the Arabian peninsula. We have a brief tape of the last Stateside pass over the Eastern Test Range tracking stations, voice remoting stations. Let's hear that tape now.

Houston	Gemini 5, Houston.
Conrad	Hello Houston, Gemini 5.
Houston	Hi. You look good on the ground. Got any questions? We're standing by.
Conrad	No. You got anything for us after 12:50:00?
Houston	Rog. But we thought we'd let you get it at Carnarvon, and get a little rest here.
Conrad	You guys are O-K-A-Y!
Flight	Good morning.
Conrad	Good morning.
Flight	All set for another bright day?
Conrad	Oh, yeah.
Flight	Good. Looks pretty good down here, Pete. We've been going over this fuel -- how much power you got left out of your fuel cells, and we think its coming along pretty well. Its kind of tight, but you've got it there.
Conrad	Okay. We've been keeping track of it here, and of course it has been going down pretty thin, but we expect it to.
Flight	That's right.
See	Pete, it looks like your tightest constraint is going to be storage space for the water they produce.

[** DMH's note -- The fuel cells produce water as a waste product.]

Conrad	Okay.
See	How's that for a surprise?
Conrad	Nothing surprises me after liftoff.
See	Got any comments about the weather up north?

Conrad	We were talking about that. I don't know. We're going to take a look at it today.
See	Okay. We've been,trying to get this water system settled down, to see just what our possibilities might be.
Conrad	Houston, have you been -- have the other stations been getting all our telemetry and everything, alright? We really build up the rates -- two and a half to three degrees per minute -- here when this thing vents.

[** DMH's note -- The venting gases from the fuel cells has been acting like a thruster, setting the spacecraft rotating -- setting up 'rates'.]

Houston	Yeah, as far as I know, they've all been getting good TM.
Conrad	Okay.
Houston	Gemini 5, Houston. We've had a little problem with the dump tape, and we think maybe the tape is getting a little dirty, but it's nothing significant.
Conrad	We've been up too long!
Houston	Rog.
Conrad	Gordo and I figure we've been up long enough now to need a sim[ulation] on reentry, to get brushed up.
Houston	We'll see if we can't work one in for you.
Conrad	Okay.
Cooper	Do you mean this is the real thing? I thought we had been in the simulator all along!
Houston	Just pretend you're in the simulator.
Conrad	That's what we've been doing!
See	I guess you know you've got about 3 hours to go here before a big event.
Conrad	Is that what it is? We didn't know exactly what the time was. Can you give us the GMT?
See	I think it's about -- just about exactly 3 hours from now.
Houston	We'll get it for you. GMT is 13:06:00. Gemini, Houston. The GMT is 13:06:00.
Conrad	Roger. We copy -- 13:06:00 -- thank you.
Houston	Do a couple rolls, and a loop.
Conrad	We haven't got the fuel.
Cooper	That's all we have been doing all day is rolling and rolling.
See	Very good.

[** DMH's note -- The powered down spacecraft is tumbling in free drift.]

Conrad	We passed a big milestone today. We got into the left-hand food box for the first time, and didn't find any Christmas presents -- just food.
Houston	Have you gone all the way through it yet?
Conrad	Sav again.
Houston	Have you gone all the way through it yet?
Cooper	No, not yet.
Houston	You never know.

See	Have you been in that pouch under the right panel?
Conrad	Yeah, we have, as a matter of fact.
Cooper	What do you think we've been wearing?
Cooper	Say, Houston, do you still read us?
Houston	Rog.
Cooper	Could you give us the GMT time-hack, please?
Houston	Rog. In about 10 seconds, it'll be 10:16:00 ... Two, one, mark!
Cooper	That's pretty good. I'm two seconds slow.
Houston	Oh, very good.
Cooper	Two seconds fast, I mean.
Houston	Roger, understand.

This is Gemini Control, at 117 hours 2 minutes after liftoff. Gemini 5 is half-way into its 74th revolution, and is presently in contact with the Carnarvon Spacecraft Comunicator, who is updating the crew on Planned Landing Area numbers and flight plan updates for the coming day. Here in Mission Control, the Blue Team Flight's Dynamics Officer has given us some elements for the present orbit of Gemini 5 -- it has a perigee of 123.4 statue miles and an apogee of 187.6 statue miles. This is Gemini Control.

This is Gemini Control, at 117 hours 32 minutes after liftoff. Gemini 5 is now coming up on the end of the 74th revolution. It will be acquired by the Guaymas, Mexico, tracking station in about two minutes. During the pass over the Carnarvon tracking station earlier in this revolution, they were given a complete 'Go' on the ground. The Carnarvon CapCom passed up to the crew the flight plan updates, but because of the length of time required for all this information to be passed up he was unable to complete the Planned Landing Areas. Coming up on the Cape Kennedy area, during this next revolution there will be a radar test in which the onboard radar will be aimed toward an L-band transponder at the Cape. They will be able to get some readings of how the onboard radar operates. We have now a tape of the Carnarvon pass earlier in this revolution. Let's hear this tape now.

Carnarvon	Gemini 5, Carnarvon CapCom.
Conrad	Come in Carnarvon, Gemini 5.
Carnarvon	Okay, we've got the rest of your flight plan update when you're ready to copy.
Conrad	Fire away.
Carnarvon	Roger. First item is a Delta-6, D-6, 13:14:23.
Conrad	Carnarvon, Gemini 5. We're ready to copy.
Carnarvon	Roger. Delta 6, D-6, 13:14:23, sequence number 20.
Conrad	Say it again -- you're fading. We're just beginning to get you.
Carnarvon	Roger. I'll start again. It's Delta-6, D-6, 13:14:23, sequence 02, load number 15, remarks -- pitch down ..., yaw left 6 degrees, speed 30. Did you get that all down?
Conrad	Just fine.
Carnarvon	Okay, next item is Delta-6, D-6, 13:21:40, sequence number 53, mode number 15, remarks -- pitch down 30, yaw left 6 degrees, speed 60. Next item, Delta 6, D-6, 13:33:35, sequence number 66, mode number 15, remarks -- pitch down 30, yaw right 7 degrees, speed 60. Next item is a D-4/D-7, 14:05:08, sequence numbers 4100 and 407. Next item D-4/D-7, 14:34:51, sequence

number 425A, pitch down 30, yaw left 03. Next item D-4/D-7, 14:46:46, sequence number 424B, mode number 01, remarks -- pitch down 30, yaw left 4 degrees, speed 60.

Conrad — Read out the D-4/D-7 at 14:34:51?

Carnarvon — Say again?

Conrad — Never mind, go ahead.

Carnarvon — You got it okay?

Conrad — Yeah.

Carnarvon — Okay. On the remarks on the D-4/D-7, 14:46:46, the test time is 14:47 -- stand by one. Okay, that test time is 14:47:41, duration is 8 seconds. Do you copy?

Conrad — Roger.

Carnarvon — Next item is Delta-6, D-6, 14:55:40, sequence 134, mode 01, remarks -- pitch down 30, yaw 0, speed 60. Next item is S-5, 15:19:48, sequence 02. Next item is S-8/D-13, 16:22:50, sequence 03, remarks -- pitch down 30, yaw right 33. Next item is S-7, 16:36:50 -- negative, that time is 16:26:54, sequence 02, remarks -- pitch down 30, Key West area. Next item is Delta-6, 16:33:07, sequence number 055, mode number 01, pitch down 30, yaw right 1 degree, speed is 60. Next is D-4/D-7, 16:32:59, sequence number 416. Do you copy?

Conrad — Yeah, in other,words, that's just before the D-6 you just gave me?

Carnarvon — Right. That last one was a D-4/D-7 -- whoops -- standby I have got add to that. I'll change that last time. Okay, that last time is the same time as the D-6, 16:33:07. Copy?

Conrad — Affirmative, any more?

Carnarvon — No, we're not going to have time for the PLA update, we'll get you later.

Conrad — Okay.

Carnarvon — Everything looks good here.

Conrad — We are 'Go' here.

This is Gemini Control, at 117 hours 57 minutes after liftoff. The Gemini 5 spacecraft is now in acquisition by the Canary Island tracking station, early in the 75th revolution. On the Stateside pass just completed, Guaymas Spacecraft Communicator, Ed Fendell, passed up to Gemini 5 the Planned Landing Area updates that were missed at Carnarvon because of the lack of time with other information being passed up from Carnarvon. The radar test over Cape Kennedy -- the radar successfully locked on to the transponder at the Cape, but no range readings were given. On the Canary pass, there is scheduled a medical data check on Command Pilot Gordon Cooper. This is Gemini Control.

This is Gemini Control, at 118 hours 2 minutes after liftoff. Gemini 5 has just left the acquisition range of the Canary Island tracking station, and it should be coming up shortly in the range of the Kano, Nigeria, Voice Remoting station. We now have a taped recording of the recent Stateside pass. Let's listen to the tape now.

Guaymas — Gemini 5, Guaymas CapCom.

Cooper — Come in Guaymas, Gemini 5.

Guaymas — Okay, how're you doing?

Cooper	Roger. Doing fine, everything's powered up.
Guaymas	You're looking good here on the ground. I've got a correction to your flight plan update, and I've got some PLA, so let me know when you are ready to copy.
Cooper	Ready to copy.
Guaymas	The flight plan update and D-4/D-7 sequence 424-bravo -- that was at the fifth day 14:46:46, change the time on that to the fifth day 14:46:54.
Cooper	Check.
Guaymas	The D-4/D-7, sequence 415, of the fifth day 12:05:16 -- add to the remarks column "recorder on for three minutes".
Cooper	Alright.
Guaymas	Okay, I've got your PLA'S. Are you ready to copy?
Cooper	All set.
Guaymas	The weather's good in all areas, and the bank angles are roll left 51 and roll right 69 on all cases. Area 76-1, 13:01:53, 13+15, 18+27. 77-1, 14:37:31, 12+09, 17+40. 78-4, 17:24:26, 14+27, 21+13. 79-4, 18:59:42, 13+11, 16+00. 80-4, 20:34:29, 12+12, 17+43. Over.
Cooper	...
Guaymas	Got them all?
Cooper	Right.
Guaymas	Okay. That's it. We'll standby, if you need anything.
Cooper	Okay. Thank you.
Flight	Very good, Guaymas. How does the roll look?
Guaymas	Looks real fine, Flight. Got the radar on.
Houston	Roger.
Guaymas	Getting a radar lock-on light.
Houston	Roger.
Guaymas	Flight, Guaymas.
Houston	Go ahead.
Guaymas	CCA 10 head temp is reading 36 degrees, so what position is the COAMS Heater switch circuit breaker in?
Houston	Leave it off.
Guaymas	Roger.
Cooper	Houston, Gemini 5.
Houston	Gemini, Houston. Go.
Cooper	No joy -- the radar locked up and the needles pointed right at the Cape, but we never did get range readings. And I kept breaking lock and putting it back on, breaking lock and putting it back on, but we never got any range reading.
Houston	That's what we were afraid of. Okay. Try and give the other part of the test a whirl, when you get over to it.
Cooper	Okay.
Houston	Gemini 5, Houston.
Cooper	Come in Houston, Gemini 5.
Houston	We've a correction to the correction on your D-4/D-7, 12:05:16 -- we added "recorder on for three minutes" to the remarks. We'd like to delete that statement now! Copy?
Cooper	Okay.

Houston	Okay, and be advised your Canary medical data acquisition time is 11:55:34.
Cooper	Okay.
Houston	Gemini 5, you can place your TM switch to 'Comand', please.
Cooper	Roger, we got you.
Houston	Okay, fine, and thank you for the ECE O2 reading.
Cooper	You're welcome.

This is Gemini Control, at 118 hours 32 minutes after liftoff. Gemini 5 is now midway through its 75th revolution. It is in contact with the Carnarvon, Australia, tracking station. While over Carnarvon, they'll take a readout of the Environmental Control System oxygen also the fuel cell oxygen and hydrogen. We've now a tape recording of the Canary Islands pass earlier in this revolution. Let's hear this tape now.

AFD	Canary CapCom, AFD.
Canary	AFD, Canary CapCom.
AFD	Okay, you got our special?
Canary	Right.
AFD	Our CapCom informed the Command Pilot of your acquisition time. He should be ready with the thermister for the medical data pass.
Canary	Okay, thank you.
AFD	Roger, we're standing by.
Canary	Okay, we've got four minutes.

This is Gemini Control, at 118 hours and 48 minutes after liftoff. Spacecraft Gemini 5 is due north of New Zealand, nearing the end of its 75th revolution. We have now the tape recording of the recent Carnarvon pass. Let's listen to that tape.

Carnarvon	Gemini 5, Carnarvon.
Cooper	Carnarvon, this is Gemini 5.
Carnarvon	Roger. We'd like to have you place your Quantity Read switch to ECS O2.
Conrad	Roger.
Conrad	Carnarvon, are you ready to copy a little problem?
Carnarvon	Go ahead.
Conrad	Roger. Our yaw left number 7 OAMS attitude thruster is out.
Carnarvon	Roger, I've got it. Continue with indication here on the ground of the OAMS yaw left thruster.
Conrad	Well, it's not working at all.
Conrad	And we powered down the radar, the gyros, everything but the platform -- we're standing by to see what Flight wants us to do.
Carnarvon	Roger. You didn't do any radar test over Africa, then?
Conrad	Nope.
Carnarvon	Roger. Would you start a Quantity Read to fuel cell O2 ? Flight, did you copy that?
Flight	Repeat that, please, Carnarvon.
Conrad	Carnarvon, we've got one other thing -- the OAMS temperature has been running really cold up here. We noticed, this morning,

	that the system was sort of sluggish all over, and so we turned the heater back on at this time -- about five minutes ago.
Carnarvon	Roger.
Flight	We're going to take a look at it.
Carnarvon	Roger, Flight.
Flight	Tell him to go ...
Conrad	We got a quantity read fuel cell H2.
Flight	We'll take a look at this.
Carnarvon	Be advised, Flight copied the problem, and they're taking a look at it now. They'll let you know.
Conrad	Okay.
Flight	Carnarvon, this is Houston Flight.
Carnarvon	Go ahead.
Flight	He should have the platform 'Off' now.
Carnarvon	Okay. He said he had it up -- I'll advise him to turn it off.
Flight	...
Carnarvon	Okay Flight, standby. Go ahead, Flight.
Flight	Tell him we'll take a.look at this thing for a while since he's got the heater on it, and see what happens, and keep an eye on what his thruster does when the heater comes up.
Carnarvon	Roger. Flight advises they'll keep an eye on this.thruster problem with the OAMS heater on, and then see what happens and advise you later.
Conrad	Okay. Well, we don't intend to do any more experiments unless they want us to, because we're down to about 12 percent fuel.
Carnarvon	Roger, I understand.
Carnarvon	Flight, do you want to hold off on the experiments?
Flight	Roger. We'll get him over Carnarvon this pass --
Carnarvon	Roger.
Flight	-- over Canton.
Carnarvon	Roger. You all hold up on the experiments -- they'll get to you over Canton.
Conrad	Okay.
Flight	Carnarvon, this is Houston.
Carnarvon	Go ahead.
Flight	Did the thruster stick 'Off', or 'On'?
Carnarvon.	Standby, I'll check. I had a continuous 'On' indication on it, on the ground.
Flight	Roger.
Carnarvon	Gemini 5, Carnarvon here. Did the thruster stick 'On', or 'Off'?
Conrad	It stuck 'Off'. It would not fire. We've isolated it to the number 7 thruster, and it will not operate.
Carnarvon	Roger.
Flight	Have they tried the backup electronics?
Carnarvon	Did your indication of the number 7 thruster go 'Off' now? It's 'On' now. It.was on the first part of the pass, it went off it came back on about the time you started talking.
Conrad	Okay. You say it's back 'On' now?
Carnarvon	It's 'On' now.

Conrad	Well, I've got the circuit breaker open now.
Carnarvon	Okay.
Flight	Tell him to pop the circuit breaker back in, and see if it gets the signal there.
Carnarvon	Pop your circuit breaker back in -- Okay, I lost indication.
Conrad	It may be that one of the solenoids froze up, open.
Carnarvon	Roger.
Flight	Ask him if he's tried the backup eletronics.
Carnarvon	Have you tried the backup electronics?
Conrad	We'll bring you up to date -- we tried secondary ACME bus power, and secondary attitude drivers, and secondary ACME logic --
Carnarvon	Roger.
Conrad	-- with no success.
Carnarvon	Understand.
Flight	Good deduction -- that the valve is stuck.
Carnarvon	Say again, Flight.
Flight	The valve must be stuck.
Carnarvon	Flight agrees the valve must be stuck. Give your Quantity Read at this time.
Carnarvon	I'm getting OAMS 7 'On' again.
Flight	Pull the circuit breaker.
Conrad	I just opened up the number 8 circuit breaker. And then checked number 7 again when you said it went out.
Flight	Has he got the platform off?
Carnarvon	Is your platform still on?
Conrad	That's affirmative.
Flight	Turn it off.
Carnarvon	Okay. Request you power down your platform.
Conrad	Okay.
Cooper	Okat. We're all powered down, IMU is off, the platform is off, and the IMU is off.
Carnarvon	Roger. Hey, Flight, the aux feed temp is 45 degrees, aux fuel temp is 40, and the CCA number 10 is reading 40.
Flight	Roger, we copy.
Carnarvon	You want an LOS summary?
Flight	Rog.

Good morning. This is Gemini Control, at 119 hours 2 minutes into the mission. The spacecraft is coming up on the west coast of the United States.

During part of this pass, we will be looking at a sticky yaw-left thruster, an 18 pound thruster which, from all indications is -- either electronically or mechanically -- stuck in an 'open' position. However, we have been able to work around that sticky point, and it isn't leaking. I emphasize, it isn't leaking either fuel or oxidizer, the crew can see it. Across the States, the crew is to receive a 'Go' or 'No-Go' for 92-1, the 92nd revolution's Primary Landing Area. They are to give us a delayed tape playback, they'll also receive an update on their 77-1 area. And, out in the area of the Canary Islands, they are to perform another D-6 photographic exercise. This is Gemini Control at 119 hours 3 minutes.

This is Gemini Control, Houston, at 119 hours 15 minutes 37 seconds. At precisely 119 hours 6 minutes, Chris Kraft looked up at our big Ground Elapsed Time clock and a grin spread from his right ear to his left ear, and he simply said, "ZAP". About a minute later, Spacecraft Communicator, Jim McDivitt, announced in a loud and clear voice that Gemini 5 was now one minute into the world record for space flight.

On the early portion of this across the United States, we've been running through a series of checks with the pilots, exercising certain electronic and mechanical circuits, and looking at that yaw-left thruster. We've gott the data. Let's go into the conversation live.

Houston	Say again.
Cooper	What is it?
Houston	92-1 is the orbit you have a 'Go' for.
Conrad	Yeah, I'm just kidding you.
Houston	Oh, okay. You were cutting out and I couldn't read you very well.
Conrad	Oh, okay.
Houston	The Flight Director would like to speak to you for a moment.
Conrad	Roger.
Flight	Good morning, Gordo.
Cooper	Chris, how are you?
Flight	How does it feel for the United States to be a new record holder?
Cooper	At last, huh?
Flight	Roger. Congratulations.
Cooper	We thought maybe you'd slept too well last night, in other words, you had rested better than we had, so we're going to put you to work this morning.
Flight	It seems that John Hodge does that to me every morning.

[** DMH's note -- Flight Director John Hodge's overnight shift focused on drawing up the flight plan for the next day, and then handed over to Kraft to execute it.]

Conrad	Houston, Gemini 5.
Houston	Go ahead.
Conrad	Do you want the readouts on our part for the 92-1 'Go'?
Houston	Roger.
Flight	Roger.
Conrad	Okay, 1A was 9.1; 1B, 8.6; 1C, 10.0; 2A was 6.9; 2B, 7.0; 2C, 8.2; RCS A 295, temperature 65; RCS B 290, temperature 68; left secondary O2, 5460; right secondary O2, 5300. And those readings were taken back when we were powered up.
Houston	Roger, and would you say what 1B was again, please?
Conrad	Roger, 1B was 8.6.
Houston	Roger.
Houston	And I'd like to add my congratulations also.
Conrad	Thank you.
Houston	Have you gone to pitch on your roll jets?
Cooper	No, we haven't.

Houston	You might as well go ahead and do that. I'm not [sure] we're going to have any great solution on how to get this thing working again.
Cooper	Okay.
Cooper	I'd like to add one thing in there -- just for your information -- when we first powered up this morning, after having been drifting for quite a while, all the thrusters were exceedingly sluggish, and we saw great globs of liquid coming out of them, drifting by us when we were firing them in 'Pulse' Mode.
Houston	Roger, roger. That's interesting, isn't it?
Cooper	And then I went to 'Direct' [Mode] to see if we could clear them out, and it did seem to -- we were getting great globules of liquid going by us, but they cleared out.
Houston	Okay. We were wondering about the dropping fuel [level] here, and that [this] might have been where we lost some of it.
Cooper	It could be. Well, we had done that last tracking experiment, we were having great difficulty getting it on the radar test there. We had quite a bit of trouble holding our attitude, and finally we had to go to 'Direct' to get the platform aligned. And then we were fiddling around, trying to find which thruster was giving us the problem.
Houston	Roger.
Conrad	Well another thing was, as we do get these tumbling rates pretty high out of the draining hydrogen, so when we first started aligning the platforms we apparently had intermittent operation on number 7 and we attributed it to the fact that we started drifting off, to the fact that the hydrogen tank was venting, and then we finally got smart after a while, and decided to look at some of it.
Houston	Roger.
Cooper	Yeah, this venting has been giving us 2 to 3 degrees rates for the last half-day or so.
Houston	Okay, have you noticed, has it built up since the last half-day?
Cooper	Yes, it seems to have built up just in the last half-day or so.
Houston	Okay.
Conrad	We drifted the first night. If you'll remember, and the thing stayed pretty low. Last night is really the first night we drifted again. We had, of course, stayed in horizon-scan most of the other United States night-cycles and so last night was the first night we really drifted any length of time, and it really did build up much higher than it did the first night.
Houston	Okay -- well the venting should start going down now, so we hope that that problem goes away.
Cooper	Roger.
Houston	Gemini 5, we'd like to have you power down your computer at this time. We have a good load in it.
Cooper	Roger, computer, coming down.
Houston	Roger.

Flight	Gemini 5, the friendly backups send congratulations and God Speed for the rest of your mission.
Conrad	Thank you.

Gemini Control here. The last voice you heard was that of Elliot See, and his reference to the "friendly backups" was to himself and Neil Armstrong, who're the backup pilots for this mission. We're still out over the Bermuda area and they have additional conversations, so let's stand by for it.

Houston	Gemini 5, Houston.
Cooper	Go ahead.
Houston	We'd like to have you turn your cryogenic gauging system off.
Cooper	Okay, turned to 'Off'.
Houston	Another thing -- we've watched your source pressure on your OAMS propellent from Canarvon to across the States. It's holding nice and steady, so we're not using any fuel there. Looks like most of the fuel that you used up was in that one pass -- that could very well have been from the sticking thruster.
Cooper	Okay.
Houston	We're going to take a little look at the flight plan again Gordo, to match up the fuel remaining with the experiments remaining.
Cooper	Okay.
Houston	Can you give us one more propellant quantity readout from your onboard gauging system?
Cooper	Yes, we're reading about 12 percent remaining on the propellant quantity gauge.
Houston	Okay. Very good.

