

EVA - begins at Tappitt

*To Gemini*

*CT-4*

This is Gemini Control Houston. Good morning. The pilots got up this morning shortly after 4:00 a.m. They had a brief physical in the Manned Space Flight Operations Building on Merritt Island, and after that, breakfast. They left the Manned Space Flight Operations Building at 5:22 a.m. and arrived at the suit-up area adjacent to Pad 19 at approximately 5:35. They were suited and had completed their pre-breathing denitrogenation checks by 7:00 a.m. and left the pad a few minutes after 7:00. They left for Pad 19 and they arrived at Pad 19 at 7:08 a.m. They were in the elevator within a minute and went over the sill, as we call, it, or stepped into the spacecraft at 7:12. In general the count has run about 5 minutes ahead of schedule this morning. We have excellent weather at the Cape area which will be covered in more detail with a report from the Cape shortly. Here in Houston, the board looks very good. Our status is quite good, as a matter of fact . . . We are making computer runs, we are checking the individual consoles and they all look very good and green at this point. This is Gemini Control, Houston, at 20 minutes after the hour.

This is Gemini Cape control. Our countdown is proceeding excellently at this time, we are currently at 86 minutes and 30 seconds and counting. The countdown has gone very well

N.A.S.A. HISTORICAL ARCHIVES

Mission Commentary Transcript

Tape 1, Page 2

this morning. We have just received a report from the blockhouse that we are still some 12 minutes ahead in the events of this morning's count. As you probably have seen, both hatches have been closed. Astronaut Ed White's hatch was closed at 7:31 a.m. EST, one minute later the command pilot's also was closed. The astronauts, just prior to hatch closure completed a series of blood pressure tests with the flight surgeons in the blockhouse. Currently going on are several tests at the launch pad, a warm up for final guidance checks with the Titan II launch vehicle. Our weather this morning also looks good at the current time. The forecast of the launch area is 2 to 4/10's cloud cover at 3,000 feet. We have a wind at 5 to 10 knots in the East, a temperature of 80 degrees. The mission has been informed that the weather conditions throughout the rest of the world are in a Go condition for launch. The Atlantic Ocean will have extensive cloud ceilings of about 1,500 feet. Around and south of Bermuda with some scattered showers. The mid-Pacific forecast is for scattered, broken clouds with a ceiling of 1,000 feet. On the West Pacific storm Carla that was typhoon Carla several days ago is reported to still be weakening and is not expected to be any problem to the mission itself. This is Gemini Cape Control at 84 minutes and 47 seconds and counting.

This is Gemini Control, Houston. The count minus - I'm sorry. Our clock here, our countdown clock is running a trajectory test and is not accurate. At this time we are looking here from the Control Center Houston at the, some of the vital measurements coming from the spacecraft's at Mercury and the respiration rate of Jim McDivit and Ed White. Very nominal values and the reading and the telemetry is quite clean. The count continues very much on schedule. The earlier count ran as much as 12 minutes ahead of schedule. We are also want to bring you up to date in the network's status, the around the world status. At Tanaverie, we are without voice contact and very likely will not be able to have voice contact relayed through Tanaverie, and at the Rose Knot Victor Ship, which for this mission is parked approximately 1,000 miles off the South American Chilean coast is without teletype. Other than that, our entire range of stations around the world is up and ~~XX~~ all elements are working very nicely. This is Gemini Control at 46 minutes after the hour.

This is Gemini Control at the Cape. The count is now T-63 minutes and counting. T-63. Our countdown continues to go excellently at Launch Complex 19. Astronauts Jim McDivit and Ed White have just completed purging their cabin that is bringing <sup>9</sup>100 percent oxygen into the cabin which will

cabin. It will remain this way through lift-off. We now have the cabin purged and both astronauts are reporting back to the pad in a series of switch tests. In this particular test, the command pilot and the pilot check with the blockhouse to reaffirm that all the switches ~~are~~ on their panels are set in the proper ~~position~~ condition. At the launch pad we are ready to gear up for one of our final guidance tests. All systems are go here at the Cape coming up on 62 minutes and counting. This is Gemini launch control at the Cape.

This is Gemini Control at the Cape. we are now at 54 minutes and counting. T minus 54. Our count continues to go smoothly and at the present time in the spacecraft Astronaut ed White is preparing to give a report to the blockhouse on the status of the spacecraft as far as the cabin is concerned, the various temperatures in the cabin, the suit circuit as part of the environmental control system and the status of gages and <sup>further information</sup> /.....in the cabin and the spacecraft propulsion system. Ed White is coming up and he is reporting it. This will be checked with gages and with information in the block house. In the meantime as far as the launch vehicle is concerned we are gearing up

for a test with the Air Force Eastern Test Range on some missile tracking telemetry. This is Gemini Control at the Cape coming up on T-53 minutes and counting. Mark, T-53 minutes and counting.

This is Gemini Control in Houston. The count is T-45 minutes and proceeding and we're right on the money. Moving right ahead with all the pre-launch verifications in the spacecraft. About a half an hour ago, shortly after he entered the spacecraft, Jim McDivitt put in a phone call to his wife in Houston. They chatted for about 5 minutes. We are unable to confirm at this time whether Ed White has talked to his home or not. Ed's been fairly busy with a series of communications checks. Meanwhile the viewing room here at Houston and I am sure at the Cape also, is filling up. Congressman Bob Casey from Houston is here, Dr. Robert Seamans, the Associate Administrator of NASA is in a chair in the viewing area here, along with some of our better known astronauts. Former astronaut John Glenn has been in the Control Center for the past hour. Wally Schirra is down on the floor of the control center at this time chatting with Gus Grissom who will be the capsule communicator during the launch phase from this center. Our general status continues to be excellent. This is Gemini Control.

This is Gemini Control at the Cape. Our countdown continues to run smoothly here at Complex 19. All conditions look good. Our count is still a little bit ahead, launch vehicle test conductor has given permission to the pool to lower the erector a little earlier than planned. We do not have a specific time at this time. The erector is due to be lowered at T-35. This is Gemini Control at the Cape. T-38 minutes and 20 seconds and counting.

This is Gemini Control at the Cape. We are now at T-35 minutes and 20 seconds and counting. We are coming up on T-35 and some 5 seconds. T-34 minutes and 59 seconds and holding. This is Gemini Control at the Cape. Holding at T-34 minutes and 59 seconds holding. We will get information to you on the hold momentarily.

This is Gemini Control at the Cape. We are now at T-34 minutes and 59 seconds and holding. I have a report from the blockhouse and difficulty is concerned with the erector around the Gemini 4 launch vehicle. The explanation at the present time is we have an electrical failure in the erector system. We are not able to lower the erector at the present time. The extent of the hold is not known at this time. T-34 minutes and 59 seconds and holding. This is Gemini Control at the Cape.

Control

This is Gemini # at the Cape. Our hold on the mission still remains at T-34 minutes and 59 seconds. The difficulty as reported earlier is with the erector on the launch pad. The launch vehicle test conductor has just reported that he estimates the hold time at about 30 minutes. The plan is to get some of the crew up on the launch pad to take a look to see how we stand. As far as trying to determine the difficulty from the blockhouse, the launch vehicle test conductor further reports that there are no red line problems in the blockhouse, that is, all the gages in the blockhouse give no indication of the difficulty. We expect to have more information shortly. We are holding at T-34 minutes and 59 seconds. This is Gemini Control at the Cape.

This is Gemini Control at the Cape. Our hold remains at T-34 minutes and 59 seconds and holding. From the blockhouse astronaut Schweikart reported to the astronauts in the Gemini 4 spacecraft that the hold was estimated to be about 30 minutes. Astronaut Ed White replied back to Schweikart "We are all squared away." We are still looking to determine our exact problem and awaiting word from the launch vehicle test conductor on the status of our erector problem. We are holding at T-34 minutes and 59 seconds. This is Gemini Control at the Cape.

This is Gemini Control at the Cape. As you can see now looking at Launch Complex Pad. 19 our erector is starting to move. Still holding at T-34 minutes and 59 seconds. It is expected that the count may be resumed in a matter of some 12 to 15 minutes. We expect to have further information on the resumption of the count shortly. This is Gemini Control at the Cape.

This is Gemini Control at the Cape. The launch vehicle test conductor has reported back to mission control that our difficulty in the erector was concerned apparently with a faulty relay in a relay box at the base of the gantry erector on launch complex 19. This relay has been replaced. The erector has started to move. The plan is to once again raise the erector to its full position, however, before continuing with the count. We are going to make one more check of the erector prior to resuming the count. This is Gemini Control at the Cape at T-34 minutes and 59 seconds and holding.

This is Gemini Control at the Cape. To further clarify our problem with the faulty relay at the base of the erector. The relay was not replaced. The relay did not close and an attempt to check it out, <sup>we</sup> physically, that is manually, depressed the relay to make it close. We are now checking on certain locks on the erector to determine that we will be able to lower the erector. It's several feet away

from the spacecraft now. Still taking several more tests. When we are ready to lower we then will have to clear the crew ~~in~~ from the launch pad and resume the count. We are still at T-34 minutes and 59 seconds and holding. Here in the Mission Control Center at the Cape at the capsule communicator's console we have chief astronaut Alan Shepard and the backup pilots for the Gemini 4 flight. The prime backup pilot, Frank Borman was at the launch pad during the early checkouts. Frank then went to the trailer when the prime crew came to dress at launch complex 16. Frank briefed astronauts Jim McDivitt and Ed White on the status of the mission at that time. In the meantime, the backup pilot, Jim Lovell remained in the spacecraft making final checks up to the time the prime pilots McDivitt and White came to the launch pad and were inserted in the spacecraft. Both Borman and Lovell are with astronaut Alan Shepard at the capsule communicator console in Mission Control at the Cape. From the viewing room are astronauts Pete Conrad, who is the pilot for the GT-5 mission and astronaut Neil Armstrong who was the prime backup pilot for the Gemini 5 mission. Also in the viewing center is Dr. George Mueller who is NASA's Associate Administrator for Manned Space Flight. We are still holding at T-34 minutes and 59 seconds. This is Gemini Control at the Cape.

This is Gemini Control at the Cape. We are still at T-34 minutes and 59 seconds and holding. We now have the report from the launch pad that we are still encountering difficulties with the erector on the launch pad. We felt that we had solved our electronics problem by closing, ~~xxxxxx~~ physically closing the relay we discussed earlier, that is a relay in a relay box at the base of the erector, however, it is now reported by the crew out at the pad they have further difficulties with the erector. The difficulty concerns a cable that rides down with the erector as it is hydraulically lowered. This cable in turn is used to raise the erector at different times. The cable has slack in it, is the report. The cable is controlled by a winch based at the launch pad. Because of this slack an automatic override comes in and cuts on the erector lowering process. As a result we are now checking in the cable rope itself in an attempt to solve this problem of the slack in the line. The test conductor on the pad reports that he does have ~~the~~ an ~~ex~~ estimate on the extent of the hold. As soon as we get further information we will pass it on to you. We are still holding at T-34 minutes and 59 seconds. This is Gemini Control at the Cape.

This is Gemini Control at the Cape. We are still holding at T-34 minutes 59 seconds at Launch Complex 19. The crew . . . the pad area doing further investigation on our cable problem that was discussed earlier. They are still looking over the situation, we do not have an estimate on the hold at this time. This is Gemini Launch Control at the Cape.

This is Gemini Control at the Cape. We are still at T-34 minutes and 59 seconds and holding. We are continuing our tests with the erector on the launch complex. You may note that the erector has moved slightly from its umbilical tower as the test continue. We are moving a matter of a few feet from the tower, but the plan is not to move the erector at this time. The erector is moving slightly as part of the test that is currently in progress to determine the full extent of our difficulty. The Launch Vehicle Test Conductor has been able to give no further information on the length of the hold at this time. We are at T-34 minutes 59 seconds and holding. This is Gemini Launch Control at the Cape.

This is Gemini Control at the Cape. As you can see at Launch Complex 19, we are now starting to lower the erector as we continue our tests. We will know shortly whether we will be able to fully lower the erector at this time. This is still a test continuing. We will pass on the information to you shortly. We are still holding at T-34 minutes and 59 seconds. This is Gemini Control at the Cape.

This is Gemini Control Houston. We are still holding at T-35 minutes, but we expect to pick up the count momentarily. The erector has been lowered and we expect within a minute or two to resume the

count. A final status check is being taken at this time in the blockhouse to - preparatory to picking up the count. Meanwhile, during this hold which began an hour and 10 minutes ago, the crew has passed the time, released a part of the time taking catnaps. Astronaut Rusty Schweiker, who is in the Mission Control Center at the Cape advised them when the hold started that he would wake them up when we had planned to resume. The reference was of course a hopefully to break a little of attention in this countdown. The problem appears to have been in an electrical governor on the erector lowering device. It has been repaired and we are satisfied the erector is properly down and in its place. We have been asked many times in the last half hour what effect this hour and 10 minute hold might have on our planned extravehicular activity in the second revolution of this mission, and Mission Director Criss Craft advises that it will have no effect. We will still plan to begin the extravehicular activity at 3 hours into the mission at the - near the end of the second revolution. This is Houston Gemini Control still holding at T-35 minutes.

And counting - T-34 minutes and mark - 50 seconds. T-34 minutes 50 seconds and counting on the Gemini Flight. On this point in the countdown in the blockhouse we are ready to turn over the remainder of the countdown to the automatic sequencer in the blockhouse. The sequencer itself will check some 70 different items during the terminal phase of the count prior to ignition and lift-off. We are now counting on the Gemini 4. This is Gemini Launch Control at the Cape.

This is Gemini Control in Houston. We are proceeding the count at T-30 minutes and moving ahead. And, barring further difficulties, we should be off at 15 minutes after the hour. A little more than 30 minutes - just under 30 minutes from now. Our status on the network which we have not report on now for more than an hour looks as follows: it is absolutely green. Earlier we reported Tanaverie had some voice relay problems, those have been cleared up. The RKV seems to have cleared up its teletype circuit problem, and the board at this time, all of our stations around the world are reporting no difficulties at all, and this is very much the situation with the spacecraft and the launch vehicle at the Cape. Say for one small electrical problem in the lowering device at Pad 19. This is Gemini Control Houston.

This is Gemini Control at the Cape coming up on T-25 minutes and counting in 5 seconds. MARK. T-25 minutes and counting on the Gemini 4 flight. At this stage in the count, Astronaut Ed White is ready to start a series of verifications as far as voltage readings are concerned in his cabin, in the pilot's cabin itself. This series of readings will be current readings and voltage readings will be passed onto the block house and to the Control Centers involved. This is to insure that all readings are correct before proceeding with the count. Our count is once again running smoothly now at T-24 minutes and 30 seconds away from lift-off prior to the Gemini 4 flight. This is Gemini Launch Control at the Cape.

This is Gemini Control Houston. The count T-20 minutes and counting. We have, within the last 3 minutes, completed an OAMS thruster check on the adapter on the spacecraft and it had worked out very nicely. All the thrusters, the two up, the two down, the two yaw thrusters, the two forward thrusters would not check, but the others

worked out entirely satisfactorily. We, within the last minute, have completed a complete systems check in the blockhouse. That was go in all of some 13 or 14 elements which were all that were polled. The mission looks very good, now proceeding at T-19 minutes at this time. This is Gemini Control Houston.

On the Gemini 4 mission. All systems are good at this time. Even at this stage of the countdown some of the checks had been performed earlier, then planned in the countdown because the count is once again proceeding so well. All conditions are go at the present time. Fifteen minutes and 30 seconds prior to lift-off. This is Gemini Launch Control at the Cape.

The Pilot . is now conducting a test with the Eastern Test Range on telemetry between the range tracking systems and the guidance and other equipment from the vehicle itself and sending back signals on the progress of the launch. We are still in a go condition at 9 and one-half minutes and counting.

This is Gemini Launch Control at the Cape.

Go ahead flight

This is Gemini Control Houston with the count T-5 minutes and counting. At T-7 minutes we completed a spacecraft Test Conductors Status check and all elements were green and go. At the conclusion of that status check spacecraft test conductor Frank Wittek of the Kennedy Space Center signed off to Jim McDivit with a short message which simply said "OK Jim, have a good flight". In the last minute the launch launch vehicle test conductor Frank Carret of Martin Company is conducting his status check. The board looks just as Green as the spacecraft. The count T-4 minutes and 30 seconds and proceeding. This is Gemini Control Houston.

This is Gemini Launch Control at the Cape. We are at 2 minutes and 41 seconds and counting. At this final stage of the countdown we are just finishing up our final guidance check with the launch vehicle. All systems look good, both in the Gemini 4 spacecraft where Pilots Jim McDivit and Ed White and with the launch vehicle on the pad. This is Gemini Launch Control at 2 minutes 20 seconds and counting.

vehicle has gone to internal power. The launch vehicle is now on its own battery power. All systems still looking good and with the launch vehicle itself. This is Gemini Cape Control, T-60 seconds and counting. T-50. T-40. T-30 seconds and counting, all final checks in the countdown still looking good at this time. T-20 seconds and counting.

Minus 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0!! Ignition!!

(Houston) Liftoff. We have a liftoff at 16 minutes after the hour. Climbing very nicely. We have a roll program initiated. Roll program completed McDivitt reported, and the pitch program has been initiated.

Forty seconds is in and surgeon says everything looks fine. Mark 50 seconds and we're go.

Guidance reports a Go. The flight trajectory looks very, very close to right on the nominal value.

We just had a short transmission from Gemini 4 where both of them are beautiful..beautiful.

Gus Grissom advises the Gemini 4 spacecraft at one minute forty seconds, this means a change in the abort mode if necessary, doesn't look like its necessary from this point. We're having some transmission difficulty from the spacecraft, the transmissions are intermittent.

Two minutes and 7 seconds into the flight and everything looks fine here.

McDivitt reports Gemini 4 is Go for staging which will occur in a few seconds. Pilot White advises he's received an update on the computer for that spacecraft. We have staging and it's been confirmed here on the ground. The thrust looks good on the second stage. Our radio guidance system which controls the terminal phase of powered flight has gone into effect and is working very nicely. Three minutes into the mission, three minutes.

And the trajectory plot is right on the line both in lofting and all other elements we're right on the money.

Gus Grissom advises Jim McDivitt everything looks great, Jim, and Jim says his displays in the spacecraft look just as good as those in the control center.

Three minutes and forty seconds.

Mission Director Chris Kraft going from console to console here and from each one he gets a completely confident and assured report that everything looks good. We're four minutes into the mission and McDivitt, in a very, very calm voice says it looks great up here. Kraft is advised to stand by for a final/<sup>status</sup>check before we go to the final minute ~~xx~~ before engine cutoff. Kraft has told Grissom

to give Jim McDivitt a Go, its been received and McDivitt advises he also is Go.

Four minutes and 50 seconds and our values are right on the money.

We're standing by for point 8, that point where we have acquired 80 percent of the velocity, 80 percent. Five minutes and 17 seconds in. Guidance says we're solid, both systems, the primary system in the booster and the video guidance system. Five minutes and 30 seconds. Stand by for sustainer engine cutoff. SECO McDivitt says, and Grissom confirms here on the ground we have a SECO.

Flight plan calls for McDivitt to uh....we've been given a Go by Kris Craft. Chris repeats Go Gemini 4.

We are standing by to get a signal from McDivitt to find out when he separates from that second stage.

Six minutes and 50 seconds in. Gemini 4 has been asked to switch to another channel to clear up some.... here we come....Jim McDivitt advises he has an incremental velocity indicator within the spacecraft during the separation maneuver which has occurred within the last minute read as follows: 20 forward, 7 right and 2 down.

Mission Commentary Transcript

...And McDivitt advises he's turning around at this time to face the booster. He says the second stage which he now has in view looks pretty, he says its also tumbling slightly.

This is Gemini Control in Houston, eight minutes and 30 seconds in on the mission, Grissom here, the capsule communications operator has just passed to Jim McDivitt and Ed White via our Bermuda station the following orbital elements: 100 statute miles at perigee, 175 statute miles at apogee. Uh.. this is exactly what the book calls for. We're 9 minutes in.... and, uh, stand by and we'll be prepared in a very few minutes to play the booster phase tape conversation for you....stand by.

This is Gemini Control, Houston. The spacecraft at this time is directly over our Canary Island station it is beginning its passage across the African continent, we are, uh, in excellent voice contact now. The crew has switched to a second, or backup unit UHF channel which reads much clearer than did the other UHF channel we were using in the launch phase.

Communications are coming through. They are excellent. Upon contact in the Canary Station. Jim McDivitt was advised that his status looks excellent from the ground and McDivitt came back with a Roger, thank you. They've read out their onboard quantities which appear, uh, which appear to be quite nominal in the spacecraft at this point. They are being updated as to the time and exact references for a recovery should one become necessary at the end of the first revolution. We've received nothing in this first 20 minutes of flight which would make such a recovery necessary but it is standard procedure to pass this along. We can hear Ed White's big baritone voice booming in now, into the Canary Station being relayed back here. This is Gemini Control at 20 minutes after the hour.

.....the spacecraft seems to be.....very nicely and the two crewman working hard at this time to line up their platform in preparation for this early rendezvous maneuver. The, uh, the, we monitored the conversation very carefully over the Canaries and they were asked what their distance from the booster was; we thought we heard Ed White say its about 500 feet away, but, uh, I cannot confirm he actually said that....I thought I heard him say 500 feet. If, uh, in fact he did say 500 that would

rhymne very nicely with the approximate distance that, uh, wherein the two vehicles should be located. Uh...we, uh, should update you on the types of cameras being carried aboard. We have not one, but two, 16 millimeter movie cameras. One will be mounted about a foot aft of the cabin that is on the adapter during the extra vehicular maneuver; White will mount this after he opens the door and it will take 16-millimeter color movies at a rate of six frames per second. Uh, in the other window McDivitt will operate a 16-millimeter camera, uh, each camera has approximately 100 feet film or some 15 minutes. The addition of the camera on the adapter was a fairly last minute thing finally arrived at during the last two days at the Cape. Uh... White also will operate a counterex camera on his little maneuvering unit as he is out in space. In addition to that will be available in the spacecraft a 70millimeter Hassel\_\_\_\_\_ camera. At this time the spacecraft is traveling on the edge of the Kano acquisition circle 28 minutes into the mission....we have the tape for you on the Canary Island pass, we'll play this tape for you at this time. This is Gemini Control Houston.

.....at this time, I'll give you a count, 1, 2 ,3,  
4, 5.

Say again, would you?

---

Roger, we understand. Shift to UHF #1 and give me a  
count please.

Gemini Iv Cap Com, shift to UHF #1 and give me a count.

.....UHF #1, 1, 2, 3, 4, 5, 5, 4, 3, 2, 1.

Roger, Canary Cap Com reads you loud and .....

Gemini 4, Canary Cap Com, please advise which radiator  
to flow at 4000.

Canary, Houston, Flight,

Go Ahead Flight.

2-11673+35. 013+25, 2+18+47 and ask him far he is  
away from the launch vehicle.

Roger.

-----  
How far are you from the launch vehicle?

Roger.....we are aligning the platform and its  
gone below our lower left and ~~xxx~~ really

Ask him about track with the launch vehicle.

I have it in sight, its about directly below me....

it's below us now, about 4 or 5 hundred feet....  
(End of Tape)

This is Gemini Control Houston. We are 39 minutes into the mission. The spacecraft is just east of the Tanaverive Malagassy station over the Indian Ocean. We have not been in touch with the spacecraft since the Canaries. Gus Grissom our communicator here attempted a voice relay transmission through Tanaverive, but if it was successful in reaching the spacecraft, we do not know. They did not respond. During this period, as the spacecraft moved across Africa, the flight plan called for Ed White to perform an all important suit integrity check on his suit. We should next have contact with the spacecraft over the Carnarvon station in 3 to 5 minutes from now. This is Gemini Control Houston.

Fifty seconds to go. The Carnarvon Station just established contact with the Gemini 4 spacecraft and the opening commentary was the question from Carnarvon, how does everything look. Jim McDivit came back very promptly, we're go. Everything here looks green. He has - he is now discussing his - some of the maneuvers he performed to get the booster in sight and he has confirmed our estimate at the Canaries at which point we was 4 to 500 feet from the second stage. All of his systems onboard give entirely nominal values at this time, he said everything couldn't look better and we are having a very active discussion over the Carnarvon station. This is Gemini Control at 8 minutes after the hour.

This is Gemini Control Houston. We are 20 minutes after the hour and during the recent pass over Carnarvon, some 2 minutes ago, Gemini 4 was given a go for three orbits. Three orbits. Perhaps

even more important, the Dr. Berry, our flight surgeon, has made an evaluation of the data of the medical data to this point, and he has advised mission director Cris Craft, that the Pilot, Ed White, as far as the surgeon is concerned, is go for the extravehicular activity. He is quite satisfied with the values he has seen in this first half of the orbit. Our apogee, again, 175 statute miles, our perigee, 100 miles. We are estimating the time of a revolution at 94 minutes, that is the time back to the Cape during the pass Command Pilot Jim McDivit reported that the lights on the booster were working very nicely. He said they could observe the booster about a half mile away which is precisely the distance it should be. Mission Director Craft complimented the Carnarvon station at the end of the pass on the quality of the material received. Very shortly, McDivit and White should be seeing the first ~~happax~~ of, hopefully, about 62 sunrises that they should observe in the next 4 days. Starting across the Pacific at this time, we have the Carnarvon tape ready and will play it for you right now.

CC ~~MIKY~~ Gemini 4, Carnarvon Cap Com

C Come in Cap Com, this is Gemini 4.

CC Roger, give me your status

C Roger, we are go, and everything looks great.

CC Roger, Gemini 4. You look good here on the ground. Can you give me your battery readouts please.

C Okay, standby.

CC Gemini 4, you can<sup>turn</sup>/your secondary Pump A off, the evaporators  
and . . . your radiator looks good.

C Roger, evaporators normal, secondary Pump A is off, . . . looks  
good.

CC Okay, ~~you~~ can you . . . on your quantity . . . swithh.

C Roger, come on.

CC Roger.

CC We have good acquisition of flight and the radar is tracking

C Roger.

CC I am standing by for battery readouts.

CC While youre doing that, can the command pilot give me a little  
information on the booster. The distance, what you had to do  
to get up close to see it, and how is the light working.

C Roger, the light is working fine. But I can't tell exactly how  
far away I am from it. I guess I am probably around a half a  
mile or so. The booster started 'turning right as we came off  
of it. I tried to get the range down and I got it down to what  
looked like 20 degrees per second but as soon as we got off and  
I got around to see it it was tumbling.

CC Okay . . .

C I got about 30 ft/sec out of my windows here.

CC Okay

C The booster fell away pretty ~~px~~ rapidly and got below us like  
we were a considerable distance in our velocity and I have  
been ~~struggling herexxxx~~ struggling here to not let it get  
too far from me.

Mission Commentary Transcript

CC Alrighty. Will you give me a better readout . . .

CC Standing by for a blood pressure from the pilot.

CC Flight, Carnarvon.

CC Go ahead.

CC Okay, we have negative acquisition beacon and negative lockon  
the booster.

CC Roger.

CC I'll give you a time hack at 16:09:00.

C . . . . this is Gemini 4. I see the light of the moon down  
below me.

CC Okay, 3, 2, 1 MARK.

CC Did you receive my time hack.

C Roger, we got the time hack and standing by for the adapter .

~~CC Roger, 1, 1A, 2C, they all look good.~~

CC Go ahead

~~C Roger, 1, 1A, 2C, they all look good.~~

C Roger 1 1A 2C are 24, they all look good. <sup>SM Amperage</sup> ~~TEMPERATURE~~ readings

~~XXXXXXXXXX~~ 1A is 6, 1B is 10, 1C is 11, 2A is 10, 2B is 5,  
2C is 6.

CC Okay, showing 24 on 2A B, ~~ROGER~~ and C also.

C Roger, I'm getting 24 on all my amps after that.

CC Okay, your mains are good.

C That is affirmative. The mains all g checked out good.

CC Okay, give me a go for . . . .

CC I am giving you a new load.

C Okay, it's coming in.

CC Okay, I've got the load here. We have a new TR time. We are

X standing by for the pilot's blood pressure. Are you ready to

copy X your update times.

C Roger, Copy the update times, pilot's blood pressure.

CC Okay.

CC 2-1, 170, 3+40 01 32 39 2+18, 8+62, over

C Roger, please give me first 4 quantities, please.

CC Say again which one you want repeated.

C Roger, the first 4 quantities.

CC 2-1, 170, 3+40 01 32 39, over.

C Roger, would you say in a . . . I can read.

CC Roger, you want to try them again?