Gemini Control here. We're definitely out of range now -- the spacecraft is probably 1000 miles east of Bermuda -- and we'll go off the line at this time.

This is Gemini Control here, 119 hours 34 minutes into the flight, with the spacecraft just coming over the coast of west Africa. We have the conversation from the early portion of the Stateside pass, and we'll play it for you now.

Guaymas	Gemini 5, Guaymas CapCom. If you read, turn your TM Control switch to 'Real-Time' at acquisition position.
Conrad	We're reading you Guaymas.
Guaymas	Alrighty. Standby for Houston.
Conrad	Okay.
Guaymas	TM solid to Guaymas. Go ahead Flight.
Houston	Gemini 5, Houston.
Cooper	Howdy Houston. Gemini 5 here.
Houston	Roger, have you got [thruster] number 7 working yet?
Cooper	Negative. We're powered down now, and just sitting here waiting for you to get on the line.
Houston	Okay, here's what we'd like to have you do. We'd like to have you turn 'Off' circuit breaker number 7, then go to 'Direct' and

	give it a good squirt that way -- to see if we can knock it loose with a good surge of power there.
Cooper	Alright. We've already tried that once, but we'll try it again.
Houston	Okay. Yeah, I imagine you've tried everything. We want to do a couple of little tests here to see what we get.
Cooper	Okay. That didn't succeed.
Houston	Okay. We'd like to try and find out whether we -- what the problem is -- and we're going to do a little test here to see if maybe the problem is one of the solenoid valves has failed. What we want to do is to look at the common control bus voltage. I've got a procedure here. I'll read it out step by step, but I want to brief you first. We'll look at the common control bus voltage, and we'll pulse both the number 7 and number 8 jets, one at a time, and have you watch the common control bus voltage. Now, if we've locked one of the solenoids on 7, the drop in common control bus voltage will be half what it will be when you pulse number 8. If both of the solenoids are working on 7, and they're both working on 8, we should get the same relative drop in voltage. So, are you ready to go through that -- this thing -- step by step now?
Cooper	Roger, we have number 7 in the open now.
Houston	Okay, I'll read off the steps. First we want to go to the common control bus on the voltmeter.
Cooper	Roger. We're on that.
Houston	Ah, just a memento, we're going to actually do the manipulation over Texas, Gordo, but we can make a few steps here, so we'll be ready to go when we get there. We'd like to gave you turn Squib Batteries 1 and 2 'Off'.
Cooper	Okay, Squib Batteries 1 and 2 coming 'Off'.
Houston	Okay. We'd like to have you turn OAMS number 7 circuit breaker -- we'd like to have that closed.
Cooper	You'd like to have the OAMS circuit breaker number 7 closed?
Houston	That's right.
Cooper	Okay.
Houston	And we'd like to have number 8 circuit breaker open.
Cooper	Okay.
Houston	And we'd like to have you in the 'Direct' control mode.
Cooper	Roger.
Houston	Okay, Gordo. We'll stand by until we get solid TM over Texas, and then we'll have you start manipulating and controlling.
Cooper	Okay.
Conrad	Houston, Gemini 5.
Houston	Go ahead Gemini 5. Houston here.
Conrad	I don't see any big problem. We can just go to pitch on the roll logic, and that ought to take care of everything as far as getting the platform aligned and so forth.
Houston	Roger. We just wanted to see if we could -- if this was a heater problem, or if we really lost part of the electronics, or whether we had a valve stuck.
Conrad	Okay.

Houston	We'll plan on skipping that D-6 over Texas this time, Gemini 5.
Conrad	Can you give us a readaut on our OAMS fuel -- is our gauge correct?
Houston	Roger Gemini 5. Your gauge is correct.
Houston	Okay, Gemini 5. We'd like to have [you] observe the common control bus voltage very carefully, and go ahead and move the attitude handle to yaw-left.
Cooper	Okay, yaw-left now.
Houston	Okay. You just have to -- these can be short pulses here, about a second or so.
Cooper	Roger.
Houston	Was that a four-tenths drop?
Cooper	About one volt, drop.
Houston	One volt -- okay, very good.
Houston	Now we'd like to have you turn off the number 7 circuit breaker and close the number 8 circuit breaker.
Cooper	Okay.
Houston	Now, we'd like to have you yaw-left again, and observe the [voltage] drop.
Conrad	It was only about half of what number 7 was. I suppose we got a short in there?
Houston	Oh, we'll think about that for a while. Okay, you can now turn your Squib Batteries 1 and 2 back 'On'.
Conrad	Did you get the same indications on the ground?
Houston	Standby one. We're looking at the data now.
Guaymas	Flight, Guaymas got a one volt drop on both of them.
Flight	Roger, Guaymas.
Houston	Gemini 5, Houston. It looks like, on the ground, that they both dropped about tile same amount.
Cooper	Okay.
Houston	We'd like to have you return the circuit breakers to the condition where number 8 is closed and leave number 7 open. And we'd like to have you go to 'Attitude Control'. We'd also like to have you power up the computer at this time in 'Prelaunch'. We want to give [your computer] an update.
Cooper	Okay. You want us to leave number 7 open, you say?
Houston	Yeah, why don't you leave 7 open for a while?
Cooper	Okay.
Cooper	Computer is in 'Prelaunch', power's on.
Houston	Roger, we'll be sending you an update shortly.
Cooper	Wait until we get it warmed up here.
Houston	Gemini 5, you can turn your TM switch back to 'Command'.
Cooper	Roger.

[** DMH's note -- The transcript now switches to a new segment of conversation, without preamble.]

Cooper	Looks like good weather down there.
Houston	Gemini 5, you have a 'Go' to 92-1.
Cooper	...

Houston These numbers are so high, I can't even count that high.

Gemini Control here. For your information, at 119 hours 6 minutes, the spacecraft was at 20 degrees north and approximately 130 degrees west longitude. And as the crew swung across the Atlantic, they had a brief conversation with the Canary Island station.

Canary Gemini 5, this is Canary CapCom.
Cooper Go ahead Canary, Gemini 5.
Canary Roger. We would like to extend our congratulations to you. We have nothing else for you. We're standing by. Everything looks good from the ground.
Cooper Okay. Everything's good here. Thank you very much.
Canary Roger.

Gemini Control back here. The weather this morning -- conditions are very favorable for continuation of the Gemini 5 mission in the next two days, and probably through the remainder of the mission. The west Atlantic recovery area, between Florida and Bermuda, has unusually fine weather, as it has had throughout the mission. Cloudiness is scattered most of the time, with a ceiling near 2,000 feet now and then, winds average a little less than 10 knots; and waves are only 2 to 3 feet. Very little change is expected by tomorrow morning. In the east Atlantic area, about 300 miles west of the Canary Islands, cloudiness varies between 3 and 6 tenths coverage; normal trade winds between 15 and 20 knots will raise seas of 5 to 6 feet. The mid-Pacific area, about 500 miles north of Honolulu, has a little more than usual cloudiness and ceilings of about 1,500 feet most of the time; winds average around 15 knots; waves about 4 feet. A weak cold front has had little effect upon the west Pacific area, 500 miles south of Tokyo. Cloudiness will be scattered most of the time; winds will average only 10 knots; waves 3 feet. A great part of the western, north, Pacific is unsettled and seems almost sure to evolve into one or more tropical storms in the next day or two. Tropical depression warnings have been distributed for two areas, one about 1,500 miles east of the Philippines, and another in the South China Sea. Still other places are being watched for possible development. Tropical storm Doreen, which was spotted by the Gemini 5 astronauts yesterday, is about halfway between San Diego and Hawaii, moving north-northwest andweakening. Extensive squall weather in the Caribbean has not evolved into any organized disturbance. No significant changes have been observed south of the equator. This is Gemini Control.

Gemini Control, Houston here, at 120 hours 2 minutes into the flight. Throughout the day, we are going to take an extremely. conservativ approach to the use of fuel -- for that reason, several experiments have been scrubbed. Most of the D-6 photographic tasks that require a lot of fuel for precise maneuvers will be eliminated. A sled run test scheduled for this morning at Holloman Air Force Base will not be undertaken. We will continue with several of the deep space D-4/D-7 experiments, looking at distant stars, and some of the other photographic experiments which don't require precise control but, in general, we're going to watch -- in view of this sticky thruster -- we're going to take a very conservative approach to the use of fuel. We have a brief conversation with the spacecraft and Houston via the Tananarive station. We'll play that for you now.

Houston Gemini 5, Houston. Do you read? Gemini 5, Gemini 5, Houston. Over.
Cooper Go ahead Houston, Gemini 5 here.

Houston	Gordo. We'd like to have you scrub a portion of D-4/D-7. We'd like to have you scrub the 410-charlie, 410-charlie. Okay?
Houston	Houston here, transmitting in the blind. I would like to have you scrub 410-charlie.
Cooper	Roger, Houston, we got that, and we'll scrub it.
Houston	Roger.

Gemini Control here, at 120 hours 29 minutes into the mission. In the last pass across Carnarvon, the pilots were invited to scrub the D-6 picture-taking exercise today, 3 or 4 in number, but they were advised to go ahead and attempt the infrared reading on Kilauea, an active volcano in the Hawaiian area during a later pass. We have the Carnarvon tape ready and will play it for you now.

Carnarvon	Gemini 5, Carnarvon.
Cooper	Go ahead Carnarvon, Gemini 5.
Carnarvon	Okay. We are going to update your TR for 92-1. Are you 'Go'?
Cooper	Roger, we're 'Go'.
Carnarvon	Roger, we're 'Go' on the ground.
Cooper	Do you have a readout of these experiments they want us to do?
Carnarvon	Roger. Standby one.
Carnarvon	Gemini 5, Carnarvon. Okay, they want you to scrub all the D-6 experiments. They want to scrub the D-4/D-7, 424-bravo. But they do want to try to do the D-4/D-7, 425-alpha, but they don't want to spend a lot of fuel on it.
Cooper	Okay, they want to do the D-4/D-7, 425-alpha?
Carnarvon	Right. That's at 14:34:51.
Cooper	Okay, scrub the D-6s, scrub the D-4/D-7 424-bravo, but do the D-4/D-7, 425-alpha, at 14:35:51.
Carnarvon	Roger. If it doesn't take -- don't spend a lot of fuel on that 425-alpha. Okay, and they will attempt to do the S-8/D-13.
Cooper	Okay.
Carnarvon	Flight, Carnarvon. Did I get that up right?
Flight	That's roger.
Carnarvon	Okay.
Flight	I think you read back 425-alpha, but I'm sure he knows it's 424-alpha -- I beg your pardon, you read 424 and we wanted 425. It was read back correctly, so forget it.
Carnarvon	Transmitting your TR.
Cooper	Okay, we're getting it.
Carnarvon	Roger. You're in sync.
Cooper	Roger.
Carnarvon	Be advised that there's a medical pass on the Pilot at Hawaii. Hawaii's AOS is 14:31.
Cooper	Roger -- 14:31, medical pass on the Pilot.
Flight	Carnarvon, what amperage are you reading?
Carnarvon	Say again, Flight.
Flight	What amperage are you reading on the ground?
Carnarvon	Okay, he came over the hill with the platform on, he just powered down.

Flight	Would you cut another main for us.
Carnarvon	Roger.
Fliglht	We'd like to know why he had the platform on?
Carnarvon	Gemini 5, Carnarvon. Could you tell us why you had the platform on?
Cooper	Roger. At the last word we got, they had only scrubbed one thing, and they neded the platform on those others, over.
Carnarvon	Roger, understand.
Cooper	So, we have now powered the platform back down.
Carnarvon	Roger. Would you verify that the roll jet switch is in a pitch position.
Cooper	Affirmative
Flight	Ask him if he has any other questions on the flight plan.
Carnarvon	Gemini 5, Carnarvon. Do you have any other questions at this time on the flight plan?
Cooper	Negative, I don't think so.
Carnarvon	Roger.
Cooper	You might pass on to Flight another small thing -- we had our onboard voice tape fade out sometime yesterday.
Carnarvon	Roger
Cooper	We have no onboard recording.
Carnarvon	Roger.

Gemini Control here, at 120 hours 43 minutes into the mission. In the pass over Hawaii, just completed, we've confirmed that both yaw-left thrusters, both numiber 7 and number 8, are inoperative. These thrusters fire in a -- this assumes a Small-End-Forward position -- they fire in the direction to the left of the spacecraft. One thruster is located at approximately 8 o'clock, the other one at 10 o'clock. We have the Hawaii tape, and we are ready to play it for, you now.

Hawaii	Gemini 5, this is Hawaii CapCom.
Conrad	Roger. Sending the blood pressure down.
Surgeon	Gemini 5, this is Hawaii Surgeon. Cuff's at full-scale. That was a real good blood pressure. Give me a mark when you start your exercise.
Conrad	Mark!
Hawaii	Houston Flight, Hawaii CapCom.
Flight	Go ahead.
Hawaii	We're showing a D-4/D-7 carrier with modulation.
Flight	Yeah, that's right.
Hawaii	Roger.
Flight	That's the 425-alpha, Hawaii.
Conrad	Cuffs at full-scale.
Hawaii	Roger, Flight.
Surgeon	We have a good blood pressure. Standing by for your food, water, and sleep reports. Particularly, we are interested in a summary of the last 24 hours, if we can have one.
Conrad	Roger, wait one.
Surgeon	Right.

Conrad	Water is 26 pounds. I already gave the last meal I ate, which was 3B at 05:09:00:00. I had about 6 hours sleep over the last 24.
Surgeon	Roger. Six hours sleep. On the meals that you've eaten, we have estimated from your past reports that it's ID, 1C, and 3B.Is this correct for the last 24 hours?
Conrad	That sounds about right.
Surgeon	Alright.
Cooper	How about putting the CapCom back on, please?
Surgeon.	... Hawaii Surgeon out.
Cooper	Okay.
Hawaii	Gemini 5, Hawaii CapCom. We have you 'green' on the ground.
Cooper	Roger. We're 'green' here except for our control system, and we do not have a yaw-left thruster. Over.
Hawaii	Hawaii. I understand -- yaw left thruster.
Cooper	That's right, we've tried in 'Pulse' and in 'Direct', and we can see it fire, a very faint fire from our indirect out there, but we're getting no thrust out of it. That's number 8 thruster. Number 7, we have the circuit breaker open on it.
Hawaii	Roger, I understand.
Cooper	And we're in, the roll jets are in the pitch position.
Hawaii	Roger. Did you copy, Flight?
Flight	Did he say the number 8 had also failed?
Hawaii	He didn't say it failed -- what he said was he could see it thrusting, but he didn't feel it get thrust out of it.
Flight	Ask him if both number 7 and number 8 are now failed.
Hawaii	Roger.
Hawaii	Gemini 5, have both number 7 and number 8 failed now?
Cooper	That's correct.
Hawaii	Roger. Did you copy, Flight?
Flight	Roger.
Hawaii	Gemini 5, Hawaii standing by,
Cooper	Okay. Mighty fine, thank you.

This is Gemini Control, at 121 hours 2 minutes into the flight, on the 77th rev, about central Atlantic. During that last pass, we hoped to perform an S-7 cloud-top experiment. This requires a sustained strip of cloud but -- wouldn't you know -- the weather didn't cooperate. Most of the United States was reported to be clear and sunny, so we couldn't perform the weather photography experiment. In the eastern portion of the swing, Pete Conrad reported that he could see a carrier and a destroyer entering Jacksonville Harbor. That would have been Mayport. We have the tape of the Stateside pass and are ready to play it for you now.

Guaymas	Gemini 5, Guaymas CapCom, over.
Cooper	Go ahead Guaymas, this is Gemini 5.
Guaymas	Have you tried the other attitude thrusters?
Cooper	Yeah, we have pitch up and down, and roll right and left.
Guaymas	Are they working normally?
Cooper	Roger.
Guaymas	Alrighty.

Guaymas	Flight, Guaymas. Did you copy?
Flight	Roger.
Guaymas	Did you try a complete secondary electronics on thruster number 8?
Cooper	No, we haven't.
Guaymas	You want us to try that, Flight?
Flight	Negative.
Guaymas	Okay, Flight says to leave it alone at this time.
Cooper	Okay.
Guaymas	Okay, you're looking good here on the ground, Gemini 5.
Cooper	Okay, very good.
Houston	Gemini 5, this is Houston.
Cooper	Go ahead Houston, Gemini 5.
Houston	We'd like to have you purge sections 1 and 2 [of the fuel cells]. You can start at any time you'd like, now.
Cooper	Okay, we'll start purging them in just a minute.
Houston	I was going to give you some more flight plan stuff. We were going to scrub the S-7 because of the weather, but I guess you don't have to worry about that, do we?
Cooper	No, they ought to be somewhere around us.
Houston	Yeah, say, do you want to check your tone box circuit breaker. That powers the tape recorder. I wonder if it'd popped off on you?
Cooper	I checked that already.
Houston	Okay.
Cooper	Coming up over the Dallas and Fort Worth area -- we can see it very clearly.
Houston	Roger.
Cooper	What do the people down there think. Did we get a little cold on that OAMS stuff?

[** DMH's note -- Cooper is thinking that the thrusters had degraded because they had been cold-soaked.]

Houston	I don't know. They're still working on it, Gordo.
Cooper	Just kidding, I figured they were.
Houston	Gordo, we think that the mixture ratio was off for some reason. We don't know exactly why yet.
Conrad	Yes, we could see this thruster is actually burning, but we're not getting any thrust out of it. We can see it just, as a matter of fact, it puts out a brighter flame than the normal thruster firing.
Houston	Yes, that's a pretty good indication that we've got a bad mixture ratio. Did you see anything like that on he other one, or did it just fail?
Conrad	No, it's just not flat burning.
Cooper	We didn't see anything at all out of the other one.
Houston	Okay. Yeah, we're working on it, down here and I guess -- why don't we just hold the experiments until we get something figured out here.
Cooper	Okay.

Conrad	The only thing that I can think of, Jim, is last night I guess when we were just drifting in this hydrogen venting. It was -- let's see if I remember it right -- the left-roll and the right-yaw?
Cooper	Left-yaw and right-roll.
Conrad	Left yaw and right roll, and we spent a lot of time cork-screwing around like that and then it seemed to keep that side out of the sun anytime we were in it and it was fairly good. It didn't have to be the way we were drifting.
Houston	Okay, you were getting left-yaw and right-roll, and you say that that side of the spacecraft was in the darkness quite a bit.
Conrad	Yeah.
Houston	Okay. That sourds like a nifty maneuver.
Conrad	That's what the hydrogen purge and I guess maybe something -- hydrogen venting.
Cooper	The hydrogen was venting ...
Houston	I knew you guys weren't very coordinated, but left-yaw and right-roll, I don't know?
Cooper	That's my fuel cells, Jim.
Houston	Roger.
Conrad	Okay, we're starting the hydrogen purge ... right now.
Houston	Okay.
Conrad	Number two hydrogen going.
Houston	Roger.
Conrad	Number one hydrogen going.
Surgeon	Gemini 5, this is the MCC Surgeon. How did your sleep go last night?
Cooper	Oh, we got about three hours each, three and a half hours each, I guess.
Surgeon	Yeah, I heard the time. Was it easier with the flight plan worked out better last night?
Cooper	A little bit better.
Surgeon	Hey, did Pete get the [thigh] cuffs off?
Cooper	Yeah, we got them off.
Surgeon	Okay. How's the skin now with the cuffs off?
Cooper	A lot better I think.
Surgeon	You having any more troublearound the sensors, Gordo?
Cooper	Yeah.
Conrad	Hey, I see a carrier and a destroyer steaming right straight into Jacksonville.
Houston	Very good.
Conrad	The weather was really clean, across the U.S.
Houston	Yeah, that's our trouble with the S-7 -- we didn't have any thunderstorms to take pictures of.
Conrad	Commencing number two O2 purge..
Houston	Roger.
Conrad	I think I see either the recovery carrier or another large ship making a big wake down there.
Houston	Yau're a real 'Homing Pigeon' for these aircraft carriers, aren't you.

Conrad	Yeah. The sun angle is just right today, and the spacecraft moved just right.
Houston	Okay. How was the weather out around Laredo. Do you think you have any chance of seeing that S-8/D-13 target?
Cooper	There are quite a few small puffy clouds out there.
Houston	Okay. Do you think you can control the spacecraft, Gordo, so that you could do the S-8/D-13?
Cooper	Yeah, we want to do it.
Houston	Say again?
Cooper	We want to do one S-8/D-13.
Houston	You do want to do it? Roger, we'd like to have you do it too.
Cooper	You said can we control the spacecraft today, huh?
Houston	Yes, can you control it?
Cooper	I don't know -- we might be able to.
Houston	Okay, don't expend a lot of fuel doing it. We're trying to save some fuel here, too.
Cooper	Okay.

This is Gemini Control, at 121 hours, 48 minutes. With the spacecraft over Australia, we've had a long chat with the Gemini 5 spacecraft. We have advised them on the precise powered-down configuration requested. They've also been advised to suspend the use of onboard fuel until further notice. More than likely, we will stay in this powered-down and drifting-flight state for the better part of today. The power configuration is drawing a load of 18 amps at 27 volts. We have the tape ready now from the Carnarvon pass, and we'll play it for you now.

Carnarvon	Gemini 5, Carnarvon,
Conrad	Go ahead Carnarvon, this is Gemini 5.
Carnarvon	Roger. I have a flight plan update for you, when you're ready to copy.
Conrad	Standby.
Carnarvon	Also be advised that Flight requests that you use no fuel until advised -- delete all experiments until advised.
Conrad	Ready to copy the flight plan.
Carnarvon	Roger. Item, map 155549, longitude 151.4 east, rev 77. Next item, star 155549, remarks -- zero hours, 19 minutes. Do you copy?
Conrad	Roger.
Carnarvon	Did you copy that about the fuel?
Conrad	Roger.
Carnarvon	Okay, and they want you in a powered-down configuration and this is a list of the items they wish you to have powered up -- a voice control center, one suit fan, two coolant pumps, a beacon, UHF receiver, a DCS receiver, PCM tape recorder, biomed recorder number 2, the dc-to-dc converter, the OAMS heater, and the RCS heater, the water line heater, and necessary cabin lights. Do you copy?
Conrad	No, I got all of it but one -- voice control, one suit fan, two coolant pumps, one beacon -- and what was the next one?
Carnarvon	The next one was UHF receiver, followed by DCS receiver.

Conrad	Yeah, a DCS, PCM tape, biomed recorder no. 2, do-to-dc converter, OAMS, RCS, and water heaters.
Carnarvon	Roger. They are trying to work up some test on this attitude pressure problem, but they haven't got anything as yet.
Conrad	Okay.
Carnarvon	They have several thoughts -- thrusters 7 and 8 run on the end of the manifold. There is the possibility of clogging toward the end of the manifold? Or it could be low on fuel or oxidizer; or both? They're working on the problem.
Conrad	Roger.
Flight	We'd also like the scanner heaters left on,
Carnarvon	Okay.
Carnarvon	You can turn your primary ACME power off.
Conrad	Roger.
Carnarvon	We've got your telemetry off; we had a look at it, it looks okay ...
Conrad	Okay.
Carnarvon	Now we're standing by.
Conrad	Roger.

Gemini Control here. In addition to the items read off that the Flight Director requested remain powered up, one other item, the,MSC-1 experiment, the electrostatic charge sensor, will be left on. This draws a very small amount of power, and the crew will be advised of that when we reach Hawaii, some five minutes from now. This is Gemini Control.

Gemini Control, at 122 hours 2 minutes. We've had no contact since Carnarvon. We should be coming up on Hawaii in a few minutes. And we're in that drifting configuration which is reminiscent of Gordon Cooper's earlier flight in 'Faith 7'; he spent the better part of his flight in a drifting mode. The Flight Director is in a discussion with Jim McDivitt, Deke Slayton, and several other people around his console, John Hodge has come back -- the Blue Team Flight Director. We generally have a fairly relaxed atmosphere here in the Control Center. This is Gemini Control.

This is Gemini Control Houston here, at 122 hours 13 minutes into the flight. Hawaii just had Loss Of Signal as I started talking. We still have no word on the kinds of rates that the spacecraft is achieving in this drifting flight, but we expect some word on this as soon as it swings across the United States. Here's the Hawaii conversation.

Hawaii	Gemini 5, Hawaii CapCom.
Cooper	Roger Hawaii CapCom. Gemini 5 here.
Hawaii	Roger. For your power up configuration, we'd like you to add the horizon scanner heater circuit breaker 'On'.
Cooper	Ah, roger. For the power up configuration?
Hawaii	That's the way you are now.
Cooper	Do you want the scanner heater circuit breaker 'On'?
Hawaii	That's affirmed.
Cooper	Roger, we have it 'On'.
Hawaii	All of your systems are 'Go'.
Cooper	Roger, thank you.

Hawaii	We're standing by.
Cooper	Okay, Hawaii CapCom.

This is Gemini Control, Houston, here. We're over the Texas site, and let's cut in on the conversation live.

Cooper	... and I saw Houston quite clearly.
Houston	Gordo, have you ever been able to see the Domed Stadium?
Cooper	No, we didn't see the Domed Stadium the last time either.
Houston	Rog.
Cooper	There are a number of small puffy clouds overhead ... And then we are drifting at a fairly good rate here too -- it'doesn't give us a great long look at anything.
Houston	Okay.
Cooper	We just now passed Florida, I saw Florida.
Conrad	Hey, one thing, Jim, I'd like you to consider on the last day's worth of experiments -- fuel permitting. Let's not load us too badly though, because we're going to have quite a restowage problem, you know?
Houston	Right, I understand that. I set aside three hours prior to retrofire for our stowage and it took us just that long to do it. As a matter of fact, we were a little rushed at about 1 hour to go, we still had some things out, so I think three hours would be a good time to use there.
Conrad	That was our feeling, that we needed at least three hours.
Houston	Well, don't worry about that. We won't load you up so that you can't get all the stuff stowed.
Conrad	Very good.
Conrad	We're right over Key West now, and it's a really nice day down there too.
Houston	Roger.
Conrad	I saw the airfields in Key West.
Houston	Have you ever noticed the Gulf Coast and the Atlantic Coast outlined in those little puffy clouds like we saw?
Cooper	Yeah, there it is right now.
Houston	That's really classical weather, isn't it?
Cooper	Yeah, it sure is.
Cooper	You can also see a big, sort of a storm, right down off the tip of Florida in the Gulf.
Houston	Rog. Say. Were you ever able to see the eye of Doreen, or does it just look ...
Cooper	Yeah, we took some pictures of it.
Houston	Does the eye actually look like an open spot, or is it just all clouded over?
Cooper	It's like a semi-opened spot and built up very, very heavy, and then right in the immediate eye of it, it was sort of sunken in place, like a convex.
Houston	Very good. All the stuff we passed over was just flat, and you could never really pick out any center to them.
Cooper	This one had a very well defined eye.

Houston	Rog.
Cooper	It looked like the center of a whirlpool, you know?
Houston	Roger.
Conrad	Say, Jim, would you give my wife a message.
Houston	I'd love too.
Conrad	Tell her -- she owes me a dollar.
Houston	Okay, I'll tell her that. You want to collect it yourself, or do you want me to mail it to you?
Conrad	No, I'll collect it. I just want you to tell her, that's all.
Houston	Okay.
Houston	Hey, Dr. Berry says that she has already called up and admitted she owed you a dollar.

[** DMH's note -- Jane Conrad had bet Pete that he'd never make five days in space.]

Conrad	Very good.
Conrad	I got a good look at the Guantanamo Naval Base down there in Cuba.
Houston	Very good.
Houston	Gemini 5. Houston again. Have you been able to see anything of Australia yet in the daylight?
Houston	Gemini 5, Houston. Have you been able to see Australia in the daylight yet?
Houston	Gemini 5, Houston.
Cooper	Go ahead Houston, Gemini 5.
Houston	Dr. Berry said yesterday at the Press Conference that after the use of your 'blue bags', when you get back we'll have a real milestone.
Cooper	Correct.
Conrad	I'm really keeping my eye on Gordo, I'll say that.
Houston	So would I, Pete! So would I.

Gemini Control here. We apparently are out of the voice contact zone. Just as we tuned in on that live conversation across the United States, we established here on the ground that we were achieving, in drifting flight, rates in pitch of about 2 to 3 degrees and slightly less than that in roll, so the spacecraft is drifting along at a very stable sort of position. This will let the crew continue with whatever kind of photography they can acquire on a when-you-can basis. We heard quite a discussion of the weather. And the conversation also cleared up the phone call that Dr. Berry got from Jane Conrad about an hour ago -- And Mrs. Conrad might have more to say on that. This is Gemini Control at 122 hours 35 minutes.

Gemini Control, Houston, at 123 hours 2 minutes into the mission. The spacecraft is on its 78th revolution around the earth. Our orbital elements today are perigee 123 statute miles, apogee 187 statute miles, and a period of about 95.5 minutes. The next perigee will occur over Guaymas at a point 115 degrees west longitude. The perigee moves back about 22 degreee per rev. Everything's status quo here. We've had no contact since the Stateside pass. This is Gemini Control.

Gemini Control here, at 123 hours 33 minutes into the flight. We are on the 78th rev in mid-Pacific. Here in the Control Center, the Flight Director's been chatting with Techland Roberts -- Tech was our first Flight Dynamics Officer back in the Mercury program. It has been a relatively quiet swing across the Pacific. The spacecraft was acquired by Carnarvon, although it was more than a thousand miles from the station; we have that conversation and will play it for you now.

Carnarvon	Gemini 5, Carnarvon CapCom.
Conrad	Come in Carnarvon, Gemini 5.
Cooper	Our status is 'green' up here.
Carnarvon	Roger. Looks good down here also. We've got about ... LOS, standing by.
Conrad	Roger, Carnarvon CapCom. Is the Surgeon listening?
Carnarvon	He's listening.
Conrad	Would the Surgeon pass on from the Pilot to Drs. Bishop Laine and Murray Austin our regards, please?
Carnarvon	Roger, will do.
Conrad	Thank you.
Carnarvon	We'll see you tomorrow.
Conrad	Okay.

Gemini Control here, at 123 hours 47 minutes into the mission. We've some tape from the Hawaii medical data pass for you in which Cooper reads out his water usages and sleep cycle. Over Carnarvon, you heard Pete Conrad convey his best wishes to Dr Bishop Laine and Dr Murray Austin. Those gentlemen are members of the Royal Australian Air Force but they're working as medical monitors at Carnarvon. Pete met them during the GT-3 flight -- the Grissom and Young flight. Cooper, our Command Pilot, also has had some experience at the Carnarvon station -- he was the Capsule Communicator there during the John Glenn flight. We have the Hawaii pass ready for you, and we'll play that conversation for you at this time.

Surgeon	... have a valid temperature. Standing by for blood pressure.
Surgeon	Gemini 5, Hawaii Surgeon. Your cuff is full-scale.
Surgeon	Gemini 5. We have a valid blood pressure. Give me a mark when you begin your exercise.
Cooper	Mark!
Surgeon	Gemini 5, Hawaii Surgeon. Your cuff is full-scale.

This is Gemini Control. We cut off the tag end of that Hawaii pass because we have a little surprise for the crew, some music that they requested earlier in the day. Jim McDivitt just advised that they are playing. Let's all listen to it.

	MUSIC
Jim McDivitt	May I have this dance please?
Conrad	That sounded good.
Houston	How do you like that GT-5? Gemini 5, Houston here. I ve got some switch positions that I would like to have you go to. You don't have to acknowledge this. We'd like to have you put your Cryogenic Gauging switch to ECS O2.

Houston	Gemini 5, Houston here. We'd like to have you put your Cryogenic Gauging switch to ECS O2.
Houston	Oh, you're up. How did you like the music.
Conrad	It was great!
Houston	Listen, as soon as we get through some of the switching here, we'll give you some more.
Conrad	Okay.
Houston	How are your rates up there now?
Cooper	Oh, about 3 degrees, I guess.
Houston	Okay, your Cryogenic Gauges to fuel cell O2. Okay, now we'd like to have you go to fuel cell H2.
Cooper	Okay, we get particles going by fairly frequently, so I think we are still venting.
Houston	Okay, you say things are going by quite often, so you think you are still venting -- right?
Cooper	Roger.
Houston	Okay, put your Cryogenic Gauging switch back to 'Off'. Be advised that it may be possible for you to get another fix on that storm Doreen.
Cooper	Okay.
Houston	On rev 79, at approximately 19:25:00, the center of the storm should be a little bit to the right of your track, or possibly directly below the spacecraft, and if you can get a fix, we'd like to have the time that you passed over it, and where you thought the center of the storm was with respect to you.
Cooper	Okay. We'll try.
Houston	Gemini 5, do you have anything else for Houston?
Cooper	No, I don't believe so.
Houston	Okay, if you don't have anything else, we'll give you the music again, okay?
Cooper	Alrighty.
Houston	Here we go. Let's have some music -- contact!
	MORE MUSIC

Gemini Control here. That apparently concludes our space concert for today. The tunes you heard were -- in this order -- 'Muskrat Ramble', 'Birth of the Blues', 'Jada', and most appropriately, 'When the Saints Go Marching In'. There has been consideration here given to playing 'Never on a Sunday', but it was ruled out as being inappropriate. The tunes, of course, were very much in keeping with the city that they were flying just to the south of -- all New Orleans type music. Both had expressed a preference for Dixieland before taking off. This is Gemini Control, at 124 hours 4 minutes into the mission.

Gemini Control here, at 124 hours, 32 minutes into the flight, and things have been all quiet in the Control Center since our Stateside pass when Jim McDivitt qualified as the first space disc jockey. We should explain that the music was played through Jim's console. He had to squeeze down his Push-To-Talk button to keep it fed up there, just the reverse of the situation about 3 months ago when Ed White was out on the end of aan umbilical, and Jim, of course, was keying so that the conversation flowed the other way. And for the record -- the music was that of Al Hirt. That's it, things are all quiet here in

the Control Center. The Flight Director is on a luncheon break. When he leaves, assistant Flight Director Bill Platt takes over.

Up in space, the pilot should be taking a nap now, and the Command Pilot is due for another meal. They're coming up on Tananarive very shortly. At Carnarvon, the crew will get some updates on Planned Landing Areas 8l through 85. That's our status at 124 hours 33 minutes into the flight.

Gemini Control, Houston here, at 125 hours 10 minutes into the flight. We're on the 79th rev, coming across the Pacific Ocean. The Capsule Communicator aboard the Coastal Sentry Quebec is in contact with the spacecraft now. They've just been given a whole long series of updates for the Planned Landing Areas 81 through 85, as standard procedure.

Of some interest, may be the pressure and quantity readings on our various tanks. The Environmental Control System breathing oxygen supply -- we're showing 76.9 percent of the quantity, pressure is 1,020, and venting slightly. The fuels cell oxygen supply shows 86.7 percent quantity, and we're showing the pressure on that oxygen supply to the fuel cell of 173 pounds per square inch. The fuel cell hydrogen quantity is 40.7 percent and the pressure is 349 pounds per square inch, and it is venting slightly. At last reading, we were drawing a total of 14.8 amps and a voltage of 26.8.

Several revolutions earlier, you'll recall that Pete Conrad said that he thought he saw a carrier and a destroyer entering Jacksonville harbor. Checking back with the authorities at Jacksonville, we believe that "carrier and destroyer" turned out to be a tug pulling a large barge, which might have been easily interpreted as a carrier and a destroyer to an old Navy pilot like Pete Conrad! This is Gemini Control.

Gemini Control here, at 125 hours 23-minutes into the flight. In the recent pass across the CSQ, Gordon Cooper noted a slight increase in his carbon dioxide sensor onboard the spacecraft. This is accountable because the suit flow rate was slightly down and -- as will be shown on the tape -- people down here were very happy that the carbon dioxide sensor is delicate enough to pick up this slight change in the carbon dioxide element. We've talked to Dr. Berry, and his comment on the status of the pilot goes like this: "they're in excellent shape". He says the EKGs, the heart rates, are as clean as any data he has seen during the flight during, these last few passes, particularly over Hawaii. He says the intervals he sees in the EKG's are precisely what they were just prior to lift-off. He is very pleased.

Gordon Cooper has reported that the spacecraft rates are presently about 6 degrees and tumbling. At this time, the spacecraft is approaching the west coast of the United States. During this period, the crew will align the platform and 'Pulse' fire -- for about one second each -- the number 7 and number 8 thrusters that were giving us trouble earlier in the day. They do plan to fire them to see how everything works out. Meanwhile let's have the tape from the earlier CSQ pass.

CSQ	Gemini 5, CSQ CapCom.
Cooper	Roger CSQ CapCom, Gemini 5 here, over.
CSQ	Roger, Gemini 5. We'd like you to place your comm switch to 'Real Time' acq-aid [beacon] for this one, please.
Cooper	Okay.
CSQ	And CSQ has a map update for you. Let me know when you're ready to copy, over.
Cooper	Standby -- we're ready.

CSQ	[Area] 81-3, 21:52:20, 143719101. 82-3, 23273 ..., 13+22, 18+35. 83-3, 01:02:52, 12+19, 17+ 53. 84-bravo, 02:38:41, 11+34, 17+45. 85-delta, 03:27:55, 19+36, 24+40. Do you copy?
Cooper	Roger.
CSQ	Okay. Be advised the weather is good in all areas and at standard bank angles, over.
Cooper	Alright, the weather is good, and standard bank angles.
CSQ	And also be advised -- if your delta-P lights on section two [of the fuel cells] come on, you should open the crossover [valve] momentarily..
Cooper	Say again.
CSQ	Roger, if your delta-P lights come on on section two, you should open a crossover valve momentarily.
Cooper	Okay, will do.
Cooper	And would you pass back to MCC that we just had a minor little difficulty. We think it's all right, but they might [not] be aware of it. Our partial-pressure CO2 gauge started sliding, and we increased the suit flow and decreased the suit temperature and suit flow, and the gauge went back down. We've run a P-CO2 tape test on it, which shows that it's below fourr millimeters of mercury, and the gauge's presently back down to the zero point. They might just want this for informational purposes.
Flight	We copy.
CSQ	Alright ...
Flight	What did he say the P-CO2 got up to?
CSQ	He didn't say how far it rose ...
Flight	Ask him.
CSQ	... it went to 4 millimeters he said, I believe.
Flight	Ask him, will you, please?
CSQ	Roger. Gemini 5, CSQ here.
Cooper	Go ahead CSQ.
CSQ	Roger. Flight would like to know how far the CO2 rose.
Cooper	When we started, it was just above 1 millimeter of mercury, -- just above one tenth of a millimeter of mercury.
CSQ	One tenth of a nlillimeter.
Cooper	Right. It's been riding right off the bottom of the peg, so this is quite a change.
CSQ	Roger, copy.
Flight	Sounds pretty normal.
CSQ	Did you copy, Flight?
Flight	Roger. That sounds normal to us.
CSQ	Roger.

Gemini Control here again. Coming right behind it we do have the Hawaii discussion. It's racked up, we'll play it for you now.

Hawaii	Gemini 5, Hawaii Cap Com.
Cooper	Go ahead Hawaii, Gemini 5.

Hawaii	Roger. We'd like to run a test on thruster 7 and 8. We'd like you to bring up the ACME and the 'Pulse' control mode and stabilize with your Adapter [Module] to the sun, without using your yaw thrusters.
Cooper	Okay ...
Hawaii	We'd like you to fire the thrusters 7 and 8 in the 'Direct' control mode for about one second each, and evaluate the performance.
Cooper	Okay.
Flight	At Guaymas, we'd like him to do that.
Hawaii	We'd like you to do that at Guaymas.
Cooper	You want us to do that at Guaymas?
Hawaii	That's affirmative.
Cooper	Okay, fine.
Hawaii	And as soon as you finish your evaluation, we'd like you to power down again.
Cooper	Okay.
Hawaii	All of their systems look good, Flight.
Flight	Roger.
Cooper	We still apparently [venting] quite a bit, because our drift rate's gotten up to around 6 degrees per second in this tumble.
Hawaii	Roger.

Gemini Control here. In the course of this swing over Mexico, we have attempted an attitude control check, and results were negative. We tried in the 'Pulse' command mode. We then tried in the 'Rate Command' mode. That's on thrusters number 7 and 8 yaw-left thrusters. We got zero thrust out of both.

Pete Conrad reported that they did fly directly over the storm Doreen. He identified the time, and we have that tape ready for you, and we'll play it now.

Gemini Control again. I'm sorry, we apparently missed a cue there; they weren't quite ready with the tape. When they are -- I'm advised they are ready now. Let's have the tape.

Cooper	Go ahead Houston, this is Gemini 5.
Houston	Roger. Have you started to slow down your rate now, and to stabilize with the Adapter towards the sun?
Cooper	We're just starting.
Houston	Okay, very good. We'd like to have you turn 'On' your TM at 19:26 ... 'Real Time' on acquisition right now. We'd like to have you turn it back to 'Command' at 19:34, if we haven't told you to do by then.
Cooper	Okay.
Houston	What do you think of those tumbling rates that you've got now? We'd like your opinion of them.
Cooper	Well, they are getting up a little bit high ... They aren't too bad yet.
Houston	Okay. What are you thinking you'll live with? About twice that much, or 50 percent more, or a little bit more, or what?
Cooper	Just a second we're damping.
Houston	Okay. How are those other thrusters working, Gordo?
Cooper	They seem to be working alright.
Houston	Very good.

Conrad	Do you want these altogether, or one at a time?
Houston	We want them one at a time. We want you to thrust for about a second on each one. And we want your evaluation of their performance, but we'll call you and tell you when we get good TM. We'd like to watch that TM, also.
Cooper	Okay.
Flight	Guaymas, do you have TM.
Guaymas	That's affirmative, Flight.
Houston	Gemini 5, this is Houston. We'd like to have you go ahead and operate one of the thrusters in 'Direct', and you tell us which one you're doing.
Cooper	Alright, number 7 is on, and I'm thrusting on my mark, 3, 2, 1, 1 -- no joy.
Houston	Roger, no joy. We'd like to have you do it on number 8 now, please.
Cooper	Alright, number 8 is on. I'm thrusting now, 3, 2, 1, mark! -- no joy.
Houston	Roger -- no joy on that one, either. We'd like to have you go to 'Rate Command' and try that now, Gemini 5, in yaw-left.
Cooper	Roger. Number 8 is on now. Negative in 'Rate Command'.
Houston	Okay, try 7.
Cooper	Number 7 is on now. And there is nothing from number 7.
Houston	Okay. You can go ahead and power back down. We'll think some more here.
Cooper	Alrighty.
Houston	Don't forget to turn your TM 'Off'. Just a second, let's see if we need anymore. Okay, leave it on for another couple of minutes, and I'll give you a call.
Cooper	Okay.
Guaymas	Flight, Guaymas.
Flight	Go ahead, Guaymas.
Guaymas	Be advised that Acquisition had a steady light ... I was getting a reading from the back room on both those thrusters as on. They never did go off, and they stayed on and they are on at this time.
Cooper	Houston, Gemini 5.
Houston	Go ahead.
Conrad	We passed Doreen 19:24:45, 20 miles north of track.
Houston	Roger, 19:24:45, 20 miles north of your track.
Flight	Guaymas, would you check that?
Guaymas	Check it again, Flight. Standby.
Houston	Gemini 5, Houston. We'd like to verify that the circuit breakers went on, and stayed on ....
Cooper	Yes, they were, and they stayed on.
Guaymas	Okay.
Guaymas	Flight, Guaymas.
Flight	Go ahead.
Houston	They should be on now, but they should have gone off when you turned the circuit breakers on.
Guaymas	That's negative.

Flight	After the pass, how about playing your tape back.
Guaymas	Will do, Flight.
Flight	Cut some Main A and B summaries for us.
Guaymas	Roger. Are the circuit breakers closed at this time?
Houston	Standby. I think that the circuit breakers are both off at the present time. Gemini 5, Houston, are both your circuit breakers open at this time?
Cooper	Roger. Circuit breakers 7 and 8 are open at this time.
Houston	Okay, very good.
Cooper	We're reading 42 percent on fuel cell hydrogen at the present time.
Houston	Roger, understand, 42 percent on fuel cell hydrogen.
Cooper	Roger. It's gone down 52 42 since we talked to you last.
Houston	Okay.
Guaymas	Flight, Guaymas.
Flight	Go ahead.
Guaymas	They're both on.
Flight	Roger.
Houston	Gemini 5, this is Houston. You can put your TM switch back to 'Command' now.
Cooper	Okay, I'm back in 'Command'.
Guaymas	LOS at Guaymas.
Flight	Roger.

Gemini Control Houston, at 126 hours 2 minutes. At this time, Eugene Kranz's Flight Control Team has come in the Control Center, and we're in the usual between shift briefing process at each console. Eugene has been here for about half an hour. He's been in detailed discussions with Chris Kraft on the events of today. Otherwise, we have not had a report from the spacecraft since the Guaymas pass. Pilot Pete Conrad is to have a meal starting in about 10 minutes after Tananarive. And, over Hawaii, they will perform another hydrogen and oxygen fuel cell section one and two purge. This is Gemini Control.

This is Gemini Control, after 126 hours 32 minutes of flight by spacecraft Gemini 5, which is now on its 80th revolution over the earth and it is moving out over the Pacific. It will shortly pass over the Coastal Sentry Quebec, our tracking ship located south of Japan. Here in the Mission Control Center, the White Team of Flight Controllers have moved into the building and will soon be manning the consoles. The Red Team is going off duty. At this point in our flight, spacecraft Gemini 5 is in drifting flight. We have been briefed that yaw thrusters 7 and 8 are not functioning. The spacecraft will be in drifting flight through the end of its mission. This is Gemini Control, at 126 hours 32 minutes.

This is Gemini Control, at 128 hours 2 minutes into the flight of Spacecraft Gemini 5. The spacecraft is now in its 81st revolution over the earth, and at the present time it's over the country of India, and will shortly be moving into the Pacific to make another pass over the Coastal Sentry Quebec, our tracking station located there. Over the Rose Knot Victor, the tracking ship off the coast of Peru, Pete Conrad, who is now awakened from his sleep period, reported on the status of experiments performed recently aboard the spacecraft. At this time, Command Pilot Gordon Cooper is scheduled to sleep. We'll now play back the voice tape transmission between the spacecraft and the Rose Knot Victor tracking ship.