C . . .

CC 2-1, 170, 3+40 01 32 39, ~~xxxxxxx~~ 2+18, 8+32 over

C Roger. 2-1, 170, 3+40 01 32 34 , 2+18, 8+32.

CC On your GVTRC, that is 01 32 39, over

C Niner. 01 32 39.

CC Roger. Affirmative. Your orbit is about 86.8, by 150.6.

C Roger, 86.8 by 150.6. Sounds good.

CC Roger, we need that blood pressure on the pilot.

C Roger, that will be coming at you next.

CC Roger. And I will need your accelerometer miles.

C You have to stand by for the accelerometer miles, I just can't

keep the . . . . . stand still.

CC Okay, you can give it to Guaymas.

C I'm affraid that you will have to wait for another orbit or two.

This is Gemini Control Houston, 1 hour and 25 minutes into the flight of Gemini 4 and the spacecraft rapidly approaching the west coast of Mexico. As the spacecraft moved across the Pacific we attempted a voice relay through the Canton Station, it was unsuccessful. We did not contact them however the Canton Station was reading some telemetry values as it passed over. To repeat, our apogee is 175 statute miles, our perigee 100 statute miles, our revolution period an estimated 94 minutes. We've had report from Jim McDivitt of the Canarvon that the lights were working very well on the booster - he could see the booster - it was about a half a mile from him, uh... in that pass Dr. Berry advised that based on the medical data up to Canarvon Ed White was Go for the EVA maneuver in the next revolution. The mission director also passed to the crew a Go for at least three or...three revolutions. The tumble rate of the booster which is some 28 feet long, 10 feet in diameter, and has a ground, if it were on the ground it would weigh about 6,000 pounds, otherwords, roughly the size of a house trailer, uh.. it's somewhere between 20 and 40 degrees, -----that is a pretty sharp tumbling rate and could have an impact on our rendezvous, that is we, advise before

the mission the tumbling rate was fairly high we'd not come too close to the booster. Interestingly, during the lift-off phase, we had an EKG monitor not only on Pilot Ed White and Command Pilot Jim McDivitt, but we're also calibrating the EKG, the heart rate of Chris Kraft, the Mission Director, and the Flight Surgeon, Dr. Berry. The values were these: at lift-off Jim McDivitt's heart rate was 150 - which was about the expected value - Pilot Ed White was 120; the Mission Director, Chris Kraft's heart rate was 135, and Dr. Berry's - the Flight Surgeon, was an unusually low 81. This is Gemini Control as we have now just established contact with Gemini 4 from our Guaymas station. Gemini Control, Houston.

This is Gemini Control, Houston. One hour and 32 minutes into the mission. The spacecraft is slightly east of the White Sands station at this time. We've had communication between Guaymas and White Sands. Pilot Jim McDivitt is advised at this time he has used approximately 100 feet per second - or in other words, about 50 percent of his OAMS capability in attempting to maneuver close to the booster. He's been cautioned to attempt no further maneuvers at this point. He has just received a Go - a confirming Go - for the extra-vehicular activity. His

distance from the booster remaining somewhere between a half mile at apogee and something like three or four hundred feet at perigee. The cabin pressure has been reported as holding between 5 and 5.5 pounds per square inch. McDivitt is asking for a precise reading on the orbit of the second stage, which would become very critical in the event that we do attempt to close on it further. However, additional closing is not indicated at this time because of the high usage rate thus far in the flight, and his attempts so far to close on it. This is Gemini Control, one hour and 34 minutes into the mission.

We're going to start the Guaymas tape in 15 seconds.

This is Gemini Control, Houston. We'd like to play for you the - at this time - the tape of the conversation as the spacecraft moved across the United States.

CC Guaymas PCN solid.

S/C Roger.

S/C Guaymas, Gemini 4.

CC Gemini 4, Guaymas Cap Com.

S/C Roger, Guaymas, we still have the booster. We're out quite a ways from it now. It's taken a little more fuel than we had anticipated. We've got 61 in the fore and aft window and the after 37 left and 36 up at the present time.

Mission Commentary Transcript

We appear right now to be just about holding our own with it. Of course, we should - as we progress here - we should start to close with it but it's out further than we had hoped to let it get right now.

CC Roger, I copy.

S/C Is there any way of giving me a quick check on what my orbit is. This thing is way below me.

CC Wilco.

S/C Say again.

S/C I say the booster is way below me. Could you tell me what my present orbit is as soon as possible.

CC Roger, We're working on it.

CC We'll do that.

Kraft: Tell him it'll probably be this pass over the States before we can get it to him.

CC Say again, flight.

Kraft: Probably be after the pass over the States before we can get it to him.

CC Gemini 4, we'll update you with the orbit calculations sometime after the pass over the States.

S/C Roger, understand. And besides our cabin pressure seems

to be holding even here below 5. It stabilized out initially at 5.5 and decreased to 5.25 and then went back up to 5-1/2 and it's now down a little below 5.

CC Roger, we copy.

S/C Would you want to get a confirmation for me on that on the ground.

CC Roger, we're working on it. Put your quantity . . . rate

S/C Roger, going to read.

S/C Guaymas, this is Gemini 4. We're going to have to get resolution right away. Do you want me to really make a major effort to close with this thing or to save the fuel?

Kraft: I think we should save the fuel.

S/C Guaymas, do you read Gemini 4?

CC Roger. We copy. We suggest that you stand by. We want to save the fuel.

S/C Roger. I guess we've already expended about a hundred feet per second.

CC You've expended a hundred feet per second? Roger.

Kraft: I don't think it's worth it.

CC We're finished with the quantity readings.

CC Gemini 4.

S/C Roger.

CC You can place the quantity read switch to off.

S/C Rog.

CC Flight, Guaymas.

Kraft: Go ahead.

CC Ok. On the ground, the cabin's holding fairly steady at 5.2. Did you copy the readouts of the spacecraft?

Kraft: Affirmative. You might tell him that as far as we're concerned we want to save the fuel. We're concerned about the lifetime more than we are matching that booster.

CC Gemini 4, Guaymas Cap Com. Flight advises that he'd like to save the fuel. You'll be advised over the Cape.

S/C I just can't wait till I get to the Cape. I guess we're just going to have to watch it go away. I'd like to save enough to help bring me down - I don't want to get down to wherever it's going.

CC Roger.

Kraft: Tell him to forget it.

CC Ok. I guess we'll scrub it.

S/C Ok. Get me a tag on my orbit as quick as you can.

CC We're working on it. Did you get that, Flight?

Kraft: Affirmative - I got that.

CC Gemini 4, Houston Cap Com.

S/C Go ahead, Houston. Gemini 4.

CC Jim, we estimate you've used about 50 percent of your OAMS capability at this time.

S/C Roger, I think we ought to knock it off, Gus. It's probably 3 or 4 miles away and we just can't close up.

CC Right. Knock off - no more rendezvousing with the booster.

S/C Ok. Roger.

CC Ok. We're giving you a go for your EVA at this time.

S/C Ok.

CC I'm going to give you . . .

S/C What kind of an orbit am I in now?

CC We're working on it but you may not get it till you get to the Canaries.

S/C Ok.

CC Ok. I'm going to give you your 3-1, 3-4 and 4-4 times.

Tell me when you're ready to copy.

S/C Stand by one.

CC Roger.

S/C Be advised I'm going to let the booster go and . . . we're going to align the platform back to conserve fuel.

CC Roger.

CC Gemini 4, Houston.

S/C Go ahead, Houston. Gemini 4 is ready to copy.

CC Roger. 3-1, 171 3 plus 42, 18, 19, 03. 2 plus 23, 8  
plus 42. Want to read those back to me?

S/C Roger. 3-1, 171 3 plus 42, 18, 19, 03. 2 plus 23, 8  
plus 42.

This is Gemini Control Houston. The spacecraft at this time is over the Canary Station. We are 1 hour and 51 minutes into the mission. Since the pass across the United States, the Mission Director and his Systems Advisors have consulted and based on the usage of fuel up to this point which is - the usage has been an estimated 160 feet/sec available out of a total of 360 feet/sec available leaving him 200 feet per second, the Mission Director has decided not to attempt any closer approaches to the booster that is, he will not attempt the Gemini 4 spacecraft will not attempt to come closer to the booster during the - during this revolution when we will attempt extravehicular activity, and he will not attempt to come any closer during the fifth revolution as previously announced.

The new elements for the spacecraft has resulted in maneuvering during the first revolution or 103 mile perigee that's statute miles, and 180 miles apogee. White has been busy the last 5 minutes unstowing his extravehicular equipment and adjusting it, getting ready for his - the hatch opening. This is Gemini Control at one hour and 52 minutes into the flight. This is Gemini Control Houston. Two hours and 11 minutes into the mission with the spacecraft over the Tanaverie station.

As the spacecraft moved across the African continent, Ed White was busy going through the detailed checklist, some 40 items long, and preparing for his extravehicular maneuver, getting his gear out of various storage boxes, putting it in place, moving the switches to the right position and presumably, he has accomplished most of that preliminary work at this time. We see no constraints at all on the extravehicular activity at this particular moment. They look very good in the spacecraft. The Pilot and the Command Pilot have been advised that they can play their attitudes anyway they like, that is they can be hatch up, or hatch down during the extravehicular activity, and, in

general, we are looking very good. We would like to play for you now the conversation recorded as the spacecraft moved across the African continent, and we have that tape for you now.

CC Gemini 4, Houston Cap Com. Gemini 4, Houston Cap Com.

CC Be advised, you are not key in our transmitter.

CC Okay, could you give me a manual key.

CC Roger, will manual key.

CC Gemini 4, Houston Cap Com. Gemini 4, Houston Cap Com.

Houston, this is an advisory, we are manually keying you.

CC Roger, I'm not getting any report back. Gemini 4, Houston Cap Com.

Houston, be advised, you are now key.

CC Gemini 4, Houston Cap Com, over.

S/C Come in Houston Cap Com, ~~how do you read~~ Gemini 4, how do you read?

CC I read you loud and clear Champ. Say, for your attitudes for EVA, go ahead with the same attitudes you planned, that is BEF and 180 degrees roll. That should be the best for photographic purposes.

S/C Roger.

CC And to get the picture of the spacecraft your best bet would be to move out forward.

S/c Say again.

CC Your best sun angle for getting a picture of the spacecraft would be to move out forward from the spacecraft.

S/C Roger, will move out forward. We'll be BEF upside down.

CC Roger.

S/C It is a getting a bit crowded in here, Gus.

CC I'll bet.

CC Hey, Jim. Jim, this is Houston. <sup>Gemini 4,</sup> ~~Jimmy Key~~, Houston.

CANO, are you still manually keying?

Negative. We will manual key if you wish.

CC Okay, manual key. Key, I'd like to talk to him one more time.

We are manually keyed.

CC Gemini, Houston.

Houston, this is CANO, would you try to key.

CC Gemini, this is Houston.

S/C Come in Houston, Gemini 4.

CC Hey, Jim. You don't have to go upside down if you don't want to whatever position is best for you.

We have no constrain on your attitude.

Houston, be advised that you are intermittently keyed. We will manually key you.

CC Gemini 4, Houston.

Houston, this is Kano. Be advised that you are manually keyed.

KANO here, . . .

This is Gemini Control, Houston. Two hours and 25 minutes into this mission. And within the last 30 seconds we've established contact with the Gemini 4 spacecraft at Carnarvan. Pilot Jim McDivitt - Command Pilot Jim McDivitt at this time is giving the ground the blood pressure reading. He advises that Ed White is in the final stages of hooking up his umbilical and his other equipments necessary for the extra-vehicular equipment - for the extra-vehicular exercise - pardon me. He also advises that things are running a little slow on the checklist but apparently it's nothing too serious. Within six minutes, the general plan calls for Ed White to switch over to his extra-vehicular equipment and go off the spacecraft cabin environmental control system, at which point he'll make a final check of all his emergency equipment for that extra-vehicular maneuver. Let's tune in now to the tape as it's started - the conversation at Carnarvan.

S/C . . .right now. He's trying to get his umbilical on.

CC Ok. We need a blood pressure reading from the Command Pilot.

S/C Stand by one. You might advise Flight, by way of the land lines that we're running late on this thing. There's a lot to do and we're having trouble keeping track of all this.

CC Ok. Copy that, Flight?

Mission Commentary Transcript

S/C Roger. I'll give you a blood pressure as soon as I get around to it.

CC Roger. Flight, Carnarvan.

Flight: Go ahead.

CC He's running late on his flight plan.

Flight We understand.

CC Ok. I'm going to cut off on the count checks.

S/C You want it back on continuous?

CC That's affirmative. Back on continuous.

S/C Do you want both on or just the reentry one?

CC . . . temperature.

S/C Ok. As soon as I get the blood pressure, then I'll give you . . .

CC Ok. Radar track at Carnarvan.

CC Ok. Give me a . . . for about 10 seconds.

S/C Roger. I can't give you a good blood pressure. The bulb popped off.

CC Flight, Carnarvan.

Flight Go ahead

CC He's having trouble with the blood pressure bulb. It just popped off. You want to give him the EVA go?

Flight Affirmative

CC Roger, we'll go without the blood pressure then.

Flight Affirmative.

CC Gemini 4, you are go for the EVA and decompression. Disregard the blood pressure unless you've got ten minutes. Then try and get a pressure. We'd appreciate it.

S/C We don't have any time at all. We're really pressed here.

CC Ok.

CC Ok, between your first and your second repressurization in that wait period, we want you to put your radiator in bypass and in the flow after you repressurize the second time.

S/C Roger.

S/C Just advised Cap Com that we're running a little late and we might not be ready at Hawaii.

CC All right - he knows that.

Flight You might tell him if he doesn't make it this pass, we'll take his evaluation and we'll do it next pass. If he doesn't think he can make it.

CC All right. Houston advises that if you are unable to make it this time, we'll take your evaluation and we'll pick it up on the next pass.

S/C Roger, understand that.

Mission Commentary Transcript

CC Ok. You don't have to acknowledge this. You're in an 89.2 by 155 orbit. And it's a 4.8 day lifetime.

This is Gemini Control, Houston. Two hours and 35 minutes into the mission. And Ed White and Jim McDivitt are making their final preparations for an extra-vehicular activity; at this point the spacecraft is on the northeast coast of Australia. Meanwhile, within the last minute, we've been advised by our Department of Defense recovery room here at Houston that an airplane - a C-54 telemetry airplane is having some engine trouble. Its position right now is 350 miles south of Bermuda. It's returning to Bermuda with one engine out. The situation is not considered critical, however, other airplanes will go out and meet the C-54 and bring it in to Bermuda. The aircraft with engine trouble is estimating Bermuda in about one hour and fifty minutes from now - ten minutes before noon CST. This is Gemini Control.

This is Gemini Control, Houston. Within the past minute the Canton station has raised the Gemini 4 spacecraft and the Command Pilot, Jim McDivitt, advises that all is in readiness for the extra vehicular maneuver. Here in the Control Center, the Mission Director wanted to pass along the information that

if they were at all rushed on the flight plan just to hold off for one pass and do it the next pass. But the word from Gemini 4 is that all the connections have been made and they're quite ready and prepared to undertake the extra-vehicular maneuver. They're standing by momentarily for some word from Hawaii at which point - or within a few minutes of LOS at Hawaii - we're not just sure, the right hatch door should be opened. This is Gemini Control, two hours and 49 minutes into the mission.

This is Gemini Control, Houston. The Hawaii station has just been in touch with Command Pilot Jim McDivitt. He apparently has decided that things were a bit too rushed and has elected to wait until the next pass around in order to attempt his extra-vehicular activity. The first indication we had of this was the cabin pressure reading on the ground which still showed something over 5 pounds of cabin pressure. Within seconds after that, Jim McDivitt's voice came up on the loop and he said that they had decided to wait until the next revolution. Apparently all of the connections and the unstowing of articles got a little hectic there over Carnarvan. We did note that Ed White was working awfully hard to get his - all of his connections strapped on. The feeling here was that, if they so elected, they could certainly wait until another

revolution and they have taken that choice. This is Gemini Control. The spacecraft at this time is some 700 to 800 miles southeast of Hawaii, proceeding toward the United States. We should have contact from our California station within three to four minutes and we expect no further advisories until that point. I want to reaffirm that the status aboard appears to be excellent at this time. The pilots have elected to wait one more pass before attempting the extra-vehicular activity. Two hours and 53 minutes into the mission. This is Gemini Control, Houston.

This is Gemini Control, Houston. We have re-racked the tape from the Hawaii pass and are prepared to play it for you. I think you'll note the unusual clarity of the conversation. As best I can recall it's about the cleanest one we've had so far into the flight. Could we have that tape now, please.

CC Gemini 4, Hawaii Cap Com. Do you copy?

S/C Roger, Hawaii. I read you loud and clear.

CC Roger. What is your status.

S/C Standby one.

CC Houston Flight, the cabin pressure is 5.4 on my meter here on the ground.

S/C Hawaii, Gemini 4.

CC Go ahead, Gemini 4.

S/C Next pass around. I don't think we want to try it.

CC Understand next pass around.

Flight: Tell him we're happy with that.

CC Roger, Gemini 4. We're happy with that.

Flight: Hawaii, Houston Flight.

CC Go ahead, Flight.

Flight: Tell him to get back on the normal suit circuit.

CC Roger. Gemini 4, Hawaii Cap Com.

S/C Stand by one.

S/C Ok. Go ahead, Hawaii.

CC Roger. Flight advises go back on normal suit circuit until next round and then go back over Carnavan.

S/C Roger. That's what we're doing right now. We just plan in action.

CC Roger, understand.

## Mission Commentary Transcript

This is Gemini Control Houston. Three hours into the mission and within the past minute, 30 seconds actually, our California Station has raised the spacecraft, Gus Grissom is in conversation with Jim McDivitt at this time and let's tune in live on that conversation as it moves across the United States.

. . . . .

CC Say again.

S/C Just wanted to confirm if we had passed the retrofire time.

CC Hey Jim, you do have your computer on, don't you?

S/C Negative, I don't have it on. Do you want it on at this time.

CC Ah, roger, cut it on. We are going to give you a 4-4 time.

S/C Okay, I thought we were going to get it later. I'll cut it on at this time.

CC Prelaunch mode.

S/C Roger, prelaunch

S/C . . . . . on, over

CC Say again Jim.

S/C I say my computer lights on, we're ready.

CC Roger.

. . . . .

CC I think you did a smart thing back there.

Roger.

S/C Yeah, it would have been a short flight if we kept pushing that bottle around.

CC Yeah, sounds like you have been awfully busy this first couple of orbits, you know.

S/C It would have been impossible. We had never got the EVA gone at all.

S/C It was . . . . . and it's really nice.  
Cap Com, Cape Flight.

CC Go ahead.  
Get him to describe his status inside the cockpit in regard to the equipment, what he's got hooked up and ready to go with.

CC Okay. Hey, Jim, Jim, this is Houston. Gemini 4 Houston Cap Com.

S/C Go ahead Houston, Gemini 4.

CC How about describing the way the cockpit is layed out now with all of your gear out.

S/C Okay, Well, we've got to the get out position here and when we finally called it quits it was obvious that we wern't going to make it at that time without really rushing, and I didn't want to do that.

CC Roger.

S/C Roger. He has most of the equipment on him right now. I've got the gun and the camera and the hatch fitting, the fitting to couple the two suit hoods together with, that is all the parafinelia on him right now, but he is on suit circuit, got the repress valve off, and we are just about all set to go. I think that when we get right over Africa, we are going to go through the checklist again, and when we get to Canarvon, we

Mission Commentary Transcript

will be all set.

CC Roger. Have you taken any pictures yet?

S/C No, as a matter of a fact, we really haven't had time to

....

CC Okay, you haven't had any time yet, have you.

S/C It is a nice spacecraft though, Gus.

CC Good. Do you have the shutoff valve on the chest pack closed?

S/C Roger, it is.

CC Okay.

S/C Okay, we get her update then?

Did you get any update Pete, retro?

Yes sir. The computer works done in and the TR clock.

Rog.

Got that Cap Com.

CC Roger, I got it okay.

Cap Com, just to verify, he never started a depressurization.

Is that correct.

CC Gemini 4. Gemini 4, Houston.

California, LOS

CC Gemini 4 Houston. Gemini 4, Houston.

California is LOS.

Texas, go to air-to-ground remote.

Roger, Texas is in air-to-ground remote.

CC Gemini 4, Houston Cap Com.

Mission Commentary Transcript

S/C Gemini 4, do you read me now.

CC Roger, I lost you there for a minute. Say, you never did start to decompress, did you?

S/C Say again.

CC Did you ever start decompressing.

S/C Negative, we never started decompressing.

CC Roger, I understand.

S/C . . . . this is Gemini 4. I think we are right over Texas now.

CC You say you are coming right over big T.

S/C Roger, we are.

CC See any of it?

S/C . . . .

S/C We are over the Gulf right now.

CC Right over the Gulf, huh. Has your weather been good around the orbit?

S/C We haven't really had time to look out . . . . .

CC Roger, can you still see the booster?

S/C I don't even know where it is right now Gus.

CC Roger.

S/C We saw it just after we . . . . .

CC You are getting awfully garbled.

S/C Roger, I say again. We saw it when we in the darkness, but we haven't seen it since we got back out into the light.

CC Roger, I understand you saw it on the dark side.

CC Gemini 4, you still with me?

Gemini 4, Houston Cap Com.

S/C ~~say again, Gemini 4~~ Go ahead Houston, Gemini 4.

CC Roger, we just switch remote. Is Ed still there?

S/C Yeah, he just doesn't like to talk, I guess.

S/C . . . .

CC Roger, did you get pretty heated up getting all that gear out?

S/C Roger, I got pretty warm.

CC How do you feel now?

S/C Fine

CC Good.

CC Did you guys have any water to drink yet?

S/C Negative.

I think the booster should be about 32 miles ahead of him and about 5 miles below him.

Did you copy that Cap Com?

CC Jim, we figure that the booster should be about 32 miles ahead of you and 5 miles below you at this time.

S/C 32 ahead and 5 below?

CC Roger.

S/C We just got a beautiful view of the whole state of Florida as we are passing over it now.

CC You got Florida in sight, huh?

S/C From the top to the bottom.

CC Very good.

S/C We are looking right down at the Cape now. You can see the launch complexes down there. It is quite clear.

CC Hey, Jim. Gemini 4. We would like for you to turn your cabin ~~S/EX~~ heat exchanger on until you get ready to decompress, and fan.

S/C Ah, roger. We are not getting hot if that is what you're worried about.

CC Our cabin temperature is getting up a little.

S/C Okay.

S/C Cap Com, Gemini 4.

CC Go ahead. This is Houston, Go ahead.

S/C Roger. How about turning the computer off?

CC Affirmative.

Turn it off.

Don't forget to drink some water now.

S/C Yeah, can we turn the computer off.

CC Roger, turn the computer off.

S/C Houston, Gemini 4, do you read.

CC Roger, we read you. Go ahead.

S/C Roger, how about turning the computer off.

CC Roger, turn off the computer!

S/C OKAY!

This is Gemini Control. Houston. For the last 15 minutes you have listened to the conversation as the spacecraft moved across the United States. Apparently, we have lost signal, lost contact with the Bermuda Station. Three hours and 15 minutes into the mission.

We apparently have lost contact with our Bermuda station at this time. For the last 15 minutes we have been listening to a live transmission from the spacecraft and generally, I guess it might be characterized as a settling down sort of past. Jim, getting another transmission, another conversation from ~~the~~ McDivitt and Grissom. Let's go back to that conversation.

CC Gemini 4, Houston.

S/C Go ahead Houston, Gemini 4.

CC As you come over Ascension I am going to try and give you a check. Air-to-ground hasn't worked too well today and we sure would like to get that one up.

S/C Roger, we'll be waiting.

CC Roger.

S/C Would you advise that we've both had a drink and I had 10 12.

CC Roger.

This is Gemini Control Houston. We're still getting a good solid TM contact from Bermuda. The voice circuit however, became noisy as you probably noted during that last conversation. The burden of it was that over Ascension the spacecraft and the ground will attempt a voice contact. We are interested in the quality of that contact which will be remoted back here from Ascension Island in the Central South Atlantic Ocean. This is Gemini Control at 3 hours and 18 minutes into the mission.

This is Gemini Control Houston. Three hours and 48 minutes into the mission. Spacecraft off the southeast coast of Africa. We have not acquired by our ground remote circuit with the Tanaverive Station, I repeat, we did not acquire the spacecraft. We have had trouble with that Tanaverie relay all morning. It did work once, it did not work this time. We are estimating our extravehicular activity to begin in approximately 35 to 40 minutes from now over Hawaii. Earlier, we mentioned an airplane in trouble south of Bermuda. That airplane has now been intercepted with several other aircraft. It's estimated to be in Bermuda at Kingley Air Force Base in approximately 20 minutes. This is Gemini Control.

This is Gemini Control Houston 4 hours and 1 minute into the mission. The Canarvon Station in western Australia is in touch with the Gemini 4 spacecraft at this time and Command Pilot Jim McDivit reports the status is excellent onboard and they are prepared to start the ~~press~~ depressurization of the cabin preliminary to the extravehicular activity. In the last minute the - we had a blood pressure reading from both the Command Pilot and the Pilot. The blood pressure readings came through loud and clear and they are quite nominal values. The sequence of events here calls for depressurization followed by final check list, preliminary to opening that hatch. They are estimating that that would occur over the Hawaii station. Our contact should be even better on this pass than it would have been on the previous pass. Meanwhile, most of the flight controllers here have taken about a 10 to 15 minute break, they have had a sandwich and a cup of coffee, and they have returned to their consoles in preparation

for this important maneuver. This is Gemini Control.

This is Gemini Control in Houston. We are still in touch with the Gemini 4 spacecraft over Western Australia, and we are prepared to play at that time a tape of that conversation which is still in progress. Let's hear the tape now.

S/C Hello Carnarvon. Hello Carnarvon. Gemini IV.

CC Gemini IV. Carnarvon CAPCOM

S/C Roger Carnarvon, Gemini IV. How do you read?

CC Loud and clear. Over.

S/C Loud and clear.

CC Roger. Will you turn your cabin fan off. Heat exchanger to 4 l.

S/C Roger. Cabin fan off and cabin heat exchanger to 4 l.

CC Roger. We would like a blood pressure from the command pilot.

What is your status for EVA?

S/C The status is GO for EVA.

CC Okay. You are GO for EVA from here. In for decompression.

Correction  
... depressurization. Could you give us the blood pressure on the command pilot?

S/C Roger. I'm going to try to give you a blood pressure right now.

CC Alright.

Okay, keep coming. It is coming up.

Your pulse is full scale.

Could you give me about 10 seconds on your quantity read switch, please?

S/C Quantity read is on.

CC Roger.

S/C Quantity read is on.

CC Roger. Okay we got a good blood pressure from you. Now, your right secondary O<sub>2</sub> should be open. Your left secondary O<sub>2</sub> should be closed.

S/C Affirmative. That's the configuration. The left is closed the right is open. I understand we have a GO to start the decompression. Is that right?

CC That's affirmative. GO for decompression and a GO for EVA.

S/C Roger. I expect to be out . . . I will call near Hawaii.

CC Roger. Very good.

CC Flight, Carnarvon.

FLT Go ahead.

CC Okay. You got anything you want to pass to them.

FLT Negative.

CC Okay. I'm going to cut off the conversation to them then.

FLT We would like to have the quantity switch to read throughout the pass, starting now -

## Mission Commentary Transcript

**Note:**

This is Gemini Control. Four hours and 24 minutes into the mission. The Hawaii station has just established contact and the pilot Jim McDivitt advises the cabin has been depressurized. It is reading zero. We are standing by for a Go from Hawaii to open that hatch. Meanwhile, we've been advised by Flight Dynamics that the booster, the second stage booster, is approximately 65 miles in front of the spacecraft and about three miles below it. It is not known whether the pilot or the command pilot will be able to see it. Meanwhile Ed White reports he's feeling fine. And standby for a mark from Hawaii.

This is Gemini Control. White has opened the door - he has stood up and it's a most relaxed period. McDivitt reports that White is standing in the seat. Let's hear that conversation live right now while is standing up in the seat - the hatch is open. Let's go with a live broadcast from Gemini 4.

CC Flight, Hawaii.

Flight Go ahead.

CC Emergency O2 is 3400 psi.

Flt Roger, we copy.

CC Roger. He is standing in the seat.

Flt Roger, we copy.

Mission Commentary Transcript

Tape 11  
EVA-2

CC All systems on the ground look good.

Flight Roger.

S/C Our ECS is real good. It's reading still 50 percent.