RKV	Gemini 5, RKV CapCom.
Cooper	Go ahead RKV, Gemini 5.
RKV	Roger. Your systems are all 'green' -- 'Go' on the ground.
Cooper	Okay, we're all 'green' here.
RKV	Roger. We'd like to confirm that your OAMS Heater circuit breaker is closing.
Cooper	That's affirmative, it's closing.
RKV	Good. We'd like an experiment status from you, this pass.
Conrad	Okay, ready to copy?
RKV	That's right.
Conrad	The experiments that we have done are 05:21:00:00, UHF test number 1, 2, 3, and 6 -- complete. D-1 sequence 1, 2, and 3 -- complete. D-2 -- nothing. D-6 -- 72 pictures. D-4/ D-7 -- in the following sequence are complete, 405, 408, 409, 410. You still copying?
RKV	Roger.
Conrad	410A, 410B, 411, 414, 420, 422, 423A, 423B, 424A, 425A. On D-4/D-7 -- we have 16 minutes of record time left.
RKV	16?
Conrad	That's affirmative. S-8/D-13 -- we have completed to date, all onboard flight plan tests.
RKV	That's good.
Conrad	On S-1 -- it is complete. On S-5/6 -- we've taken 3 magazine's worth, we have over 210 pictures. On S-7 -- we've taken 23 pictures, which includes 8 groups of clouds, one a calibration card picture. The M-1 [thigh cuff] experiment's broke; it's zero power plus 00 plus 00, plus 00, give or take a couple of hours.
RKV	What was the number of that one again?
Conrad	Say again?
RKV	Which experiment was that?
Conrad	The M-1.
RKV	Roger.
Conrad	The M-3 [bungee cord] exerciser has only been used when appropriate, by the Pilot. The Command Pilot has used it as many times as ...
RKV	Good.
Conrad	The MSC-1 has been done once on day 1, once on day 3, once on day 4.
RKV	Roger.
Conrad	On the Apollo Landmarks, we've photographed 207, 208, 212, 213.
RKV	Good.
Conrad	Cabin lighting surveys.
RKV	Say again?
Conrad	On the cabin lighting -- we've run 4 surveys.
RKV	Good.
Conrad	On the humidity sensors -- we have at least one reading per day.
RKV	Good.

Conrad	[The 16-]millimeter camera -- we've taken one and a quarter magazines. We've two and three-quarter magazines left. With regard to D-6 are almost out of film. 3401. Do you read?
RKV	Rog.
Conrad	That's it.
RKV	Okay. What size of film did you give me where you had two and three-quarters magazine left?
Conrad	16-mm.
RKV	Rog. Thank you.
Conrad	We've also taken about fifty S-5 and S-6 photographs with the extra 35-mm film pack.
RKV	Roger. Okay, could you give me the scores on your vision test?
Conrad	I'll give you one here; it's the only one that that you haven't got.
RKV	Okay.
Conrad	Last night ... at 05 days, 08 hours, 40 minutes. The Command Pilot had ten wrong. And on test M-9, his scores were 95, 95, 94, 96, 96.
RKV	Good, good.
Conrad	On the Pilot, the S-8/D-13 were 6 wrong, and 9 scores were 95, 93, 92, 98, 98.
RKV	Good. We'd also like to get an evaluation of the -- on this mode of failure on the tape recorder. And approximately what time it happened?
Conrad	We don't have any idea of what time it happened, because we just realized that we had done a lot of talking on the tape and hadn't gotten a record light, and it shouldn't blink.
RKV	Roger, understand.
RKV	Houston Flight, RKV CapCom.
Flight	Go RKV, Houston here.
RKV	Do you have anything else for us? Everything looks real nominal on this pass.
Flight	Could we have another alpha summary please?
RKV	Roger, will do.
RKV	Gemini 5, RKV CapCom. We have nothing else for you. We'll be standing by.
Conrad	Thank you.

This is Gemini Control, at 128 hours 32 minutes into the flight of spacecraft Gemini 5, which is now on the 81st revolution over the earth, and has just passed out of voice range of our Hawaiian tracking station. Over that station, Pilot Pete Conrad had a conversation with Bill Garvin, the Spacecraft Communicator at the Hawaiian station. After giving some readouts on the fuel system, Bill Garvin reported to Mission Control Center at first that all systems looked good from the ground. He then asked Pete Conrad: "How are your rates doing?" Conrad said: "The rates are running about 6 degrees per second, and on one axis, mostly pitch and a little yaw." Garvin asked him how he felt about these rates, and Conrad said: "They're alright." We had then a report that a Delayed Time telemetry was completed to the ground, and Conrad asked how much electrical power what the indication of use of electrical power was in the spacecraft from ground readings. The response was 15 amps. We'll now give you the play back of that taped voice conversation.

Conrad	Hawaii, Gemini 5, do you read?
Hawaii	I read you, loud and clear.
Conrad	The rates are about 6 degrees per second.
Hawaii	Roger.
Conrad	That only on one axis.
Hawaii	Which one?
Conrad	Well, the vehicle is tumbling, and it changes axes, but that's the big rotation.
Hawaii	Okay.
Conrad	It's mostly pitch, with a little yaw.
Hawaii	Roger.
Flight	Why don't you find out how he feels about those rates.
Hawaii	How do you feel about those rates, Pete?
Conrad	Oh, they're alright.
Hawaii	They don't bother you?
Conrad	Nope.

This is Gemini Control, at 129 hours 2 minutes into our mission. Spacecraft Gemini 5, at the present time, is passing off the east coast of South America, and towards Africa. We had a pass over the Rose Knot Victor tracking ship just a few minutes ago. It was a routine pass, the Spacecraft Communicator updated the flight plan and passed on the comment that all systems looked good. We've talked to Dr Dwayne Catterson, our Flight Surgeon here in Mission Control Center, and he said that both crewmen are in excellent physical shape, and that Pete Conrad, at this time, sounds particularly good. Command Pilot Gordon Cooper is in a sleep period. Some of the flight controllers are taking advantage of this lull in the flight and are having a coffee break. This is Mission Control -- Gemini Control -- at 129 hours 3 minutes into the mission.

This is Gemini Control, at 129 hours 32 minutes into the flight of spacecraft Gemini 5, which, at the present time, is passing over -- beginning to pass over India. Our next voice communication, we expect, will be made over the Coastal Sentry Quebec, as the spaceship passes that tracking ship. At that time, the spacecraft crew will be advised that there will be a medical data pass upcoming -- as it passes over the Rose Knot Victor some thirty to forty minutes from now, and that is the only activity that is scheduled on this revolution. This is Gemini Control, at 129 hours 32 minutes into the flight of spacecraft Gemini 5.

This is Gemini Control, at 130 hours 2 minutes into the flight of spacecraft Gemini 5. At the present tine our spacecraft is passing south of Hawaii on the 82nd revolution of the earth. Over the CSQ, about 10 to 15 minutes ago, Pilot Pete Conrad was advised to delete the cabin lighting survey which was scheduled for that time. And he was also advised that he is scheduled to make a medical data pass to the Rose Knot Victor, our tracking ship off the coast of Peru, which will be coming up in approximately 15 minutes. At this moment, we are 130 hours 2 minutes into the Gemini 5 flight. We have the voice tape now between spacecraft Gemini 5 and the Coastal Sentry Quebec tracking ship located south of Japan.

CSQ	This is CSQ CapCom.
Conrad	Go ahead CSQ, Gemini 5 here.
CSQ	Roger. We have you 'Go' on the ground. And we would like to advise you to delete the cabin lighting survey that was scheduled -- the next scheduled one. We'd like a reading of the

	number of "heads up" and the number of "heads down" surveys you have taken.
Conrad	Well, so far, they're either heads up or tumbling!
CSQ	Roger, copy. Could you give me the number of each please.
Conrad	There's two heads-up, and two drifting.
CSQ	Copy. And we'd also like to remind you that you have a medical data pass over RKV on the next rev -- at time 00:21:32.
Conrad	00:21:32.
CSQ	That's affirmative.
Conrad	... flight data -- our complete range now is 8 degrees.
CSQ	Copy. Range is now 8 degrees? Is that affirmative.
Conrad	Affirmative.
CSQ	Roger. We have nothing further. Stand by.

This is Gemini Control, at 130 hours 32 minutes into the flight of spacecraft Gemini 5, which is now passing over South America, on the 83rd revolution around the earth. Just a few minutes ago, as the spacecraft passed over the Rose Knot Victor tracking ship, Pilot Pete Conrad made a medical pass including exercise, which the Flight Surgeon aboard the Rose Knot Victor pronounced as good. The conversation between the Rose Knot Victor and the spacecraft was somewhat garbled on this end, and Pete Conrad was giving a water report -- water intake report -- and we think he said 27 pounds and 6 ounces; we'll have to check this figure. The Rose Knot Victor also updated the spacecraft star map. At this time, Command Pilot Gordon Cooper is asleep. This is Gemini Control, at 130 hours 32 minutes into the mission.

This is Gemini Control, at 131 hours 2 minutes into the flight of spacecraft Gemini 5. At the present time, our spacecraft is coming up on India, on the 83rd revolution over the earth. We've had no voice communication with Gemini 5 for a little more than 30 minutes, and at that time it was passing over the Rose Knot Victor, our tracking ship located off the coast of Peru. Here in the Mission Control Center, our flight controllers are taking turns at a dinner break in a cafeteria that has been set up in an adjoining room. During past flights, this cafeteria was operated on a temporary -- a makeshift -- basis. Now, with spaceflights increasing in frequency, the cafeteria has been put on a more or less permanent operation. Controllers can get a hot meal complete with all the trimmings. Tonight's menu is stuffed pork chops, black-eyed peas, and a variety of salads. This is Gemini Control at 131 hours 3 minutes into the mission.

This is Gemini Control, at 131 hours 32 minutes into the flight of spacecraft Gemini 5. Our spacecraft, at the present time, is passing over the Pacific Ocean, approximately over Canton Island, on the 83rd revolution around the earth. A few moments ago, we'd a voice communication with the Coastal Sentry Quebec, our tracking ship located south of Japan. That station gave the spacecraft the 'Go' from the ground. The pilots, in cooperation with the tracking ship, made a fuel cell purge, and they were given the coodinates for a tropical depression that is in the Pacific -- they should come rather close to it and will try to make a visual observation. The tropical storm -- depression -- is west of Japan at 21 degrees north by 157 degrees east. At this time, both crew members are awake, and both took part in the conversation with the Coastal Sentry Quebec. However, the transmission voice quality was not too good from the spacecraft. This is Gemini Control, at 131 hours 33 minutes into the flight.

This is Gemini Control, at 132 hours 2 minutes into the flight of spacecraft Gemini 5. Our spacecraft has just started its 84th revolution over the earth. At the present time, it has just left the vicinity of the Rose Knot Victor, off the coast of Peru, and is now nearing the southern tip of South America. We had a voice communication with the spacecraft on this pass. Spacecraft Communicator Jim Fucci on the Rose Knot Victor gave Gordon Cooper some new data for Planned Landing Areas, and added that the weather is good all around. He advised Cooper there'll be a medical pass for him on the next revolution as they come over the Coasal Sentry Quebec. He asked Gordon Cooper if he'd noted the storm that we had indicated was in the area. Cooper confirmed they did see the storm. It had a center eye. It appeared quite large and appeared to be on the buildup, and building fast. This is Gemini Control, at 132 hours 3 minutes into the mission.

This is Gemini Control, at 132 hours 32 minutes into the flight of spacecraft Gemini 5, which is now passing over Africa on its 84th revolution over the earth. We've had no voice communication with the spacecraft since it passed over the Rose Knot Victor approximately 30 minutes ago. At that time, Gordon Cooper reported that he'd sighted the tropical storm that had been pointed out by our weather people at 21 degrees north and 157 degrees east. He said that he'd seen the eye of this storm -- it was quite large, and it was on the build-up. At the present time, activity aboard the spacecraft is on the low side. We've a medical pass coming up on the Command Pilot over the Coastal Sentry Quebec, which will be in another 20 minutes, and that's all the activity we have slated at this time. This is Gemini Control, at 132 hours 33 minutes into the flight.

This is Gemini Control, at 133 hours 2 minutes into our flight of spacecraft Gemini 5. The spacecraft, at this moment, is passing over the Pacific Ocean, having just passed over the Coastal Sentry Quebec, our tracking ship located south of Japan, and now on the 84th revolution over the earth. Over the Coastal Sentry Quebec, Command Pilot Cooper passed some medical data to the ground; this consisted of a blood pressure check, temperature, an exercise period, followed by another blood pressure. He received a map update. We have the voice tape now between spacecraft Gemini 5 and the Coastal Sentry Quebec.

CSQ	Gemini 5, CSQ. It's a 'Go' on the ground.
Surgeon	We have a valid temperature. Standing by for blood pressure.
Surgeon	Gemini 5, CSQ Surgeon. Blood pressure cuff is at full-scale.
Surgeon	Gemini 5, CSQ surgeon. We have a valid blood pressure. Give me a mark when you begin exercise.
Copper	Mark!
Surgeon	Gemini 5, CSQ Surgeon. Your cuff isn't at full-scale.
Surgeon	Gemini 5, CSQ Surgeon. It's at full-scale now.
Surgeon	Gemini 5, CSQ Surgeon. We have a valid blood pressure. Standing by for your water report.
Cooper	Rog. Hear you. We've now had 28 gallons 1 ounce -- ah, that's 28 pounds 1 ounce. Over.
Surgeon	Roger -- 28 pounds 1 ounce.
Cooper	At 17:00:00, I had 3-charlie, 3-charlie.
Surgeon	Understand -- Meal 3-charlie at 17:00:00.
Cooper	Roger. Do you want the scores on the S-8/D-13 and M-9 for the Pilot and myself?
Surgeon	If you'd like, we can take those.

Cooper	Okay. The Pilot had 5 wrong on the S-8/D-13 and on the M-9 his scores were as follows: 99, 97, 99, 97, 98.
Surgeon	Roger. That was all for the Pilot, right?
Cooper	Rog. On the Comand Pilot, I had 8 wrong. My numbers on the card -- 91, 91, 92, 92, 92.
Surgeon	Rog, understand -- 8 wrong, 91, 91, 92, 92, 92.
CSQ	Continuing with CSQ CapCom now. Gemini 5, CSQ has a map update, if you are ready to copy.
Cooper	Roger, go ahead.
CSQ	Roger. Map 05 19 09, longitude 54 degrees west, rev 86, star 05 19 09, 00:03:20 Right Aection.
Cooper	Okay, fine
CSQ	CSQ has nothing further. Standing by.

This is Gemini Control at 133 hours 32 minutes into the flight of spacecraft Gemini 5, which, at the present time, is passing over our tracking ship in the Pacific, off the coast of Peru, the Rose Knot Victor. We have had no voice communication with Gemini 5 since it passed over the Coastal Sentry Quebec, approximately 30 minutes ago, and at that time we had a tape playback of the voice communication. At this time, Pilot Pete Conrad is asleep, and Command Pilot Gordon Cooper is in charge and awake. We have over the Rose Knot Victor, according to our flight plan, only a delayed time telemetry play back for this station. It would be received there. And the flight continues. We're just ending the 84th revolution, and will be starting the 85th in a matter of minutes. This is Gemini Control, at 133 hours 33 minutes into the flight.

This is Gemini Control, at 134 hours 2 minutes into the flight of spacecraft Gemini 5, which, at the present time is on its 85th revolution over the earth and is now passing over North Africa. Flight Director Gene Kranz, here in the Mission Control Center, gave us a status report a few minutes ago. He said the hydrogen usage appears to be slightly better than we had expected, and that the status of our flight now is essentially unchanged from that reported when the Red Team left the control room at 3 p.m. this afternoon. He said all spacecraft systems are operating well at this time. Our Flight Surgeon, Dr. Catterson, said that the crew's getting more sleep today. They're eating on schedule and drinking enough water, and they're in good health and good spirits. This is Gemini Control, at 134 hours 3 minutes into the flight.

This is Gemini Control, at 134 hours 32 minutes into the flight of spacecraft Gemini 5, which, at the present time, is passing over the Philippines, on the 86th revolution over the earth. Here in the Mission Control Center, we are in the midst of changing shifts. The Blue Team of flight controllers has appeared on scene, and are in the process of being briefed by the White Team that's been on duty since 2 p.m. Our spacecraft passed within voice range of the Coastal Sentry Quebec a few minutes ago. However, voice communication was kept to a minumum, and the CSQ merely passed on a 'Go' from the ground. I've a correction -- we're in the 85th revolution instead of the 86th as I stated. Flight Director Gene Kranz and two of his controllers, Henry Stephenson, Guidance and Navigation, and John Aaron, our Electrical and Communications Controller, plus our Flight Surgeon Dr. Dwayne Catterson will be reporting for our nightly press briefing at 11:30 p.m. in the News Center here. This is Gemini Control, at 134 hours 33 minutes into the flight.

This is Gemini Control, at 135 hours 2 minutes after liftoff. Gemini 5 is within two minutes of acquisition by the tracking ship Rose Knot Victor, off the coast of Peru. The next station which will acquire it after Rose Knot Victor, will be the Canary Island station. This occurs at 27 minutes past the hour. Here in Mission Control there is a changing of the guard underway, as various members of the Blue Team flight controllers come in and talk with the people they're relieving, the White Team people, and it is fairly quiet in here other than muffled conversation. This is Gemini Control.

This is Gemini Control, at 136 hours 32 minutes after liftoff. Gemini 5 is now nearing the end of the 86th revolution. It will be acquired by the Rose Knot Victor tracking ship in approximately 8 minutes. During the pass over the Eastern Test Range station at Antigua, a delayed-time tape play back of telemetry information will be fed down from the spacecraft. Pilot Pete Conrad is scheduled for sleep at this time, and presumably he is asleep. This is Gemini Control.

This is Gemini Control, at 137 hours 2 minutes after liftoff, Gemini 5 has just been contacted by the Canary Island tracking station. Canary CapCom said they had nothing for Gemini 5 and were standing by. The spacecraft has just begun its 87th revolution. And, in 35 minutes, will be in contact with the Carnarvon tracking station. Over Australia, the crew will attempt synoptic terrain photography -- which means, in simple terms, large land mass areas being photographed from space altitudes. We have the tape of the pass over the Rose Knot Victor at the end of the 86th revolution, which we'll hear now.

Cooper	Roger, Gemini 5 here, RKV.
RKV	Roger. All systems are good on the ground. We have nothing else for you at this time, so we'll standby.
Cooper	Okay, mighty fine, thank you.
RKV	Roger.
Flight	RKV, this is Houston.
RKV	Go, Houston.
Flight	You might ask him how those rates are going.
RKV	Roger.
RKV	Gemini 5, RKV CapCom.
Cooper	Go ahead RKV.
RKV	How are your rates doing by now?
Cooper	Rog, we just damped them again -- about 20 minutes ago. I fired up, and redamped. The rates came up to about 12 degrees per second -- 12 degrees per second.
RKV	Roger. How did it feel at 12 degrees?
Cooper	Not too bad. I thought we'd get better heating on that center line ...
RKV	Rogerr, understand. I was just curious how it felt to you at 12.
Cooper	We didn't really feel much specifically -- except that items that have been flying around were getting slung to the side of the cockpit.
RKV	Roger, understand. Thank you.
Flight	Roger RKV, we copy.
Cooper	Tell him we had to power up for about 1 minute there, brought the AC power up, and I damped the rates down, andwent back 'Off' on it.

RKV Roger, thank you.

This is Gemini Control, at 137 hours 32 minutes after liftoff. Gemini 5 is 5 minutes out of Carnarvon tracking station in Australia, and it is just south of the Republic of Indonesia, nearing the mid-point of the 87th revolution. Communications between the spacecraft and ground stations tonight have been kept to a minimum, primarily to give the crew more rest. The Pilot, at this moment, is still asleep. The last station pass at the Canaries, almost a half-hour ago, was very brief as far as communications. However, telemetry looked very good on the ground, according to the Spacecraft Communicator at the Canaries. This is Gemini Control.

This is Gemini Control, at 138 hours 2 minutes after liftoff. Gemini 5, nearing the end of the 87th revolution, is over the mid-south Pacific. It passed the Carnarvon station a few moments ago. The Carnarvon Spacecraft Communicator updated the Gemini 5 flight plan. There are 2 or 3 items to do in the next couple revolutions including infrared measurements in East Africa -- of water-to-land, mountains, desert measurements in the infrared. Also in the East African area and the Arabian peninsula, they've synoptic terrain photography tasks -- providing they can align the spacecraft for these pictures without using fuel. In fact, none of the experiments will be done if fuel is required. Other experiments which were updated included additional S-8/D-13 vision checks. At this moment, we are 138 hours 3 minutes into the Gemini 5 flight. We have the voice tape now between spacecraft Gemini 5 and the Carnarvon station.

Carnarvon	Gemini 5, Carnarvon CapCom. I have a flight plan update. Will you prepare to copy?
Cooper	Roger.
Cooper	Good morning Carnarvon, Gemini 5 here. Ready to copy.
Carnarvon	Good morning. Okay. First item, S-8/D-13, sequence numbers 01, 02, remarks -- increase to 3 times daily as time permits. Next item, D-4/D-7, 08:41:16, sequence humbers 417, 418 and 414, remarks -- experiment recorder on, 3 minutes maximum. Next item, S-5, 08:45:00, sequence number 02. Next item, S-8/D-13, 09:14:06, sequence number 04, remarks -- pitch down 30, yaw right 2 degrees. Okay, did I tell you to make visual and photo passes if possible, without using fuel. Do you copy?
Cooper	... and on the D-4/D-7 will you give me the time again?
Carnarvon	Roger. Time was 08 hours 41 minutes 16 seconds.
Cooper	Okay, that's it, huh?
Carnarvon	That's it. Houston will give you more updates on rev 88.
Cooper	Roger.
Carnarvon	It looks like we're going to give you a chance at this visual acuity pattern now -- it'll be your next pass.
Cooper	Right.
Carnarvon	We got a beautiful day down here. I hope you got -- I hope you happen to be in attitude [to see us].

This is Gemini Control, at 138 hours 32 minutes after liftoff. Gemini 5 has just begun its 88th revolution. It is now in contact with the Houston Spacecraft Communicator via the Eastern Test Range stations. It will be acquired in approximately 8 minutes by the Canary Island station. At the present time, the Spacecraft Communicator here in Mission

Control is discussing various flight plan updates with the crew and getting onboard readouts of the systems. This is Gemini Control.

This is Gemini Control, at 139 hours 2 minutes after liftoff. Gemini 5 is now out over the Indian Ocean. It should be acquired by the Carnarvon tracking station in approximately 8 minutes. During the recent pass over the Canary Islands, the telemetry on the ground of the spacecraft systems looked good, according to the Spacecraft Communicator at Canary. We've the voice tape now between the spacecraft Gemini 5 and the stations of the Eastern Test Range, through which the Houston Spacecraft Communicator talked to Gemini 5.