Looks like we're not even using any.

CC We concur on the ground.

S/C Hell, Hawaii, hello, Hawaii

CC We understand.

Flight . . you're having him get out?

CC Roger, flight, we're go. He's got some nice elevated rates which we expected and he's really speeded it up but he looks great - let's go (This transmission was from the Flight Surgeon.)

Flight Hawaii, Houston.

CC Houston Flight, Hawaii Cap Com. Go.

Flight Tell him we're ready to have him get out when he is.

CC Roger, I understand.

Flight Tell him to give us a mark.

CC Gemini 4, Hawaii Cap Com.

S/C Come in, Hawaii, Gemini 4.

CC Roger. We just had word from Houston we're ready to have you get out whenever you're ready. Give us a mark when you egress the spacecraft.

## Mission Commentary Transcript

S/C Okay we've got our Go now - is that right?

CC Affirmative.

S/C Ok.

CC Be sure and give us a mark when he egresses.

S/C Ok. We're still doing a little work right here.

CC Roger, understand.

Flight Get his status, Hawaii.

CC Hawaii Cap Com, what is your status now?

S/C We're about ready to start getting out. Ed just got one of his gloves back on and he'll put another one on and we're ready to go.

CC Can you repeat Gemini 4?

S/C He's ready to egress right now.

CC Gemini 4, Hawaii Cap Com. Can you repeat your last transmission.

CC Gemini 4, Hawaii Cap Com. Do you copy?

CC Gemini 4, Hawaii Cap Com. Do you copy?

This is Gemini Control, Apparently the spacecraft has lost contact. The Hawaii station advises that "I think the last transmission was 'He is getting out right now' at 45 past the hour. Very shortly after that transmission we had

## Mission Commentary Transcript

loss of sight. Gus Grissom, Cap Com here, isn't so sure that that was the burden of the message. It'll be several minutes before we can establish whether he did leave the spacecraft at that time or not. In any case, he was feeling good. The surgeon was entirely satisfied with what he was reading and the weather over the United States looks like it's going to cooperate. The weather in the southwest is clear over Arizona. Moving farther east, partly cloudy over Texas and Louisiana, scattered clouds over Florida. So, in general, the viewing while White is out in space over the United States should be excellent. We'll stand by for a recontact with our California station in perhaps two minutes. This is Gemini Control at four hours and 31 minutes into the mission.

This is Gemini Control, Houston. Gus Grissom has just established contact with the spacecraft. McDivitt confirmed that White did leave the spacecraft. He said he looks great. He's outside working his maneuvering unit and Jim is quite exuberant about the performance that he's witnessing at this time. Let's cut in live now and listen to what White says. We've not heard him say anything over his comm loop, but let's tune in on that conversation.

This is Gemini Control. The voice you hear repeating

## Mission Commentary Transcript

"It's working - keep talking there" is Jim McDivitt -

CC Tell him to keep talking - we're receiving Ed through your VOX.

S/C Ok. We'll go to VOX then. Ok, Ed, they're receiving us. Tell them what you think.

White: Cap Com, the maneuvering unit is good. The only problem I have is that I haven't got enough fuel. I've exhausted the fuel now and I was able to maneuver myself down to the bottom of the spacecraft and I was right up on top of the adapter.

. . . Jim and came back into his view. The only thing I am . . .  
. . . Over my head and I'm looking right down and it looks like we're coming up on the coast of California. And I'm going in slow rotation to the right. There is absolutely no disorientation association.

S/C One thing about it when Ed gets out there and starts whipping around it sure makes the spacecraft tough to control.

CC Is he taking pictures?

S/C Of the ocean. This is only my guess. He took the first one.

CC Take some pictures.

White: I'm going to work on getting some pictures, Jim.

Mission Commentary Transcript

Tape 11

EVA-6

S/C Ok. Get out in front where I can see you again.

I've only got about three in the Hasselblad.

White: Ok.

S/C Where are you?

White: Right out in front now. I don't have the control I had any more . .

CC And you've got about five minutes.

White: I want to get out and shoot some more pictures . . .

S/C Ok. I'm going to start firing the thrusters now.

White: There's no difficulty in recontacting the spacecraft.

It's all very . . . particularly in trying to move back . .

I'm very thankful in having the experience to be first. Right

now I'm on top of the . . . the window. I pulled myself in

and put myself in . .

S/C Move slowly and I'll take your picture.

Haney: Can he see the booster, Gus?

White: Right now I could maneuver much better if I just had the gun but I'll manage. . .

S/C Ok. Stay right there if you can.

This is Gemini Control, Houston. . . Here they are again.

S/C Ed, will you please roll around. Right now we're pointing

## Mission Commentary Transcript

just about straight down to the ground.

White: Ok, now I'm taking a look back at the adapter - I'm looking back there. Couldn't see . . . The thrusters are clean. The sun in space is not blinding but it's quite nice. Also the Velcro that we put on seems to be in good shape. . . I'm coming back down on the spacecraft. I can sit out here and see the whole California coast. Looking on further out . . .

Flight, this is Surgeon. The data looks great here.

Flight: How's his EKG?

Surgeon: It looks great, Flight. He's just ripping along here at a great rate.

This is Gemini Control, Houston. Here on the ground we're watching a scope of the heart action and respirations.

S/C For your information, Ed, we're only down to 48 percent on our O2. And the ECS O2 pressure is about 830 so it's staying right up there.

White: . .

S/C Oh, yeah, is that right? Where it's attached to you or where it's attached to the spacecraft?

White: Where it's attached to the spacecraft.

CC Gemini 4, this is Houston Cap Com

S/C Hey, Ed, smile.

Mission Commentary Transcript

White: I'm looking right down your gun barrel, huh? All right.

S/C Let me take a close-up picture of you.

S/C You smeared up my windshield, you dirty dog. You see how it's all smeared up there.

White: Yep.

S/C Looks like there's a coating on the outside and you've rubbed it off. That's apparently what you've done.

CC Gemini 4, Houston Cap Com.

S/C The spacecraft rates are up about one degree per second in pitch and yaw and about a half degree per second in roll.

S/C Ed, I don't even know exactly where we are but it looks like we're about over Texas.

CC Gemini 4, Houston Cap Com.

S/C As a matter of fact that area looks like Houston down below.

CC Gemini 4, Houston Cap Com

S/C Hey, Gus, I don't know if you read us but we're right over Houston.

White: . . . we're looking right down on Houston.

S/C Go on out and look.

CC Gemini 4, Houston

S/C Yeah, that's Galveston Bay right there. Hey, Ed, can you

Mission Commentary Transcript

see it on your side of the spacecraft.

White: I'll get a picture.

S/C Can you see the camera here?

White: Yeah.

S/C Is it pointing at you.

White: No, Not now.

S/C Which way.

White: . . . I'm not getting a picture.

S/C Now don't get back there where the -

White: I'm right behind you and right above where . .

CC Gemini 4, Houston.

White: . . .

S/C That'll really be it, huh?

White: Yeah.

CC Gemini 4, Houston.

White: . . . . of the Texas . . . I only shot about three or  
four.

S/C Is that right? Well, I've taken a lot but they're not  
very good. You're in too close for most of them. I finally put  
the focus down to about 8 feet or so.

CC Gemini 4, Houston.

Mission Commentary Transcript

S/C You know, Ed, this thing about the reference we were talking about looks like it's sure right.

CC Gemini 4, Houston.

S/C Let's see what Kleinknecht has got to say.

Flight: The flight director says get back in.

S/C Gus, this is Jim. Got any message for us.

CC Gemini 4, get back in.

S/C Ok.

S/C I don't know. We're coming over the west there and they want you to come back in now.

CC Roger. We've been trying to talk to you for a while here.

White: This is fun.

S/C Well, back in. Come on.

White: . . . to come back to you, but I'm coming.

S/C You still have three and a half or four days ago, buddy.

White: I'm coming.

S/C Ok.

CC You've got about four minutes to Bermuda LOS.

CC Gemini 4, Houston Cap Com..

White: I'm trying to .. .

S/C Ok, Ok. Don't wear yourself out now. Just come on in.

S/C How you doing there?

White: The spacecraft really looks like it's . . . because

Mission Commentary Transcript

Tape 11

EVA-11

whenever a piece of dirt or something goes by it always heads right for that door and goes on out.

S/C Ok - whoops, take it easy now.

White: Ok. I'm on top of it right now.

S/C Ok, you're right on top. Come on in then.

White: The hand hold on that spacecraft is fantastic. You can really . . . . Aren't you going to hold my hand?

S/C No, come on in the . . .

S/C Ed, come on in here.

White: All right.

S/C I'll put the gun up.

White: I'll open the door and come through there.

S/C Ok. Let's not lose this camera now. I don't quite have it. A little bit more. Ok. I've got it.

White: . .

S/C Yeah, we sort-of talked about that -

White: Huh?

S/C We sort of talked about that didn't get very much of a chance.

White: No.

S/C Come on. Let's get back in here before it gets dark.

Mission Commentary Transcript

Tape 12  
EVA-12

White: It's the saddest moment of my life.

S/C Well, you're going to find it sadder when we have to come down with this whole thing.

White: I'm coming.

S/C Ok. Come on now.

CC Gemini 4, Houston Cap Com.

S/C Let's see you get those hand dogs fixed now.

CC Gemini 4, Houston Cap Com.

S/C I'm just putting all this stuff down here . . .

I'm going on in a minute. No time to talk now - I'm pulling in his air hose. Ok. Any messages for us Houston?

Flight: Yeah, get back in.

CC Are you getting him back in?

S/C Yeah, he's standing in the seat now and his legs are down below the instrument panel.

CC Ok, get him back in. You're going to have Bermuda LOS in about 20 seconds.

S/C Ok, he's coming in. He's having some trouble getting back there in the spacecraft.

CC Are your cabin lights up bright in case you hit darkness?

This is Gemini Control, Houston. We apparently have lost the signal in Bermuda after an extraordinary 20-minute conversation.

## Mission Commentary Transcript

with Pilot Jim McDivitt and Ed White. The reason for the delay in receipt of the signal from Houston was, of course, that McDivitt had his key so - in a position so that he could not receive the signal up here. No great concern on the ground. The conversation was certainly stimulating and we are assuming by now, at last report we have Ed down in the seat and we're assuming by now that they're about to close the door on that. And We're now hearing McDivitt again.

S/C . . especially what kind of pictures we had there - . .

CC Roger.

Flight: What did he say, Gus.

CC That he was busy and would rather not talk to us.

This is Gemini Control, Houston. We have lost signal with Bermuda. At our last report, McDivitt was - everything was going along all right. We're standing by right now. We expect to get a cue from the Flight Director as to when we'll next depressurize and open the spacecraft. This is, according to our original plan, in order to jettison some of the bulkier gear. Among the items to be discarded in space are the chest pack, the emergency chest pack that Ed used, the space maneuvering unit, the umbilical, a number of items. There's some question as to whether the maneuvering unit will be discarded. It's not too bulky. At very least, the propulsion -

## Mission Commentary Transcript

the oxygen propulsion bottles on the maneuvering unit will be discarded, perhaps the little thruster - oxygen thruster engines will be retained in the spacecraft. This is Gemini Control, four hours and 53 minutes into the mission.

(First tape after EVA)

This is Gemini Control Houston. We are 5 hours and 10 minutes into the mission. To review for you the times, approximate times of the extravehicular activity of Major White. We estimate here that the hatch was open, the right hatch was opened at 42 minutes after the hour. We have a time hack on his, his actual pushaway from the spacecraft at 45 minutes after the hour. He was back in and standing on the seat at 5 minutes after the hour, some 20 minutes after he left the spacecraft. We have not had an approximate time of closure, however. Ascension was reading the spacecraft on some telemetry channels. They did not raise it by voice as it passed over that station a very few minutes ago. Right now, its approaching the Tanarive Station and then we also have a station which may or may not be able to raise it at Pretoria South Africa. The next major discussion we can look from for is the Carnarvon Station, some 8 to 10 minutes from now. The spacecraft is in a darkside right now. Our data here shows approximately 2 pounds of fuel, 2 pounds of fuel were used to maintain attitude during the extravehicular activity. The mission seems to be proceeding very nicely at 5 hours and 11 minutes in. This is Gemini Control Houston.

This is Gemini Control Houston. 5 hours and 31 minutes into the mission with the spacecraft almost dead center over the Indian Ocean. Our last contact - the last advisory on the progress of the

## Mission Commentary Transcript

was from Ascension. We did not establish voice contact there.

Everything from that point was fairly optimistic. We still are unable to supply a precise time on hatch closure, however, we have the Carnarvon station coming up with communications from Carnarvon have been excellent all day. We have a report that both Mrs. McDivit and Mrs. White are in route to the Control Center now. They plan - this is a little unscheduled visit. I think they want to stop by and shake a few hands with some people here who followed the - this extravehicular activity very closely since ~~it is the beginning~~ it's beginning. This is Gemini Control at 5 hours and 32 minutes into the flight.

This is Gemini Control Houston. Within the last minute we have established contact with the Gemini 4 spacecraft at Carnarvon. Jim McDivit's first words were "Hello Carnarvon, nice to have someone to talk to again". He apparently noted the long blank in the network also. He advised us that the cabin has been repressurized and holding nicely at 5.1 psi. He has been given an update and a go for at least a 6 revolution flight which is his next nominal landing point should anything develop between now and then. I emphasize that this is just a routine update. All of the values we have heard sound entirely nominal. We want to stand by and listen to additional discussions. This is Gemini Control at 5 hours and 35 minutes.

This is Gemini Control, Houston, five hours and 44 minutes into the mission. We've just completed a conversation between the Gemini 4 spacecraft and the Carnarvan station. And during the course of the pass, Jim McDivitt advised that the cabin had repressurized to 5.2 pounds. He advised that he had elected not to depressurize, as had been called for in the earlier flight plan. He didn't pass along a reason. The best guess here in the Control Center is that they probably decided that they'd like to keep the equipment as a souvenir. He did indicate they were going ahead and stowing the gear and he also advised that they could see the booster flashing some 60 miles away. We have re-racked that tape for you and we're prepared to play it for you at this time. This is Gemini Control.

S/C Gemini 4, Carnarvon, read you loud and clear. How so you read me. Over.

CC Cap Com Carnarvan, Gemini 4. Gemini 4, Gemini 4, Carnarvan reads you loud and clear. Over.

CC Gemini 4, Carnarvan Cap Com.

S/C Hello, Carnarvan, hello, Carnarvan, Gemini 4.

CC Gemini 4, Carnarvan Cap Com.

S/C Carnarvan, Gemini 4. Do you Read me?

CC Roger, loud and clear.

S/C Loud and clear. It's nice to have somebody to talk to again.

CC Roger, it's good to hear you. How are things going?

S/C Ok. We're back inside the spacecraft. We're repressurized to 5 psi. We are not, I say again, we are not going to depressurize the spacecraft again.

CC Roger, understand. How are you feeling?

S/C Say again.

CC How are your feeling?

S/C Very, very fine. We're feeling great.

CC Roger. Can you give me a battery readout, please.

S/C Roger. Battery readout coming up.

CC Roger.

S/C Before you get the battery readout, do you want me to stay powered up or do you want me to start power down?

CC Negative. I'd like you to keep the power on your computer on until I estimate your time and loads. Then if you are Go, we'll power you down.

S/C Ok, I'm going to bring the computer on the line now. It's not on yet.

CC Roger. Turn your computer up. If your platform is off, you can leave it off.

S/C It is.

S/C 6-1/2. 1a is 24 volts.

CC Say again, please.

S/C Roger. 1a and 1.b are 6-1/2

CC Volts?

S/C That's amps. And 24 volts.

CC Go ahead.

S/C 1c is 7 amps. 24 volts.

CC Roger.

S/C 2a is 7 and a half. 24.

CC Roger.

S/C 2b is 6 and a half - 24.

CC Roger.

S/C 2c is 5 and a half - 24 and they look good. The RCS a and b are both holding up fine.

CC Roger. We're going to give you a Go for 6 more. I'll update load for you with maneuver. And a 6.4 for you without maneuver time.

S/C Would you stand by one, please.

S/C Carnarvan, we won't wait for that one now. We've got all his equipment in the spacecraft right now and we're trying to get it stowed away in a reasonable manner.

CC Ok, understand. I'm going to update your command load first

And then we'll copy the times when you're ready.

S/C We're ready right now.

CC OK. Just make a PR.

S/C I've got it.

CC Roger. Got it in. And you've got a valid 4.4 without....  
maneuver. Over.

S/c Understand, we're good for 4.4.

CC OK. Ready to copy your time.

S/C Roger

CC 4-4 1053 3+18 21 08 57 3+00 8+43

S/C Roger, reading back. Area 4-4 1533 18 210857 3+00 8+43.

Affirm this will be done in the following manner - the burns -  
110 aft, 43 forward.

S/C Correction. 110 aft, 43 forward.

CC Roger. You can power down your platforming computer at this  
time.

S/C Roger. Clear. Power down.

CC OK. You can turn your quantity read switch off.

S/C Quantities down. So we're going to power down and read you  
out several other things at this time also.

CC All right. Want to copy some 6.4 times?

S/C Stand by.

CC 6-4 00 00 01 00 08 54 8+12 16+19. That's it.

S/C Roger. Would you read back the GMT and retrocommand on 64. I can make the 00, Delta V 00 8+12 6+19, and I didn't copy on the retro time.

CC Roger. That's 01-00 08 54.

S/C Roger. I understand. That's 00 08 54. Got it.

CC That's affirmative.

S/C Roger.

CC OK. We have set your adapter C-band beacon to command.

S/c We have set it to command.

CC Roger. We're going to turn it off.

S/C Carnarvan, This is Gemini 4. It looks like our booster's still out there flashing away.

CC Roger, 4. How far do you think it is?

S/C I really can't tell. It's -- looks like it's about five or six miles perpendicular to our flight path. Maybe it's more than that. It could be as far out as twenty miles perpendicular to us.

CC Roger. Is your adapter C-band in command now?

S/C Roger. It is. OK. It looks like I'm ready to turn it off.

S/c Flight, Carnarvan.

Flt Go ahead.

CC The only thing that didn't work properly is I'm not sure whether I got that beacon off. It's in command. I tried to turn it off and just then I had telemetry LOS so I don't know whether it went off - I don't - I didn't get a map deck.

Flight Roger. I understand.

CC But no telemetry. Everything else went normal. And he sees the booster out there, but he doesn't know whether it's five or six miles or twenty miles -- it's perpendicular to his flight path.

Flt Rog. We copied everything. Good pass.

CC Roger. That's affirm.

This is Gemini Control, Houston. We are six hours and five minutes into the mission. We've just had a short discussion with the Gemini 4 spacecraft over Hawaii. It was very brief, on the order of less than a minute. It did develop in that discussion that there was apparently some small difficulty in closing the hatch. It was not described in any detail, and we had asked the spacecraft for a hatch closure time. They said they'd figure it out and advise us. They did advise that Ed White discarded one of the thermal gloves - protective gloves - that he was wearing. He also discarded a gold over-visor that he wore while outside the spacecraft. The systems

report from Hawaii was excellent. All the spacecraft systems functioning very nicely. The cabin pressure holding nicely at 5.2. Meanwhile, both Pat McDivitt and Pat White, the wives of these two pilots, are here in the control center. They've been here approximately a half hour. They have been chatting with Dr. Gilruth and with Congressman Casey. This is Gemini Control at six hours and seven minutes into the mission.

This is Gemini Control, Houston, six hours and fourteen minutes into the mission with the spacecraft moving across the south central United States. It's been an unusually quiet pass to date, due largely to the fact that Jim McDivitt has been taking an oral temperature and, therefore, has stayed off communications. The communications, themselves, have not been the best. We don't know whether we have a problem in our ground site remoting or whether we have a problem in the spacecraft. We plan to work both ends of it in an attempt to clean up communications. When we do have them, they're noisy, and we attempted during the earlier part of this pass to go to using the high frequency communications system via California. That was an extremely weak and unreadable signal. We're back on UHF now. We can hear McDivitt, but it is just barely intelligible. This is Mission Control, Houston, six hours and fifteen minutes into the mission.

This is Gemini Control Houston. We are 6 hours and 21 minutes into the mission. In this pass across the states, we read out medical values onboard, our flight surgeon here in Houston has been in direct conversation with both the Command Pilot and the Pilot. One of the more interesting aspects of the conversation was a question by Dr. Berry as to whether Ed White had any disorientation while he was extravehicular. White came back very strongly that he had absolutely no disorientation. He, in fact said that marveled at the fact that in no matter what position he seemed to assume, or what kind of whirl he went into, he was at no time disoriented. He has, White, that is, has been advised as to go to sleep for about a 4 hour period. Jim McDivitt, meanwhile, who sounds a little sleepy too, has advised that he will pick up the flight plan as it existed and begin to begin to program his fuel against his various experiments. This is Gemini Control at 6 hours and 22 minutes into the mission.

This is Gemini Control. We are now 7 hours and 59 minutes into the mission. Voice communication with the spacecraft was made within the last hour between the tracking ship Coastal Sentry Quebec and through the Houston communications center here, talking to the spacecraft through the Guaymas and California stations on a remote loop. While the spacecraft was talking to the Coastal Sentry Quebec, that tracking ship gave the spacecraft commander a Go for 18 revolutions. McDivitt said his spacecraft was in a Go condition. The tracking station advised Jim that he looked very good. At that time McDivitt also made a medical pass and a blood pressure reading was obtained. Here at the Gemini Control Center in Houston everything has calmed down after the EVA. Flight Director Eugene Kranz anticipates no additional maneuvers will be needed to maintain our four day orbital lifetime. At the present, the spacecraft is orbiting at approximately 185 statute miles apogee and 103 statute miles perigee. The fuel remaining aboard the spacecraft is greater than anticipated since we scrubbed the rendezvous exercise. The oxygen consumption is normal,

as expected.

The Houston communicator during a pass over Southern California asked that the EVA glove be put in a plastic bag, and sealed, and stowed away. The purpose of this is for an analysis, which will be made, on the ground when the spacecraft comes home. During the EVA exercise, Pilot White brushed against the glass window of the spacecraft and they want to see if anything brushed off with it.

This is Gemini Control, we are now 8 hours and 34 minutes in the mission.

End of Tape 16

At this time the spacecraft is over the Indian Ocean and we are into a quiet period of the flight. Pilot Ed White is sleeping. Spacecraft commander Jim McDivitt is guiding the spacecraft and communicating with the ground at long intervals in between. To sum up our situation the Gemini IV spacecraft has been given a GO for 18 revolutions. McDivitt has reported that he and Ed White are in a GO condition. The oxygen and fuel supply are in good quantities aboard the spacecraft and at this point in the flight everything is GO. This is Gemini control.

This is Gemini control. We are now 9 hours and 19 minutes into the mission. The Gemini VI spacecraft is passing over the Pacific Ocean on the day side of the world. It is in the sixth revolution. Flight surgeon Dr. Dwayne Catterson reports that thus far the medical read-outs on the flight crew look real great. Pilot Ed White is still asleep. Dr. Catterson reported that White ate some bacon and egg bites, toast and orange juice before going to sleep. Both astronauts have taken water. White did not comment on the food. We had communication with the spacecraft at 8 hours and 57 minutes into the mission, while it was over the Coastal Sentry Quebec, in the Pacific Ocean. At that time the Coastal Sentry Quebec updated landing area times for the flight crew. The Coastal Sentry Quebec also reported that all spacecraft systems looked good. Flight Director Gene Kranz has just ordered a halt to voice communications with the spacecraft

because its position relative to the ground tracking stations on this pass makes communications difficult and he wishes to spare the flight crew this difficulty. This is Gemini control.

This is Gemini control. We are now 9 hours and 38 minutes into the mission. At the present time the spacecraft has just passed over the Rose Knot Victor, the tracking ship located off the east coast of South America. During this pass, the Rose Knot Victor communicator passed on an updated flight plan for the crew. He advised the command pilot to start his sleep period at 11 hours into the flight. That is approximately 1 hour and  $\frac{1}{2}$  from now. And to sleep for approximately 4 hours. He also instructed the pilot to give a medical pass - type one - at the time the command pilot would be starting his sleep period. We have had very little voice communication with the spacecraft. In fact, until this communication with the Rose Knot Victor we have been out of communication for at least 45 minutes. Communication has been difficult due to the elevation and angles at which the spacecraft is passing over the tracking station. And for this reason Flight Director Gene Kranz has ordered that voice communication with the spacecraft be kept at a minimum. This is Gemini control.

This tape had 2 pages.

This is Gemini Control at 10 hours and 9 minutes into the flight. We will be out of voice with the spacecraft for approximately another  $\frac{1}{2}$  hour. At this time the spacecraft is over the Indian Ocean and is about to come up on another sunrise. Flight Director Gene Kranz is starting the flight crew back on the regular flight plan. He has programed times for measurements of outside radiation and of the earth's magnetic field relative to the spacecraft. He has also programed the experiment to measure radiation inside the spacecraft. The first experiment designated D-8 will be made approximately 1 hour from now. The latter two designated MSC 1 and 2 commence in approximately 2 and  $\frac{1}{2}$  hours. Flight surgeon Dr. Dwayne Catterson reports that all the medical data he has received looks perfectly normal at this time. Mission Director Chrispor Kraft has just returned to visit the mission control center. Obviously to see how things are going. They are all going real well. This is Gemini control.

This is Gemini control. We have not had communication with the flight crew for approximately 1 and  $\frac{1}{2}$  hours. However, we expect to be contacted by voice from the Hawaiian tracking station within moments. Flight Director Gene Kranz has ask the Hawaiian station to conduct a UHF communications check with the spacecraft. He also asked them to use a minimum amount of spacecraft fuel for this check. Delayed time telemetry will also be relayed from the spacecraft to the ground station. Passing over the Coastal Sentry Quebec tracking station, just prior to pulling into the range of the Hawaiian station the flight surgeon at the Coastal Sentry

Quebec reported the pilot is sleeping very soundly. We are not about ready to transmit live communications between the spacecraft and the Hawaiian tracking station. This is Gemini control.

This is Gemini control. We are now 11 hours and 8 minutes into the mission. The spacecraft is now passing over the Rose Knot Victor, a tracking ship located off the east coast of Pueru, South America. The Rose Knot Victor is giving the flight crew block updates for landing areas in 6 orbit increments. Pilot Ed White has completed his sleep period and he has given the ship's flight surgeon a blood pressure check for aeromedical type pass I. This also included an oral temperature check and he used the bungee cord exerciser. This was followed by another blood pressure check. Pilot Ed White also gave a report on food, water, and sleep. He said he woke up about 20 minutes ago. He did get some sleep but not a sound sleep. His report on food and water intake was not clear and we did not get a good report on that. This is Gemini control.

This is Gemini control. Gemini IV spacecraft is now 11 hours and 39 minutes into its mission. At the present time it is passing just outside the tracking range of the Tanna Reed tracking station. We are in the eighth revolution. We have been out of voice contact with the flight crew since passing over the Rose Knott Victor, some 30 minutes ago. At this time according to our flight plan the spacecraft commander Jim McDivitt is in his scheduled sleep period. Pilot Ed White is busy conducting the D-8 radiation experiment - measuring the radiation level inside the spacecraft. And also the MSC 1 and MSC 2 experiment. MSC 1

calls for measuring radiation outside the spacecraft. MSC 2 monitors the direction and volume of the earth's magnetic field. Results of these experiments are scheduled to be relayed to the Hawaiian station, when the spacecraft passes that area. This is Gemini control.

This is Gemini control. Spacecraft Gemini IV is now 12 hours and 9 minutes into its mission. At this time it is on the day side of the world passing over the Coastal Sentry Quebec tracking ship in the Pacific Ocean. We have had no voice communication with the spacecraft for approximately 1 hour. At that time a medical pass was made over the tracking ship, Rose Knot Victor. Command pilot Jim McDivitt is in his sleep period. Pilot Ed White has been busy with various experiments according to our flight plan. Here in the mission control center some members of the blue team of flight controllers have already arrived. They are scheduled to take over direction of this flight in about 1 hour. The Coastal Sentry Quebec has reported to flight director Gene Kranz that the cabin pressure aboard Gemini spacecraft IV is 5.4 lb/sq in. This is Gemini control.

This tape had 3 pages

This is Gemini control. We are now 12 hours and 39 minutes into our mission. At the present time the spacecraft is over the Rose Knot Victor tracking ship, off the west coast of South America. Which incidently is on the night side of the world. The tracking ship is conducting an environmental control systems check with the flight crew. There will also be a telemetry transmission from the spacecraft to the Rose Knot Victor tracking ship. This is Gemini control we are in revolution eight.