Conrad	Copy.
Houston	S-6, 14:50:00, sequence 06, remarks -- south of track. S-5 15:10:00, sequence 02. D-6, 16:08:09, sequence 05, pitch 30 down, yaw 15 left, if completed, notify ground as soon as possible.
Conrad	What's the mode number?
Houston	Negative on a mode number -- we'll pass up a correction on that when you get to Carnarvon. And I don't have the speed number either.
Conrad	Is Elliot there?
See	Go ahead.
Houston	Roger. Be advised we're ...
Conrad	There's a story on the 8th too, I've got it going off the bottom of the page at the end of 7 days.
Houston	Roger. Be advised we're reading suit temperatures up to about 70 -- you got any comment on that?
Conrad	That's the way they are. It's cold in here.
Houston	Okay, understand.
Conrad	Everything's freezing up!
Houston	Roger. Negative sweat on the H2 -- it's okay.
See	Pete, the usage rate on that will level off, as you go along here.
Conrad	...
See	Say it again.
Conrad	You've been saying that for days, and it hasn't [levelled off].
See	You haven't got to the level-off point yet.
Conrad	Okay.
Houston	It's 10 percent above the estimate, right now. Okay we've about had LOS. We'll get the rest of it up to you at Carnarvon.

This is Gemini Control, at 139 hours 32 minutes after liftoff. Gemini 5 is presently in the central South Pacific -- due south of the Canton Island station -- nearing the end of the 88th revolution. We now have the tape between the Gemini 5 spacecraft and the Carnarvon tracking station.

Conrad	Visibility was really good down there. Too bad we weren't in the right position.
Carnarvon	Roger, Pete. Yeah, the winters here are beautiful.
Conrad	Is it too cold to swim?
Carnarvon	They tell the swimming pool ... today. It's a little too cool, yet.

Conrad	I keep forgetting it's winter.
Carnarvon	Right. It's beginning to warm up.
Conrad	You can tell them that I got some 414 and some 417's for them on -- in Africa instead of around the Cape, coming over on this last pass -- on the D-4/D-7.
Carnarvon	Roger.
Flight	I got that. You can tell him we'll have another 'Go'.
Cooper	I can see some smoke ...
Carnarvon	Say again.
Cooper	I can still see the smoke.
Carnarvon	Okay. The site's about three miles east of the third column of smoke, inland.
Conrad	We're a good 300 miles from it now -- past it -- but we can still see the smoke.
Carnarvon	Roger.
Flight	We'll have another chance tomorrow, Carnarvon.
Conrad	We think the two purges are complete.
Carnarvon	Roger. We'll have another try at that site tomorrow.
Carnarvon	We got a minute to LOS. Everything looks 'Go' on the ground. Standing by.
Conrad	Thank you. We're 'Go' up here. See you next pass.
Carnarvon	Roger.

This is Gemini Control, at 140 hours 2 minutes after liftoff. Gemini 5 has just begun its 89th revolution and is now in contact with the Eastern Test Range stations. It was Remoted through to the Spacecraft Communicator here at the Manned Spacecraft Center. The Canary Island station will be the next station to acquire the spacecraft, later in this revolution. In a short time, we hope to have a tape playback of the Stateside pass. This is Gemini Control.

This is Gemini Control, at 140 hours 32 minutes after liftoff. Gemini 5 is now crossing the east coast of Africa and out over the Indian Ocean, on the 89th revolution. During their recent pass over the Canary Island tracking station, the Spacecraft Communicator said they were on standby; they had nothing for Gemini 5, but they looked good on telemetry. There was also a reported visual sighting of Gemini 5 from the Lake Champlain, prime recovery vessel, at 4 a.m. Central Standard Time -- approximately 33minutes ago. We now have the voice tape between the spacecraft and the Stateside and Voice Remoted stations.

Houston	From your weather observations, you've been doing a real good job, and the weather men are really happy with it down here. And one thing they'd like to have on the observations, is the precise time. You're way ahead of any other data they have, and they'd like to get the time of these observations. It'll really help them in their predictions. Okay?
Conrad	Alright.
Houston	I have a couple of questions on your thrusters, when you were damping your rates during the last few revs. Did any OAMS thrusters -- other than 7 and 8 -- show a degraded performance

Conrad	Well, I really can't tell too well. We have noticed a little cross-coupling, and that indicates to me that some aren't doing as well as others.
Houston	Roger, understand. Well, we're trying to figure it out down here. We haven't got an answer yet. Were the circuit breakers on number 7 and 8 closed while you were trying to damp the rates?
Conrad	No, they've been open ever since we were told to leave them open, except a couple of times when we took a look at them to see if they'd come back into action -- because of the heater.
Houston	That's what we were wondering about. If you had them closed, did you make any attempt to fire 7 and 8? And did you get any response?
Conrad	No response.
Houston	Okay. Fine. Understand.
Conrad	We haven't done it on the dark side yet. We noticed number 8 was firing, but giving no thrust, so it was firing off mixture.
Houston	Roger. Okay. We understand.
Conrad	I've got some plots for you on the ground. We broke off a piece of frozen urine maybe 3.5 inches by 4, and we've saw an awful lot of stuff floating by the spacecraft, which must've come from the venting cryos.
Houston	Understand.
Conrad	I was wondering if -- maybe -- something hasn't run into these thrusters when we haven't been using them, or something like that?
Houston	Okay. Understand your comment. We'll be looking into it.
Conrad	I'm not exactly sure where all the different vent holes are on the spacecraft in relation to the thrusters.
Houston	Okay. Understand.
See	Pete, in regard to your hydrogen, it looks like it'll be about 15 more hours before your curve levels off on that, so you can expect this rate to continue down until about that time. Then you'll see it level out quite drastically.
Conrad	You're sure?
See	That's what the curve says here. It's a curve that we didn't have before flight, but it's the type of a curve they do expect. After about 15 hours, you'll stop venting, and this'll cause the curve to level off quite drastically. We're running well ahead of it incidentally, but this is the shape of it.
Conrad	Okay.
See	The fact that we're running ahead of it, is why you've got another 15 hours to go before you level out.
Conrad	I see.
See	If I understand you, in regard to these chance sightings -- so to speak -- although you might be pointing in the right direction, your comment is that you'd not have the rates stopped well enough to take a picture unless you had actually stopped. In other words, the rates do not decrease at all, they merely go in different directions?

Conrad	In the Questar lens, the 9,000-foot runway fills the whole lens up, and the probability of having it pass through the Questar's field of view is virtually impossible. And even if it did, you'd never get a picture.
See	Because of the rates?
Conrad	That's true. That's equally true with the 200-mm, although it doesn't blow up quite so big.
See	Roger. I understand.
Conrad	I seriously don't even think it's worth rigging the gear, myself.
See	Well, we thought -- we weren't thinking about those rates. If they were fairly high you've got a good point, you just couldn't do it. If you were dealing with some fairly low rates you might try it, and just make the comment that you had such and such a rate, and they could kind of take that into consideration when they analyse the pictures.
Conrad	Well, we've got plenty of pictures for them out of the Questar, anyhow -- over 70.
See	I'll bet.
Houston	Hey, Pete, next time you try damping on the dark side, how about checking 7 and 8 and see if you get a glow out of them.
Conrad	We'll do that. The venting must have slowed down because the rates haven't built up too badly. We're getting along here about 2 degrees per second now.
Houston	Okay. Understand. Okay, that's about what we expect.
Conrad	We unfortunately - it was a beautiful day in Australia, and we were just not in the right position to see the S-8/D-13. We saw Sharksmouth Bay, and that's the last thing we saw. We were pitching up, and then we saw the smoke streams 300 miles past, over our shoulder, so I'm sure we could've seen it [if we had been facing down at the time].
Houston	Okay. We copied the pass as you went over, and we'll play it again for tomorrow.
See	I lost a bet on that one, Pete.
Conrad	What was that?
See	I bet you'd be looking at it.
Conrad	Came pretty close!
See	I guess you're aware that the thing that we feel is the tightest, is the water storage capacity. We're continuing to work on that but as you know we don't have a real good handle to work with on that one.
Conrad	That's the one thing bad -- we've been talking this whole thing over, and we're aware of all the problems.
See	Roger.
Conrad	We're beginning to feel the effects of ...
See	The effect of what?
Conrad	Of being confined so long -- we're getting stiff, and so forth.
See	Maybe you ought to open the door and stretch a little bit.
Conrad	I'd sure like to.

See	I'm not sure we copied exactly what you said, Pete. We understand you're begining to feel the effect of being cooped up, and were there any other comments?
Conrad	No other comments -- just that we're getting stiff.
See	Roger. The exerciser isn't enough on that, huh?
Conrad	No.
See	Roger.
Conrad	There's not enough really, to use it right.
See	Roger.
Houston	We about have LOS. We'll see you next pass.
Conrad	Okay.

This is Gemini Control, at 141 hours 2 minutes after liftoff. Gemini 5 is now north of New Zealand, nearing the end of the 89th revolution. During the pass over the Carnarvon, Australia, tracking station, Planned Landing Area updates were passed up to the crew for revolutions 91 through 95. There was also a report of a visual sighting from the Carnarvon station of the Gemini 5 spacecraft. This is Gemini Control.

This is Gemini Control, at 165 hours 2 minutes after liftoff. Gemini 5 presently is over the central Pacific nearing the end of its 104th revolution. Recently, it made a pass over the Carnarvon, Australia, tracking station in which the flight plan was updated and updates for the Planned Landing Areas for revolutions 107 through 111 were routinely passed up to the crew. People who've extremely good eyesight, and are in the Houston and southeast Texas area, may possibly be able to see the spacecraft starting at 5:14 Central Time this morning, when it will rise in a west-southwesterly direction, will have a maximum elevation of about 70 degrees due south at approximately 5:19, and will set over the eastern horizon at 5:22. The slant range at this maximums elevation will be approximately 132 miles. We have now a tape of the voice transmission between the Carnarvon and Gemini 5 during this last pass.

Carnarvon	Gemini 5, Carnarvon. I have PLA update when you are ready to copy.
Conrad	Roger, ready to copy.
Carnarvon	Roger. Area 107-1, 14:14:44, 12+43, 18+04, test 8 TX. Next area is 108-4, 17:00:17, 15+33, 20+37. Next area is 109-4, 18:35:54, 14+08, 19+19. Would you place your Quantity Read switch to fuel cell H2. Next area is 110-3, 19:53:52, 16+42, 21+52. Next area is 111-3, 21:29:46, 15+13, 30+19. Weather is good in all areas, bank angles are roll left 53 and roll right 67 for all areas. Do you copy?
Conrad	Roger.
Carnarvon	Okay. Turn your Quantity Read switch 'Off'. We have a flight plan update for you, when you're ready.
Conrad	Go ahead.
Carnarvon	Roger. Standby one.
Flight	You have to leave your real time TM 'Off'.
Carnarvon	Okay, flight plan updates. First item is map 110351, remarks -- longitude 15056 degrees west, rev 104. Next item, star 110351, remarks -- 22 hours 26 minutes [Right Ascension]. Do you copy?

Conrad	Affirmative.
Carnarvon	Okay, and one more item -- we have a medical data pass on the Pilot at Guaymas. The AOS time is 101:12.
Conrad	Say again the AOS time, please.
Carnarvon	Roger -- 101 hours 12 minutes.
Conrad	Okay.
Carnarvon	Have you got writer's cramps?
Conrad	Yeah. We do an awful. lot of writing -- but not much work!
Carnarvon	Roger.
Conrad	Did you see us out there today?
Carnarvon	Negative, we've got almost complete overcast today.

This is Gemini Control, at 165 hours 32 minutes after liftoff. Gemini 5 is now over the mid-Atlantic and will be acquired by the Canary Island tracking station in two minutes. It is at the beginning of its 105th revolution. During the pass over Guaymas, Mexico, at the end of the 104th revolution, the Command Pilot ran a medical data check and also made a report of his food and water consumption as well as his sleep. We've a tape of the just-completed Stateside pass by Gemini 5.

Guaymas	Gemini 5, we have a valid oral temp. Stand by for Surgeon.
Surgeon	Gemini 5, Guaymas Surgeon here. We're standing by for your blood pressure. Your cuff is full-scale. We have a good blood pressure. Standing by for your mark when you begin exercise.
Cooper	Mark!
Cooper	I have now exercised.
Surgeon	Roger. Your cuff is full-scale. We have a good blood pressure. We're standing by for your food, water and last 24-hour sleep report.
Cooper	Roger. On water, I've had 31 pounds and 7 ounces of water. On food, at 07:02:00:00 I had Meal 4-charlie. And in the last 24 hours, I've had approximately 3 hours of sleep and I'm due for my next sleep period in an hour.
Surgeon	We copy. 31 pounds plus 7 ounces of water, Meal 4 Charlie at 07:02:00:00, and three hours of sleep in the last 24. Could you give us an estimate of the quality of the sleep?
Cooper	Very good.
Surgeon	Roger. Thank you very much. Guaymas Surgeon, out.
Cooper	Roger.
Guaymas	Gemini 5, Guaymas. You're looking good here on the ground. Would you turn to 'Real-Time' and press in your TM Control switch to the 'Command' position.
Cooper	Roger.
Cooper	Guaymas, Rog. I'm firing up my FDI's to take our rates out now.
Guaymas	Ah roger, understood. Flight, Guaymas.
Flight	Roger, I read [him].
Guaymas	Okay.
Flight	We're going to take it [the comm link] now, Guaymas.
Guaymas	Go.

Houston	Gemini 5, Houston. We haven't got anything for you. You might give us a comment on rates, when you get them damped down.
Cooper	Roger. They weren't too high -- we just thought we'd go ahead and damp them down.
Houston	Okay, thank you, we appreciate it. [You're] looking good on the ground.
Cooper	Roger.
Houston	Gemini 5, Houston. We're doing some more discussion on this hydrogen here, and the latest thought is that the venting may not stop until we get down to 10 percent on the gauge. But I'd like to reinterrate that even if it continued without leveling off at all, we'd be in good shape at the end of the mission. We'd still have come 4 or 5 percent remaining. We're continuing to monitor this very closely, and we do expect it to level out somewhat, as soon as it stops venting, which, the latest estimate is, it may be as low as 10 percent.
Cooper	Okay, just fine.
Conrad	My status in regard to experiments is still no-fuel-expenditure, is that correct?
Houston	That's correct.
Conrad	Okay.
Houston	You understand the reason, I think, don't you, Pete. We're trying to make certain that we have fuel available to stop these rates, as long as we need to do so. Once we get to the point where we don't have any rate buildup due to venting, then we will be free to use the rest of the fuel for experiments.
Conrad	Yeah, okay.
Houston	Well give you a decision on that radar test on the next rev -- as you go by -- on the fuel usage.
Conrad	Okay. This OAMS system is plenty sluggish now. I'll tell you, it just doesn't seem like it is putting out what it use to.
Houston	Rog, I understand.
Houston	Pete, do you feel that there are any other thrusters tending to go out at this time, or do you feel it's just a general sluggishness of the system?
Conrad	Well, they very definitely have degradation of several thrusters, because we've got, I think, more cross-coupling then we should have. As a matter of fact, it has started, let's see, roll has started to couple into pitch now, which it hadn't done before. When we are using right yaw -- right yaw's been coupling into roll, which it is still doing. But I just think that general performance is just dropping off, and dropping off.
Houston	Roger.
Conrad	It may be when we fire up for good, that if we make a good shot at the retro -- all the way around or something -- we might sorta liven things up. I don't know.
Houston	Are you doing all your damping with 'Pulse' [Mode]?
Conrad	That's correct.

Houston	There may be a lot to that. [Maybe] you are just not clearing the system up, and you haven't been for a long time -- it might just be needing a good shot of clearing out. But we don't want to do that [it would waste fuel].
Conrad	We're right smack dab over Houston, it looks like right now. I can just make it out as the sun is coming up.
Houston	Very good. Everybody is outside, looking for you.
Conrad	They ought to be able to see us because the sun is shining on us and not on you.
Cooper	Can you see us at Clear Lake, too?
Houston	Yeah, we have had some reports of sightings.
Cooper	Okay. We're powering down all our ... and so forth.
Houston	Roger.
Houston	Gemini 5, Houston.
Cooper	Go ahead, Houston.
Houston	When you mentioned that the pitch and roll are coupled, and the yaw and roll are coupled, which direction of roll was that. Can you give us an idea?
Conrad	Let's see. Right-yaw coupled into right-roll, I guess.
Houston	Okay.
Conrad	I think I'd say that the number 3 yaw thruster is the weaker of the two.
Houston	Roger. How about the pitch?
Conrad	The roll, the right-roll --excuse me -- the left-roll coupled into pitch-up.
Houston	Okay, understand. Incidentally, as you went by, you were extremely easy to see and I think just about all of Houston saw you.
Cooper	Very good.
Conrad	What's our ephemeris now. Still 107?
Houston	Standby.
Conrad	What?
Houston	Standby -- 107.4 by 159.0.
Conrad	Roger. What's the outlook for the recovery area tomorrow?
Houston	I think it all looks pretty good. I'll get a detail on it.
Houston	Geemini 5, Houston.
Cooper	Go ahead.
Houston	The way it stands right now, 122-1 is acceptable but about 500 [miles] downrange is not so good, 121-1 is clear all the way.
Cooper	Roger, thank you.
Houston	We're watching it real close, down here.
Cooper	Okay.

This is Gemini Control, at 166 hours 2 minutes after liftoff. Gemini 5 is now midway through the 105th revolution, and will be acquired by the Carnarvon, Australia, tracking station in approximately seven minutes. The big clock at the righthand side of the Control Center, now says 25 hours and 59 minutes and 55 seconds until retrofire. This is Gemini Control.

Gemini Control here. Good morning. At 166 hours 28 minutes into the flight, we are waiting for the Stateside pass that will be the decision point on whether we're going to go for 122-1, or not. The status of the spacecraft will also be a very strong determining factor on how much experimenting we do in this Stateside pass. We have ready for you now, the conversation from Carnarvon, and we'll play it now.

Carnarvon	Gemini 5, Carnarvon. Place your Quantity Read switch to the ECS O2 position.
Cooper	Hello Carnarvon, Gemini 5 here. We've the number 2 fuel cell powered up on the line.
Carnarvon	Roger.
Cooper	Had one on at about 12:03.
Carnarvon	Roger. Okay, would you go to FC [Fuel Cell] O2 on Quantity Read?
Cooper	Carnarvon, Gemini 5. We noticed a lot of venting again, coming into the dark side this trip, but we presume it's ECS O2 this time.
Carnarvon	Did you say you noticed a lot of venting?
Cooper	Yeah, a couple of times.
Carnarvon	Roger. Now would you place your Quantity Read switch to the fuel cell H2?
Flight	...
Carnarvon	Go ahead, Flight.
Flight	Roger. We don't think that EC O2 is going to give him much in the way of [angular] moments. That vents inside as close to the centre of mass.
Carnarvon	Roger. Did that venting there give you much rate?
Cooper	Oh, it's picked it up a little bit, but not much.
Carnarvon	Okay, Flight advises that they don't suspect ECS O2 will give you much of a rate. There's not mch moment on that -- it's near the CG [Centre of Gravity].
Cooper	Well, we think that that's probably what it was that was venting.
Flight	Did he see that? Or did he feel it by rates? Did he see a lot of fire flies and things? Or is he estimating that on the basis of rates he got?
Carnarvon	Gemini 5, were you estimating that venting on the basis of rates, or visual [cues]?
Cooper	Visually.
Flight	Roger.
Carnarvon	Could you put your Quantity Read switch to the 'Off' position?
Carnarvon	Everything looks good here on the ground.
Cooper	We're 'Go' up here.

This is Gemini Control, Houston, here, at 166 hours 42 minutes. The Weather Bureau Spaceflight Meteorology Group says that the weather conditions remain quite good, should Gemini 5 be committed to an eigth day. The center of tropical storm Betsy was estimated to be about 100 miles southeast of the island of Barbados, several hours ago. Movement was predicted to be on a course of 280 degrees at a speed of 14 knots and the strongest winds to be near 40 knots. This storm is still in the early stages of development and not too precisely positioned. It will not likely affect weather conditions significantly in

the Primary Landing Area, 600 miles east and a little south of Miami, but an alternate area off Jacksonville at the end of the previous revolution will have more favorable weather conditions. Off Miami, the skies will be frequently cloudy 00 ceilings of 1,000 feet or less, scattered showers covering about 10 percent of the surrounding ocean area; winds will average nearly 20 knots; seas of five to six feet. Off Jacksonville, skies will be less cloudy -- with little chance of showers; winds between 10 and 15 knots; and seas of about 3 feet are expected. In the east Atlantic recovery area, about 300 miles west of the Canary Islands, skies will be partly cloudy with ceilings usually unlimited; winds will average 10 to 15 knots; and seas of 3 to 4 feet. In the mid-Pacific area, 500 miles north of Honolulu, cloudiness is decreasing -- ceilings, when present will be about 800 feet; winds will average 10 knots; seas of two to three feet. In the west Pacific area, about 500 miles south-west of Tokyo, mainly fair weather will continue; winds will average a little over 15 knots; and seas of four feet. In addition to tropical storm Betsy, a new typhoon has evolved in the fertile area of the western north Pacific. Typhoon Olive is centered about 1,000 miles southeast of Tokyo, and is moving slowly towards the northwest. Probably not much remains of storm Doreen, which is now centered about 800 miles west of San Diego. In the southern hemisphere, major storms are nearly all centered south of the ground track of Gemini 5, but cold fronts may be present near South Africa, South America, and Australia. This is Gemini Control.

This is Gemini Control, at 166 hours 48 minutes into the flight. And the spacecraft has established contact with our Texas station, and is about to go over White Sands area. They have been told to perform a no-fuel visual tracking task of a sled run out there at Holloman Air Force Base. Let's tune in on them now.

Houston	Gemini 5, Houston. We'd also like to have you bring up your HF receiver, so we can play some music as you leave the States here.
Cooper	Very good.
Houston	Gemini 5, Houston. We'd like to have you place your biomed recorder switch to 'Off' now -- we'd like to save the rest of the tape until just prior to retrofire.
Cooper	Okay.
Conrad	Biomed recorders one and two are both 'Off'.
Scott	Okay. Gemini 5, Houston. The big Blue Team gives you a 'Go' for [area] 122-1, so press on.
Cooper	Roger. We're pressing on!
Houston	Good show.
Conrad	Okay, Blue Team. Over the ocean, over the blue, Gemini 5, we thank you.
Houston	Great. Now since we're discussing poems here, I was talking to both Jane and Trudy this morning. They both went outside, and saw you. Jane sent up a little poem here Pete. It goes: "Twinkle, twinkle, Gemini 5, How I want you back alive. Up above the world so high, I saw you today as you went by. Twinkle, twinkle, Gemini 5, Tomorrow you take your great big dive. Zinging toward the ocean blue and I send my love to you."
Conrad	Tell her -- I think it's real great!
Houston	Okay, we've got about five seconds for the White Sands -- for the Holloman test. Right up.