This is Gemini control. We are now 12 hours and 53 minutes into the mission. Spacecraft Gemini IV has passed out of range of the Rose Knot Victor tracking ship, off the west coast of South America. During voice communication with the ground pilot Ed White reported that he had had very good maneuver control using the maneuvering unit while doing his EVA outside the spacecraft. He said he had a little trouble when he was not using the maneuvering unit. White also said he could see the entire state of Texas, the Clear Lake Area, and the Manned Spacecraft Center. At the present time, he said, he can see the Southern Cross, various stars, and other constellations. We will now transmit the voice tape between the pilot Ed White and the Rose Knot Victor tracking ship.

Flight RKV Systems . . .

CC RKV, Gemini IV

CC Request that you mark your primary O<sub>2</sub> source pressure . . .

Flight RKV systems your pad 93 - change the RETRB to 15 minutes  
47 seconds. 1547 RETBR.

S/C Say again RKV.

CC . . . . .

Flight RETRB for 93 is 1547.

S/C Say again 1547.

CC . . . . .

Flight Roger, roger.

CC If you wish to find out how you look right now - fine and I  
am reading you quite well and also received . . . . .

S/C Roger.

CC RKV systems say again. I cannot read you through the under-  
ground. Go ahead now.

Flight Roger. Your 9-3 pad message was incorrec~~on~~ RETRB. The correct  
RETRB for 9-3 is 15 plus 47.

CC Roger. I understand. 15 plus  
. . . . .update for you.

. . . . . Roger . . . . .

CC Roger. 9-3 . 043619 07 plus 59 15 plus 47. Do you copy?

Flight RKV AFE

S/C . . . . .043619 07 59 15 47

CC. Thats affirmative.

S/C Roger. Would you relay to . . . .

said that we were out and over . . . .

but we were able to see the coast of Texas quite clearly and

. . . .

Flight RKV CAPCOM Houston Flight.

S/C see considerably more . . . .

Flight RKV CAPCOM Houston Flight.

S/C . . . . . the whole state of Florida. We went right

near . . . . .

Flight RKV CAPCOM Houston flight.

S/C islands and about that time we had the . . . .

Flight RKV CAP COM Houston flight.

FLIGHT Goddard, ring RKV for me, please

RKV CAPCOM

FLIGHT Go ahead, RKV

RKV Do you copy

FLIGHT Roger, we copied, we are trying to get - you gave them the wrong

400 time

RKV Very good, FLIGHT has been copying your transmissions.

S/C Roger

RKV

FLIGHT Tracking ship RKV due west of Peru in South America  
The orbit presently is 101 mile perigee by 191 apogee. The command  
pilot is scheduled to sleep at the present time. This is Gemini  
Control.

FLIGHT This is Gemini Control, 13 hours 39 minutes into the flight. The  
S/C should now be in contact with Coastal Sentry Quebec tracking  
ship off the island of Guam due east of Japan. There was a shift  
change here in Mission Control Center, Houston, at approximately  
10:15 central standard time at which time the so-called blue team  
of flight controllers relieved the flight team headed by Flight  
Director- Gene Krantz. The new Flight Director for the blue team  
is Mr. John Hodge. The flight surgeon on this team is Dr. D.  
Owens Coons. Capsule communicator relieving the white team CAPCOM  
is Eugene Cernon. This is Gemini Control.

This is Houston, are you there CAPCOM?

FLIGHT Look at the perspective releases and see what you pick up.

FLIGHT This is Gemini Control, 15 hours, 39 minutes after lift-off.  
Gemini 4 S/C presently over the central Pacific and will be in  
radio contact with Rose Knot Victor 6 minutes from now. The contact  
will last approximately 7 minutes 21 seconds. The Houston S/C  
Communicator Gene Cernon was unable to establish contact with the  
S/C through the Canton Island Voice Remoting Station. The  
Command Pilot is due for a medical data pass while passing over  
the Rose Knot Victor tracking ship. This is Gemini Control.

FLIGHT This is Gemini Control 16 hours 39 minutes after lift-off. The Gemini 4 spacecraft is presently leaving China coast and will be passing over the Phillipine Islands in about 5 minutes and over the Solomon Islands in the southwest Pacific in the next 15 minutes. The next contact with the tracking station will be with the Rose Knot Victor tracking ship west of Peru some 40 minutes from now. This is Gemini Control.

FLIGHT The first 39 minutes after lift-off, Gemini 4 spacecraft is presently over the South central Atlantic approaching acquisition by the Canary Islands tracking station. The Flight Surgeon on the third shift here in the Control Center, Dr. D. Owen Coons, reports that the medical data check on pilot, Ed White, during the 10th revolution relayed to the Rose Knot Victor tracking ship by the delayed tape playback showed that White's medical responses, heart rate, blood pressure, electrocardiogram, etc. were all normal. He also reports that both astronauts' responses have settled to a resting rate.

FLIGHT We now have a tape recording of communications between Gemini 4 and the tracking ship, Rose Knot Victor at the end of the 11th revolution. The tape follows. This is Gemini Control.

RKV Gemini 4, Flight asks how are you doing at getting things stowed away and if you are getting a little crowded up there.

S/C : Indeed we are crowded. We have got most of that junk down in the foot well, and I guess we are going to have to hold some of it during reentry.

on the thing until I thought we were going to break it right out of the hatch, and we got it going. . . . So I don't think we ought to try opening it up any more.

RKV Yeah, it sounds like a good idea to keep it closed.

S/C Roger. I found out what the trouble was when I got down close I tell you one thing, I am glad that we got that trouble . . .

RKV Now, you with all that extra training, it sure pays off at times.

RKV FLIGHT, did you copy, over.

FLIGHT Roger, we got all of that. That is just about the same conclusions we came to. That's very good.

RKV Roger

RKV Gemini 4, we're coming up on that attitude circling. Anything else?

RKV Gemini 4, RKV

FLIGHT Roger RKV

RKV Roger, everything <sup>appeared</sup> / normal here on the ground. We got the Cape Comp all right came in real solid, . . . put it back on Cape Comp and it looks good. We haven't played any back

FLIGHT Very good. It seems that since we have gone to this reentry antenna we are getting quite good communications.

RKV Yeah, it has certainly helped. Give them the O<sub>2</sub> bank pressure sitting 950 psi, cabin pressure at 5.2 psi.

FLIGHT Very good

RKV We got the flight plan updates to him and he is copying them real clear and came back with the whole thing.

FLIGHT Roger

RKV Boy oh boy! Sounds like a lot of fun.

S/C . . . . . trying to figure out what to do with all the stuff I've got.

RKV Well, let's see, there is a lot of empty space up there around you. If you could get to it.

FLIGHT RKV, this is Houston FLIGHT.

RKV RKV

FLIGHT You might ask him to go briefly over the trouble he had closing the hatch because that's good communication with you now, we can read him loud and clear.

RKV Roger

RKV Flight advises that they have very good communication on this, they're remoting and would like for you to go over the problems you had with the hatch closure.

S/C Roger, the gear that you have when you go around when you pull the handle back and forth. One of them is the gear that sorta acts as a ratchet - a little filter with a system in it that engages this ratchet. We had a little trouble with that before we got it open. After we got it open we had difficulty in getting this ratchet to work. Also, we had a great deal of difficulty in getting the hatch to close far enough so that we could even start ratcheting it. We had to point the ratchet in with our hand on every go until we got it started. We pulled

RKV That's about it from here, FLIGHT

FLIGHT Roger, that cleared a few things up for us.

RKV Roger, it sure is a pleasure having good communications for  
a change.

FLIGHT Yeah

This is Gemini Control, 18 hours 39 minutes after lift-off. The Gemini 4 is presently over the South Pacific, just east of New Zealand. The next station contact will be in 13 minutes when voice and telemetry will again be acquired from the tracking ship, Rose Knot Victor. No voice contact has been made with the spacecraft since the pass over the Rose Knot Victor at the end of the 11th revolution. This is Gemini Control.

This is Gemini Control. It is now 19 hours 9 minutes after lift-off, beginning of the 13th revolution. Gemini 4 spacecraft is now in the Atlantic, north of Trinidad. During the pass over the tracking ship, Rose Knot Victor, beginning about 16 minutes ago, the crew received retrofire times for several of the next planned landing areas. This is a routine procedure and allows the crew to make a closed-loop reentry should it become necessary. Retrofire updates are routinely passed up to the crew at intervals. The Rose Knot Victor CAPCOM reported that the spacecraft systems all looked good on the telemetry readouts. The Rose Knot Victor will have a respite until the 21st revolution. Next contact will be with the Canary Islands tracking station 6 minutes from now. This is Gemini Control. \_\_\_\_\_ 19 minutes after lift-off. We now have a tape recording of the recent pass by Gemini 4 spacecraft over the Rose Knot Victor in which retrofire times for several planned landing areas were routinely passed up to the spacecraft crew to allow them to make a closed-loop reentry should it become necessary. Retrofire updates are routinely passed up to the crew at these intervals. The tape follows.

S/C Go ahead RKV CAPCOM

RKV You should have acquisition.

S/C Roger. We have contact.

RKV Gemini 4, Gemini 4, RKV CAPCOM. Do you read?

S/C Roger, we read you clear, a little background noise.

RKV Gemini 4, RKV CAPCOM

S/C Roger

RKV I have a whole bunch of stuff to pass up to you.

S/C Okay go ahead.

RKV Roger. I've got a map update. It will be a . . . .

S/C Roger. 49 73 degrees west.

RKV I have a correction to the flight plan. You will be taped up on the 13th rev over Canary Islands, and the taped for the Carnarvon will be changed to the 14th rev.

S/C Okay, taped up over Canary on 13th and Carnarvon on 14th.

RKV Roger standby for retro updates.

RKV Are you reading?

S/C Roger, I am

RKV 15 BRAVO 14603 + 32 11 01 48 12 + 09 14-2 1K1 03+7 11 56 46 3+17  
8+36 14 130 02 46 12 35 16 12+59 15-1 121 +34 13 21 00 04+07  
09+03 15 BRAVO 121 02+34 14 10 30 12+22 16-1 140 3+26 14 54 40  
3+14 8+35 65 BRAVO 096 02+03 15 50 26 11+28 17-1 158 3+48 16 08  
08 2+39 08+00 17 BRAVO 087 01+51 17 06 03 10+03 Do you copy?

S/C I got down to 17-1 . . 3+48 That is all I will be able  
to give it to you.

This is Gemini Control. It is now 19 hours and 30 minutes after liftoff. The Gemini 4 spacecraft is now over the Indian Ocean just west of India. The spacecraft is in an orbit, with a perigee of 101 statute miles and a apogee of 179 statute miles. Communications during the last pass over the Canary Island tracking station were quite good. The next tracking station to make contact with the spacecraft will be the Canarvon, Australia station 12 minutes from now. This is Gemini Control.

This is Gemini Control, 19 hours, 46 minutes after liftoff. We now have a tape recording between Gemini 4 spacecraft and the Canary Island tracking station during the 13th revolution. The figures given between the CapCom and the spacecraft crew on the apogee and perigee of the orbit are in nautical miles. To get statute miles you need to add about 15 percent. This is Gemini Control, the tape follows.

S/c: Roger, GFTRC. 16282802+3908+22.

CC: Roger, I have that, thank you.

S/c: Canary, what's my current apogee and perigee?

cc: Say Again.

S/C: Canary, what's my current apogee and perigee?

CC: Standby. Houston flight. CapCom. What is present apogee and perigee?

F: Present estimate is 88 by 155.7. We are waiting on your data to update that.

CC : Roger. Apogee is 155.7, perigee 88. They will give you better data after they get our radar track.

S/c: Okay.

End of Tape

This is Gemini Control. Twenty hours and eight minutes after liftoff. During the 13th revolution pass over the Canarvon Tracking Station in Australia some minor changes to the flight plan as well as some updates to routine plan landing area retrofire times were passed up to the crew. We have now a tape of the voice transmissions between the spacecraft and the Canarvon station. The tape follows.

This is Gemini Control.

CC: Gemini 4, how to you read.

S/c: Ah, Roger, read you loud and clear. How do you, over?

CC: Ah, Roger. Loud and clear.

S/c: Ah, Roger.

CC: Will you turn to party lead switch on, please.

S/c: Okay, we've got it.

CC: Radar Track at Canarvon. Have you completed M \_\_\_\_\_ exercise experiment?

S/C: -----medical pass.

CC: Allrighty. I'd like a readout in primary O2 pressure and quantity from you please.

S/C: Roger. Primary O2 pressure is 970 psi, quantity is about 39½ percent.

CC: Ah, I got this.

F: Canarvon Cap Com, this is Houston Flight.

CC: Houston Flight.

F: Roger, we would like for him to put on his C-band, adaptor C-band switch to continuous at 11+52+43.

CC: Roger, I copy.

F: Back to command at 59+23.

CC: Roger.

F: Go Ahead.

CC: -----Do you copy? These are some changes to your flight plan.

Spc: It's okay, Go ahead.

CC: Like for you to switch your adaptor C-band beacon switch to the continuous position at 115243.

Spc: Roger. C-band adaptor switch continuous at 115243.

CC: Roger. We would like for you to go back to command at 115923.

S/c: Roger. Back to Command at 115923.

CC: That correct. Flight, Canarvon.

F: Go ahead.

CC: Confirm the GMTRC of the spacecraft is 180243.

S/C: I have a question, Canavron. Looks like we are getting back on the fuel line in order to do the rest of the flight plan as originally scheduled. Is that correct?

CC: Ah, Roger, that's correct.

S/C: Okay. In my flight plan it shows me going to sleep at the last time of about 2030 or so, does that still hold true?

CC: Affirmative.

S/C: Okay.

F: Say again, Canarvon. This is Houston.

CC: Okay. He was checking on his flight plan, he's gonna go to sleep at 2030.

F: Roger. What was your question regarding clocks?

CC: Are you showing a GMTRC of 180242 -----elapsed time we'll take up the flight plan, we'll be back on a fuel line time at that time, correct?

S/C: Okay.

F: Canarvon. This is Houston. Negative on use of fuel, we'll talk to him later on that.

CC: Okay, what about that GMTRC?

F: Standby.

CC: 'Cause I want to change it - it doesn't look good here at all.

F: Canarvon, this is Houston.

CC:] Go ahead, flight.

F:] Understand time should be 18-1, 17+56+03.

CC: Okay, you check flight. That's a....I'll talk to you about it later.

F: Roger.

F: Canarvon, this is Houston.

CC: Houston Flight, Canarvon.

F: Are you skin-tracking?

CC: We are beacon tracking.

F: Beacon tracking??

CC: Affirm.

F: I say, we didn't intend to have the beacon on at this time, you're down at 4 degrees. Make sure he gets it off before the end of your pass.

CC: Roger, we've had LOX TX.

F: Roger.

(Hou)Long count on the PAO release line, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1. Out.

(hou) Testing on the PAO Release Circuit. 1, 2,345, 6, 7 8, 9 10, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1. Do you read, Cape?

.....Eastern Carribbean Ocean acquisition by the Antiqua Tracking Station. There have been no earlier

contacts with the spacecraft since the passover Canarvon,  
Australia some 40 minutes ago. The next station to have  
contact with the spacecraft will be Bermuda two minutes  
from now. This is Gemini control.

This is Gemini Control Houston, 21 hours and 39 minutes into the mission. The spacecraft just passed over the Canarvon Station which we had a rather lengthy discussion with Pilot Ed White. White reported among other things that he had had a very sound sleep earlier, he said Jim McDivitt is asleep at this time. He reported his cabin pressure at 5.7 psi and he reviewed other quantities which looked very favorable - oxygen, for instance, he uh, had at least 40 percent supply left which is slightly above what had been programed. The Mission Director Chris Kraft is considering at this time ordering the Gemini 4 crew to return to the flight plan as laid out, until, at this particular time. Uh, that is, he's going ahead with the normal oms usage, etc. He feels that we, uh, from all the information collected during this first day of flight, that, uh, we have enough reserve to continue with the flight plan as originally laid out. This is Gemini Control at 21 hours and 40 minutes into the mission.

This is Gemini Control Houston. Twenty two hours and 8 minutes into the mission with the spacecraft moving across

the Gulf of Mexico. The, uh, our, we are returning to our, on the next pass will be coming up, will be very much like the first rev of yesterday. We are just starting the 15th rev. At 22 hours and 8 hours into the mission. This is Gemini control.

This is Gemini Control Houston, 22 hours 26 minutes into the flight of Gemini 4. The spacecraft is now in contact with the Canary Station. A very few minutes ago we had a most interesting conversation between CapCom Gus Grissom here in Houston and Ed White. Ed discussed at length his walk in space; he points out in the conversation that over Houston he could see not only Galveston Bay but Clear Lake, a small body of water only a mile from this Manned Spacecraft Center. He also described as the vivid blues in the Gulf and the Carribean area. He said, uh, on this uh, revolution, while passing over Australia he could see very clearly the lights of Perth. He has been advised to follow the normal flight plan with all the maneuvering. During the night the pilots among other things, photographed, took several pictures of Typhoon Carla. At this time we have racked up the tape on the Bermuda conversation and we'd like to play it for you. Here's the tape.

CC: Okay, the last thing I tried to get to you before I lost you just a few seconds ago was that, the, uh, be judicious in the use of your fuel. We think we've got enough to complete the whole flight plan now.

S/C: landmark sightings.

CC: Roger, don't worry about that while in Africa, because that 92 miles away and you're only about 114 miles high at that time.

S/C: Roger We'll be looking for it; that's a real good one for it and we won't use much fuel. Looks like Jim's pretty corked off for now, he hasn't stirred for the last hour and a half.

CC: Okay, I have a news release right here about Mike's baseball team. You want to take it and pass it on to him?

S/C: Affirmative.

CC: Right, the Hawks won their PeeWee League 3-2. They beat the Falcons. The Hawks got three runs on two hits, the Falcons got two runs on three hits.

S/C: Ah, Roger. Understand. The Hawks won 3-2.

CC: Roger. Hey, uh. Here's a headline of the Post today, you might pass on also. Sounds pretty good. Big headlines

are: "Ah, Ed, Please Get Back in the Spaceship!!"

S/C: Say again.

CC: The headlines are "Ah, Ed, please Get Back in the Spaceship!!"

S/C: Say again, I'm not getting it.

CC: Say again.

S/C: Say again, I'm not getting it.

CC: Say again, I'm not reading you.

S/C: It has tough in get in, real tough to get back in.  
That was sure something out there.

CC: Ah good, I have you.

S/C: Were y'all reading us? We never knew when y'all were  
reading us or not?

CC: Yeah, your box was keyed off, we couldn't get  
to you. we were trying to tell you your time was up and to get  
back. Never could get through to you at all.

S/C: In some ways I'm glad you didn't.

CC: Yeah, ha, I could tell that.

S/C: trying to get pictures out  
there, I never did get pictures with my still camera to my  
satisfaction.

S/C: read on the outdoor 16 millimeter  
we should be getting something with that.

CC: Yeah, we should get some good ones. Could you give us  
quantity read for about 10 seconds?

S/C: Quality coming up for test.

CC: Have you had anything to eat yet?

S/C:]I'm in the middle of my first course of and expect  
a good  
some chicken salad, finish it off with ~~parmesan~~ salad and  
orange juice.

CC: We've got your qualities so we'll leave you alone and  
let you eat.

S/C: Say again?

CC: I said, you can turn your quality read off and we'll  
leave you alone and let you eat.

S/C: It's good to talk to you, you get all the news from  
the home front. When we went over houston I could actually  
see, when I was outside I could see the Gulf and Galveston.

CC: Hay, Ed. When you came over on the night pass did you  
actually see buildings?

S/C: On the night pass?

CC: Yeah, you said you could see ..

S/C: No, I couldn't see, see any buildings, and you might relay to the uh, as we came over on this last pass I could see the light of Sidney loud and clear and the .....

CC: Very Good: Ed, uh, you're talking about walking on the spacecraft, were you actually walking on it?

S/C: Yes, I was. I was using thetether to pull myself down towards the spacecraft and I was right on top of it, as a matter of fact. tether operation, works pretty good, but its still hard to get any traction on the top of, but when you pull yourself down, you do get a little bit.

S/C: We need some suction cups or magnets, I guess.

S/C: Yeah got on the adapter too that might have (fade out)

CC: We lost....where is he? Uh.....

This is Gemini Control 23 hours 40 minutes into the mission. The spacecraft is coming across Central America at this time, and we have just sent a command out to turn telemetry on and we should be in contact with the spacecraft momentarily. We have a report from the weather man that the weather over the state should make for very good viewing from the spacecraft. The California coast only fair is the forecast, but as we move east it gets better. The weather man says that the viewing over Florida, for instance, should be very good. In the Gulf area, partly cloudy, but it should make for good viewing. Meanwhile out in the Pacific the typhoon babe, which we have heard so much about the last few days, has downgraded to a tropical storm. It is over Shanghai at the present time with winds of about 40 knots. We have a report also on what was typhoon Carla. It is no more and was downgraded during the night to a tropical storm. It is something less than a tropical storm at this time. Neither of those systems are going to present us with any trouble. We have been looking at an electrical usage curve here in talking with our guidance navigation control officer about it, and in his words were fat on electrical power. The curve shows that at this point we thought we would have had about 1700 amp hours remaining and as a matter of fact we <sup>have</sup> better than 1800 amp hours remaining. This is Gemini Control at 23 hours and 42 minutes into the mission. We still have not established contact, but we will momentarily and will be back with you when we do.

Mission Commentary Transcript

NOTE: There will not be Tape #24 due  
to misnumbering of Tape Boxes  
Tape 25, Page 1

This is Gemini Control Houston, 24 hours, 10 minutes into the flight on the 16th revolution, with the spacecraft southeast of the Kano, Nigeria station. The current elements for our orbit are as follows: 178 statute miles apogee, 178 statute miles apogee, 102 miles apogee, that statute. Our information is 32.56 degrees to the equator. The period of each revolution is one hour, 34 minutes, and 20 seconds. One hour, 34 minutes, and 20 seconds. In the last five minutes we've been in conversation with our flight surgeon, Dr. Berry, and he passes along the following information on the sleep and eat cycle of these two men. Ed White slept ~~XXX~~ lightly from 6 hours and 30 minutes into the mission to 10 hours and 30 minutes into the mission. The sleep was described as little more than dozing. He was then awake for 5½ hours at which time he went back to sleep for a four hour period and at least the first part of that period which extended from 16 hours in to 20 hours, was described as a deep and restful sleep. We know that White has eaten at least two ~~XXX~~ meals and probably more. Each pilot has drunk about a pint and a half of water which, uh, appears to Dr. Berry to be quite an adequate consumption. Jim McDivitt slept

and again his first sleep period was described as a light one. He went to sleep at 11 hours and 15 minutes into the mission; he awakened at 15 hours and 30 minutes in. He was then awake for five hours, he went back to sleep at 20 hours and 30 minutes elapsed time and awoke up a few minutes ago after a good solid 3 and a half hours ~~XX~~ sleep. Jim also has had two meals. Neither man at this time has had a bowel movement and Dr. Berry says this is expected. It is the result of the low residue diet they were on prior to the flight. He said it would not surprise him if neither had a bowel movement today. Perhaps it might be tomorrow before we, uh, either has one. This is Gemini Control at 24 hours 13 minutes into the mission.

(End of Tape 25)

This is Gemini Control Houston, 24 hours and 40 minutes into the mission. Some 8 minutes ago the Canarvon station acquired the spacecraft; a very brief discussion ensued with the pilot Ed white; he said everything looked fine, and the Capsule Communicator at Canarvon assured him that everything looked just as good on the ground. The flight plan for this next revolution calls for, or for the last part of this 16th revolution, calls for a medical update over Guaymas. We will do some HF checks during the next hour or two and we are having the flight plan marked for us now so that we can barely read it. All in all everything is moving along very nicely. The spacecraft directly over Australia at this time. This is Gemini Control out at 24 hours and 41 minutes into the mission.

(end of Tape 26)

This is Gemini Control, 25 hours and 12 minutes into the mission. In the last minute we've established contact with our Guaymas station with the Gemini 4 spacecraft. Earlier we had reported that Jim McDivitt was awake. We had reported that he awoke about 24 hours into the mission. That report was in error. He has continued to sleep, he's been asleep a little more than 5 hours, apparently very deep and restful sleep. We've been comparing notes with the ECon Environmental Control Officer here in the Control Center, and he advises that we have about 35 pounds of oxygen remaining. That is out of a total...we lifted off with about 50 pounds of breathing oxygen on board. He tells me that the pilots used a little over 9 pounds in performing the extravehicular activity yesterday. Their normal consumption rate is 2.2 pounds per day, per man. This gives us plenty of pad on the oxygen department. We also have in the spacecraft ... we lose about one pound per day in leakage and this is the acceptable value on that. With the spacecraft coming across the, uh...Mexico at this time, let's cut in and see if Ed White has anything to say for a live transmission. Stand by.

NOTE: Audio unable to pick up this transmission.

This is Gemini Control, Houston. ....

..... Live transmission. We've moved across the United States and you may have missed the last portion of that, we're still receiving. Stand by. We're right on the tail end of what will be the last transmission from Bermuda, the circuit is getting noisy and ragged. You probably heard McDivitt report that he had not slept particularly soundly. He dozed a bit and he advised that when there is radio contact he can't get his radio all the way down - it's designed that way and it does make for a rather fitful sleep, apparently. He did report earlier, however, that he slept very soundly on his earlier sleep cycle. This is Gemini Control starting the 17th revolution at 25 hours and 26 minutes into the flight.

(End of Tape #27)

This is Gemini Control at Houston, 25 hours and 39 minutes into the Mission, The spacecraft some 600 to 700 miles south of the Kano Nigeria Station. During the next hour and one-half, the Gemini 4 crew will perform at least three checks of their HF radio transmitting equipment. This system is not used for normal flight mission activity. It is used, however, during reentry and close to the water in the recovery process. The primary mode of communication voice communication during a flight is UHF. We had a marginal contact with the Gemini 4 spacecraft a few minutes ago at the Canary station. It was right on the outer edge of the Canaries' contact capability. It was not a long transmission, a very brief sort of contact at which time an update time was passed up to the pilot on one of the HF checks. Everything moving along very nicely, 25 hours and 40 minutes into the mission.

This is Gemini Control at 26 hours and 9 minutes into the flight. At this time the spacecraft is in contact with the Canarvon Station. The medical quantities are being reviewed, the command pilot has just performed a blood pressure check and they are being queried now on their food and water consumption. The flight seems to be progressing very nicely at this point. This is Gemini Control.

(End of Tape # 29)

This is Gemini Control Houston, 26 hours 41 minutes into the mission. We have just lost contact with the Hawaii station in a brief pass there, but a most interesting pass. I mentioned earlier that Pat McDivitt and Pat White entered the control center about 15 to 20 minutes ago. In the course of chatting with Mr. Chris Kraft, he asked them if they would like to talk to their husbands during this pass across the United States. They both eagerly accepted the offer, and they are down on the floor of the Control Center at this time prepared to talk if communications are solid. The conversation will probably await until the latter portion of the pass. We should be in contact with the California station momentarily. We have not yet established it. This is Gemini Control.

This is Gemini Control Houston, 26 hours 54 minutes into the mission. In the last few minutes here in the Control Center, we have had a most unusual occurrence. Pat McDivitt and Pat White came down on the floor. They plugged into the mission director's console and had an extraordinary chat with their husbands. They very kindly consented to share that conversation with us, and we are prepared to play that tape for you right now.

FLIGHT We've got your wives here so put McDivitt on now.

Mrs. McDivitt: Jim

Jim McDivitt: Pat

Mrs. McDivitt: Do you hear me?

Jim McDivitt: Roger. I can hear you. Loud and Clear

Mrs. McDivitt: You are doing great.

Jim McDivitt: Yeah, we seem to be coming along good in all . . .  
How are you?

Mrs. McDivitt: me -

Jim McDivitt: How are you?

Mrs. McDivitt: I'm fine, and how are you?

Jim McDivitt: Pretty good. I'm over California right now.

Mrs. McDivitt: Can't you stop over Texas?

Jim McDivitt: I'll be over Texas in about 3 minutes.

Mrs. McDivitt: Hurry it up.

Jim McDivitt: How are the kids making out?

Mrs. McDivitt: Fine, fine. They think you are at the Cape.

Jim McDivitt: At Cocoa Beach, huh?

Mrs. McDivitt: That's the way they think.

Jim McDivitt: Is everything going okay?

Mrs. McDivitt: Yes, beautifully, beautifully.

Jim McDivitt: You being good?

Mrs. McDivitt: I'm always good. Are you being good?