Conrad	Okay. I see the track. I don't see the lamp lights, but I do see the track.
Houston	Okay. Do you see the rocket?
Conrad	Not yet.
Houston	Okay. It should be burning.
Conrad	No. I don't see the rocket, but I do see the track.
Houston	Okay. Well, it should have lit up -- it should have been burnt out by now. Let me check with Flight -- It should be breaking right now, Gemini 5.
???	California is LOS. Texas, go remote. Texas, wake up! UHF.
Houston	Gemini 5, Houston again.
Houston	Gemini 5, Houston. You can turn your C-Band Adapter switch back to 'Command'.
Conrad	Roger, 'Command'.
Houston	Here comes your DCS [computer] load now.
Cooper	Roger -- we've got it.
Houston	Very good.
Houston	Gemini 5, Houston. I'd like to give you a little briefing on our flight plan for today. Ready to copy? Or to listen, I guess.
Conrad	Ready.
Houston	Most of the things that we've got on the schedule today are all to be done with no fuel [expenditure], so there if you happen to get pointed in that direction, fine. If you can't, well, that's too bad. We'd like to have you do your damping though, so you can take advantage of the fuel that you're using doing your damping -- to point in the direction that would be usable to you. And especially so on the Laredo S-8/D-13 pass, which is supposed to occur at 16:00:40. We might even expend a little fuel on that, to point the spacecraft in the right direction, so that you can see the target. Okay?
Conrad	Alright. We concur.
Houston	Okay. We're still conserving the fuel -- I just got here as Elliott was briefing you on the venting, and when it may stop, but we would like to get that Laredo S-8/D-13. Now for tomorrow, we have a couple of other things that we want to do. One of which is to do the D-4/D-7 pointing at the sun. And another one is an S-8/D-13 at Woodleigh Ranch -- if possible.
Cooper	Right.
Conrad	What's their weather outlook tomorrow? They were overcast today.
Houston Cap Com	Rog. We had them scheduled, but we scrubbed them. We don't really know what it's going to be tomorrow, yet, Pete. We've got no forecast for them.
Conrad	Funny thing -- the day before yesterday, it was so clear down there you couldn't believe it.
Houston	Rog.
Houston	Gordo, Houston. As I said, on your last pass, Trudy saw you up there without too much trouble at all. She sends here best wishes and she says that she had the girls up quite early this

	morning and they all went out and saw you and they certainly enjoyed it.
Cooper	Very good, thank you.
Houston	She said you put on a good show.
Conrad	No better than you did.
Houston	Roger, Pete, Jane said that the 'Gemini' horoscope for today in the paper said that you should get your house in order and the evening was good for dining out -- in case you're interested.
Conrad	Okay.
Flight	Gemini 5, this is Houston Flight. Standby. With regard to these recovery areas, we're going to take a look at the weather for the rest of the day, and as you come up on this thing, our feeling at the moment is that we'll go to 122, but we will also be prepared for 121.
Cooper	Okay. Very good.
Flight	The other thing is -- it looks like from here to the end of the mission, we've no problem with water or with the hydrogen we have left, and that you can average quite a bit higher amps than we'd expect that you would, so that's no problem.
Cooper	Okay, fine.
Houston	Gemini 5, Houston. Have you got the HF up?
Conrad	Roger.
Houston	Okay, standby.
-	MUSIC
Cooper	Hey, that sounds good!

Gemini Control here. They've picked up a little musical interlude. I want to explain that the 'Go' for 122-1 was passed up by our Capsule Communicator, Dave Scott. Most of the communications on that pass were handled by Jim McDivitt, the Red Team's CapCom, but Dave Scott reserved the right to pass up that 'Go'. Because of the timing of the shifts here, you heard him say the "big Blue Team gives you a 'Go' for 122-1". Jim picked it up from there, then Chris Kraft came on toward the end and explainpd his thinking on the recovery areas for tomorrow morning, that we're inclined to go for 122-1 but we're also be covered in 121 if needed. Let's go back and listen to the music.

This is Gemini Control. That of course is the sound track of the movie 'Cat Ballaou'. We've had a momentary dropout for an unexplained reason. We'll standby, and here it is again.

Gemini Control here. As you can see we're experiencing intermittent dropouts on our 'Cat Ballaau' transmission. I'm sure that the problem is somewhere in this building. With the spacecraft out east of Bermuda, that will probably wrap up the conversation. So we'll leave the spacecraft now.

Gemini Control, Houston, here, at 167 hours 32 minutes into the flight. We'll briefly interrupt this 'special interlude' to bring you the following information -- our perigee this morning is 123.4 statute miles, our apogee is 183 statute miles. The period of our 'inertial orbit' is 89 minutes 20 seconds. And the period of our 'revolution orbit' is 95 minutes 18 seconds. We were in conversation earlier this morning with several staff members of the little cafeteria that serves the Mission Control Center here, just a few steps off the floor of

the Mission Operations Control Room itself, talking about the coffee consumption. They advised during this shift -- during this mission -- we've averaged about 300 cups per shift. The people in the cafeteria say that they always know when we have trouble, because the coffee consumption begins to spike very quickly, or, using the jargon of the mission, the cafeteria staff people advise that the coffee consumption curve is very close to the planned value. This is Gemini Control Houston.

Gemini Control here, at 168 hours 2 minutes into the flight. We've just completed the Carnarvon pass. The spacecraft is halfway between Australia and Hawaii, right now.

We regret that we cannot give you the tape on the Carnarvon pass. We've experienced some technical difficulty. We don't know whether it's here in Building 30, in the Mission Control Center, or over in our News Center Building, but we're working on it from both ends, and expect to have it solved momentarily.

In the course of the Carnarvon pass, the conversation went like this -- the crew was passed up a pre-retro command load for the 122-1 Primary Landing Area, and that is the final command load they will get, except for updates on the orbits remaining between now and 122-1.

Over Hawaii, they'll power down the platform. It was turned on over the States, and was pulling a peak amp load of 39 amps along with the other systems activated. And over Hawaii they'll damp their tumbling rates, and attempt to position the spacecraft Small-End down -- the reason for this is that in the next pass across the States they'll attempt another radar test at Cape Kennedy. They will activate their radar and try to read the L-band signal being piped out of the Cape.

Also over Carnarvon, the Gemini 5 spacecraft crew received congratulations from the station keepers, and the crew came back with some nice words for the performance of the Carnarvon crew. Pete Conrad said, "Good show down there." Spacecraft Communicator Charles Lewis, an MSC employee working at Carnarvon for this mission, promised them he'd bring each of them a can of Swan lager beer back to Houston. This seemed to delight the crew very much. This is Gemini Control, at 168 hours 4 minutes into the flight.

Gemini Control here, at 168 hours 20 minutes into the flight. We have just concluded the Hawaii pass, and we have the tape ready -- we'll play it for you now.

Hawaii	Gemini 5, Hawaii CapCom.
Conrad	Go Hawaii CapCom, Gemini 5 here. Go ahead.
Hawaii	Roger. All your systems are looking good. We're standing by.
Cooper	... and we're going to warm up the radar at this time.
Hawaii	Roger.
Flight	You show the computer is still on?
Hawaii	That's affirmative.
Flight	Roger.
Flight	Hawaii, you might tell him that it looks like his hydrogen is not venting -- if that makes him feel warm.
Hawaii	Roger.
Hawaii	It looks like your hydrogen is not venting.
Conrad	We concur. The pressure has dropped to about 740, the last time I looked.
Hawaii	Roger. By the way, you passed through 24 hours, you are now 23 hours and 50 [minutes].

Cooper	Oh, boy!
Conrad	We'll be looking for you to count down tomorrow.

[** DMH's note -- Hawaii will recite the countdown to Retrofire.]

Hawaii	I'm practicing.
Conrad	So are we.
Hawaii	Looks real good, Flight.
Flight	Roger.
Flight	Hawall, ask which direction he's pointing in at the minute.
Hawaii	Which direction are you pointing in at the moment?
Conrad	We're pointed about 30 degrees nose up, about 30 degrees yaw right.
Hawaii	Copy Flight?
Flight	Roger. Ask him if he has any rates.
Hawaii	Do you have any rates?
Conrad	They're relatively low right now. We just put the timer to ...just gently start her back down so that we were already pitched down by the time we hit Florida.
Hawaii	He's got the radar up, Flight.
Flight	Roger. I want you to give us an LOS main.
Hawaii	Roger.
Flight	A and B.
Hawaii	We are coming up on LOS minus one minute.
Conrad	Roger, Gemini 5's standing by.
Hawai	C-Band LOS. Telemetry LOS. ACQ-Aid LOS.

Gemini Control here. We're now halfway across the Stateside pass, with the spacecraft directly over Texas. We established in the early part of the pass, that the hydrogen fuel cell hydrogen has stopped venting. It's stopped venting, and we noted a pressure drop on that tank -- it had been running about 349 to 350 pounds, and it dropped to 344 -- which was a very encouraging sign. We expect some conversation momentarily, between Jim McDivitt and the spacecraft. Let's tune in there and find out what's going on.

Houston	Roger. It looks like we finally got it stopped.
Cooper	Pete finally hit one, after a few tries.
Houston	Gemini 5, Houston standing by.
Houston	Gemini 5, Houston.
Cooper	Go ahead Houston, Gemini 5.
Houston	Roger. We're standing by. How are you drifting? Are you drifting in the right direction?
Cooper	We're pitched down and in pretty good shape. We're yawed just slightly off the to the left. We're in pretty fair shape I believe.
Houston	Very good, very good.

Gemini Control here. That's one of our quieter passes. As the mission has progressed, I think we've noted less and less conversation with each pass. I think that's been true of all of our stations. We will be performing a radar check over the Cape -- in about 30 seconds. We'll stand by for anything additional.

Conrad	... range is not reading right in 69 yet.
Houston	Okay -- keep us appraised at what happens.
Conrad	Okay, I'm going to go to 'Catch-up' once, quicky.
Houston	Roger.
Conrad	It's still not reading right. Going to 'Standby'.
Houston	Okay.
Conrad	It's still not reading right.
Houston	Okay.
Conrad	We're well past the Cape, and we went past the Cape on lock-on and we just broke lock.
Houston	Roger -- just broke lock.
Conrad	We never did get the proper range indication.
Houston	Roger.
Conrad	We're going to turn the radar off, at this time.
Houston	Roger. We'd also like to have you bring the platform back up now, Gemini 5.
Conrad	Okay, platform has gone to 'Cage'.
Houston	Gemini 5, looks right now that we are never going to be able to spare the fuel to align the platform while we're doing this, so if you ever pass through [attitude] 000 and you'd like to go ahead and uncage it, go ahead.
Cooper	Yeah, we tried to get some simple ones in.
Houston	I sort of figured you would. Gemini 5, do you think you will be able to do this selected drifting, and do any good over Laredo?
Conrad	Yeah, with the cost of a couple of bleeps of fuel, why, it didn't cost us too much. We came pretty well across the country with the nose down that time.
Houston	Okay, very good. So the next pass will be over Laredo, and we would like to have you use this sort of technique to see what you can do with the visual acuity target.
Conrad	It's okay for that, but it is impossible for D-6 -- they have been asking for the Questar Mode, and you have to absolutely track.
Houston	I know that, Pete, and I have already talked to all of them about that. I think there is probably one chance in a million you might get a picture.
Conrad	Yeah, that's my feeling.
Houston	We'd be more than happy if you just see the targets at Laredo, and I think that would be a pretty successful day.
Conrad	Okay.
Houston	... a few minutes here before we lose you. We don't have any more information. We'll just standby.
Conrad	We'll try and get a look at Betsy, and get a S-7 photograph. We got six fairly good S-5 photographs across East Africa. Now -- the time that they gave us for the S-5 was for East Africa and the mode was for Mexico, and I presume it was East Africa that he wanted.
Houston	Rog. Is there any information that we could furnish you, that you think would be of use to you?
Conrad	No. But we have a couple of ideas about aligning the platform tomorrow [for the retrofire burn] ... we didn't know whether to

	try out the RCS and put one ring on the line and close off all the circuit breakers to yaw left and use it direct or expend fuel out of 7 and 8 which are not burning but, are giving some thrust and use it to align.
Houston	Roger. We're working on that right now. Can you see the weather. right below you -- right at this time?
Conrad	Yes sir. It's a nice round circular storm with a bunch of Cumulo clouds in it.
Houston	Okay.
Conrad	It's circular, but it really doesn't have a defined center, as such, but it's open in the center with a couple of really large thunderstorms.
Houston	Okay.
Conrad	And it's 300 or 400 miles across.
Houston	Okay, we know what storm that is.
Conrad	Say again?
Houston	I say, we know which storm that is.
Houston	We were a little more interested, Pete, in the weather that was behind you there -- over [area] 122-1.
Conrad	Loud and clear.
Houston	Roger.
Conrad	It looked like it was all scattered, all the way.
Houston	Okay, the thinking right now is that we'll arm both the RCS rings and then use one of the rings to do the platform alignment. You might think about that for a while.
Cornrad	Well, why not start out with the -- we'll try the OAMS and if we can get it aligned with that, we'll be just that much fatter [on the RCS], if not, we use the RCS.
Houston	Okay. We are working up a good sound set of procedures right now for all the things -- all the contingencies that we might have and we'll relay then to you later on in the day and have you take a look at them and see what you think.
Conrad	Okay.
Houston	Gemini 5, Houston.
Cooper	Go ahead, Houston.
Houston	We have a medical data pass on the Pilot at Carnarvon, next time and the AOS is 15:17:50.
Cooper	Good.

Gemini Control here. I think we're out of communications range. That pass was well south of Antigua, so the spacecraft is now between Ascension and Tananarive. The pilots will take -- on an if-they-can basis -- some more synoptic weather photography, and over Carnarvon there'll be a medical data pass on Pete Conrad. This is Gemini Control out.

Gemini Control here at elapsed time 168 hours 52 minutes, and our Time-To-Retrofire clock shows 23 hours 10 minutes. During that last pass across the Cape, the spacecraft did achieve a radar lock with the L-Band from the Cape, and we locked onto the spacecraft. A few minutes later, Jim McDivitt had a brief chat with the spacecraft over Ascension. That conversation went like this.

Houston	Gemini 5, Gemini 5, Houston, over.
Cooper	Houston, Gemini 5 here.
Houston	Gemini 5, Houston. We're interested in what kind of accelerations you're getting out of your spacecraft, now that the hydrogen isn't venting, so we'd like to see if the rates build up, at all, without any thruster activity. We'd like to have you do it for long enough so that you can see if there is any significant increase, and would you sort of keep this in mind so that you can inform us the next time you talk to us?
Cooper	Okay. I've got a question for you.
Houston	Shoot.
Cooper	Any reason why we're using the Secondary Coolant Pump 'A', rather than 'B'?
Houston	It's about six tenths of an amp more efficient than the other pump.
Cooper	...
Houston	There's a little piece of information for you! We've got about three or four more minutes here, but we don't have any other information. We'll just standby.
Cooper	Check.

Gemini Control, Houston here, at 169 hours 2 minutes into the flight. The spacecraft is out over the southern tip of Africa. In about 20 minutes, over Carnarvon, Pete Conrad will make routine a medical data pass. About 20 minutes later, between Hawaii and California, there is some photography planned, if the spacecraft is pointed in the right direction. Later, over Texas, on the upcoming swing, we'll try to acquire those eye charts north of Laredo. They were observed very quickly on the last pass, and we're hopeful that the pilots will be able to see them again today. This is Gemini Control, Houston.

This is Gemini Control, Houston, at 169 hours 31 minutes into the flight, and we're in the 107th revolution. During the recent Carnarvon pass, Pete Conrad reported he'd drunk a total of 32 pounds 10 ounces of water, and was in the process of eating Meal 5-alpha. This consists of grapefruit drink, chicken bites, corn chowder, peaches, and brownies -- eight in number -- for a total intake of 932 calories. Also of some significance during that last pass, is the fact that Pete reported the hydrogen venting -- the stoppage of the hydrogen venting. The spacecraft now is experiencing very, very slow rates, on the order of only one quarter of a degree per second in pitch, and it is very little in the other axes. The fuel cell hydrogen pressure is presently reading 340 pounds, and is not venting. We have the Carnarvon tapes and we'll play it for you now.

Carnarvon	Gemini 5, Carnarvon. We have a valid oral temp. Standby for Surgeon.
Surgeon	Gemini 5, Carnarvon Surgeon. We observe ... your cuff is full-scale. We have your other blood pressure. Would you give us a mark when you begin your exercise?
Conrad	Roger. Mark!
Surgeon	Cuff is full-scale. Roger, Gemini 5. We have a valid blood pressure. Would you update us on your water status, please?
Conrad	Had 10 ounces.
Surgeon	Say again, Gemini 5.

Conrad	Roger, ... 10 ounces.
Surgeon	Sav again pounds.
Conrad	32.
Surgeon	Roger, we've got it. Just a second, Gemini 5, Surgeon out.
Conrad	I ate Meal 5-alpha.
Surgeon	Okay, 5-alpha.
Conrad	That's affirmative.
Surgeon	Thank you, Surgeon out.
Carnarvon	Gemini 5, Carnarvon CapCom. Would you turn your biomed recorder number 2 'On' and leave it on for duration of mission.
Conrad	Biomed recorder number 2 is back 'On'.
Carnarvon	Flight would like to know if you've got any rates which you can give us ...
Conrad	They're very, very low. Looks like we don't have anything in roll, and maybe a quarter degree or less in yaw, and about the same in pitch. Very slow drift rates.
Carnarvon	Roger ... TM 'Off'. Flight wants you to be advised they're standing by for the Laredo test on this pass.
Conrad	Roger, the radio test?
Carnarvon	The Laredo test.
Conrad	Laredo, roger.
Conrad	What's the weather guess down there tomorrow, for the Laredo site?
Carnarvon	We don't know the weather as yet. For the S-8/D-13 -- is that what you're referring to?
Conrad	Affirmed.
Carnarvon	It's still overcast at this time, but they think it might clear.
Conrad	Roger.

[** DMH's note -- Evidently Pete Conrad's use of 'tomorrow', meaning next orbital daylight pass, was initially misinterpreted by the Carnarvon CapCom as being a reference to the next day of the mission, the final day, on which the spacecraft would return to Earth, and he may have thought that Pete had asked about the 'landing' site.]

Carnarvon	... LOS. Standing by.
Conrad	Gemini 5, right here, standing by, and see you tomorrow.
Carnarvon	Roger. That's must be a pretty good map you've got.
Conrad	Did you say nap?
Carnarvon	I say map -- your orbital map.
Conrad	Why is that?
Carnarvon	How did you know it was our last pass?
Conrad	Oh, well yeah. We keep the map up to date.
Carnarvon	Right.
Conrad	Actually, we've been so nominal on the orbit that we've been on the original flight plan from liftoff, as far as stations go, and we slipped 24 minutes is all on the station passages.
Carnarvon	Roger.
Conrad	That's not bad for 7 days.
Carnarvon	No, it isn't.
Flight	All that was due to the maneuvering we did.

Carnarvon	Flight says all that was due to the maneuvers we did.
Conrad	That's affirmative.
Carnarvon	We've had C-band LOS.
Flight	Roger.
Carnarvon	Still on the Beacon. ACQ-Aid LOS. Flight, did you copy about the rates?
Flight	Affirmative. We copied it all.
Carnarvon	Roger. A point on that C-Band Adapter -- we've got a message received earlier that C-Band ...
Flight	Roger. You got that from network?
Carnarvon	I must have, yeah. The mission instruction message didn't include it, but we went ahead on the other.
Flight	He's made his one mistake for the flight.

Gemini Control, Houston, here, at 169 hours 41 minutes into the mission. Within the last 15 minutes, we've been in contact with the Lake Champlain. The Public Affairs Officer stationed out there has given us a little run down on what's in store for the crew tomorrow when they board that ship. It goes like this, the first few hours will be reserved for medical checks. Starting with the Command Pilot, the first thing that he will do is undergo a series of X-rays of the chest and the heel bone, followed by a blood chemistry work up, checking the plasma volume, the red cell-mass, to be followed by some EKG readings. And while Gordon Cooper is undergoing those tests, Pete Conrad will be on the tilt-table, getting his number one tilt. Then the next hour, Gordon Cooper is to get an eye exam, to be followed by a tilt, his number one tilt. Meanwhile, Pete Conrad will get the same sort of checks that Gordo got during that first hour. The next thing on the schedule for Gordon Cooper, is his hearing test, to be followed by a neuro-psychiatric test, which will include a thorough test of the nervous system, paying particular attention to the motor responses. Pete will pick up that part of it during that side of the hour. It will be followed by an internal medical check, on both. So the overall schedule shapes up something like this. They're reserving about an hour to an hour and a quarter for recovery exercises themselves. Then they block out about 6 hours for the medical check. They're allowing a half an hour for clean-up and shave for both pilots. Then there'll be a half hour set aside for visiting the spacecraft, which by then will be on the hangar deck. That evening they'll have dinner in the general mess, with the enlisted men, to be followed by dessert in the Ward Room with the officers. After dinner, there'll be more tilts and some additional medical checks, fairly brief. Then they plan to be in bed by 10 p.m. tomorrow night. They'll be up early the next morning, about 5:30 a.m., and if all the plans hold, they'll be leaving the carrier about 7:30 a.m. All the times I have given you were local times on the carrier, Lake Champlain. This is Gemini Control.

Gemini Control, Houston, here, at 169 hours 51 minutes into the flight. In the recently-completed Hawaii pass, the crew was instructed to look for that pencil-shaped shaft of light out over White Sands. The laser experiment is up, and they'll attempt to acquire it visually. During the pass, the crew will also be looking for the eye charts north of Laredo. Here is the Hawaii conversation.

Hawaii	Gemini 5, this is Hawaii CapCom.
Cooper	Hello Hawaii CapCom, Gemini 5 here. Go ahead.
Hawaii	Roger. We hold you 'green' on the ground.
Cooper	Our status is 'green' here.

Hawaii	Roger, I have a flight plan update, when you're ready to copy.
Conrad	Ready to copy.
Hawaii	Roger. Map 15 31 24, longitude 140.7 east, rev 107.
Conrad	Roger on the map.
Hawaii	Star, 15 31 24, 23 hours 20 minutes [Right Ascension].
Conrad	Roger on the star.
Hawaii	Okay, Gemini 5. We have a little information for you here. The laser beam is going to be up at White Sands, they're going to be ready for that. They're set up for Laredo, and Flight would like to have a UHF-6 during the pass over the States.
Conrad	Okay, very good.
Hawaii	Gemini 5, we have nothing further. We're standing by.
Conrad	Roger, Gemini 5 standing by.
Hawaii	Are you still looking ... We have all our ... out but they're not back yet.
Flight	Rog. We have it.
Hawaii	Roger.

Gemini Control here. And Jim McDivitt has just put out his first call for the spacecraft, Remoting through California. Let's come up on that conversation live.

Houston	... Laredo is very good. Be advised that they'll have four smoke pots there today. There'll be one on the northwest corner, and two on the northeast corner, and then another one about three-quarters of the way between the northwest and northeast corners so that you should have a nice line across the northern border of the acquisition target. Be advised that the wind is blowing from the south-southeast, so that the smoke should be blowing away from the targets, and we hope they provide adequate visibility for early acquisition.
Cooper	Okay.
Houston	We'd also like to inform you that the laser will be on at White Sands, but it's low priority compared to the Laredo pass, we're mostly interested in Laredo pass.
Cooper	Alrighty.
Houston	We'd also like to have you bring your C-Band Adapter Beacon up now. We'd like for you to place the switch to 'Continuous'.
Houston	Gemini 5, Houston. We'd also like to advise you that we will be updating and reloading your TR [Time to Retrofire] over Texas. We'd like to get a bias check on your TR, so you will get some DCS lights.
Cooper	Okay, fine.

Gemini Control here. Very little conversation here. We're assuming, that the pilots are looking for that laser out near White Sands -- they're coming up over the White Sands area right now. We'll standby.

Houston	Gemini 5, are you drifting around in the proper direction here.
Cooper	Affirmative.

Houston	Very good. When you've completed the S-8/D-13 pass, give us a call -- we've some other information for you.
Cooper	Okay.
Houston	Gemini 5, we'd like to have you place your C-Band Adapter switch to 'Command' at this time.
NASA-902	...
Conrad	Gemini 5, go ahead.
Houston	This is Houston. We would like to have you place your C-Band Adapter switch to 'Command'.
Conrad	We did! It was somebody else calling us?
Houston	Roger.
Cooper	We have White Sands in sight. I'm looking at it as we go by.
Houston	Roger, you see White Sands. Do you see the laser?
Cooper	I see the sled track -- I guess that's still at White Sands?
Houston	Roger.
Cooper	I don't see any light, at all.
Houston	Okay.
NASA-902	... NASA-902, do you read?
Conrad	Hello NASA 902, Gemini 5 reads you weak but clear.
Conrad	We have Laredo in sight -- you can see the smoke from it very clearly.
Houston	Okay, does the smoke outline the northern boundary for you? Does it help with orientation... of which direction the target is?
Conrad	Yeah, I can't see the targets yet because of the sun angle.
Houston	Okay.
Conrad	In fact, I might not be able to see them at all, Gordo will probably be able to see them [out of his window] because we're not cleared out of the left yaw [rate].
Houston	Okay.
NASA 902	Gemini 5, you read NASA jet 902?
Conrad	Roger 902. Gemini 5 reads you.
Cooper	I have targets in sight!
Houston	Roger.
NASA 902	Hello Gemini 5. Do you read NASA jet 902?
Conrad	Okay Houston. Gemini 5, we got a '4' and a '1' on the first row [of the target pattern], and then we lost track because of the yaw [rate].
Houston	Okay, you got a '4' and a '1'. Were those the first one and the second one, or were they some other ones in that first row?
Conrad	The first and the second [positions].
Houston	Okay. Very good.
Conrad	NASA 902, Gemini 5. Do you read?
Houston	Gemini 5, Houston. We're all set to send up the TR time.
Cooper	Roger.
Houston	Could you look at your stowage for reentry, and sort of give us a quick appraisal of what you plan on doing -- if you plan doing something different than your preflight plan stowage?
Conrad	The only thing different that we may do, is that we may have to have one or two food bags in the footwell. The thing we'll have the two alpha bags with a food bag each wrapped in them in the

	right foot well. And I believe that we'll make it into the proper place with just about everything else.
Houston	Okay, fine. If you have any real drastic changes, let us know as soon as you can so we can figure it into the CG.

[** DMH's note -- They need to know the spacecraft's centre of gravity -- more properly the centre of mass -- in order to maneuvre to control the reentry trajectory].

Conrad	Okay, I don't really think so, Jim. We're in pretty good shape, and we're going to work on that this afternoon.
Houston	Okay, very good.
Conrad	There is one change. We'll take the little bit of gear that was in the wing boxes out and carry it on our person, and use that as extra storage area for food bags.
Houston	Okay, very good.
Houston	Gemini 5, Houston again. We'd like to remind you to purge the fuel cells before you power down.
Conrad	Roger. We'are still planning on powering dawn 16:20:00.
Houston	Roger, and we'd also like to have you read out your propellant quantity gauge to us at this time.
Conrad	Okay, standby.
Cooper	The propellant quantity reads about 7 percent.
Houston	Roger -- 7 percent. We want to do some radar tracking with Pretoria on this pass. We'd like to have you turn your C-Band Adapter Beacon 'On' and 'Off' at these times. Are you ready to copy?
Cooper	Roger.
Houston	Okay, we want you to go to 'Continuous' at 07:16:31:00, we want you to go back to 'Command' at 07:16:42:00.
Conrad	Roger, I copied. 07:16:31:00 to 'Continuous', 07:16:42:00 to 'Command'.
Houston	Roger. Be advised also that we'd like to run another HF test out of the Eastern Test Range antennas, so after we have completed the Stateside pass, we'd like to have you go to HF, and we will start the music up again and we'd like to see if we can compare today's results with yesterdays. We thought that that was about the best HF test we have done so far.
Conrad	I think you're right, and we'll mark the time down that we lose the signal.
Houston	Okay, we're going to be going over the Canaveral antenna, and then we're going to shift down to the Antigua antenna, and then we're going to leave it at Antigua until you lose it.
Conrad	Okay. We'll give you a call at either the RKV or CSQ tonight, after we get the stowage all done.
Houston	Okay, very good.
Conrad	We're going to take a little nap, and then go to work on it.
Houston	Okay. We'll allow you between three and a half and four hours for your stowage tomorrow, prior to retrofire.
Conrad	We're going to have all the hard articles stowed, the only ...
Houston	Gemini 5, Houston.

Conrad	Go ahead
Houston	Okay, you cut out. You said you were going to have all the hard articles stowed before then -- is that right?
Conrad	We're going to give it a try.
Houston	Okay, very good.
Houston	Would you put your Cryogenic Gauging switch to 'Off', please.
Houston	Gemini 5, Houston again.
Conrad	Go ahead.
Houston	We definitely want you to be in UHF [when] over the CSQ. Do you have the acquisition time there?
Conrad	Would you please give it to us.
Houston	The acquisition time there will be 07:17:02:42.
Conrad	Okay.
Houston	Gemini 5, Houston. We have about another four minutes here. We'll just standby in case you have anything.
Cooper	Okay, it sure is a pretty day down over the Caribbean today.
Houston	Say, would you like to describe some of the colors of the water down there. Do you see any shelves that go from green to blue, or anything.
Cooper.	I'll say! There's a real brilliant green, and a bright, bright blue. We came over Cuba. And South America is again fairly cloudy.
Houston	Roger. Can you see any real sharp breaks in the color down below the water?
Cooper	Yeah, very clearly. We're coming in over South America now.
Houston	Roger. Can you see the storm out there at all?
Cooper	Yeah, just out to our left.
Houston	The name of that is Betsy, in case you haven't been told about it.

Gemini Control here. We're standing by here, for the resumption of another HF test in which music will be played; you heard the pilots say they'd log how far from the Cape and the Eastern Test Range antennas they can read the HF signal. And over Texas, Pete Conrad reported he saw two squares, he read a '4' and a '1'. The '1' reference indicates a vertical line up north and south through the center of the squares, and the number '4' indicates that he saw a slant line beginning in the upper left of the square and running to the lower right, and we're checking with our experimenter staff support room to see if those were accurate. Now there goes the music, and we will all have a listen.

This is Gemini Control, at 171 hours 27 minutes into the flight. Some 6 or 7 minutes ago, the Gemini 5 spacecraft, while in contact with the Hawaii tracking station, logged its 3,000,000th mile -- the time on that was 171 hours 20 minutes.

The Network Controller, Ernest Randall, this morning has been in contact with Navy officials on the west coast. We're attempting to arrange some sort of a [radio] patch with the SeaLab-II. The divers, including [astronaut] Scott Carpenter, went down yesterday off the coast of La Jolla. We don't know whether we're going to be successful, or not, but in about three hours, we may be able to Remote a signal through Hawaii, if the passes aren't coming too close to the coast. Again, we're not certain we can undertake this SeaLab pass today, but we're making an attempt right now to make a line arrangement to do it. We've the tape from Hawaii for you, and we'll play it for you at this time.

Hawaii	Turn your Quantity Read switch to fuel cell H2.
Conrad	Roger.
Hawaii	And leave it there for Guaymas.
Conrad	Okay.
Hawaii	Now we've got a medical data pass scheduled on the Commanrl Pilot. Is he asleep, or is he about to go to sleep?
Conrad	Yeah, he's asleep. Do you want him?
Hawaii	No, we don't want you to wake him up. We'll scrub that data pass, if he's sleeping.
Conrad	Yeah, he's asleep.
Hawaii	I've got an update for you, if you're ready to copy.
Conrad	Ready to copy.
Hawaii	MSC-1, 17:20:00. I've already passed it by, Pete. Place your ECS central circuit breaker to 'Open', and hold it, momentarily.
Conrad	Do what?
Hawaii	Turn the ECS central circuit breaker to 'Open' and hold it momentarily.
Conrad	Okay, it's open. Do you want it closed?
Hawaii	Roger, close it.
Conrad	Okay, it's closed. How's that?
Hawaii	That's okay.
Conrad	You just want one orbit on that, don't you?
Hawaii	Roger, that was on this rev -- it was on this rev, Pete.
Conrad	Okay. I've got something for you to copy.
Hawaii	Go ahead.
Conrad	Okay, we lost HF at 07:16:27:00.
Hawaii	Roger.
Conrad	And I'll give you Gordo's -- he ate a Meal 5-alpha at 07:15:00.
Hawaii	Roger.
Conrad	And his total water is 31 pounds -- excuse me, that's 32 pounds -- and 8 ounces.
Hawaii	Roger. Houston Flight, Hawaii CapCom.
Flight	Go ahead.
Hawaii	Okay, it's ... on this message of instruction -- what was the purpose of this ECS central circuit breaker to 'Open'?
Flight	I asked the same question! And all I know is that's what they wanted done.
Hawaii	Okay, we had them do it, but I don't know why, and I missed the time on it. I thought that was for the next rev. I got this thing in kind of late.
Flight	That's okay, Hawaii. Would you get us an onboard hydrogen readout, and give us your readout of the battery temperature, BF01.
Hawaii	Roger. Could you give us fuel cell hydrogen read out, please? We've had LOS, Flight.
Flight	Roger.

This is Gemini Control, Houston, at 171 hours 45 minutes into the flight. We've just completed a rather long swing down the west coast of North America, and we have some eleven minutes of conversation to play for you. One or two other items during the pass --

our Guidance and Navigation Controller reported that his gauges showed a little more than 6 pounds of fuel remaining onboard. No new difficulties were reported in the thrusters, or no difficulties in maintaining attitudes. Of course, that was vastly simplified a few revs ago when the hydrogen in the fuel cell stopped venting. On another matter, the prime recovery vessel, the Lake Champlain is just a little north of the [area] 107 pickup point. We expect it may be 2 to 3 hours from now before any firm decision is made dispatching that ship either to the north or to the south. To the north, of course, would be the 121 recovery area, to the south it is the 122 recovery area. The best estimate right now is -- around 3:00 o'clock -- a decision will be made and the ship will be advised. We have the tape now of the Stateside pass, and we will play it for you now.

Houston	Gemini 5, Houston.
Cooper	Go ahead, Houston.
Houston	On that last pass over the States, it looked like you might have tried to start up your thrusters numbers 7 and 8 -- from the TM data. If you did, we'd like to know how they worked?
Conrad	Same. Same.
Houston	Okay, got you. The Flight Surgeon would like to talk to you for a minute here, and then we'll release you to Guaymas, and they will finish up the pass.
Surgeon	Hello, Pete. I would like to check with you a minute about this stowage that you're going to do this afternoon. Would you be sure and check on that reprogramer and make sure you have that out some place where you can get hold of it rapidly on the water when you are planning your stowage. Secondly, I will talk with you tomorrow morning, and give you a briefing on how we are going to get the BP's and we are checking that out down here now, how we will do them during the retrofire and the landing sequence. I'd like for you and Gordo to both be thinking about, and we will have to do some discussing about whether we do want you to, or whether you feel there is any need to use any of the item B, so you might consider that between now and tomorrow and depending an how things go with sleep the rest of the time. Do you know of anything that's really been bothering Gordo with trying to get sleep, like last night?

[** DMH's note -- The Flight Surgeon's 'items' (such as 'B' here) are medications which the crew might take.]

Conrad	No.We were just busy, that's all.
Surgeon	Okay. Pete, your water intake has been down some, to both of you. We're not concerned about it, or anything, but it has gone down some from what you've been doing the rest of the flight. It has gone down some in the last 24.hours and you both might watch that some, too.
Conrad	Okay, Things have been running fairly cool in here and, as you noticed, we have actually heated the suit loop up, and I think -- we discussed that also -- and I think that's the reason [for lower water intake].

Surgeon	Rog. I think so. And I think you still sound like you're pretty well [nasally] plugged up. Do you feel that you are, up there.
Conrad	No, no. It's just the 100 percent pure oxygen, that's all.
Surgeon	Okay, listen, there's another one you can consider, you and Gordo, both between now and entry, if you both feel that you are pretty plugged up, you ought to consider this business about item E for the stuffiness and we can look at it later this afternoon or this evening and check again.
Conrad	Okay.
Surgeon	Very good. Everything looks good down here, Pete, as far as your data. All of the sensors are still working very well. The data is as clean as it was at prelaunch, it looks real beautiful. Your rates and things are leveling out pretty well, and we've no concern from the medical point of view, down here.
Conrad	Okay, we feel real fine.
Flight	Guaymas, Houston Flight.
Guaymas	Go ahead.
Flight	Tell him to leave that [fuel cell] section 2 on for the rest of the flight.
Guaymas	Roger.
Guaynias	Gemini 5, Guaymas CapCom.
Conrad	Hello there Guaymas, this is Gemini 5.
Guaymas	You'are looking pretty good down here. How are you doing?
Conrad	We are 'Go' up here, Gemini 5.
Guaymas	Okay. We decided to leave the section two on for the remainder of the flight.
Conrad	Okay, very good.
Guaymas	Roger.
Guaymas	Flight, do you want to leave them in fuel cell H2 quantity [read out]?
Flight	Until you get a readout at Texas.
Guaymas	Okay.
Conrad	Hey Guaymas, would you tell Houston that we didn't come close enough to Betsy to get an S-7 run -- it had moved quite a bit east of our track.
Guaymas	Not close enough to where?
Conrad	It had moved east of our track.
Guaymas	Okay, I understand. Flight did you get that?
Flight	Roger.
Flight	Guaymas, you can have him turn the hydrogen switch off.
Guaymas	Roger. Okay, turn your Quantity Read switch 'Off' at this time.
Conrad	Roger.
Guaymas	Okay, we copied.
Flight	What did you read there, Guaymas?
Guaymas	PCM bit count 41.
Flight	Roger, that's what we got.
Guaymas	There's quite a difference in that TM, Flight, now that we're no tumbling.
Flight	Roqer.
Flight	Ask him what his rates are now?

Guaymas	What kind of rates are you having there, now?
Conrad	Very, very, very low.
Guaymas	It sure does help on the telemetry, real good.
Conrad	You said what?
Guaymas	It really has given us much better telemetry.
Conrad	Oh yeah, we are hardly moving at all now that the hydrogen has stopped venting.
Guaymas	Guaymas has LOS.
Houston	Gemini 5, Houston.
Conrad	Go ahead, Houston.
Houston	Pete, we're looking at the preparation for retrofire for tomorrow and it looks like the most straightfoward way is to arm the RCS and have you do the platform alignment in RCS, and unless you have some objection to thlat, go ahead and sort of plan on that as far as the procedure down here
Conrad	We concur to that.
Houston	Okay, very good. We'll look into it and try and get a time on it. Looks like it really won't make much difference from TR-30 on down, and we'll just do a few things from TR-2 hours down to TR-30 minutes.
Conrad	Okay, TR-30 is over Carnarvon? Or past Carnarvon? I'm not sure of that.
Houston	Jast a second -- it's over Carnarvon. Did you get that -- it's over Carnarvon at TR-30.
Conrad	Yeah, I got that.
Houston	Okay.
Conrad	That's the only thing I can see -- is when we work through the power up checklist, after the platform warms up, we go ahead and arm the RCS early, that's all.
Houston	That's right.
Conrad	Otherwise, it ought to be about the same.
Houston	That's right. That's why I say there are very few things that are definite. We're just trying to line it all up here to make sure -- if there are any differences, we'll let you know about it.
Conrad	Okay.
Houston	We're planning on just telling you a little summary of what we had here and we're going to figure it all out, and we shouldn't have any changes at all, except for that one little thing we have already mentioned.
Conrad	Okay. That, by my calculations, ought to be somewhere around ...
Houston	Rog. I think we've got you over Carnarvon at 08:13:33:00 -- is that what you're talking about?
Houston	Are we still talking to you?

Back to Gemini Control. In that discussion between Pete Conrad and Dr. Berry, you heard reference to Item B. This is a dexedrene preparation. And another reference was to Item E. This is a nasal decongestant. A nasal decongestant which might be needed as the 100 percent oxygen atmosphere seems to have a drying effect on the nasal passages.

This is Gemini Control, Houston, at 172 hours 32 minutes into the mission. The CSQ has just been in conversation with the Flight Director here. They're standing by and should acquire in a few minutes, they're due to acquire at 35 minutes after the hour. We also have in front of us a large map the Retro officer has provided, and this shows the flight paths of orbits 121 and 122 tomorrow morning -- excuse me revolutions. If we land in the 121-1 area, which is a spot about halfway between the Cape and Bermuda, the spacecraft would come over the west coast of Mexico; start across the States at 6:37 Central Standard Time; at 6:39, it would be roughly over El Paso; at 6:41, it would be between Abilene and Fort Worth; at 6:43, it would be a few miles east of Jackson, Mississippi; at 6:44, it would be almost precisely over Columbus, Georgia; at 6:45, a few miles east of Savannah, Georgia; with an impact at 6:55 a.m. On the next rev, 122-1 area, we'd begin to cross the California coast at 8:11 a.m.; at 8:13, we'd be just west of Denning, New Mexico; at 8:14, we would be slightly east of El Paso; at 8:15, almost over San Angelo, Texas; a minute later, just to the east of Bryan; then New Orleans at 8:17; at 8:18, halfway across the arm of the Gulf of Mexico between Florida and New Orleans; at 8:19, over St. Petersburg, with an impact at 8:30, at 72 degrees west longitude, 23 degrees north. This is Gemini Control.

Gemini Control Houston here, at 172 hours 46 minutes into the flight. We've just made a pass aver the Coastal Sentry Quebec, and that signal, a very clean one, relayed back to the States by a Syncom [geostationary satellite] is ready for you now. It's about a four minute conversation. Some five minutes from now, the spacecraft will swing north of Hawaii, and we're due for a medical data check there from the Command Pilot. Let's find out now what went on over the CSQ.

CSQ	Gemini 5, CSQ CapCom.
Cooper	Hello CSQ, Gemini 5 here.
CSQ	We have you 'Go' on the ground. And be advised that the Command Pilot has a medical data pass at Hawaii -- acquisition time 18:54:11. Do you copy,?
Cooper	Roger, 18:54:11, medical pass, and who's that for?
CSQ	That's for the Command Pilot. I also have a flight plan update, when you're ready to copy.
Cooper	Could you wait a second. Go ahead.
CSQ	Roger, D-4/D-7, sequence 426, it is to be done when both crew members are awake. Do it in drifting flight and use the recorder. For the D-6 experiment -- expend remaining film on features of opportunity. Do you copy9
Cooper	Roger.
CSQ	CSQ has nothing further this pass. We're standing by.
Cooper	Okay, fine, Gemini 5 here.
Conrad	CSQ, Gemini 5.
CSQ	CSQ. Go ahead.
Conrad	Roger. We're supposed to do MSC-1 at 17:20:00, and we were doing something, and the time got by us.. And could you check with Houston, the experiments, please to give us another time today to do it?
CSQ	We'll check on that. It's MSC-1 -- is that affirmed.
Flight	We'll check on that.

CSQ	Roger. Copy.
CSQ	Gemini 5, Houston is checking on a new time for that.
Conrad	Okay.
Flight	We don't have your summary yet, CSQ.
CSQ	CSQ. Roger.
Flight	We now have your summary.
CSQ	Roger. We sent them all again.
Flight	Roger.

Gemini Control here, at 172 hours 54 minutes into the flight. As we have been talking, Hawaii acquired. Let's cut in on that conversation.

Flight	... we're sure he is going to be awake.
Hawaii	Roger, Flight.
Hawaii	Gemini 5, Hawaii. We don't have a valid temperature.
Hawaii	Gemini 5, Hawaii CapCom.
Conrad	Go ahead, Hawaii.
Hawaii	We don't have a valid temperature yet.
Conrad	It's coming.
Hawaii	Roger.
Hawaii	Flight, this is Hawaii, ... good.
Surgeon	Gemini 5, Hawaii Surgeon. We have a valid blood pressure. Give us a mark when you begin exercise.
Conrad	Roger.
Hawaii	Flight, we're copying the dump.
Flight	What did you say, Hawaii?
Hawaii	We're copying the dump.

This is Gemini Control. That appears to be all the conversation we'll have on this pass. This is Gemini Control out.

Gemini Control here, at 173 hours 2 minutes into the flight. We have just completed a medical data pass over Hawaii, and Gordon Cooper reported his total water intake is now 34 pounds. He said he finished his last meal about 3 hours ago -- it was 5-alpha. The Rose Knot Victor should acquire the spacecraft in about 15 minutes. The flight plan at this point is mostly all white space. They've just about wrapped up all their experiments. They've a few to do tomorrow morning before reentry, but the flight plan itself is as barren as we've seen it. It just shows items like briefing period, Pilot eat, Command Pilot eat, medical data pass, here and there, and that's about the extent of it. We are continuing in drifting flight. This is Gemini Control, Houston.

This is Gemini Control, at 173 hours 32 minutes into our mission. The spacecraft has just began its 110th revolution around the earth. At the present time, it is over the southern Atlantic, off the east coast of South America. Here in the Mission Control Center, we have had a change of shift. The White Team of flight controllers is taking over from Chris Kraft and his Red Team. As Dr Charles A. Berry, our Flight Surgeon, left the room, he advised us that the flight crew -- Gordon Cooper and Pete Conrad -- are still in excellent physical condition, and that during our last voice communication with the crew over the RKV, both were awake, and they did sound cheerful and in good spirits. Here's the tape between the Rose Knot Victor tracking ship and spacecraft Gemini 5.

RKV	Gemini 5, RKV CapCom.
Conrad	Go ahead, RKV.
RKV	Roger. We'd like for the Pilot to be awake if possible over CSQ and Hawaii on the 110th rev.
Conrad	Okay. What's the acquisition?
RKV	CSQ acquisition is at 20:09 -- 20:09. That's on your upcoming rev.
Conrad	Okay, I'll be up.
RKV	And what we'd like to do -- we're going for ... thruster check, and we want to give you the instructions on this rev -- over the CSQ and Hawaii to perform the test on the next rev
Conrad	Okay.
RKV	We have all your systems real good, here on the ground. Everything looks fine.
Conrad	Okay, we're 'Go' up here.
RKV	Roger. We've nothing else for you. We'll be standing by.
Conrad	Okay.
Flight	RKV, Houston Flight.
RKV	Flight, RKV.
Flight	Tell Pete, he can go to sleep for the next rev, and Gordo could take down the instructions, then Pete could be up for the pass over the CSQ and Hawaii for the actual test.
RKV	Roger. Gemini 5, RKV CapCom.
Conrad	Go ahead.
RKV	Flight advises that if you want to sleep for the next rev, you can go ahead and the Command Pilot can take down the instructions and then you can be awake to do the test. Most of the switches are on your side of the cockpit -- that's the problem.
Conrad	Well, listen, we're working on ... and a lot of things like that ... We'll probably ... your way for the next couple of rounds.
RKV	Roger, understand.
Flight	Very good.