Jim McDivitt: I haven't much choice, all I can do is sleep and look out the window.

Mrs. McDivitt: No room to move around?

Jim McDivitt: Huh?

Mrs. McDivitt: No room to move around?

Jim McDivitt: Not much. Ed is cluttering up the place.

Mrs. McDivitt: Turn the computer on.

Jim McDivitt: Turn the computer on, yes mam

Mrs. McDivitt: Okay, sir.

Jim McDivitt: The computer is on.

FLIGHT: Is Ed awake?

Jim McDivitt: Yes, he is.

Mrs. McDivitt: Be a good boy now, kid.

FLIGHT. Now switch head sets.

Ed White: . . .

FLIGHT Say again

Ed White: Are you on comp for . . .

FLIGHT Is this Ed? We will get you . . . down here in a second.

Mrs. White: Good morning.

Ed White: Got to push a button, honey.

Mrs. White: Good morning.

Ed White: How are you doing?

Mrs. White: Fine.

Ed White: You have to push the button when you talk and let it go so  
I can talk.

Mrs. White: You are really looking good.

Ed White: Looks pretty good from up here. We are passing over -- coming  
up on the west Texas area within a minute or so.

Mrs. White: Good

Mrs. White: Didn't hear you.

Ed White: Pat, repeat it.

Mrs. White: It looked like you were having a wonderful time yesterday.

Ed White: Quite a time we had, it was quite a time.

Mrs. White: I can't wait to talk to you about it.

Ed White: . . .

Mrs. White: Fine

Ed White: Okay, honey, I'll see you later.

Mrs. White: Okay, have a good flight.

Ed White: Take care, honey, bye bye.

Mrs. White: Bye

This is Gemini Control, Houston, 27 hours and 30 minutes into the mission, on the 18th revolution. From Carnarvan, we've just had a report that they've skin-tracked with the radars the second stage of the Gemini launch vehicle. They report that it's running some 4 minutes and 10 seconds ahead of the spacecraft. We have no elements available on the orbit the second stage is in at this time. Meanwhile the two Pats, Mrs. McDivitt and Mrs. White, are still with us here in the Control Center. They've been in an animated conversation with Dr. Berry, our Flight Surgeon, and Mission Director, Chris Kraft, for much of the past hour. They seem delighted with the progress of the flight, as their conversations with their husbands indicated. Jim Lovell has also joined the group here. Jim Lovell is the backup pilot to Ed White on this mission. Meanwhile, Ed White should be sleeping at this time. He's due for a two-hour sleep at this period. We do not know whether he's taking advantage of it or not. He's been awake for seven hours. In the next pass over the United States, Jim McDivitt will perform what we call an M-3 experiment; that is, he will use the inflight exerciser. The exerciser is a rubbery, or a bungee, cord affixed to the floor of the spacecraft. Each crewman pulls the cord at the rate of one pull per second for about 30 seconds. Each

crewman exercises in conjunction with an aeromedical pass over a ground station, in which readouts are made of oral temperature and blood pressure. The astronaut then exercises with the exerciser and again inflates the blood pressure cuff for a ground station readout. The two crewmen use the exerciser three times daily, additionally, without an aeromedical pass. And, as we've been talking, the Carnarvan station sounds as if it has acquired the spacecraft. The contact was a slightly unintelligible one - a lot of noise on the circuit. But momentarily, they should be in good voice contact as the Gemini craft will go almost directly over the Carnarvan station. This is Gemini Control.

This is Gemini Control, Houston, 28 hours 9 minutes into the mission. Within the last minute, the spacecraft has come in solid contact with the Hawaii station. It is directly over the Hawaii station. However, we have had no conversation between the pilots and the ground at this time. That circuit out there today is quite clean. We are standing by trying to monitor to see if there is any conversation coming in. We have heard none. The Hawaii CAPCOM has called, but the pilots are obviously otherwise occupied. This is Gemini Control.

This is Gemini Control Houston, 28 hours 34 minutes into the mission. We are now entering the 19th circuit around the earth. The Gemini 4 spacecraft lost signal - 1qst contact with the Bermuda station at 1:48 Central standard time, just 3 minutes ago. This was one of the quietest passes across the United States. It started with a medical exercise involving Jim McDivitt at the Guaymas station. This, of course, requires exercise because it involves an oral temperature. / <sup>apparently,</sup> Ed White is about to drop off to sleep. We have indications he has been getting set to go to sleep for much of the last orbit, perhaps dozing a bit the surgeon advises. In the course of the pass, Gus Grissom talked to Jim McDivitt and asked Jim to look at his hatch mechanism on the right side and Jim did, reported on the position of the various handles and springs involved in that hatch mechanism, and we are completely satisfied that it is properly seated and there's no concern there. They have noted a slight rise in the oxygen source pressure the last orbit or two. We were reading a source pressure of about 950 pounds. We asked Gemini 4 to release a little bit of pressure. The automatic valve releases it if it builds up to a 1000 pounds, but we would just as soon manually release the pressure rather than to ask the automatic valve to perform that task. This apparently was done.

Jim McDivitt, in the course of the pass, was preparing to eat a meal. He advised that he had drunk some water previous to the stateside pass, and he planned to drink some more with the meal.

We also tested out, in the course of the pass, an airplane relay. We were talking to the Gemini 4 spacecraft through an aircraft somewhere in the Kennedy area. The relay worked effectively, a noisy relay but a readable relay.

We are prepared to play the tape from most of that pass over the states for you at this time.

S/C Flight, This is Gemini 4

FLIGHT Roger. Say, Jim, when you get a chance, will you check those two palls of the hatch handle and see if they are still free, or see if they are free or if they are locked in their position. We are just trying to run down the hatch problem down here and we want to see if those things are still floating free.

S/C You want me to turn them to lock and then unlock or something like that.

FLIGHT Right. See if the spring is holding them in the lock position. Now, before you do it make sure that handle is stowed up good and tight.

S/C Roger. We can keep it better now, but that doesn't say that the other thing will go around.

FLIGHT Well, is the spring holding them in their position. That is what we want to know. Is the spring letting it float freely.

S/C Yeah, the spring is leading itself right now.

FLIGHT The spring is restraining the valve.

S/C . . .

FLIGHT Okay, that's all you know, thank you.

S/C It did when we operate

FLIGHT Roger, these transmissions are coming through a relay now. How are you reading me?

FLIGHT Gemini 4, this is Houston, transmitting through the relay airplane,  
How are you reading?

S/C . . .

FLIGHT Pretty garbled, but you are barely readable.

This is Gemini Control. We are now 29 hours and 14 minutes into our mission. Spacecraft Gemini 4 is now on its 19th revolution over the earth and currently is on the night side passing over the Indian Ocean about to come up along the coast of Australia. The White Team of flight controllers has taken over the second shift here in the Mission Control Center. Flight Director Gene Kranz is making a status check of all systems. The spacecraft electrical supply is excellent. We still have the same pad, or margin, available that we had at lift-off. There is plenty aboard to complete the mission. Communications are good. There's more than enough oxygen and more than one-half the OAMS fuel load still aboard. The Flight Surgeon reports the crew is in top condition as they continue this flight. This is Gemini Control.

This is Gemini Control. Spacecraft Gemini 4 is now 29 hours and 40 minutes into the mission. The White Team of Flight Controllers has assumed control of this flight. The spacecraft is passing over the Pacific Ocean near Hawaii. As Mission Director Chris Kraft left the Mission Control room a few moments ago, he observed, "I don't see anything at this moment to keep us from going four days, and we will probably do an OAMS reentry." Spacecraft Commander Jim McDivitt reported to the Carnarvan tracking station as he passed over Australia, that Pilot Ed White is sleeping at this time. Earlier, Ed White reported to the Houston Mission Control Center that there was no sign of moisture build-up in the cabin of Gemini 4. Moisture build-up had been evidenced in previous flights. Gemini 4's cabin has been coated with a special cellulose cloth. This is Gemini Control.

This is Gemini Control. We are now 30 hours and 9 minutes into the mission. Spacecraft Gemini 4 has just completed a pass over the States on its 20th revolution. In voice communication with Gus Grissom, spacecraft communicator, Command Pilot, Jim McDivitt, reported he had sighted another object in space. He described it only as an object that appeared to have big arms sticking out. He said he took some motion pictures of this object, but was having some difficulty because of the position of the sun. During this pass over the States, Gus Grissom gave McDivitt some updated times to perform various experiments. This is Gemini Control.

This is Gemini Control. We are now 3 0 hours and 31 minutes into our flight. The Gemini 4 spacecraft is in its 20th revolution and is into the dark side of the world as it passes over the South African continent. As relayed during our last transmission, approximately one half hour ago, the spacecraft commander, Jim McDivitt, had reported sighting an object in space. He said it appeared to have big arms sticking out, perhaps another - or a satellite. He said he had taken some motion pictures of this object, but the sun's position made it difficult to keep the object in view. We have had no further voice communication with the spacecraft since that time. But now we will play back for you the tape recording made during that pass over the States. This is Gemini Control.

S/C In one minutes, GMT time.

CC 23 00 GMT.

S/C Ok. Got that.

CC Perform the D-8 that was scheduled for 33 20 last time.

Perform that at a GMT of 40 00.

CC Ok. Delete the D-8 at 33 20 and perform it at 40 00.

Is that right?

CC 00 40. My fault. Copy that?

CC All right. Third item scheduled - do D-8 - start time of 02 15 GMT.

S/C Ok. We'll have a new D-8 at 02 15 GMT. How many D-8's are you giving? Repeat.

CC We deleted one, the one at 23 00 GMT.

S/C Roger. Thank you. You deleted that one and we have another one at 02 15?

CC That's affirm. Perform S-6 at 00 15 GMT.

S/C That's S-6 at what time?

CC 00 15 GMT. We want you to use minimum fuel on that one.

S/C Roger. I'll use minimum fuel on all of them.

CC Roger, roger. Perform S-6 at 22 35 GMT.

Flight: Guaymas Cap Com.

CC Go, Flight.

Flight: Roger. S-6 is a cellular cloud formation.

S/C Two S-6 - one at 00 15 and one at 22 35. Is that correct?

CC That's affirmative. Say again, Flight.

Flight: Roger. Advise him S-6 is a cellular cloud formation.

CC Roger. S-6 is a cellular cloud formation.

S/C Roger.

CC That's the one at 00 15 GMT. Sorry, that would be . .

Ok. MSC experiments 2 and 3 at a GMT of 30.

S/C GMT of what?

CC 30 minutes.

S/C How many hours. I've got the 30 minutes - how many hours?

CC 00 30 00.

S/C 00 30.

CC Roger. Go BEF on experiments 2 and 3.

S/C Ok. That would be 2 and 3 of a GMT of 00 30 00 - there'd be a GMT hack at that time.

CC That's affirm. Are you still looking at that thing out there?

S/C No, I've lost it. It had big arms sticking out of it, it looked like. I only had it for just a minute. I got a couple of pictures of it with the movie camera and one with the Hasselblad. But I was in free drift and before I could get the control back I drifted into the sun and lost it.

CC Good show. Flight, do you copy?

Flight: Roger.

CC On this S-6 experiment I think we got our times mixed up. This pass elapsed time is confusing.

Flight: Which one are you confused on?

CC Well, there's two of them. There's - this MSC experiment

2 and 3 - it starts at elapsed time or a GMT of 30 minutes  
and it ran to what time?

Flight: To 55 - 00 hours 55 minutes.

CC Gemini 4, Guaymas Cap Com. Ok, we've had LOS, Flight.

Flight: Roger.

END OF TAPE

This is Gemini Control. We are 31 hours and 4 minutes into our mission. Spacecraft Gemini 4 is on its 20th revolution, and we expect to make voice contact with the Coastal Sentry Quebec, a tracking ship in the Pacific Ocean, during this pass. It is expected that the Coastal Sentry Quebec tracking ship will give the flight crew a GO for 33 revolutions the longest yet for an American space flight. We will now transmit to you live the voice transmission between the Coastal Sentry Quebec and Spacecraft Gemini 4.

CC Flight, CAPCOM

FLIGHT GO CAPCOM

FLIGHT The only thing he has got to pass up is just tell him to take targets of opportunity any place free of weather and not wait until the last day to do it.

CC Please be advised that this pass is live on the TV networks back home.

FLIGHT Will you give me your quantity readon.

S/C . . .

CC I've got your 20 4 backup guidance quantities when you are prepared to copy.

CC Gemini 4 CSQ, do you copy?

CC Gemini CSQ, do you copy?

S/C Roger. CSQ, Gemini 4, I read you.

CC Roger. What's your status for 33 1?

S/C We're good.

CC Okay, we're GO on the ground. Uh, I've got your 21 4 load prepared to transmit and transmitting now.

S/C Roger.

CC Roger. Your load is in. I've got your 21 4 backup guidance quantities if you are prepared to copy.

S/C Go ahead, I'm ready.

CC Roger. 21 4. Your  $\Delta V$  will be split between forward and aft 56 ft forward at 1 minute and 32 seconds. 120 ft/sec aft, 2+30, 01 days, 23 hours 53 minutes 23 seconds. 2+42, 8+46,

S/C Roger. 21 4, 56, 1+32, 120, 2+30.

FLIGHT CSQ CAPCOM, Houston Flight

FLIGHT Voice Control, ring CSQ for me, please.

This is Gemini Control. Obviously, we have experienced some transmission difficulties and are unable to bring you this voice transmission live from the Coastal Sentry Quebec. We hope to try again from another station, possibly Hawaii. This is Gemini Control.

This is Gemini Control. Spacecraft Gemini 4 is now coming up over Hawaii, and that tracking station will give the spacecraft a Go-no-go for 33 orbits. Transmission difficulties made it impossible to do this over the Coastal Sentry Quebec, as we had planned. We will now transmit to you live the voice transmission between Hawaii and the Gemini 4 spacecraft.

CC It is 23 58 23.

S/C Roger, 23 58 23.

CC Roger.

S/C Thank you.

CC Also the S-5 experiment, MCC requests crew take terrain photos of any clear areas along ground track and not wait until last day. Crew should identify which areas they are. Did you copy?

S/C Roger. Understand they want us to take areas of terrain wherever it is amenable and not to wait till the last pass. Be advised it looks we ought to save some film, though, until we get the opportunity to make a pass across the southwestern United States tomorrow and make a bunch of sequence photos there if it's ok.

Flight: Roger, that's fine with us.

CC Roger. That's fine with us. Go ahead. Stand by.

Flight: Hello, Hawaii.

CC Roger. I got his tape stuff off. His delayed time T/M off. I relayed the GMT`RC and item 7.

Flight: Ok. Have you had LOS?

CC Negative

Flight Why don't you see if you can get the battery readouts, since we didn't get them at CSQ.

CC Roger. Gemini 4, Hawaii Cap Com.

S/C Go.

CC Can you give us your battery readouts if you did not give them to CSQ?

S/C Roger. We didn't give them to CSQ. We'll give them to you in just a minute.

CC Roger.

CC Gemini 4, Hawaii. Flight, Hawaii.

Flight: Roger, go Hawaii.

CC Roger. We had LOS while we were waiting on the battery readout from him.

Flight: Ok. Very good.

This is Gemini Control. Spacecraft Gemini 4 is now passing over South America on its 21st revolution. There was no voice transmission over the United States. As the spacecraft came over Guaymas, spacecraft commander Jim McDivitt was advised to look for a tropical storm located west of Mexico. We have had no report from him on that. Here at Mission Control Center at Houston, we are checking with SPADETS here - Space Detection and Tracking System - concerning the object that McDivitt reported he saw on his last pass over the United States. They will advise us concerning the known satellites that were in that area at that time. One of these would be the Pegasus V. This is Gemini Control.

This is Gemini Control. We are now 32 hours and 10 minutes into our mission. Spacecraft Gemini 4 is now on the night side of the world passing over the southernmost tip of Africa on its 21st revolution. Flight Surgeon Dr. Duane Catterson reports both men are in excellent physical condition. He said that, as of this morning's report, spacecraft commander McDivitt had taken throughout the flight a little under quarts of water and has eaten two of his complete meals. He said this represents about one half of the normal ground food intake. Pilot White has had a little less than a quart of water but has eaten a little more food than McDivitt. This report was, again, as of this morning. We have had no additional communication concerning food and water from the pilots, since the White Team came on duty approximately three hours ago. This is Gemini Control.

This is Gemini Control. Spacecraft Gemini 4 is now 32 hours and 40 minutes into its mission. At the present time it is coming up on the Coastal Sentry Quebec, our tracking ship in the Pacific. During the last pass we had communications difficulties between the CSQ and the spacecraft. This was due to a power failure on the Coastal Sentry Quebec. It was quickly corrected; however, the spacecraft had already passed out of tracking range and the system will be checked out with the spacecraft as it passes over in the next few minutes. We have had no other voice contact with Gemini 4 since Guaymas. This is Gemini Control.

This is Gemini Control. We are now 33 hours and 9 minutes into the mission. Spacecraft Gemini 4 is on its 21st revolution and at present is approaching the Rose Knot Victor, a tracking ship located at the Pacific Ocean, west of Peru. Spacecraft Commander, James McDivitt, is in a sleep period. Our flight plan calls for Pilot Ed White to be working at this time on various experiments. He is to turn off MSC 1, an examination of the electronic charge buildup outside the spacecraft, using a sensor. He will also conduct a D-8 experiment. This is measuring radiation inside the spacecraft, using a portable sensor. We have had no ground communication with the spacecraft with the exception of some updating of possible landing area data values for the past three quarters of an hour. This is Gemini Control.

End of tape

This is Gemini Control. We are now 33 hours and 40 minutes into our mission. Spacecraft Gemini 4 is now passing over the southern tip of the African continent on its 22nd revolution around the earth. Communications between the ground and the spacecraft have been kept at an absolute minimum for the past half hour. This is directed by our Flight Director, Gene Kranz, in an effort to give Command Pilot, Jim McDivitt, a good sleep period. While McDivitt is in a sleep period, Pilot White has been working on experiments according to our flight schedule. We have had no communication and have no additional information to pass on at this time. This is Gemini Control.

End of tape.

This is Gemini Control. We are now 34 hours and 9 minutes into the flight of Gemini 4. The spacecraft is now off the east China coast and will shortly pass by Midway Island on its 22nd revolution. Astronauts Jim McDivitt and Ed White will thus shortly set a new American record for long-duration space flight since Astronaut Gordon Cooper splashed down approximately 275 miles northeast of Midway in his Mercury spacecraft on May 16, 1963, after a flight of 34 hours, 19 minutes, and 49 seconds. As the Gemini 4 spacecraft comes into voice range of our Hawaiian tracking station in a little more than 10 minutes from now, we will transmit live from that station. The voice conversation between the flight crew and Stew Davis, our Spacecraft Communicator at Hawaii, we expect that Stew will pass on congratulations from the ground. This is Gemini Control.

End of tape.

This is Gemini Control. 34 hours and 21 minutes into the flight. Gemini 4 Spacecraft has set a new long-duration American record for space flight. Gemini 4 Spacecraft is now within voice range of Hawaii. Stu Davis, our Spacecraft Communicator there, will be talking to the crew. We will now go to live voice transmission. This is Gemini Control.

CC I would like to advise you to perform a medical Type 1 pass on pilot over RKV.

S/C Roger. Command a Type 1 medical pass on pilot over RKV.

CC Roger. RKV acquisition in approximately 10 minutes.

S/C Roger. Acquisition affirm in about 10 minutes.

CC I also have a map-up date for you. Are you ready to copy?

S/C Standing by for map-up date.

CC Rev 22 01 07 00 - longitude of ascending node 63° east.

S/C Roger. Understand rev 22 01 07 00 - longitude 60° East

Flight Hawaii Cap Com, this is Houston.

CC 63° East.

S/C Affirmative. 63° East.

CC Roger. I also would like to congratulate you on the new American space flight record - congratulations.

S/C Roger. We got a few more to go.

CC Roger.

S/C Thank you very much.

Flight Hawaii Cap Com, Houston Flight.

CC Go, Flight.

Flight Its about 20 minutes to his acquisition - its about 14 from

your LOS.

CC Roger. Gemini, Hawaii.

S/C OK Hawaii. Gemini 4.

CC Roger. On the acquisition time of the RKV it will be approximately 20 minutes.

S/C Roger. Be approximately 20 minutes for the RKV acquisition.

CC Roger.

CC Flight, I have passed up all the parameters. We've had a TX. We are receiving dumps at this time.

Flight OK. What's your OAMS helium temperature at this time and the oxidizer tank temperature?

CC Stand by, Flight.

CC Flight, Hawaii.

Flight Go, Hawaii.

CC The OAMS helium temperature is 65<sup>0</sup>, the OAMS . . . (garbled) . . Stand by, Flight.

Flight Roger.

CC Gemini 4, Hawaii. Go ahead.

S/C Roger, be advised I have a good view of the Hawaiian Islands now on my window. I'm passing - I will be passing over there in about 30 seconds. There's scattered to broken clouds and looks pretty good. In fact, right now it looks like I'm looking down on - if I'm right, right down on the Island Niihau.

CC Roger, Gemini 4

S/C Looks pretty good.

CC Did you copy, Flight?

Flight Roger.

CC OAMS helium pressure 2,000 psia.

Flight OK, how about the OAMS oxidizer tank temperature?

CC Flight, Hawaii.

Flight Go ahead.

CC 65° also.

Flight Roger.

CC We have completed tape dump.

Flight Roger. How'd your tape quality look, Stu?

CC It looked good here, Gene.

Flight OK.

CC All systems on the ground are looking good.

Flight Very good. You've got what, about 2 more passes coming up, or one more, one more I guess.

CC We have one more in Hawaii following this series of passes.

CC Flight, Hawaii.

Flight Go ahead.

CC TR leads  $\frac{1}{2}$  second, FET lags  $1\frac{1}{2}$  seconds.

Flight Roger.

CC Hawaii's at LOS

Flight Roger, Hawaii.

This has been a live voice transmission of communications between the Gemini 4 space flight and the Hawaiian tracking station. This is Gemini Control.

End of tape.

CC CSQ to Gemini 4.

S/C OK. Roger. Got ....

CC Gemini.....

CC Gemini.....

S/C Hello, CSQ. Gemini 4.

CC: OK. Roger. Got you loud and clear, and you look real good on the ground. Be advised to go to a heads-up position. Heads-up attitude for a type one medical pass over Hawaii. That's in about five or six minutes.

S/C Roger. Understand a heads-up position over Hawaii in five or six minutes

CC Roger. Also over Hawaii the air-to-ground communications will be carried live on television.

S/C Roger. Understand.

CC Houston .....CSQ

Flt Go ahead, CSQ.

CC Is there anything else you want?

Flt Negative. That's a pretty good com for this pass. I didn't think it'd be that good.

CC Say again.

Flt That was a pretty good communications for this pass. I didn't think at that low elevation that you'd do as good.

CC Roger.

Flt Did you get the adapter C-band on and realtime TM on?

CC Gemini 4, CSQ. We have nothing else, we're standing by.

S/C .... CSQ. Thank you very much. Everything's Go up here.

CC Calling Houston Flight. Roger. We got the .....

Flt Roger.

CC Gemini 4, CSQ. Go ahead.

S/C You might ask the .... at Houston if they'd like to have

the break-down medical over one pass .... quite a while back.

I've been taking a few exercises to keep up with the four  
required today myself....

CC OK. Read you with background noise. Understand you want  
to inquire of Houston if they want a type one medical pass for  
command pilot.

S/C Negative. See if they want to make up the one they missed  
a while back.

Flt That's affirmative. Will advise him over Hawaii.

CC Roger. Gemini 4, Houston will advise you over Hawaii.

S/C Roger. That's good.

Flt CSQ Cap Com, Houston Flight.

CC Go ahead, Flight

Flt Roger. Would you verify that the ECS 02 heater switch is off?

CC Roger. Gemini 4, CSQ. Would you verify that the ECS 02 heater switch is off?

S/C Roger. That is affirmative. The ECS 02 heater switch is off and has been off

Flt Roger. We read, CSQ.

CC Flight, did you copy?

Flt Affirmative.

This is Gemini Control. Spacecraft Gemini 4 is now in its 23rd revolution over the earth. Ground elapsed time is 35 hours and 9 minutes. The spacecraft is now -- has now just passed -- is now just coming up on the coast of South America. During the pass over the Rose Knot Victor, a tracking ship off the west coast of South America, Spacecraft Commander, Jim McDivitt was in a sleep period. The Rose Knot Victor flight surgeon asked Pilot Ed White for a medical pass Type 1. This included an oral temperature reading, a blood pressure check, a 30-second exercise period with the bungie cord exerciser, and this was followed by another blood pressure check. White also reported he had 4 hours of good sound sleep. He has eaten a full meal and had about 6 swallows of water. The meal consisted of beef bites, potato salad, fruit cake, and orange juice. After analyzing the data from the medical pass, Flight Surgeon, Dr. Duane Catterson, here at Mission Control Center in Houston, said Pilot White is in excellent condition. This is Gemini Control.

End of tape.

This is Gemini Control. We are now 35 hours and 45 minutes into our mission. The Gemini 4 Spacecraft on its 23rd revolution over the earth. This flight is the longest duration two-man spacecraft flight ever made. Gemini 4 is now over southern Japan. To the people on the ground it is Saturday. In the spacecraft our pilots are going through Friday - Friday night. We have had no voice communication since the spacecraft passed over the Rose Knot Victor tracking ship a little over a half hour ago. At that time, Spacecraft Commander Jim McDivitt was asleep, and Pilot Ed White was busy with experiments. The next station to acquire Gemini 4 will be the CSQ tracking ship in the Pacific Ocean. This is Gemini Control.

End of tape.

This is Gemini Control. We are 36 hours and 9 minutes into the mission. Spacecraft Gemini 4 is on its 23rd revolution over the earth and is now over the Pacific Ocean moving into the night side of the world. Our last voice communication with the spacecraft came as it passed the Coastal Sentry Quebec tracking ship a few minutes ago. Pilot Ed White reported at that time that he had completed the D-8 experiment. This is to measure radiation inside the spacecraft. The Coastal Sentry Quebec also updated the spacecraft for various landing areas. This is Gemini Control.

End of tape

This is Gemini Control. We are now 36 hours and 39 minutes into the mission. The Gemini 4 spacecraft is on its twenty-fourth revolution of the earth and is now on the night side passing near Ascension Island. The last tracking acquisition of the spacecraft was made by the Rose Knot Victor tracking ship off the west coast of South America. There was no voice communication at this time. But the tracking ship reported they had real solid telemetry, that it appeared that the command pilot - the spacecraft commander - was still asleep, and that Pilot Ed White appeared to be working at some task or other. The Rose Knot Victor advised the Mission Control Center that everything looked good from their vantage point. This is Gemini Control.

CC Gemini 4. RKV surgeon. We have a good blood pressure. Standing by for your food, water and sleep.

S/C Roger. Power down. Got four hours of rest, most of which was a good sound sleep. My last meal was ..... , orange juice, .... (remainder of transmission garbled).

This is Gemini Control. It is now 37 hours and 9 minutes since Gemini 4 started its flight. The spacecraft is on its 24th revolution over the earth and at the present time it is coming over the continent - at the present time it is coming over the continent of Asia and will be shortly moving into the Pacific Ocean area. We have been out of voice contact with the spacecraft for approximately 1 hour. Flight Surgeon, Dr. Duane Catterson reports that apparently Command Pilot Jim McDivitt is getting a good long sound sleep. He said the medical telemetry readouts are excellent and that both crewmen are in excellent physical condition. Flight Director, Eugene Kranz, reports the spacecraft systems are all Go at this time. This is Gemini Control.

End of tape.

## GEMINI NEWS CENTER

Release No. 17  
June 4, 1965

HOUSTON, TEXAS -- Analysis by Norad Spadat computational facilities reveals the following earth satellites were within 1000 km (about 600 miles) of GT-4 Spacecraft at the time Astronaut James McDivitt reported the satellite sighting:

<u>Object Identification</u>	<u>Spadats Number</u>	<u>Time (CST)</u>	<u>Distance in Kilometers from GT-4</u>
Fragment	975	2:56	439
Tank	932	3:01	740
Fragment	514	3:04	427
Omicron	646	3:06	905
Omicron	477	3:07	979
Fragment	726	3:09	625
Fragment	874	3:13	905
Omicron	124	3:13	722
10 x 20 Foot Debris of Pegasus	1385	3:16	757
Yo-Yo De-Spin Weight	167	3:18	684

Pegasus B at 3:06 (CST) was about 2000 km in the proper direction to be observed by the astronauts.

####

This is Gemini Control. The ground elapsed time since Gemini 4 began its flight is now 37 hours and 39 minutes. The spacecraft at present is over the mid-Pacific on its 24th revolution around the earth. It is in drifting flight. We have had no voice communication with the flight crew now for more than 90 minutes by design. Spacecraft Commander Jim McDivitt is still asleep from all indications we get on the ground and Pilot Ed White is busy performing various experiments. However, the ground tracking stations report everything is proceeding normally. Here at the Mission Control Center in Houston, our retro controller, Tom Carter, estimates that the second stage of the Titan launch vehicle, which went into orbit with Gemini 4, will reenter about noon tomorrow, central standard time. Its impact point is predicted for  $11^{\circ}$  North latitude and  $173^{\circ}$  East longitude. This is near the Marshall Islands in the Pacific. In the 23rd revolution of the flight, the Titan rocket was 3,000 miles ahead of the spacecraft and 25 to 30 miles below the spacecraft. This is Gemini control.

End of tape.

## GEMINI NEWS CENTER

Release No. 17  
June 4, 1965

HOUSTON, TEXAS -- Analysis by Norad Spadat computational facilities reveals the following earth satellites were within 1000 km (about 600 miles) of GT-4 Spacecraft at the time Astronaut James McDivitt reported the satellite sighting:

<u>Object Identification</u>	<u>Spadats Number</u>	<u>Time (CST)</u>	<u>Distance in Kilometers from GT-4</u>
*Fragment	975	2:56	439
*Tank	932	3:01	740
*Fragment	514	3:04	427
Omicron Transit 4A	646	3:06	905
Omicron Transit 4A	477	3:07	979
*Fragment	726	3:09	625
*Fragment	874	3:13	905
Omicron Transit 4A	124	3:13	722
10x20 Foot Debris of Pegasus -- Shroud (A or B) not a work- ing part of Satellite	1385	3:16	757
Yo-Yo De-Spin Weight- 2' to 3'	167	3:18	684

Pegasus B at 3:06 (CST) was about 2000 km in the proper direction to be observed by the astronauts.

\*4' to 6' in length down to 15" in length, 2' to 6" in width.

####

. . . . 16 minutes ago. Blood pressure readouts in the Command Pilot were begun during the pass over the Rose Knot Victor as well as oral temperature readouts. But completion of these was postponed until the pass over Ascension Island voice remoting station. The spacecraft should be in contact with Ascension at this time. This is Gemini Control.

End of tape.

This is Gemini Control, 40 hours, nine minutes after liftoff. Gemini 4 spacecraft is now just southeast of Teheran, Iran, midway through the twenty-sixth revolution. During the pass over the Kano, Nigeria, Voice-Remoting Station, the flight surgeon passed up some more Little League baseball scores to the crew. Mike McDivitt plays for the Hawks, and Eddie White plays for the Dodgers. Both teams won their games. A tape recording of this voice transmission follows. This is Gemini Control.

CC Gemini 4, Gemini 4. Houston Cap Com. Over.

S/C Gemini Houston, Gemini 4.

CC Roger, Gemini 4. I'd like to explain this split burn to you. Over.

S/C Houston, send a release,,you're still keyed.

CC Gemini 4, Gemini 4. Anytime your OAMS burn is greater than 120 feet per second, we will give you a split burn -- 84 feet out of the forward thrusters and a balance out of the aft thrusters. Do you understand? Over.

S/C OK. Anytime it's greater than 120 feet per second, give it 84, that's eighty four out of the forward, rest out of the aft.

CC Roger. You got it, Jim, and we will be standing by at all these remote sites. I'll just give you a call and say standing by; and if you get lonesome and have any comments, you can come on up and we have a few personal messages here from the doctor. Over.

S/C OK.

CC Gemini 4, this is Houston surgeon. I have a message for the Command Pilot. Little League score of the Hawks, 3, the Pelicans, 2; and Mike walked. Do you copy? Gemini 4, this is Houston surgeon. Do you read?

S/C Roger. I do.

CC Did you copy the score for the Hawks - Pelican game?

S/C Roger. Boy! Did I ever!

CC Roger. A message for the pilot. The Dodgers, 11, the Yankees, 10; and Eddie had one for three.

S/C OK. He's sleeping right now, but I'll tell him when he wakes up.

CC Roger. You can also advise him that his wife received the flowers. She forgot to tell him that today when she was on air-to-ground.

Cape Receivers Note:

RE: Tape 56, Page 3

The following page was erroneously omitted during the night's transmissions:

Bottom of Page 2, Tape 56, "End of Tape" should be removed.

Button

S/C OK.

CC Houston surgeon out. Jim, this is Cap Com. You also might tell the pilot when he wakes up that Jim's here, and he's going to give him one more chance to change seats with him.

S/C Roger.

CC Hey, listen. The only free water we've got in here is anytime we've tried to use that urine system.

CC Have fun, Gemini 4, and as I say, anytime you get lonesome, we'll be standing by in the remote sites.

S/C OK.

End of tape

This is Gemini Control. 40 hours and 39 minutes after lift-off. The Gemini 4 spacecraft is now over the New Hebrides Islands in the southwest Pacific in an orbit measuring 101 statute miles at perigee and 172.5 statute miles at apogee. The next station contact will be with the tracking ship Rose Knot Victor 29 -- 21 minutes from now. This is Gemini Control.

End of tape.

This is Gemini Control. 41 hours and 11 minutes after lift-off. The Gemini 4 spacecraft has just crossed the west coast of South America and is now over the southern Peru. During the pass over the tracking ship Rose Knot Victor just completed, a Type 1 medical data pass was to have been run on Pilot Ed White; but since the pilot was still sleeping, the medical data check on him was postponed until a later pass. The Type 1 checks are run once daily on the Command Pilot and once or more per day on the Pilot. The checks involve measurements of oral temperature, blood pressure, plus exercise on the bungie exercise device once per second for 30 seconds. The RKV Cap Com reported to the Flight Director that the spacecraft looked good on his telemetry readouts. A tape of this pass follows. This is Gemini Control.

S/C RKV, this is Gemini 4.

CC Roger. Were you expecting a Type 1 pass on you this time?

S/C Roger. I'll hurry up my system heating . . . . .

CC Roger. Insert the oral temperature probe and we'll stand by. We've got 8 minutes so it should give us plenty of time to do it. Gemini 4, if you have just had a drink of water it won't do you any good to insert the oral temp probe.

Roger. This aero-med pass is on the pilot.

S/C He is still asleep.

CC Don't bother to wake him. Do not bother to awaken the pilot.

S/C Say again.

CC Do not bother to awaken him for it. We'll hold on until later on.

S/C Roger. I didn't plan to get him up for another 10 or 15 minutes.

Do you want my temperature and blood pressure?

CC Gemini 4 stand by and we will check with the Cape and see what they want, Ed. Flight, RKV.

Flight Stand by. Negative on that, RKV.

CC Roger. We will just stand by on this one then.

Flight Roger.

CC Gemini 4, RKV. Negative on the Type 1 on the Command Pilot.

Did you copy?

S/C Roger. You don't want a Type 1 pass on the Command Pilot.

CC That's negative. We'll just stand by on this one.

S/C OK. Sorry we don't have any business for you.

CC Everything looks Go here on the ground. The surgeons here advise that the pilot appears to be sleeping very good.

Flight Roger.

CC Will you want a playback on this aero-med data? Its very nominal here.

Flight Negative on that, RKV.

CC Roger. Thank you. Primary O2 tank pressure is running 957.

Do you want us to advise him to go to O2 high rate and run that pressure down?

Flight I think he's keeping an eye on that RKV.

CC OK.

Flight RKV, this is Houston Flight.

CC Roger, Flight.

Flight You know the standard procedure for doing that now. We are not using the O2 high rate, we are using the repress valve.

CC Roger.

Flight Apparently going to high rate disturbs the crew when they are asleep because you get extra noise when the fans go off.

CC Yeah, I imagine that could make quite a difference. Everything still looks good from here, Floyd. TR and FET are within one second.

Flight Roger.

CC We have had extremely solid TM all the way through this pass.

Flight Roger, RKV. Are you running on low power -- HF?

CC That's negative. We went back to high power.

Flight Roger. You're coming through loud and clear now.

CC Roger. The RKV has had air loss.

Flight Roger, RKV.

End tape.

Flt Roger. That should then be at -- let's get that GNT --  
170 is three hours and ten minutes, 11:40 ZULU.

CC Roger, Flight. Their T 0 is scheduled for 11:42 ZULU.

Flt OK. That gives us -- it'd be about Canary.

CC Roger

Flt That really shouldn't any trouble at all.

CC No. It's ....

Flt What's their predicted length of mission?

CC 30 minutes.

Flt Due west for 30 minutes.

CC Roger. It's quadrulant. Even if the spacecraft is in the  
Pacific, they're down so low ....

Flt We've got a 2,250 nautical mile safety on the thing, so  
we'll hold them if they get within 2,250 nautical miles of the  
impact point. Nine minutes.

CC Is -- The long and lat he gave me was 168° East, 9° North.  
And were in the Southern Hemisphere at that time. There'll  
be no problem about that. Their launch window runs from  
11:35 to 15:35.

Flt OK.

This is Gemini Control. Forty-one hours and 39 minutes after liftoff. The spacecraft is now in it's twenty-seventh revolution and over the northern sector of the Arabian Peninsula. During the recent pass over the Canary Island Tracking Station, the crew was given information on Apollo Land Mark Experiment in the northern part of Africa. The pilot, Ed White, was awakened for the type one medical check that was omitted during the pass over the tracking ship Rose Knot Victor. This is Gemini Control.

Flt Roger. Houston. You look good from here. Stand by - we want you to wake the pilot up. We will run an aeromed pass one at this time.

S/C Roger. Just got him up.

Flt OK. Stand by for my surgeon on UHF.

CC Pilot, this is Canary surgeon. Would you pump up the blood pressure cuff?

S/C He just put the thermometer in his mouth, and he's getting the cuff on.

CC Gemini 4, you need not take oral temperature. We will not have time. We will dispense with that. Proceed to pump up

your blood pressure cuff.

S/C OK. Canary, is this Apollo land mark investigation to be done with or without fuel?

Flt Without. Canary, this is Houston. Without fuel, do you read?

CC Yes. Gemini 4, this is Canary surgeon.

S/C Go ahead, Canary surgeon. Gemini 4.

CC Your blood pressure was received. Begin exercise, on your mark.

S/C Mark. Did you get our mark?

CC Check. We received your mark.

S/C OK. We're sending a blood pressure now.

CC Gemini 4. Canary surgeon. Your cuff is full. Have you completed your exercise?

S/C Roger.

Flt Houston Flight, Canary Cap Com. Calling on the SOP, we should be turning ourself off now. I will let it run until nearer LOS.

CC Gemini 4. Your blood pressure has been received. May I have your food, water and rest status.

S/C Roger. Gemini 4. I just got up from a long winter's nap. I had a four and a half hour sleep. Out of that time I probably had a good three and a half hours of sleep. I've had, since I got up, three swallows of water, I finished my -- before I went to bed I had Meal A of Day 2, and I'm getting ready to eat Meal 2 of .... Meal 3 of Day 2.

CC Very good. I will return you to Cap Com. Canary surgeon, out. Gemini 4, Canary Cap Com. We're at LOS. Do you have anything more?

S/C Roger. I'd like to know if this Apollo Landmark specification coming up is with or without fuel.

CC Roger, Flight, did you copy?

Flt Roger. Without maneuvers. Without OAMS.

CC It is without fuel.

S/C Roger.

end of tape

This is Gemini Control. Forty -two hours, 9 minutes after liftoff. The Gemini 4 spacecraft is now over Townsville, Australia nearing the end of the 27th revolution. No contact has been made with the spacecraft since early in this revolution over the Canary Island Tracking Station. The next station to be in radio range of the spacecraft will be the tracking ship Rose Knot Victor, 26 minutes from now. After this brief two minute pass, the RKV can retire for the night until the 3 th revolution, some 20 hours from now.

This is Gemini Control.

(End of Tape)

This is Gemini Control, 42 hours 39 minutes after lift-off. The Gemini 4 spacecraft is now approaching the west coast of South America, just south of Guayaquil, Ecuador and is in voice contact with the tracking ship Rose Knot Victor. The spacecraft is in an orbit measuring 101 statute miles at peragee and 172 statute miles apogee. Additional Apollo landmark experiment data was passed to the crew during the pass over the Rose Knot Victor tracking ship. This is Gemini Control.

End of tape.

CC: Roger, I have some Apollo updates for you.

SC:

CC: Roger.

S/C: Do we have

CC: Roger, Apollo landmark close to approach. Left 28, number 11, GMT 101651, 28 miles south, number 12, GMT 102150, 6 miles south, number 13 GMT 102530, 1.5 miles north, number 18, 103013, 28 miles north. No attitude control will be used for these maneuvers.

S/C: Roger, understand, go right ahead control, would you read

CC: Roger, the first one was on number 11, 101651, 28 miles south,

S/C:

CC: four updates

S/C:

CC: Ah, Roger, everything looks good from down here.

S/C:

CC: Ah Roger, we understand on that.

S/C: RKV?

Flight for No. 12 Apollo update. I have a time of 102190 and the chart is 102650, which is correct?

F: Correct number is 102150 zulu.

CC: Roger, that's the number I gave him.

CC: Gemini 4, we'll have LOF in about one minute here. Do you have anything?

S/C: CapCom this is Gemini 4, be advised that the Apollo landmarks, the attitude, no it's not that, we can't get very much out of them.

CC: Roger, we understand on that, that's okay.

S/C: Roger

F: RKV, this is Houston Flight.

CC: Roger, go ahead.

F: Tell him on numbers 12 and 13 he can use fuel sparingly.

CC: Flight advises that on numbers 12 and 13 you can use fuel sparingly. Do you copy?

S/C: Roger, on numbers 12 and 13 I can use fuel sparingly.

CC: Roger.

S/C: Roger, I'll be..

This is Gemini Control, 43 hours, 9 minutes after lift-off. The Gemini 4 spacecraft is now over Benghazi, Libya early in the 28th revolution. During the pass over the Canary Island tracking station which began 13 minutes ago, the Canary Cap Com advised the crew of Gemini 4 that the spacecraft systems all look green from the ground. A tape recorded during the pass over the voice remoting station at Antigua follows. This is Gemini Control.

CC Gemini 4, Gemini 4, this is Houston Cap Com. Over.

S/C Gemini 4.

CC Roger, Gemini 4. We'd like your quantity read switch on for about 10 seconds please.

S/C Roger. On for 10 seconds.

CC Gemini 4, this is Houston.; I have a map up-date for you.

S/C Roger. Go ahead.

CC Roger. The ascending node of rev 29, 119<sup>0</sup> West, GMT 12 56 46.

S/C Roger. We have 29, 119<sup>0</sup> West, 12 56 46.

CC Rog, Ed, and you can delete -- its an error on your flight plan -- delete at elapsed time of 45 minutes, correction, 45 hours and 15 minutes, delete the M-3 experiment. That is an error in your copy of the flight plan. Over.

S/C Roger, 45 hours and 15 minutes

CC Roger.

This is Gemini Control

This is Gemini Control, 43 hours, 11 minutes after lift-off.

We now have a tape recording of the voice transmission during Gemini IV's pass over the Canary Islands Tracking Station during the 28th revolution. The tapes follows. This is Gemini control.

CC Gemini IV, Canary Cap Com.

S/C Go ahead Canary, Gemini IV.

CC Roger. Your systems look green.

S/C Roger. The pass systems are green. Thank you. We look good up here.

CC Gemini IV, Canary Cap Com. Is your quantity switch in the read position?

S/C That's affirmative. I will turn it off now.

Roger. It's off.

End of tape.

This is Gemini Control, 43 hours, 39 minutes after liftoff. The Gemini 4 spacecraft is now over Central Australia, mid-way through the 28th revolution. During the pass just ended over the Canarvon Tracking Station, routine retrofire times for several planned landing areas were passed to up/the crew by the Canarvon CapCom. This is Gemini Control.

CC: Gemini 4, Canarvon CapCom.

S/C: Gemini 4, go ahead.

CC: Roger, read you loud and clear. Can you give me a little info on how your control went over North Africa and how much pul.....did you do?

S/C: Roger, control in about the middle of the target of number 12 when by I had the period of pretty well squared away I could see the target, I believe. Target number 13 did work and clear, I was able to pick up the City of Alexandria, an airport and I think perhpas I have been able put my attention airport, I went ahead and operated the camera and took come pictures and I passed over the location on target from the data called up was it exactly.

CC: Roger, what time did you turn your ACME power supply off?

S/C:Roger: I turned the ACME power supply off I would estimate about 235.

CC: Roger, I under rate of a pitch

S/C: Roger

CC: 30-110902+191300134+529+4031-184 Aft will be 42X 2+20

0+541434223+549+1832-184 aft~~XX~~ will be 562+201+11160816

3+058+5333-184 aft will be 682+201+271742152+378+4934-4120

2+322029043+338<sup>1</sup>5529 Bravo 8450 Aft 2+201+0310163512+0830Bravo

1202+3213501912+2931Bravo952+0115300921+4832Bravo861+5017

050110+4033Bravo841+4718362810+01 Over

S/C: Roger, I got 'em all 'cept for one quantity 3-1 aft company

CC: Aft company 68

S/C: Roger 68 I have quality readouts.

CC: Okay, very good, you look real good here.

S/C: Roger, any other thing?

S/C: Ah, you don't have a new map-up date for me do you?

CC: Not at this time, you'll get a log

S/C: Roger, I'll be waiting for another one

CC:] Roger, I'll pass that on to Houston

This is Gemini Control, 44 hours, 16 minutes after liftoff. The Gemini 4 spacecraft is now nearing the Panama Canal Zone. No contact has been made with the spacecraft since the pass over the Canarvon Tracking Station earlier in the 28th revolution. We have now begun the 29th revolution. This is Gemini Control.

This is Gemini Control, 44 hours, 39 minutes after liftoff. The Gemini 4 spacecraft is now over the Libyan Desert, southwest of Tripoli at the beginning of the 29th revolution. The Canary Island Tracking station contacted the crew of the spacecraft and reported that the spacecraft looked good from there. The Command Pilot reports everything is go for the spacecraft. The spacecraft is in an orbit with a perigee of 98.3 statute miles and an apogee of 158.2 statute miles. This is Gemini Control.

(End of tape)

This is Gemini Control, 45 hours, 9 minutes after lift-off. At the present time the Gemini IV is directly over the Carnarvon, Australia tracking station. Spacecraft crew reports that everything looks good from their end. This will be fairly long track across the Carnarvon station, in that it comes, the spacecraft orbital track comes directly across the circle of acquisition of this station. This is Gemini Control.

Mission Commentary Transcript

This is Gemini control, 45 hours, 39 minutes after lift-off. The Gemini IV spacecraft is now over the mid Pacific and will cross Mexico and Cuba 10 minutes from now. The Bermuda tracking station should have a good solid data and voice pass this trip, as should the Canary Island station shortly thereafter. This is Gemini control.

This is Gemini control, 46 hours, 9 minutes after lift-off. Gemini IV spacecraft is now crossing the northeast coast of Africa, south of Casa Blanca and is in radio contact with the Canary Island tracking station. The crew provided the Houston flight surgeon with blood pressure and oral temperature readouts, as well as food and water usage report. Also the flight plan was updated by Houston Cap Com. A tape recording of the pass over the stateside tracking station follows. This is Gemini Control.

Flight Gemini IV, Gemini IV, Houston Cap Com, over.

Flight Gemini IV, Gemini IV, Houston Cap Com, over.

S/C Houston Cap com, Gemini IV.

Flight Roger, we are receiving your oral temp. We would like your quantity read switch on throughout the state pass, over. This is Houston Cap Com. You can commence your blood pres-sure at this time and I am turning you over to aeromed, over. Gemini IV, this is Houston surgeon, we have your oral temperature you can send blood pressure now. Your temp is full scale. Blood pressure is received Gemini IV. Start exercise on your mark.

S/C On your mark.

Flight Blood pressure is received. Standing by for your food and water report. We have your sleep report from Canaries at 09 06 zulu.

S/C Roger, understand. I have completed the second meal and had

approximately 6 swallows of water. I also had a good use of the defecation pack. And everything is in good shape.

Flight Gemini IV, Houston Cap Com. Put your quantity read switch on and leave it on until I tell you, over.

S/C Roger, it's on now.

Flight Roger, I have some flight plan updates. Are you ready to copy? Gemini IV, Houston Cap Com, are you ready to copy flight plan update, over.

S/C . .

S/C Okay Houston, Go ahead, Gemini IV.

Flight Roger. At GET of 47 plus 00 delete. Translation 2 alpha. Horizon scan moon set check and horizon scan thruster plume check. Gemini IV at a G.e.t. of 47 plus 00 minutes insert Experiment D-9, run 1 at GMT of 14:14:00 with OAMS. I say again with OAMS.

S/C This is Gemini IV. I understand that at elapsed time of about 47 hours you want translation 2 alpha, horizon scan, plume set check and horizon scan thruster plume check and insert D-9, run 1 at 14:14:00 with OAMS.

Flight Check, that is affirmative, Gemini IV. Also concerning Experiment MSC 1, we would like you to turn your ACK beacon off for a period of about 5 minutes during the period of your MSC 1 experiment. Recommend you do this between Conno and Carnarvon, this pass, over.

S/C I understand you want MSC 1 Experiment - the beacon turned off for 5 minutes.

Flight That's affirmative, Gemini IV. They want about 5 minutes of this experiment with your ACK beacon off when there are no UHF transmissions.

S/C Roger, you want me to go to real time, delayed time, or you want me to turn the ACK beacon off at the circuit breaker.

Flight Roger, use the circuit breaker.

S/C Okay.

Flight Gemini IV, Houston. We would like a repeat on your food and water report.

S/C From the pilot, or do you want a new one from me.

Flight That's from the pilot, please.

S/C Roger, this is the pilot. I had, about 3 hours ago I had meal 2, day 2. I had about 4 1/2 swallows of water. I had a successful use of the defecation bag.

Flight Roger, Gemini IV.

S/C Houston, this is Gemini IV. There has been a . . .  
What stations are we passing over right now.

Flight Roger, we have you Bermuda right now. You just passed through Texas and Canaveral.

S/C Roger.

Flight Good morning Jim, how do you feel?

S/C        Feel pretty good.

Flight     You sound great.

S/C        Thank you. How are you?

Flight     Had a good night's sleep?

S/C        No, I got a little more sleep this time though, than I  
            have been in the past.

Flight     How about that plug in your throat there. Have you taken  
            that out when you were sleeping?

S/C        No, No, negative. No I didn't disconnect my radio. I left  
            it on.

Flight     Did it bother you at all.

S/C        Has been up till now but this time I guess I was pretty  
            tired and I slept without it.

Flight     Very good.

Gemini IV, Houston. You can turn your quantity read switch  
off now.

Gemini IV, Houston Cap Com. You can turn your quantity read  
switch off.

S/C        Roger, it's off.

Flight     Roger, you are looking good here. Have a good day.  
            Which we will play at this time. This is Gemini Control.

CC         Gemini IV, Canary Cap Com.

S/C        Go ahead Canary, Gemini IV.

CC         Roger. Request that you use the cabin repress valve instead

of O<sub>2</sub> high rate. Also be advised that Houston says do not relieve through the cabin if you can avoid it.

S/C We don't have any other place to put the oxygen except in the cabin.

CC Roger. They are wanting you to avoid relieving through the cabin relief.

S/C O<sub>2</sub> pressure down to 9 hundred and 10.

CC Roger, I understand. 9 10.

S/C Could you tell me why that they want to use the repress instead of the O<sub>2</sub> high rate. Where else are we to put the oxygen.

CC Roger.

Flight Canaries, this is Houston.

CC Roger, Houston, go ahead.

Flight We were using the repress because the O<sub>2</sub> high rate switches off the fan and tends to be noisy. Wanted to do this to keep the noise down in the cabin when one pilot was asleep. As far as the relieving - we were talking about relieving overboard. Don't - ask him not to not to let the cabin pressure get so high that he actually relieves O<sub>2</sub> overboard. Normal system. You can point out to him that his O<sub>2</sub> use in the last couple of hours is about 25 percent up over the average for the day.

CC Roger. Gemini IV, Canary Cap Com.

S/C Go ahead.

CC Roger. The reason for using the repress is to avoid turning off your fans and to cut down on your noise level in the cabin.

S/C Okay.

CC Do not relieve overboard, if you can avoid it.

S/C Okay Canary they don't want me to vent the ECS O<sub>2</sub> overboard.

Roger, they want to vent it overboard through the cabin. Is that it?

CC They don't want to avoid overboard at all if possible.

S/C Roger. I know it.

CC Okay. Your O<sub>2</sub> usage for the last 24 hours, correction - Flight Canary Cap Com. Was that 24 hours?

Flight Negative. Over the last 2 or 3 hours.

CC Over the last 2 or 3 hours has been 25 percent higher than normal.

S/C Roger. Our cabin has been holding alright. There really isn't too much we can do about that. That tank pressure goes up and that is just about all there is to it. We are actually venting oxygen overboard that we don't need to.

CC Roger

S/C How is O<sub>2</sub> consumption. I have been plotting it and it looks like we are in reasonably good shape.

Flight That's affirmative Canary.

CC Flight, Canary. Do you have time on his O<sub>2</sub>?

Flight Roger. He is in real good shape. He's got oh somewhere  
between 5 and 10 hours above what we need. Plus the secondary.

CC Five or 10 hours above necessary plus secondary.

Flight Even at the rate he is using it right now.

CC Your rate, even at your present rate, you will have enough  
for 5 or 10 hours more than you need plus secondary O<sub>2</sub>.

S/C Okay, fine. Thank you. Planning to take your advice about  
not venting any overboard but I just don't know how I'm going  
to do that.

END OF TAPE

This is Gemini Control Houston, 46 hours and 40 minutes into the mission on the 30th revolution. Two minutes ago the Canarvon station acquired the Gemini 4 spacecraft. The opening voice contact was requested the status of Jim McDivitt, he came back, he said we're in good shape up here and the ground said he looked good also. Mission Director Chris Kraft is now chatting with the capsule communicator at Canarvon. The, uh, one observation he's made...we'll break this transmission because, he, we're apparently having feedback on the line. This is Gemini Control.

(End of Tape)

This is Gemini Control, 46 hours, 55 minutes into the mission. We've completed another shift change of Flight Controllers here in the Control Center and this is settling down to becoming a fairly routine practice now. It consists to an half an hour to 45 minutes of discussion between the oncoming shift and the outgoing shift member, conducted informally. We purposely try to schedule the shift change at a period when there is very little activity, no station contact; so that the full discussion can cover the previous eight hours. A word or two should be said on the operation of the Mission Control Center here throughout this flight. It's been nothing short of outstanding. We've had no problems in our very complex communications system. Our computers have performed just an outstanding, uh, in an outstanding way. Here on the floor in the Control Center we've been,....the only small problem we have had has occurred in the last hour or two. A transformer in one of the consoles got a little hot and it was decided to replace it. The, uh, scence, then, uh, became something like a pit stop at Indiannapolis, about three people descended on the console, pulled the front and

the back off, reached in very quickly and took out a small electrical device, it was replaced in a matter of minutes. At, uh, we are ready at this time to play for you the tape of the Canarvon Station which the spacecraft departed some 5 minutes ago, and let's hear that tape now.

CC: Gemini 4, Canarvon CapCom

S/C: We're Gemini 4

CC: Roger, What's your status?

S/C: Well, uh, we're in good shape.

CC: Well, you're looking real good on the ground, I'd like a few readouts from you.

S/C: Okay

CC: I'd like OMS source helium temp, pressure and propellant quantity.

S/C: On propellant quantity I have about 61 percent, it fluctuates between that and 63.

CC: Roger, how 'bout your helium temp and your helium pressure?

S/C: My helium temperature is about 58

CC: Good

S/C: ...and the pressure is a little under 2 thousand

CC: Say a little under what?

S/C: ~~Three pounds~~ Two thousand

CC: Ah, roger.

CC: Houston Flight, Canarvon CapCom.

F: Go ahead.

CC: Okay, OMS source helium temp is 58, helium pressure  
a little under 2000

F: We copied all that Ed.

CC: Okay, nothing else then.

F: Roger, we're reading him, you extremely well this  
morning.

CC: Roger, the communications with him seemed really  
improved as we continue the mission.

F: That's right.

CC: Good equipment. Okay, we're standing by here on the  
ground if you have anything. ~~WXXXXX~~

S/C: we're preparing to do Experiment B9 and we probably  
won't have any transmission for you.

CC: Okay, very good.