This is Gemini Control, at 174 hours 2 minutes into the flight of spacecraft Gemini 5. At the present time, our spacecraft is coming up over the Philippines on the 110th rev, and will very shortly be over the Coastal Sentry Quebec, our tracking ship in the Pacific south of Japan. Our flight status at this time, is essentially unchanged, as it's been over the past 16 hours. The spacecraft is in drifting flight, and the flight crew are in excellent physical condition. This is Gemini Control.

This is Gemini Control, at 175 hours 32 minutes into the flight of spacecraft Gemini 5. At the present time, our spacecraft is on its 111 revolution over the earth, and it is passing over the Indian Ocean. Our last voice communications were made as the spacecraft passed over the Coastal Sentry Quebec, and over the Hawaiian tracking station shortly thereafter. This was approximately 40 to 45 minutes ago. At that time, Flight Director, Gene Kranz, passed on instructions to the spacecraft crew to have a procedures check of thrusters 7 and 8, and a plan to heat up the thruster chamber assembly through a series of maneuvers, or switching procedures. This particular attempt to heat up the thrust chambers will take

place as the spacecraft moves agrain over the Coastal Sentry Quebec tracking ship and we expect to get some information as to whether it was successful after the maneuver -- or switching procedure -- is completed. The spacecraft Gemini 5 also received a map update, and some instructions on medical passes to be performed. We now bring you a voice transmission between spacecraft Gemini 5 and the Rose Knot Victor, our tracking ship off the coast of Peru.

RKV	Gemini 5, RKV CapCom.
Cooper	Go ahead.
RKV	Did you turn ACQ Beacon circuit breaker 'Off' over us?
Cooper	Yes we did. We were late, I know.
RKV	Okay. It was on when we got acquisition, and it went off during our pass, and we were wondering if you were conducting your MSC-1, or what happened?
Cooper	Right, we are entering MSC-1 right now.
RKV	Roger, understand. I can ... Turn your ... Real-Time 'Off'.

This is Gemini Control, at 176 hours 2 minutes into the flight of spacecraft Gemini 5. Our spacecraft, at the present time, is on its 111th revolution, and is approaching now the Hawaiian tracking station in the Pacific Ocean. We had voice conversation with Gemini 5 over the Coastal Sentry Quebec, a few minutes ago. At that time, both crewmembers were awake, and Pete Conrad did the talking. There was a thruster check -- an attempt to fire the thrusters in sequence. This was designed to try to unfreeze thrusters 7 and 8. Pete Conrad reported that during sequence thruster firing, he built up some fairly high [rotational] rates, and he'd then have to damp them out. That conversation came just shortly before Loss Of Signal, and we did not get word on whether thrusters 7 and 8 did fire. We further word as the spacecraft passes over the Hawaiian tracking station. We will now play back the taped conversation between the Coastal Sentry Quebec and Pete Conrad.

Conrad	CSQ, CSQ, Gemini 5.
CSQ	Gemini 5, CSQ. Read you loud and clear. We have you 'Go' on the ground.
Conrad	...
CSQ	Negative, all we got was a lot of noise on HF.
Conrad	... build up some high rates, but we'll damp them out when we get through with them.
CSQ	Roger. CSQ copy. Houston, CSQ.
Flight	Go ahead.
CSQ	Did you copy that?
Conrad	...
Flight	Go ahead and finish the tests ... we'll take up with you later.
CSQ	Gemini 5, CSQ. Say again.
Conrad	Roger. ... control is holding at 23.1.
CSQ	Roger, copy. Gemini 5, CSQ requests you place the Quantity Read switch to the fuel cell H2 position.
Conrad	Roger.
CSQ	.... CSQ. Did you turn left ... circuit breaker on and off? Over.
Conrad	Yes, we did, but we got negative results.
CSQ	Very good. TX transmitted.

Flight	CSQ don't forget the medical data pass over Hawaii.
CSQ	Roger. Gemini 5, CSQ. I want to remind you that the Pilot has a medical data pass over Hawaii. And you can place the Quantity Read switch 'Off'.
Conrad	Roger. Do you have the acquisition for Hawaii, please?
CSQ	Roger, 22:02:46, and we'll monitor HF.
CSQ	CSQ is LOS.
Flight	CSQ A&D -- how far did he say he get through the check?
CSQ	How far did he get through the check -- is that your question?
Flight	Yes, sir.
CSQ	He was attempting to -- it looked like he was attempting to fire 7 and 8 thrusters at about 47. He turned the circuit breaker on and off, and then at about 4:30 he tried it again. Then we monitored him in a 'Direct' mode, and it looked like possibly he was trying to damp his rates. Some of the other thrusters were firing. We didn't get any of the results of the test. Over.
Flight	Okay. What did he say about build-up of rates?
CSQ	When we acquired him, he said he had built up some ... rates.
Flight	Okay. That's all he offered then, on the tests, huh?
CSQ	That's affirmative. He didn't give us any results at all. It appeared that he might have been trying to damp out his rates prior to LOS. He had some of the other thrusters firing, and he was in a 'Pulse' mode.
Flight	Okay.

This is Gemini Control, at 176 hours 32 minutes into the flight of spacecraft Gemini 5, which is at this moment passing over the southern part of South America and beginning its 112th revolution over the earth. We had a conversation over Hawaii concerning the attempt to re-fire, or fire the thrusters that had been frozen obviously, or evidentially on tests, was not successful. Command Pilot Gordon Cooper also advised that the rates of the spacecraft at this time are completely acceptable. Our Flight Director, Gene Kranz, has noticed on his trend charts that the hydrogen pressure seems to be building up again and he has instructed the spacecraft crew to power up the platform, to prevent hydrogen from beginning to vent again. Our Flight Surgeon, Dr. Dwayne Catterson has recommended to the crew that they concentrate on water, food, an sleep for the next 10 hours. This is Gemini Control at 176 hours and 33 minutes. We'll now play the taped voice communication between spacecraft Gemini 5 and the Hawaiian tracking station.

Hawaii	Gemini 5, this is Hawaii CapCom.
Cooper	Roger Hawaii, Gemini 5 here.
Hawaii	We've a valid temperature. Standing by for blood pressure.
Cooper	Okay.
Surgeon	Gemini 5, Hawaii Surgeon. Your cuff is full-scale.
Hawaii	Transmitting TX.
Flight	Roger.
Surgeon	Gemini 5, we have your valid blood pressure. Give me a mark when you begin your exercise.
Conrad	Mark!
Hawaii	He's looking good on the ground, Flight.
Flight	Roger, Hawaii.

Surgeon	Gemini 5, Hawaii Surgeon. Your cuff is full-scale.
AFD	Hawaii, AFD. Have you commanded tape dump?
Hawaii	That's affirmative, ... time 176:03:30.

[** DMH's note -- This time mark is expressed in Mission Elapsed Time.]

AFD	Roger.
Surgeon	Gemini 5, Hawaii Surgeon. We have a good blood pressure. Standing by for your water report only.
Conrad	Roger, wait one -- 34 pounds 8 ounces.
Surgeon	Roger Gemini 5. Thank you. And a happy landing to you and Gordo tomorrow. Hawaii Surgeon, out.
Conrad	Roger. Thank you.
Cooper	Roger. Thank you.
Hawaii	Gemini 5, Hawaii CapCom. I'd like a readout on your onboard quantity source temperature and source pressure for the OAMS?
Cooper	Roger. Our onboard quantity is about 6 percent, temperature is 50 degrees, and source pressure is 1,000 psia.
Hawaii	Roger. I understand. Copy, Flight?
Cooper	You went the results of our little [thruster] test, that we did?
Hawaii	That's affirmative. We'd like to know what you did there.
Cooper	All right. We followed procedure to the letter, and the first thing that we did was roll left pretty good and the gas started going out through the left yaw thrusters. We got pretty good rates ... We held the thrusters on yaw left for 10 minutes. Then we went to the other procedure, for rearming and trying them, and we still had no thrust.
Hawaii	Roger, I understand.
Cooper	In the meantime, we've discovered that we don't have ... thruster are out, so we're getting down to with very few thrusters left on the OAMS system.
Hawaii	Do you happen to know the numbers of the ones that failed?
Cooper.	No, we were unable to get any left roll., with the roll jets and the yaw logic.
Hawaii	Roger, I understand that.
Cooper	Just a minute, let me recheck that. It was roll logic in -- that's right -- left roll only, with the roll logic switch in the pitch and then no right yaw, then right yaw only with the roll logic in the yaw, but no left roll in that position.
Hawaii	Roger, I understand.
Cooper	And the yaw is feeding through into the pitch, which means we have a very weak thruster on the right yaw also.
Hawaii	Okay.
Hawaii	Did you copy that, Flight.
Flight	Affirmative.
Hawaii	TM off.
Flight	What are ...
Cooper	Other than that, it's a pretty good system.

Flight	What are his rates now. Is he pretty well damped?
Hawaii	Just a second, Flight.
Hawaii	What are your rates now, Gemini 5. Are you pretty well damped out?
Cooper	Roger. We've managed to switch back and forth, and work on the few remaining thrusters, and we have our rates damped pretty well now.
Hawaii	Roger.
Hawaii	Okay Gemini 5. We have nothing further. Hawaii's standing by.

That was a voice communication taped between Gemini 5 and the Hawaiian tracking station, and we will now give you the taped voice conversation between Gemini 5 and the Rose Knot Victor tracking ship.

RKV	Gemini 5, this is RKV. Com-check -- how do you read?
Conrad	RKV, Gemini 5. Read you loud and clear.
RKV	Roger, would you close your ACQ Beacon circuit breaker?
Conrad	Roger.
RKV	Okay. And we'd also like you to bring up the platform at this time. The reason for this is that we might start venting H2, and we want to prevent this. Right now hydrogen and oxygen pressure is low.
RKV	We show them powered up, Flight.
Flight	Roger.
RKV	You want to another main?
Flight	Affirmative.
Conrad	Okay, the platform's on, at this time.
RKV	Roger.
Conrad	Now, what are you going to want us to do?
Flight	Just leave it up, we want to stay in a powered up state while we watch his ...
RKV	.... in the powered up position right now, at the present time -- we don't want you to do anything.
Conrad	Okay.
RKV	We'd like to pass some information to you. We're going to cancel the medical data pass on the Command Pilot over the CSQ on rev 114.
Conrad	...
RKV	Okay, and the Surgeon recommends that both of you concentrate on water and sleep for the next 10 hours.
Conrad	Say, do you have an ACQ time for that pass over the CSQ?
RKV	Roger, CSQ on 114 is 02:28:26, and that medical data pass has deleted.
Conrad	Oh, you want it deleted?
RKV	That's affirmative.

This is Gemini Control, at 177 hours 2 minutes into the flight of spacecraft Gemini 5. At the present time, our spacecraft is passing over the continent of Africa on its 112th rev. Flight Director Gene Kranz, here in Mission Control Center, has made a decision to bring the spacecraft in on revolution 121 into the area designated 121-1 Planned Landing Area.

This is approximately 240 nautical miles southwest of Bermuda. The decision was made due to adverse weather in the 122-1 area, where tropical storm Betsy, although moving on an undetermined path, has a long range forecast that would place it close to the 122-1 area sometime in the next 24 to 36 hours. The decision has been made that spacecraft Gemini 5 will land on the 121st revolution in area 121-1. In that area at the present time, the [aircraft] carrier Lake Champlain is steaming toward that target point. This is Gemini Control, at 177 hours 4 minutes into the mission.

This is Gemini Control, at 177 hours 32 minutes into the flight of spacecraft Gemini 5, which is now passing aver the Pacific Ocean on its 112th revolution over the earth. At this time, the spacecraft is in drifting flight. Its rates have been damped out, and the platform is powered up to ensure hydrogen venting does not reoccur. Flight Director Gene Kranz says that the failure of additional thrusters on the Gemini 5 indicates that we may be running out of OAMS fuel. For that reason, he has placed the spacecraft in the drifting flight mode, at least for the present, until the fuel load can be determined. The splashdown of Gemini 5, scheduled for the 121-1 area, is estimated to occur at 12:55 GMT, or 6:55 a.m. CST. The spacecraft will land approximately 276 statute miles southwest of Bermuda, at 29 degrees 43 minutes north latitude, and 68 degrees west longitude. Ken Nagler, now our Mission Control Center weather man, will give us an update on the weather in those landing areas. Come in, Ken.

Thank you, Al. Well, as most people know, this is tropical storm season, and all week we have been watching to see if something would crop up in the Atlanti -- and, yesterday, tropical storm Betsy was located, just in time to give us some problems on revolution 122. So this is the current position according to the advisory put out by the Weather Bureau in San Juan. With this disturbed area something like this, moving in this direction, with the center of the storm expected in here ... at least the eastern edge of 122-1 would be awfully close to disturbed weather. So this is the reason why this area is a little bit risky to use for tomorrow. Now, with regard to 121-1, we also have a problem there. We are sort of being squeezed from a tropical storm moving this way, and a cold front coming down this way, with a band of shower activity out ahead of it. But by moving the recovery area a hundred miles or more to the east over to this new position here, this gets it well out of the way of the showers. So we expect the landing conditions to be very good in this area, tomorrow morning. That's all from the Weather Bureau.

Thank you, Ken Nagler, our weather man. This is Gemini Control out, at 177 hours 34 minutes into the flight of spacecraft Gemini 5.

This is Gemini Control, at 178 hours 2 minutes into the flight of spacecraft Gemini 5, which at this moment is passing within voice range of Rose Knot Victor, our tracking ship located off the coast of Peru. It is on its 112th revolution and, within a matter of moments, will start the 113th revolution over the earth.

As we reported on our last transmission -- spacecraft Gemini 5 is due to splash down southwest of Bermuda, 276 miles, statute miles southwest of Bermuda, at 29 degrees and 43 minutes north longitude, and 68 degrees west latitude, at approximately five minutes to 7:00, Central Standard Time, or, 12:55 Greenwich Mean Time. Retrofire will take place at 12:27 GMT.

At this time, we are 178 hours 3 minutes into the flight of spacecraft Gemini 5. We've the voice transmission between spacecraft Gemini 5 and the Coastal Sentry Quebec tracking ship.

CSQ	Gemini 5, CSQ CapCom.
Conrad	CSQ, Gemini 5. Go ahead.
CSQ	Roger, ... also we'd like you to put your Quantity Read switch to the fuel cell hydrogen position, please.
Conrad	Roger, we're at fuel cell hydrogen.
CSQ	Houston advises the fuel is possibly -- you will have sufficient time to ... to the thrusters. They'd like you to fire up again, and go to false load, PCA circuit breakers 7 and 8 closed, rate gyros on, and again liquid thrusters. Over.
Conrad	You mean all [the] thrusters, or [just] 7 and 8?
CSQ	I believe he means 7 and 8 -- I'll check it.
CSQ	Flight, CSQ.
Flight	Go ahead
CSQ	You want them to check thrusters 7 and 8 -- is that affirmative?
Flight	Well, we'd like them to check all thrusters, but I'd like to make sure 7 and 8 are closed during this check.
CSQ	You want all circuit breakers on the thrusters closed.
Flight	That's affirmative.
CSQ	Roger. Gemini 5 -- advise all circuit breakers on the thrusters closed. Check all thrusters.
Conrad	Okay.
CSQ	Also, Gemini 5, Houston advises there is sufficient hydrogen for the remainder of flight, and no problem on water. Over.
Conrad	Okay, they want us to leave the platform up all the time -- is that correct?
CSQ	That's affirmative. Leave the platform on, and after your thruster check, turn the rate gyros back off.
Conrad	Roger.
Flight	CSQ, please re-broadeast your alpha summary
CSQ	Say again.
Flight	Please rebroadeast your alpha summary.
CSQ	Copy.

This is Gemini Control, at 178 hours 32 minutes into the flight of spacecraft Gemini 5. At the present time, the flight crew is on its 113th revolution over the earth, and is passing over the continent of Africa. In a pass over the Rose Knot Victor, our tracking ship off the coast of Peru, just a short while ago, Pete Conrad reported "no joy" on the attempts to fire thrusters 7 and 8. And, as we had reported earlier, failure of additional thrusters indicates the spacecraft may be running out of OAMS fuel -- according to our Flight Director, Gene Kranz. Therefore, he's advised the crew to go to drifting flight, their rates are damped out, and the platform is powered up to ensure that hydrogen venting does not start again.

Here in the Mission Control Center, the scene is normal. Some of our flight controllers have started their evening meals. Others are relaxing at their consoles, waiting for the next pass over the Coastal Sentry Quebec, which should be coming up in 22 minutes. The room atmosphere here is relaxed, and conversation is at a low pitch. Aboard the spacecraft, our crew's been advised by Flight Surgeon, Dr. Dwayne Catterson, to get as much rest as they can through the remainder of the flight, and to drink a bit more water. Evidently, Command Pilot Gordon Cooper is taking that advice. Our ground data indicates he's asleep right now.

At this time, we are 178 hours 33 minutes into the flight of spacecraft Gemini 5. We've the voice transmission between spacecraft Gemini 5 and the Rose Knot Victor, our tracking ship off the coast of Peru.

RKV	Gemini 5, RKV CapCom.
Conrad	RKV CapCom, Gemini 5 here. Read you loud and clear.
RKV	Roger. Read you loud and clear also. All systems are 'Go' on the ground. We'd like to advise you, you have a UHF-6 over CSQ on rev 113.
Conrad	Roger. Rev 113. And be advised that we went back through the thruster checks again, and ran them in 'Direct' and ran them in 'Pulse', and like we told you before, it's still the same.
RKV	Roger. Is that enough for you, Flight?
Flight	That's affirmative.
RKV	Okay. We'd like to have a fuel purge at this time.
Conrad	Roger.
RKV	Give me a mark.
Conrad	Roger. Standby, ... Hydrogen number 2 on my mark -- mark! Standby for oxygen on number 1 -- Mark!
Conrad	Number 1 purge complete, commencing number 2.
RKV	Flight, this is RKV.
Flight	Go, RKV.
RKV	Roger. We show circuit breakers for thrusters 7 and 8 are closed at the present time. You want us to open them?
Flight	I don't think it makes any difference.
RKV	Roger. Gemini 5, this is RKV. We'd like to know your platform position please -- when you can give it.

This is Gemini Control, at 178 hours 54 minutes into our Gemini 5 flight mission. The spacecraft is now approaching the Coastal Sentry Quebec, our tracking ship in the Pacific Ocean south of Japan, on its 113th revolution over the earth.

We expect to have voice communication with the tracking ship, within moments. Let's listen for the live conversation now.

CSQ	Gemini 5, CSQ CapCom.
Conrad	Go ahead CSQ, Gemini 5 here.
CSQ	Be advised that you're UHF-6, and we'd like you to place your Quantity Read switch to fuel cell hydrogen position, please.
Conrad	Roger. Switch to fuel cell hydrogen at this time.
CSQ	Also, be advised that due to fog rolling on area 122-1, Flight's decided to advance to 121-1 -- we'll be updating your TR time.
Conrad	Roger, understand -- 121-1 is to be the new recovery area.
CSQ	Listen Gemini 5, I also have the coordinates if you're ready to copy.
Conrad	Roger. Okay, ready to copy.
CSQ	Roger -- 21 degrees 43 minutes north, 68 degrees 00 minutes west.
Conrad	Roger.
CSQ	Transmitting TR.
Conrad	The TRC of 121-1.

CSQ	Gemini 5, say again.
Conrad	The TRC of 121-first, please.
CSQ	Roger. Stand by to copy. TRC, 01:29:45, RET 403, 20+24.
Flight	CSQ CapCom, you gave them the wrong TR, you gave them 114-delta.
Conrad	... Would you give me the GMTRC of 121-1.
CSQ	Roger. Disregard what I gave you. The GMTRC is 12:27:39.
Conrad	Okay, 12:27:39.
CSQ	That's affirmative. RET 403, 14+08.
Conrad	I'm sorry, you're cutting in and out. Say it again.
CSQ	Roger. RET 403 is 14+08.
Conrad	Okay, I got it.
CSQ	RETRV 19+30.
Conrad	Roger. Could you tell us what the recovery force is? Will the carrier be there?
Flight	That's affirmative -- the carrier [Lake Champlain] will be there.
CSQ	The carrier will be there, and I have the ... in that area. Over.
Conrad	Copy.
CSQ	Roger. Cloud cover, five tenths, 2000 foot scattered, 10 miles visibility, 1230 degrees, one or two knots, wave height 2 to 3 foot, water temperature 82 degrees.
Conrad	Sounds pretty good to me.
CSQ	Roger, Gemini 5. We'd still like to know your ...
Conrad	Roger.
CSQ	Copy.
Flight	CSQ CapCom. Did you get your TR in? And is it in sync?
CSQ	Roger I have the TR in, and it's within one-quarter second.
Flight	Roger.
CSQ	Gemini 5, be advised we have your TR in sync.
Conrad	Roger, understand -- TR is in sync. And you may advise Flight that we'll be ready for 121-1.
CSQ	Roger, copy.
CSQ	Gemini 5, you can return to the 'Off' position the Quantity Read switch.
Conrad	Roger. Would you give me a GMT?
CSQ	Roger. On my mark, it'll be 01 hours 00 minutes 25 seconds -- 2, 1, mark! Would you like ...
Conrad	...
CSQ	Okay. We'll be coming up on 01:01:00.
Conrad	Roger.
CSQ	5, 4, 3, 2, 1, mark! That was 01:01:00.
Conrad	Roger. We got it. Thank you.
CSQ	CSQ has LOS, Flight.
Flight	Roger, CSQ. Well done.
CSQ	Not too well.

That was live voice conversation between the Coastal Sentry Quebec tracking ship and Pete Conrad aboard spacecraft Gemini 5. This's the first word our spacecraft has received on the decision to land during the 121st revolution southwest of Bermuda. This is Gemini Control, at 179 hours 1 minute into the flight.

This is Gemini Control, at 179 hours 32 minutes of flight for the Gemini 5 mission. At the present time, spacecraft Gemini 5 is ending its 113th revolution around the earth, and is coming up on our Rose Knot Victor tracking ship located off the west coast of Peru. It will shortly start the 114th revolution.

To give you a recap of our situation, our flight crew was advised that they will end the mission during revolution 121. That will be at 12:55 Greenwich Mean Time, or 6:55 a.m. Central Standard Time. Retrofire will commence approximately 90 statute miles due north of Hawaii. That is the time of retrofire. Splashdown will occur at 12:55 Greenwich Mean Time, or 6:55 a.m. Central Standard Time. The landing will be 276 statute miles southwest of Bermuda, at 29 degrees 43 minutes north longitude, 68 degrees west latitude. We have a weather report for that area. The weather forecast is good with winds out of the southwest, 12 knots, clouds scattered to broken at 2000 feet, visibility 10 miles, and wave height will run 2 to 3 feet. That's the weather forecast for the landing area tomorrow morning. This is Gemini Control.

/continued