CC: Flight, Canarvon, we're not getting you any good.....  
skin track.

F: Roger

This is Gemini Control, Houston, 47 hours and 10 minutes into the mission. We've been out of touch with the spacecraft now about 10 minutes, ever since it left Australia. It will be another five minutes before it starts swinging across Mexico on a pass that will carry it across the Gulf and Florida. Uhhhh, the, in the next hour the pilot plans to perform some terrain and weather photography over the United States. Uh, all in all, we're looking fine here, should have contact perhaps in two to three minutes, This is Gemini Control.

End of Tape

This is Gemini control, Houston, in the 31st rev of the spacecraft over the Australian Continent. In the past hour we have had a report from Tannarive that they have been pleged by power failures out there, which has reduced their capabily on the teletype contact with this station. They plan to vertually shut down the station for the next 3 to 4 hours and expect to be back up with us around noon our time. In the last stateside pass we had planned to do some D-9 experiments. Or in other words do some star sextion tracking. This was not done however because the stars could not be seen in the daylight. The two are however performing star tracking experimentation right now over Australia. They've advised us because the are working with the sexton and controlling the attitude of the spacecraft there will be very little conversation during this pass across Australia. In the most recent pass across the states command pilot Jim McDivitt in a discussion with the flight surgeon noted some dryness in the throat which is expected from the oxygen atmosphere in the cabin. But, of - another medical sidelight of some interest to Dr. Berry however, was McDivitt's statement that at the end of the first day or since the end of the first day some irritation around the eyes which is expected from an oxygen invironment has cleared up. Gordon Cooper noted the same sort of irritation in his day and a half flight. The medical people here are wondering what's been planned to find out a little more about this. They would like to know what the position of the faceplate has been since the end of the first day. The thought being that that could bear on whether there's - on this clearing up of the irritation

around the eyes. The cabin humidity at last readout was 58.5 percent. We have just lost signal with Carnarvon in the last minute as the spacecraft swings up across the Pacific, in contact with Canton Island station in 3 or 4 minutes. Meanwhile we have racked up the tape on the last United States pass. We are prepared to play it for you now.

Flight Gemini IV, Houston Cap Com.

S/C Go ahead Houston, Gemini IV.

Flight Roger. You busy with D-9?

S/C No. I think it just drew to a close. We just can't see the stars in the daylight and I can't carry out the daylight portion of it. We will wait until we get back to the night time and do a little more with that.

Flight Roger. I want to talk to you a little bit about this O<sub>2</sub> high usage rate thing.

S/C Okay.

Flight We don't think it's any problem. We would like for you to put your quantity read switch on and leave it on for the next several hours so that we can get a feel for what's going on. We want to try to - even at the rate that it's been used the last several hours. It won't be any problem. We would like to find some way to control this thing so it won't be a nuisance to you, so you won't be bothered with it. This is the reason we want to take a look at it for some time. Don't like the idea of you having to relieve pressures or build up pressures every few minutes. You read me?

S/C Houston, Gemini IV. I got the . . . . . to leave  
the read switch on for awhile and then all the rest cut-off.  
Say again.

Flight Okay. Jim, how do you read now?

S/C For the next couple of hours - say after that.

Flight Wait until we get Bermuda acquisition. I'll tell you there.

S/C Okay.

CC Go ahead Houston,

Flight Roger.

CC Bermuda

Flight What I was saying is we want to get a hack on whats going on  
with that pressure buildup in the primary O<sub>2</sub> system. We want  
to try to find someway to control without you having to  
re relieve cabin pressures every few minutes or every few hours  
so this is the reason we want your quantity read switch on  
for the next several hours.

S/C Okay. What did you say about my usage?

Flight It is a little bit higher than it has been but nothing to  
worry about. You've got - you have plenty so don't be concerned  
about it.

S/C Okay. In plotting it, it looks like we are going to end up  
with 7 or 8 percent, maybe.

Flight Yeah, we are just trying to find someway to keep you from  
having to relieve the cab pressure every now and then.

S/C Okay. I don't like that either.

Flight Say ah - the flight surgeon would like to know if either one of you have had any trouble with drying around the eyes or dry throat.

S/C My throat is a little dry. And our eyes were burning us by the end of the first day, but that's all cleared up now.

Flight Okay. Very good.

S/C Hey Gus, could you give me a G.m.t.

Flight Roger, I'll give it to you at 14:45:00 in about 20 seconds.

S/C Roger, 14:40

Flight 10 seconds to go. That'll be 14:45:00 on my mark. MARK

S/C Roger. 14:45:00.

Flight Any complaints?

S/C No, except this thing isn't very big

Flight Your next pass over the states we'll have the latest news for you.

S/C Okay, very good.

END OF TAPE

This is Gemini Control Houston, 48 hours, 42 minutes into the mission on the 31st revolution. Some information for you on the fuel, the onboard OMS's fuel. We still have 195 pounds remaining as compared to 360 pounds at liftoff. In the last 24 hours we've used virtually no fuel although there has been some attitude adjustment here and there to snap a picture. Our systems people advise however there's been no measurable decrease. In the oxygen department we have 27½ pounds of oxygen remaining in our primary tank, this compares with 50 pounds at liftoff, 24 hours to go we reported our remainder was 35 pounds and this would indicate a usage of something on the order of 7 to 8 pounds in the past 24 hours which follows very carefully, very closely, the expected plot. In addition to our primary oxygen tank, we have a two back-up, uh, secondary oxygen tank, each containing enough oxygen to keep a man in spacecraft comfortable for a period of about one day. (From the North American Air Defense Command we're advised that Space Object 1391 which is the second stage of the Gemini launch vehicle is expected to decay and to burn back into the earth's

atmosphere between 11:50 and uh, 1, uh, 1 p.m. CST today.

As we get closer to that, uh, time ~~wex~~ the ~~exp~~ expected decay, we'll be able to give you a more precise fix on precisely when and where that object will reenter the earths atmosphere. This is Gemini Control, 48 hours and 44 minutes into the mission.

End of Tape



down so you don't have to watch it so close and be bothered with it so much.

S/C:

CC: I can't read you very good right now, wait til we get to Bermuda again, will you.

CC: Okay.

CC: Gemini 4, Houston Capcom

S/C: Gemini 4

CC: Roger, could you give us an estimate as to how far that satellite was from yesterday.

S/C: I couldn't really tell, it looked like quite a large object. It looked like I was ~~xxxxxxx~~ approaching it rather rapidly I'd say ten miles or so.

CC:] Ten miles?

S/C: That would only be a guess. It was close enough that I could see....

CC: See what?

S/C:

CC: Your're coming off pretty badly there, I couldn't read that.

S/C: Okay

CC: That came through good.

S/C: Allright, I said I got close enough to

CC: Close enough to it to what? The nearest we can tell there wasn't anything that close to you. Pegasus was about 1200 miles away.

S/C: No, not quite that close. That far away.

CC: Pretty good eyeball, allright.

S/C: I took a picture, I just hope it comes out.

CC: So do we.

S/C: Unfortunatly...

CC: Are you using box because your're cutting out

S/C: No I'm using continuous interphone push to talk, how do you read me now?

CC: Good. Every now and then the last part of your sentence cuts off.

S/C: Okay, maybe I've got a weak thumb. Hey, would you ask the Doctors if its okay if I this exercise?

CC: If you use it?

S/C: but I'd sure like to get more exercise than I'm getting.

CC: Sure, go ahead.

S/C: It's okay?

CC: Sure, just let us know how much you use it, if you will.

S/C: I sure will, is it okay?

CC: It's okay, go ahead and use it.

S/C: Okay, do you have a

CC: Say again.

S/C: Can I get

CC: Your're cutting out again, go ahead, say again.

S/C: May I use the exerciser like in free exercise?

CC: Roger.

S/C: Thank you.

S/C: here, go ahead.

CC: Do you have a time hack at the exact time you saw this  
Satellite?

S/C: No I do not, I ~~remember~~ called it out on the radio  
and it ought to be on the tape.

CC:] Okay.

S/C: I also put it on the voice recorder so you can go  
back and look for it.

CC: Okay, the exact time you saw it you put it on the tape?

S/C: That's right.

CC: On the radio.

S/C: Right.

CC: Hey, Jim.

S/C: Go ahead.

CC: Why do you want to use the exerciser? Are you feeling stiff or cramped? Or what?

S/C: Yeah

CC: Say again

S/C:

CC: That's garbled again, I couldn't read it.

S/C: I say, I just haven't moved around very much and I'm (word completely cut, not even garbled)

CC: Okay, that makes sense

This is Gemini Control, Houston. We had loss of signal at Bermuda at 49 hours and 7 minutes into the mission. In the course of that pass we heard McDivitt discussing with Capsule Communicator Gus Grissom here that he felt the need for additional exercise. The flight surgeon urged him to go ahead and get the additional exercise and to advise us when and the duration of the exercise. In the course of that pass at 48 hours and 55 minutes, to be exact, we reached the mid-point in this flight of Gemini 4. That would have been some 13 minutes ago. This is Gemini Control.

END OF TAPE

Say again.

S/C I can't read you. I think I'll just pass over you.

CC Roger, you are passing over Cape Verde.

S/C Okay, I'll look down and see you. I saw you standing outside waving.

END OF TAPE

This is Gemini control, 49 hours 45 minutes into the mission. Spacecraft coming up on the Carnarvon station. It is now about 1500 miles west of Australia. It has been a very quiet pass since the spacecraft left the United States. Very little contact across Africa. We've been in active conversation with various offices at the Goddard Space Flight Center and at the North American Defense Command regarding this sighting of a satellite yesterday. We are fairly well convinced now that in all probability this was Pegasus. The clues would depend largely on the angle at which the Gemini IV spacecraft approached Pegasus. Earlier we had indicated Pegasus some 1000 to 1200 miles away. However, the angle and the speeds of the bodies would make those closing distances very significant and the consensus is right now that it probably was Pegasus that Jim McDivitt saw. He advised us this morning that he would guess that it was somewhere between 10 to 20 miles from him. They still don't know precisely which direction he was viewing it from. At 49 hours, 47 minutes into the mission. This is Gemini control.

END OF TAPE

This is Gemini Control Houston, 50 hours, 9 minutes into the flight of Gemini 4. We have the following food, water and sleep summaries available throughout the first 48 hours of the mission. In the food department the first 24 hours of the flight Jim McDivitt ate two meals for a total of 904 calories. For the second 24 hours of the flight, McDivitt also ate two meals and the total calorie intake was 1,222. Meanwhile Ed White on the first day, also had two meals. His total calorie intake was 1,187 calories. On the second 24 hours Ed White had 3 meals for a total calorie intake of 1,868 calories. The pilot, the command pilot, Jim McDivitt, during the first 24 hours of the mission drank 1300 cc's of water, during the second 24 hours of the mission he drank 795 cc's of water. The pilot Ed White during the first 24 hours of the mission drank 1,230 cc's of water and during the second 24 hours White has drunk 1,260 cc's of water. In the sleep-work cycle beginning, and we will cover here only the second 24 hours since we have already covered the first 24 hours in earlier summaries. For the command

pilot, Jim McDivitt, he was awake from 25 hours and 20 minutes into the mission to 34 hours and 21 minutes into the mission. He went to sleep at 34 hours and 21 minutes into the mission and he slept until 37 hours and 20 minutes. He was then awake from 37 hours and 21 minutes until 42 hours and 36 minutes. There followed a sleep period of more than 3 hours from 42 hours and 36 minutes into the mission, until 45 hours and 48 minutes into the mission, and this was described by McDivitt as the most restful sleep he has had, so far in the mission. He woke up at 45 hours and 48 minutes into the mission and he's still awake. For Ed White during the past 24 hours, he was awake from 25 hours and 45 minutes until 29 hours and 15 minutes. He went to sleep at that point and slept until 33 hours and 15 minutes into the mission. He was then awake from 33 hours and 15 minutes until 39 hours ~~xx~~ into the mission. He slept from 39 hours until 41 hours and 23 minutes. He was awake from 41 hours and 23 minutes until 49 hours and 30 minutes into the mission about 40 minutes ago at which time he went to sleep reportedly at 49 hours and 30 minutes into the flight. White is asleep now, with the spacecraft over the Canton Island station. McDivitt is awake, he sound very rested based on the word of the Canavron Station, excuse me,

Canavron surgeon, We have the tape from the Canarvon pass ready ~~XXXX~~ to play for you at this time.

S/C: Read you loud and clear.

CC: Okay, I've got some update information for you.

S/C: Okay, wait just a second. Okay.

CC: retro. These are F-5 and Apollo landmark

S/C: Okay.

CC: For F-5 to be reved 32~~X~~ over the States instead of rev 33. The pass will start at 17+40 and should make Apollo landmark run number 4.

CC: Flight, Canarvon.

F: Go ahead

CC: I cut you off because of the echo. The start time on landmark number 4 is 19+52 and he got close to approach at 19642. That doesn't jive.

F: Rog, stand by. We're checking it. .

CC: Okay

S/C: gulps of water damp and everything I've had so far.

CC: You look good on the ground here too. Say again about the water.

S/C: I've had about 10 or 15 gulps of water since I woke up.

CC: Very good.

S/C: as soon as I get through eating.

CC: Okay, that's all we need. Fading out.

This is Gemini control, Houston. 50 hours and 18 minutes into the mission. We have just been advised by the Department of Defense Recovery Forces here in our recovery center, that the second stage of the Gemini launch vehicle which put Gemini IV spacecraft in orbit is at this precise time reentering. It is burning up into the atmosphere over the Atlantic Ocean. The radars at Cape Kennedy are tracking it and very shortly we hope to be able to get you some coordinates on where that reentry would have occurred. This is Gemini Control.

END OF TAPE

This is Gemini control, Houston, 50 hours 46 minutes into the flight. Spacecraft is - about 3 to 5 minutes ago lost contact with the Bermuda station after a state side pass. In the course of that pass the pilots talked to the communicator, Grissom, here about some medical matters, read out medical quantities. They also got into a discussion about the sleep rest cycle. Jim McDivitt reported that Ed White had been dozing for the past hour or so but apparently not sleeping too soundly. He pointed out that they weren't too tired, but that they were probably ought to take another look at their sleep cycle at some point during the next revolution. We are prepared to play that conversation for you now.

Flight Gemini IV, Cap Com.

Gemini IV, Houston, Cap Com.

Gemini IV, Houston, Cap Com.

Gemini IV, Houston, Cap Com

S/C Roger Houston. Go ahead with your updates.

Flight Roger. That's 40 feet. Did you get the last one I gave you?

S/C Negative. I never got 36 4.

Flight Okay. 36 4. 40 feet/sec forward. That's 1 plus 06.

120 ft/sec aft. That's 2 plus 31. At 23 plus 38 plus 08.

2 plus 48. 8 plus 43.

S/C Roger. Was that 2 plus 48 and 8 plus 43?

Flight Affirmative. Okay, we'd like to know if you have your

L squib battery 1 off.

S/C Roger, we just turned it off.

Flight Okay, fine. Okay, you have a valid 36-4 in your computer.

You can turn your computer off.

S/C Okay, our computers are off.

Flight Okay, and if you want to - in fact we would like for you to update all of your type 2 medical passes to type 1. That'll give you a little more exercise.

S/C Okay, very good. All type 2's to type 1.

Flight Okay, and how much has Ed been sleeping the last couple of hours. Can you give us a clue on that?

S/C Roger. Ed's only got about an hour nap. We are going to have to rearrange our sleep cycle here a little bit too.

Flight Okay. Have you felt rested with the amount of sleep you've got or do you think you need some more?

S/C No. I don't think we'll ever get an awful lot of rest out of it, but on the other hand we're not doing much. We're really not too tired. I think we'll go through this next pass and then go back to sleep again.

Flight Okay. The other thing is - when you were doing your maneuvering during the first orbit, did you get that recorded on your onboard tape?

S/C You mean on my voice onboard tape?

Flight Yes.

Flight Yes.

S/C Say again.

Flight Yes. Did you get it recorded on your onboard tape.

S/C Roger, we got a good bit of it.

Flight Okay, good.

We'd like for you to bring your primary O<sub>2</sub> pressure down to 800 now, its up to 9 - we are reading it as 960 down here.

S/C Okay, I've got 950. We'll bring it on down.

Flight Okay.

S/C John, on this - what's on the voice tape recorder is that we were turning it on and off. So we don't have it all.

Flight Say again. Say again, Jim.

S/C Say again, Houston.

Flight Say again. Hey Jim, this is Gus again. Do you read Houston still.

S/C I'm not reading you.

END OF TAPE

This is Gemini Control, Houston, 51 hours 13 minutes into the flight. We've had a quiet pass across the African continent. At this time the spacecraft is over the Indian Ocean coming up on Carnarvan intercept. We have data from Goddard and from the Department of Defense indicating that the second stage of the Gemini launch vehicle reenetered the atmosphere at approximately 11:30 a.m. Central Standard Time over the central Atlantic Ocean. Our approximate coordinates on that point of reentry right now are about 33 degrees west by 15 degrees north. That was 33 degrees west - 15 degrees north at 11:30 a.m. Central Standard Time. This is Gemini Control.

This is Gemini control Houston. 51 hours 42 minutes into the mission. We have no new contacts report since the Australian contact. Mrs. White and Mrs. McDivitt have joined us here in the control center and are chatting right now with Mission director Cris Kraft. Ed White's boy and his girl are also here with us on the floor and there is very strong suspicion that the two wives will chat with their husbands during this next pass across the United States. This is Gemini control.

END OF TAPE

This is Gemini Control, Houston, 52 hours and 23 minutes into the mission. In the last 15 minutes here in the Control Center we broke in two new Capsule Communicators by the names of Pat McDivitt and Pat White. Pat White opened an exchange with Pilot Ed White, who happens to be her husband, as the spacecraft came into contact with Guaymas about 20 minutes ago. The conversation was not the normal from husband and wife conversation. It was very businesslike. Ed was advised to turn switches here and there and he did so without changing the expression of his voice for some five or ten minutes. Apparently he knew who was broadcasting on the other end, because at one point he comes in and he - he came in and he said, that the Capsule Communicator here was a great improvement over Gus Grissom with whom he had been talking for about the past seven hours. Both pilots were advised to drink a lot more water - this was on the advice of the surgeon - during the coming revolutions. They were also advised that they should plan for a good long sleep period. They had been busy working with their experiments now some eight to ten hours and they are apparently in for a break from experiments for - oh, the next twelve to eighteen hours. The surgeon wants to see them get a good long restful sleep. During the United States pass

Ed White's two children, Bonnie - his daughter Bonnie - and his son Ed were also here in the Control Center, patched in at Gus Grissom's console. They listened attentively to the conversation. We have the tape of that exchange ready for you and we'll play it now.

CC Gemini 4, Gemini 4, this is Houston Cap Com. Do you read?

CC Gemini 4, this is Houston Cap Com, do you read?

CC Guaymas has had LOS.

CC Gemini 4, Houston Cap Com, do you read?

CC Gemini 4, do you read?

S/C . . .

CC Gemini 4, do you read?

S/C This is Gemini 4.

CC Your booster reentered over the Cape at 17 29 Zulu, radar's were tracking and watched break-up on their boresight TV.

S/C Roger. We had the booster reentered and they were being tracked, and they watched the break-up.

CC Now have a drink of water.

S/C Roger. Standby for a drink of water. You sound pretty good to me - a big improvement over Gus, I can tell you that.

CC I'm great.

S/C Right.

CC This is fabulous.

S/C Roger. The batteries are up and the oxygen supply is good.

CC You sound good. Turn off the quantity read switch.

S/C Roger. The quantity read switch is going off at this time.

CC We separated the spacecraft and the booster on the Gemini 4 cake yesterday. Do you read?

S/C Roger - say that one again.

CC We separated the spacecraft from the booster yesterday - on the Gemini 4 cake.

S/C Fine - very good. Understand. I got the message.

CC See you next week.

CC Gemini 4.

S/C You're an improvement.

CC Hey, have a drink of water, both of you.

S/C You have the wrong guy up here.

CC No static on that.

S/C Pardon.

CC No static on that.

S/C I'm not allowed to give you static at home, why should I do it up here?

CC One more - Jim, disconnect your head set communications at the neck ring from now on at the start of your sleep period.

No static on that.

S/C . . the flight plan.

CC Chris says that's what he wants you to do.

S/C You still got . . .

CC Do you read me?

S/C . . . I just started to.

CC We're reading you weakly.

CC Do you read, Jim?

S/C I cannot - repeat.

CC Did you get the message on disconnect your head set?

S/C Yes, I did.

CC You going to drink some water?

S/C Yes, I will.

CC And your left eye is looking good.

S/C What was that?

CC Your left eye's looking good.

S/C How do you know my left eye's good?

CC I said your left eye's looking good.

S/C Oh. Ok.

CC And be good.

S/C How are you? How are you and the children making out?

CC We're fine. How about you?

S/C . . .

CC SPADATS on at 34 over - 34 rev over Antigua. ES switch from 19 20 - on to 19 35 off. Do you read me, Jim?

CC Gemini 4, do you read?

S/C . . .

CC Gemini 4, do you read?

S/C Roger, I do. Go ahead.

CC SPADATS on 34 rev over Antigua - ES switch on 19 20, off 19 35. Do you read me?

S/C On at 19 20 and off at 19 35, is that right?

CC Affirmative.

Flight: Should be on now.

CC Gemini 4, Cap Com.

S/C Hello, Cap Com. Come in.

CC Your ES switch should be on now.

S/C What switch should be on now?

CC The ES switch - the ES for the ES sensor.

S/C ES sensor - roger. Roger, it's on. You want it off at 19 35?

CC Affirmative.

S/C Ok.

CC Hey, Jim.

S/C Rog, Gus.

CC Look, we don't have very much for you to do in the flight plan for the next 18 hours. So we'd like for both of you to get a good long sleep. And we want whoever is sleeping to unplug their headset so you get a good solid sound sleep. Ok?

S/C Ok . . . I might . . . . . but I can do it.

CC We think you'll sleep better. Have you made up your minds who is going to go to sleep first?

CC Gemini 4, Houston Cap Com.

CC Gemini 4, Houston Cap Com.

S/C Roger. This is Gemini 4.

CC Roger. Did you get all the information on sleeping - or resting for the next 18 hours?

S/C Why, negative. I didn't get it all but I said - we're planning on . . . . experiment here. And then Ed's going to sleep for about 5 or 6 hours and I will. And we'll unplug our helmets.

CC Very good.

S/C Ok?

CC Rog.

CC Drink some water.

S/C I must sound like I'm a little hoarse.

CC What?

S/C Do I sound hoarse?

CC I still can't hear you.

S/C . . . hoarse?

CC Yes, you do sound hoarse. So drink some water.

Flight: The medics don't feel like you've drunk - either one  
been drinking enough water, Jim.

S/C Ok. We'll drink some more. I was a little dry the first  
day, Chris, but I'm ok now. We'll just drink some more.

CC Roger.

End of Tape.

This is Gemini control Houston, 52 hours and 39 minutes into the mission. Spacecraft now over the southeast coast of Africa, preceeding on the 34th revolution of the earth. We have information from our Department of Defense Recovery Forces that a U.S. Navy search and rescue plane called an HU-16 has been forced to land at about 85 miles east of the Cape - east of the coast of North Carolina a point designated Point Lookout. The airplane is down and a Navy ship the USS Hoist which participated in the launch day activities involving the Gemini IV launch is on scene and is rendering whatever assistance it can. We have no information on any injuries. Apparently there are none. We are advised that the airplane is able to taxi on the water. However, this is very preliminary information. This is Gemini Control.

END OF TAPE

This is Gemini control Houston. We have received additional information on the HU-16 aircraft downed off the coast of North Carolina. There are 14 people reported aboard this aircraft. It is a two engine aircraft used as a search and rescue plane. It was not in any way involved in the Gemini IV mission. We do not know from which field it left. However, the situation is - there is approximately 1 foot of water in the bilge of the aircraft. However, the captain has been successful in starting both the engines. The airplane is reportedly taxiing on the water. It's an amphibious aircraft. It's reportedly taxiing toward the coast and standing by is a navy ship the USS Hoist which was involved in the launch day activities of Gemini IV. This is Gemini control.

End of tape

This is Gemini control Houston. The HU-16 in trouble off the coast of Carolina was on a flight out of NAS Norfolk, bound for Bermuda. We have no additional information available at this time and was last reported taxiing back toward the coast. Meanwhile overnight the cable ships working down off San Salvador have successfully repaired the break in the cable reported prior to flight. The cable was put back in its place and on the last pass moved excellent data. Repeat the cable break off San Salvador has been repaired and the cable is now functioning very well again. The orbital elements for Gemini IV are currently 101 statute miles peragee, 107 statute miles apogee. This is Gemini control.

END OF TAPE

This is Gemini control Houston, 53 hours 39 minutes into the mission, with the spacecraft going down over Central America, headed down toward South America for a pass across Brazil. We have been in contact since the California station, 3 to 5 minutes ago. Its been minimal talking kind of contact. The spacecraft is right on the outer edge of the communications range. We have essentially no new flight information to report but for one fact - Ed White reportedly will go to sleep and hopefully for a long sleep, 6 to 8 hours duration, in about 30 minutes from now. Meanwhile in the Atlantic off the coast of North Carolina, we have just been advised that the HU-16 amphibian aircraft out of NAS Norfolk is now in tow by the USS Hoist. It's being towed back to the Carolina coast. We are told that 10 of the 14 people onboard the aircraft have been transferred to the Hoist. Apparently there were no injuries. We are also advised that a life raft inflated prematurely in flight and forced the airplane to set down on the water off the Carolina coast. Its position 80 miles east of Cape Lookout. The four crewmen are remaining in the amphibious aircraft as it is being towed back to the coast. We have the tape - I'm sorry we do not have it racked up as yet. This is Gemini control.

END OF TAPE

This is Gemini Control, Houston, 53 hours, 52 minutes into the mission. The spacecraft starting - it is presently over Brazil on its 35th revolution around the earth. We have now the tape racked up from the recent pass down the west coast of Mexico and Central America. We're prepared to play it for you at this time.

CC Gemini 4, Houston Cap Com.

S/C Go ahead, Houston, Gemini 4.

CC Rog, Jim. We'd like to get a readout on your OAMS source pressure and temperature and your quantity gage.

S/C The OAMS source temperature is 60 degrees and the pressure is a little below 2000.

CC Roger. What about the quantity?

S/C The quantity is reading about 60 and a half percent.

CC Roger. When are one of you guys going to go to sleep?

S/C . . .

CC Say again.

S/C Probably about --

CC Hey, you're cutting out.

CC Hey, Gemini 4, hold your switch down a little bit longer - you're cutting out.

S/C Rog --

CC We're only getting your first word, Jim.

S/C That ok?

CC Well, I can't say that's ok.

S/C Ok?

CC Ok. That came through good. Have you really decided who's going to go to sleep first?

S/C Yes, Ed is.

CC Ed is? Ok. And about when will he go to sleep?

S/C In about another thirty minutes.

CC Ok. That's fine.

CC Jim, did you see that tropical storm off California?

S/C Yes, I did.

CC It's a full-blown tropical storm, they tell me now.

S/C Carrying a lot of clouds. . . over.

CC You're logging . . . are you?

S/C California . .

CC You're cutting out again.

S/C Ok. It must be the mike button. I said . . . . to about a third of the way between Hawaii and California. . . . .

CC You say clouds ran about a third of the way from Hawaii to California and then what was that last?

S/C The stopped abruptly at the coast line.

CC Roger. That's stopped abruptly.

CC Hey, Jim, would you press on your sternal sensors again, please.

S/C Does that help any?

CC Yeah, that looks better. You're still alive.

S/C Roger.

CC Hey, Jim.

S/C Yeah?

CC Chris just told joke A.

S/C That one's a real dilly, isn't it? I thought it was going to be White who was going to tell joke A.

CC Guaymas has LOS.

S/C . . .

CC We'll go ahead with B when you can stand it.

End of Tape.

This is Gemini control. Here in the mission control center Houston, we are in the midst of a shift change. Mission Director Chris Kraft and red team of flight controllers are going off duty. And the white team headed by Flight Director Gene Kranz is moving into the consoles. A check with the flight surgeon on the crew physical conditions, revealed that both men are really doing fine. He has advised us that the crew activities be at a minimum for the next 18 hours so that they can get additional sleep, which he feels they need at this time. Spacecraft Gemini IV is now over the southern tip of Africa on its 35th revolution of the earth. The time elapsed since takeoff 54 hours and 9 minutes. This is Gemini control.

END OF TAPE

This is Gemini Control. We are now 54 hours and 39 minutes into the flight of Gemini 4. The spacecraft is now over the Pacific Ocean on its 35th revolution over the earth, and is moving to the range of the Coastal Sentry Quebec tracking ship in the Pacific. We have had no voice communication with the flight crew for at least 45 minutes. However, the Coastal Sentry Quebec is expected to make a voice contact with Gemini 4 to check the onboard systems and, if all is normal, we'll give spacecraft commander Jim McDivitt a Go for 48 revolutions. Flight Director Eugene Kranz has advised the Coastal Sentry Quebec that everything here in the Mission Control Center at Houston is in a Go condition for the 48 revolutions. This is Gemini Control.

End of Tape.



CC Gemini 4, CSQ. Would you check your main batteries and give us a Go or No-go on your mains for orbit 48?

S/C Roger.

Flight: CSQ Cap Com, Houston Flight.

CC Go ahead, Flight.

Flight: Roger. You can advise the pilot to scrub his medical data pass over your site on the next rev.

CC Roger.

Flight: That's the one over Hawaii on the next rev - excuse me.

CC Gemini 4, be advised that the pilot can scrub his aeromed data pass over Hawaii the next rev.

S/C Next rev - roger.

CC Roger - what is your status for Go-no-go 48?

S/C Go-no-go 48?

CC Roger.

S/C I'm just checking out on the batteries now.

CC Roger.

CC Be advised you can turn your computer and quantity read switch off. I've just updated your computer with a new 36-4 low. I have your backup guidance quantities when you're prepared to tell me.

S/C Roger. Stand by just a moment. Want me to forward the battery data?

CC Go ahead.

S/C Roger. The adapter batteries are now . . . staying at 24. The main batteries are . . I say again, the adapter batteries are 2 to 2-1/2 at 24. The main batteries are 9 and 22-1/2.

CC Roger. Are you prepared to copy your 36-4 backup guidance quantities.

S/C CSQ, Gemini 4.

CC Roger. We're Go here. I'm going to change your TR to a 48-1.

S/C Roger.

S/C Sentry what's your . . .

CC Roger. Area 36-4. Forward, 40 - aft 120. 1 plus 06, 2 plus 31, 23 hours 38 08. 2 plus 40, 8 plus 44. 36-4 without maneuver, GMT RC 23 31 59, 7 plus 30, 14 plus 42.

S/C Roger. I received 36-4 with and without OAMS.

CC Roger. GMT RC for your 48-1 is 3 days 17 hours 20 minutes 18 seconds.

S/C Roger. Can you give me a GMT time hack, please.

CC Roger. On my mark it will be 22 hours 07 minutes, about a minute. We still have indications that your AC power is on.

S/C Roger. We're going to get it here.

CC Be advised also that we have some D-9 - Delta-9 - experiment data for you.

S/C Roger. At that time, tell me what time it is.

CC We're going to have LOS, I believe. I'll let Hawaii give you a GMT time hack. I think we'll have LOS before you can copy.

S/C No, keep giving me the hack.

CC Ok. About 10 seconds. 3, 2, 1, mark. 22 hours 07 00.

S/C I got the mark.

CC Ok. D-9 - are you prepared to copy?

CC Gemini 4, CSQ. We have had . . . LOS. I'll advise Hawaii to send you the Delta 9 experiment data.

CC Gemini 4, Hawaii Cap Com. Do you copy?

S/C Hello, Hawaii, Gemini 4 - loud and clear.

CC Roger. I have your D-9 information. Are you ready to copy?

S/C Roger. Go ahead.

CC Run 2 - start 22 43 00, end 23 22 00. Used scheduled filter settings. Did you copy?

S/C I copied the times - 22 43 and 23 22 - what was the experiment?

CC This is D-9, run 2. Use scheduled filter settings. Did you copy? Over.

S/C Yes. Got them down but the pilot's going to be asleep.

CC Gemini 4, Guaymas Cap Com.

S/C Guaymas, this is Gemini 4. Go ahead.

CC Roger. I've got you green on the ground here. I've got a map update for you. Ready to copy?

S/C Guaymas, Gemini 4. Be advised I've got my helmet off and I can't raise you.

CC Roger, roger. Flight, did you get that?

S/C Do you have anything important to tell me?

CC I just wanted to give you a map update.

Flight: Say negative.

CC Negative.

S/C Ok. Standby one and let me get a pencil. I can still hear through the head tube. Just a minute.

CC He's a tiger, Flight.

Flight: Ok.

S/C Ok. Ready with your map update.

CC Roger. Rev 36, ascending node, the time 23 plus 18, longitude 82 degrees east.

S/C Ok. Understand that was rev 36.

CC That's affirmative.

S/C I'm good for 23 18 - and . . . 82 east?

CC 82 east.

S/C I got 82 east. Thank you.

CC Roger. We'll see you tomorrow.

S/C Okeydoke. Then I'll have my hat on and I can hear what you're saying.

CC Roger.

CC Houston Flight, Guaymas Cap Com.

Flight: Roger, Guaymas. How does he look from there?

CC He looks real fine.

Flight: I thought you were going to have fits there. You're right - you have got a tiger here.

CC Say again.

Flight: You have got a tiger here.

CC We've got a couple of them up there.

End of Tape.

This is Gemini control. The Gemini IV spacecraft has just passed over Vietnam. The ground elapsed time is 56 hours 8 minutes. And the spacecraft is on its 36th revolution of the earth. There has been no voice communication with the flight crew since our last tape relay from the Pacific area. Voice communication has been reduced so the flight crew can get a maximum of rest. Pilot Ed White is asleep. Spacecraft commander, Jim McDivitt, is preparing to do some photography according to our flight plan. At present the orbital data is approximately 173 statute miles apogee and 101 statute miles perigee. The spacecraft is powered down and is in drifting flight. Here in the mission control center activity is also in a low key. This is Gemini control.

END OF TAPE

This is Gemini Control. It is now 56 hours and 39 minutes since the start of the Gemini IV flight. The spacecraft is on its 36 revolution of the earth and is now over the Pacific Ocean between Hawaii and the United States. The spacecraft passes over the Coastal Sentry Quebec tracking station and over the Hawaiian station were both passive. The tracking stations confined their activity to telemetry reading of spacecraft and flight crew environmental systems, and in receiving of automatic telemetry data from the spacecraft. The Hawaii Flight Surgeon reported that Pilot Ed White is asleep and that spacecraft Commander Jim McDivitt is very quite and possibly also asleep. Hawaii also reported that all the spacecrafts systems look very good from the ground. This is Gemini Control.

This is Gemini Control. We are 57 hours and 9 minutes into the mission of Gemini IV. The spacecraft recently started its 37th revolution around the earth and is now over the South Atlantic. It has been about one and one-half hours since we last had voice communications with the flight crew. When the spacecraft passed over the Rose Knot Victor, our tracking ship off the East Coast of Peru, Pilot Ed White was still asleep and spacecraft Commander James McDivit appeared to be moving around slightly. In approximately 1 hour, our Gemini IV flight crew will have rolled up a cumulative total of space flight time equal to that achieved in all previous American Space Flights. This is Gemini Control.

This is Gemini Control. We are now 57 hours and 39 minutes into the mission, and we have had no voice contact with the spacecraft for about 2 hours. Gemini IV is now over the Bay of Banghor, India, and it is in its 37th revolution over the earth. We have a late report on the aircraft, the HU16 amphibian aircraft that was involved in a mishap earlier this morning, at approximately 85 miles east of Point Lookout, North Carolina. At the present time it is in tow of the USS Hoist, a Navy salvage vessel, and it is now approximately 40 miles off of Cape Patterous making for Norfolk. All the passengers have been transferred to the U.S.S. Hoist, and there are 4 crew members still aboard the aircraft and it looks as though they will be successful in reaching shore very shortly. This is Gemini Control.

This is Gemini Control. Spacecraft Gemini IV is now over the Pacific Ocean on its 37 revolution around the earth. At this time, our flight crew has spent 58 hours and 10 minutes in weightless flight, which is a greater amount of time than the total spent in space by all other American astronauts combined. That total was 58 hours 9 minutes and 25 seconds achieved in the Project Mercury flights of Alan Shepherd, Gus Grissom, John Glenn, Scott Carpenter, Walter Schirra, Gordon Cooper, and the Gemini III flight made by Gus Grissom and John Young just a little over 2 months ago. And, as the spacecraft was passing Hawaii just a moment or two ago, we had our first voice contact with the flight crew in more than 2 hours. Spacecraft Commander Jim McDivit sounded a little sleepy, but he did respond. He was advised that in about 15 minutes the Pegasus Satellite will be in the area of the spacecraft at a slant range of about 300 nautical miles and we can assume that they will try to get a sighting. This is Gemini Control.

This is Gemini Control. We now have the voice tape of the communication by voice between the Hawaiian tracking station and the spacecraft and will play it for you now.

CC You look good here on the ground, Gemini 4.

S/C Roger. There's nothing going on up here now.

CC Roger, roger. Did you copy, Flight?

Flight: Roger. Did he talk to you or did you talk to him?

CC He talked to me, Flight.

Flight: Roger. If you've got a valid 48-1 load, why don't you get it in now?

CC Roger, I do. Gemini 4, Hawaiian Cap Com.

S/C Go ahead.

CC Roger. I have a valid 48-1 load for you, if you'll turn on your computer.

S/C I have, Hawaii.

Flight: Hawaii Cap Com, Houston Flight.

CC Houston Flight, Hawaii, go.

Flight: Roger. We got some pointing angle information for him if he feels like it. At 01 hours 39 minutes Zulu, they'll be near Pegasus. His yaw should be zero; he should be pitched up approximately 60 degrees.

S/C . . .

Flight: Stand by.

CC Roger. We have your loads. Here it comes. You have a valid 48-1 load.

S/C Ok. I just can't seem to get it right.

CC Did I copy you did?

S/C Negative. I did not.

CC You did not get a DCS light?

Flight: Roger. Get your TR up, Stu.

CC We don't ----

Flight: Hawaii Cap Com, Houston Flight.

CC , Go ahead, Flight.

Flight: Roger. Do you have a 48-1 TR in your Vox.

CC Negative. I have the other Vox set in at CSQ.

Flight: Ok. We'll pick it up next rev.

CC Roger.

Flight: Ok. On the Pegasus thing - are you ready to copy?

CC Roger. Go ahead.

Flight: Ok, I gave you the time - 01 39 Zulu - yaw zero degrees, pitch-up, approximately 60. It will be slightly to the right.

He should be heads up. His slant range will be approximately 300 nautical miles. Did you get that, Hawaii Cap Com?

CC Roger. We'll relay it to him now.

Flight: Roger.

CC Gemini 4, Hawaii Cap Com.

CC Gemini 4, Hawaii Cap Com.

S/C Hawaii, Gemini 4, I can't read you.

CC Roger. If you can read, turn your computer off.

S/C Roger. I don't think . . . DCS . . . computer on.

CC Roger. Flight, Hawaii.

Flight: Go, Hawaii.

CC He's not able to copy me. Be advised he didn't get a DCS light ON in the spacecraft. I did get an indication of a valid Gemini load on the ground. He turned his computer off.

Flight: Ok. Give him that information in the blind, there, Stu - on Pegasus.

CC Roger. Gemini 4, this is Hawaii transmitting in the blind. We have information on your Pegasus time. 01 39 00. Yaw - 0 degrees. Pitch-up - 60 degrees. Slightly to your right, heads up. 300 nautical miles. I repeat again, in the blind. Hawaii transmitting. 01 39 00 - Pegasus. Yaw - 0, Pitch up - 60 degrees, slightly to your right. Heads up. 300 nautical miles.

Flight: Ok. That's enough, Stu.

CC Flight, Hawaii. We did get the full dump. We got the Gemini load in. I did not transmit the 48-1. I didn't have the new one set in, Flight.

Flight: Roger.

CC Spacecraft reported that he did not get a DCS upload.-

Flight: Flight, roger.

CC light, but I did have a valid indication on the ground.

I got MAP back for all the words.

Flight: Ok.

CC Spacecraft advised that he thought he didn't get the load  
in.

Flight: Ok.

End of Tape

This is Gemini Control. We are 58 hours and 39 minutes into the mission and the Gemini IV spacecraft is just passing by the South American continent. Our next voice communications with the spacecraft will be in about 45 minutes. At that time, we will transmit the voice contact in real time. Gemini IV is on its 38th revolution about the earth. As it passed by the Rose Knot Victor, our tracking ship, a few minutes ago, that ship reported that from the ground all systems looked good. It appeared that from the data they were receiving that the Pilot was still sleeping soundly and the Command Pilot is at rest. This is Gemini Control.

END OF TAPE

This is Gemini Control. The Gemini IV spacecraft has now been in flight for 59 hours and 9 minutes. It is now passing over India. Since leaving the South American continent, its path on this 38th revolution has been out of range of our tracking stations. It will remain out of range for approximately 17 more minutes. When it will cross the tracking range of the Coastal Sentry Quebec, a ship located in the Pacific Ocean southeast of Japan, we plan to transmit in real time the voice communication between the spacecraft and that tracking ship. This is Gemini Control.

END OF TAPE

This is Gemini Control. The Gemini spacecraft is now 59 hours and 43 minutes into its flight. At the present time, it is over the Pacific Ocean on its revolution path that will take it down around the southern coast of South America -- the southern tip of South America. During our last voice communication with the spacecraft which took place over Hawaii, we noted that the spacecraft commander, James McDivitt, reported that he had seen another satellite. He gave us a time hack on this sighting and said it was at 02 hours and 38 minutes GMT. That would place the sighting at approximately 15 minutes before our voice transmission started with the Hawaiian Tracking Station. We have had no further contact with the spacecraft since that time, and the Spacecraft Commander James McDivitt did not elaborate further on his sighting. We expect that we may get some additional description from him at one of the later tracking passes, but at this time we have no additional word on it; and we will give you anything that we do get. At the present time when the spacecraft crosses the South American continent, it will be again on the night side of the world. This is Gemini Control.

End of tape

This is Gemini Control. The Gemini IV spacecraft is now in range of the Coastal Sentry Quebec ship southeast of Japan in the Pacific Ocean. We will now transmit live the voice communication between the CSQ and our Gemini IV flight crew.

CSQ . . . CIA and CLAF station. Area 40-3. This is a split burn. 56 forward, 10 aft, 1+34, 2+30, 05 38 10, 2+56, 8+52. Area 41Δ, 83, 1+41, 06 30 09, 8+58, 15+01, Area 42-2, 90, 1+52, 08 06 26, 6+52, 11+59. How's it going?

S/C It's not going very good. Your 41Δ . . .

CSQ Let me go back and pick up 41Δ. IV 83, 1+41, 06 30 09, 8+58, 15+01. Getting it that time.

S/C No, you burned out again on that one, cut-off.

CSQ Roger, I'll say again. 41Δ - 83, 1+41, 06 30 09, 8+58, 15+01. Go ahead.

CSQ You can turn your computer off.

CSQ Gemini IV, CSQ. You can turn your computer off.

S/C Roger

CSQ Did you get the 41Δ.

CSQ Houston Flight, CSQ.

CC Go CSQ.

CSQ Okay. We got the TR and Gemini load in. He did have a DCS flight this time. I got down through area 42-2, had to read back 41Δ twice. Never did get confirmation from him. I ask him to turn

his computer off at near LOS. I didn't confirm.

CC Okay, we'll pick him up at RKV.

CSQ Roger. Also, he reported sighting another satellite at about 02 hours 38 minutes. It was quite a bit further away than the first one.

CC Okay.

CSQ He took a shot with his camera. He doesn't know how good it will be.

CC Roger.

CSQ We also advised him of his medical pass and tape dump at RKV.

CC Roger.

CSQ All systems are go on the ground.

CC Roger.

CSQ Goddard Voice CSQ.

CC CSQ, Cap Com Houston Flight.

CSQ Go ahead

CC RKV, Cap Com Houston Flight.

END OF TAPE

This is Gemini Control. We are 60 hours and 9 minutes into the 4 day flight mission of Gemini IV. The spacecraft is now over South America on the night side of the world in its 39th revolution. Our last voice communication took place between the Rose Knot Victor tracking ship off the west coast of Peru and the spacecraft. At that time Pilot Ed White made a type I medical data transmission including use of the exerciser. There was no further discussion with the crew concerning the reported sighting of a second satellite. By the time the medical pass was made we had loss of signal and there was no time for a discussion of anything beyond the medical data pass. The spacecraft will now swing up over Africa and then back towards the United States on its pass around the other side of the world. Our next communication will be with the Coastal Sentry Quebec in the Pacific Ocean. This is Gemini Control.

This is Gemini Control. We are 60 hours and 39 minutes into the flight of Gemini IV. The spacecraft is now in its 39th revolution of the earth and is over Iran better known in history perhaps as Persia. Our last voice contact with the flight crew was over the Kano Nigeria tracking station a few minutes ago. We will now play the tape of the voice communication made at that time.

CC Gemini IV, Houston Cap Com. Over.

S/C . . . . .

CC Gemini IV, this is Houston. We are not reading. Houston in blind. Pilot be ready for the medical data type I at CSQ.

Acquisition time 04 16. I say again. Medical data type I for Pilot at CSQ. Acquisition time 04 16. Houston over.

S/C Houston, this is Gemini IV, got the message.

CC Ah, roger. Read you loud and clear that time.

S/C Roger, reading you loud and clear also.

CC Good, did you read me at Ascension.

S/C I heard so very faintly, but evidently you couldn't read me, I know I couldn't get anything you said. Be advised that the Command Pilot is going down down to sleep and will sleep for the next four or six hours.

CC I understand. Command Pilot is asleep and should be asleep for the next 4 to 6 hours. Very good.

CC Be ready to give the food and water report for both of you over the CSQ if you have time.

S/C Roger, will do.

END OF TAPE

This is Gemini Control at 61 hours and 9 minutes into the 4 day flight mission of spacecraft Gemini IV. The spacecraft is now passing over Canton Island in the Pacific Ocean on its 39th revolution around the world. Pilot Ed White gave a type I medical pass to the Coastal Sentry Quebec tracking ship just a few minutes ago. This included oral temperature, blood pressure checks, before and after exercise. He said the Command Pilot, Jim McDivitt, is asleep. White also reported he was about to eat a meal. This would be meal one on the third menu and that he had taken about 9 swallows of water since his last report. He also said that McDivitt had already eaten the first meal of the third day menu and had taken about 20 swallows of water. We will now play back the tape of that conversation. This is Gemini Control.

CC Gemini, this is Surgeon. We have a valid blood pressure. Start the exercise on your Mark.

S/C Mark.

CC Gemini, this is Surgeon. Can I speak to the Command Pilot please?

FLT. Negative on talking to the Command Pilot. I believe he is asleep.

S/C Be advised the Command Pilot is asleep.

FLT. Command Pilot is asleep. Roger.

CC Roger Flight, he is asleep.

FLT. Roger

CC Roger, we've got a full scale on your blood pressure.

FLT. CSQ, Cap Com Houston Flight

CSQ Go ahead Flight.

FLT. Roger, after you get the food and water report on the Pilot you can ask him, ask the Pilot if he knows what the Command Pilot's report was. They were both awake at that time.

CSQ Roger, will do Flight.

CC Gemini, this is Surgeon. Your blood pressure is valid. Can I have a read out on your food and water at this time.

S/C Roger. Coming is report on the Pilot. The last meal the Pilot had was the second day the fourth meal. I've had 9 swallows of water and I'm feeling great. The Command Pilot third day had the number 1 meal, and the defecation bag and has had about 20 swallows of water. The Pilot is getting ready to eat the meal 3. That is the report at the present time.

CC Roger. Stand by.

FLT. Give him his PLA and CIA stuff Chuck.

CC Roger. This completes the data pass over to the Cap Com.

CSQ Gemini, CSQ Cap Com. Shut your quantity read switch off.

CC Roger, I'm prepared to copy CIA.

CC We won't have time to go through the entire list. I want to give you a one CIA. The next one coming up.

FLT. Roger.

CC Okay. CIA 40A, 841+47, 04 57 16, 10.07.

CC Did you copy Gemini.

CSQ Gemini, CSQ. Did you copy 40A?

FLT. Houston Flight, CSQ. We've run out of time.

END OF TAPE

This is Gemini Control at 61 hours and 40 minutes into the four-day flight of Gemini IV. The spacecraft is now on its 39th revolution of the earth and is presently over the South American continent. In voice communication with the Rose Knot Victor, our tracking ship off the western coast of Peru, Pilot Ed White received updated information for various landing areas. Spacecraft Commander Jim McDivitt is still asleep. There was no additional conversation during this pass. This is Gemini Control. The spacecraft has just started its 40th revolution rather than the 39th. This is Gemini Control.

END OF TAPE:

This is Gemini Control. We will now transmit a tape recording of the voice transmission between Gemini IV spacecraft and the Rose Knot Victor, our tracking ship in the Pacific, just a few minutes ago. This is Gemini Control.

RKV Gemini IV, Gemini IV, RKV Cap Com.

S/C Go ahead RKV, Gemini IV.

RKV Roger, how do you read me on this pass.

S/C Read you loud and clear.

RKV Roger. Be advised that you are requested to make an HF check at Ascension during this pass. The time of that HF check will be 05 hours 15 minutes. You will turn your transmitter on at our LOS and make a short check and then make the final check at Ascension.

S/C Roger. HF check at 05 15 at Ascension. Turn on HF at LOS and make short check and make final check at . . .

RKV That's affirmative.

RKV Did you get 40Δ tailing update.

S/C 40Δ update, that's 84, 1.7, 04 51 16, 10 27.

RKV Roger. I have a 41 for you.

FLT. RKV Systems, Houston Flight

RKV Roger. It's a split ΔV - 46 . . .

FLT Houston Flight, this is RKV.

RKV Roger.

FLT. That HF check time at Ascension should be 05 09.  
RKV 05 09  
FLT Roger.  
RKV Split ΔV 46 120, 1+18, 2+20, 07 20 21, 7+50.  
S/C Roger, you faded out on that GMTRC. Could you repeat please.  
RKV GMTRC, 07 20 21.  
S/C 21 is . . . .  
RKV Roger. 07 hr 20 minutes, 21 seconds.  
S/C Roger, I got it 07 20 21 7+50.  
RKV Roger. 42 Bravo, split ΔV. 40 120, 1+07, 2+30, 08 50 48,  
8+36, 43 Bravo, split ΔV. 47 120, 0+45, 2+30, 10 22 59,  
10+01.  
S/C Roger, got 43 Bravo, but did not get the one before, did not  
get any . . . .  
RKV Roger. I'll say again. 42 Bravo, split ΔV. 40 by 120,  
1+07, 2+30, 08 50 48, 8+36.  
S/C I . . . .  
RKV Ah, roger, keep

END OF TAPE

This is Gemini Control. At 62 hours and 9 minutes into the four-day mission. The spacecraft is now over the Red Sea Area. Just a few minutes ago, we had a remote voice conversation between Roger Chappe, our spacecraft communicator here in the Mission Control Center and Pilot Ed White. This was through the Kano Nigeria tracking station. Astronaut Chappe gave astronaut White a start time for another sextant navigation experiment. We will now play back this taped conversation.

S/C Come in Houston, Gemini 4

CC Gemini 4 reading you loud and clear at Kano. I have a D-9 update for you.

S/C All right, go ahead.

CC Roger. It's revolution 41. The start time is 06 01 44.

S/C Roger. Confirm the revolution 41, 06 01 44 D-9 and what not.

CC Say again your last.

S/C Roger, I got that, rev 41, 06 01 44, and D-9, and what is the D-9 you want us to perform.

CC Roger, stand by one.

CC Gemini IV, this is Houston. That's the sextant D-9, rev. 41. Over.

S/C I . . .

CC Gemini IV, this is Houston Cap Com. That's D-9, run number 2, run number 2, over.

CC Gemini IV, this is Houston, I say again, run number 2, run number 2.

S/C Roger, I understand, run number 2.

CC Roger, that's all.

S/C D-9, we also use fuel on that one?

CC That's affirmative, use fuel.

END OF TAPE

This is Gemini Control. Sixty-two hours 39 minutes after lift-off. Gemini IV spacecraft is now over the Central Pacific just northeast of the Solomon Islands. There will be a brief 4 minute period in which this Canton Island Voice Remoting system will be within radio range of the spacecraft but it is unlikely that contact will be made. Later in this 40th revolution, some 26 minutes from now, there will be a 7 minute pass over the tracking ship, Rose Knot Victor stationed about 900 miles off the West Coast of South America. This is Gemini Control.

END OF TAPE

This is Gemini Control. Sixty-three hours 39 minutes after lift-off. The Gemini IV spacecraft is now approaching the Nile River Delta and will over Alexander Egypt within a minute. The spacecraft will not pass over another tracking station until an hour from now when it will pass almost directly over the tracking ship Rose Knot Victor. During the pass over the Kano Nigeria voice remoting station six minutes ago, spacecraft communicator Gene Cernan here in Mission Control passed up to Gemini IV updates on orbital tracks and flight plan activities. This is Gemini Control.

END OF TAPE

This is Gemini Control. Sixty-four hours and 9 minutes after lift-off. Gemini-IV spacecraft is now passing along the north coast of New Guinea. The spacecraft will be in contact with the tracking ship Rose Knot Victor in a half hour. This is Gemini Control.

END OF TAPE.

This is Gemini Control. Gemini IV spacecraft, now in telemetry and voice contact with the tracking ship Rose Knot Victor for a pass which will last 8 minutes. The RKV's spacecraft communicator updated Apollo landmark experiment information to the Gemini IV crew.

We had a bit of levity here in Mission Control a few minutes ago when Blue Team Operations and Procedures Officer, Jim Tumberland, called the control room to say, "If you need me, I'll be at such and such extension." "Where's that," was the reply. "In the front elevator - stuck." Jim is now back at his console. This is Gemini Control 64 hours 39 minutes after lift-off.

END OF TAPE

This is Gemini Control at 65 hours and 9 minutes after lift-off. The Gemini IV spacecraft is now crossing the North African Coast just east of Tripoli. During the pass just ended over the Canary Islands Tracking Station, a type I medical data check was run on the Pilot and White. Oral temperature and blood pressure measurements were first telemetered to the Canary Station followed by a 30-second period of exercise with the bungee device. White then repeated the blood pressure measurement after exercising. He also reported his food and water usage and that he had had a good 4 hours sleep. Command Pilot Jim McDivitt is asleep at this time. This is Gemini Control.

END OF TAPE

This is Gemini Control at 65 hours, 39 minutes after liftoff. Gemini 4 spacecraft is now passing over the Indonesian Island group and will cross the Australian coast in two minutes just north of Darwin. Tracking data from the Canary Islands pass, early in this revolution, indicates the Gemini 4 orbit now has a perigee of 100.8 statute miles and an apogee of 165.7 statute miles. The people of Melbourne, Australia, a city of 2,000,000, will turn on all their lights when Gemini 4 passes near Melbourne in the forty-fourth revolution. This is Gemini Control.

End of tape

This is Gemini Control 66 hours and 9 minutes after lift-off. The Gemini Spacecraft is now over the mid-Pacific coming up on a brief pass by the tracking ship, Rose Knot Victor. The RKV will be within radio range for only 4 minutes 38 seconds. This will be the RKV's last contact with Gemini IV until the 51st revolution. We are now nearing the end of the 42nd revolution. This is Gemini Control.

END OF TAPE

This is Gemini Control 66 hours 39 minutes after lift-off. The Gemini IV spacecraft is now in telemetry, voice, and radar tracking contact with the Canary Islands Tracking Station and is passing across the coast of Africa just south of Casablanca. The crew of Gemini IV is currently conducting a weather photography experiment run involving some heavy clouds in the lee of the Canary and Mederia Islands. During the pass over the tracking ship, Rose Knot Victor, at the end of the last revolution, telemetry readouts indicated that the Gemini IV was go all the way in the words of the RKV spacecraft communicator. This is Gemini Control.

END OF TAPE

This is Gemini Control 67 hours and 9 minutes after lift-off. The Gemini IV spacecraft is now over the Eastern Indian Ocean just south of the Indonesian Island Chain. Carnarvon Australia tracking station, now in voice, telemetry, and radar tracking contact with Gemini IV. The crew is presently performing the electrostatic charge sensing experiment. This is Gemini Control

END OF TAPE

This is Gemini Control at 65 hours 39 minutes after lift-off. The Gemini IV is now over the Pacific toward the end of the 43rd revolution and will be in contact with Mission Control through the voice remoting station at Antigua Island about 18 minutes from now. This is Gemini Control.

END OF TAPE

This is Gemini Control 68 hours and 9 minutes after lift-off. The Gemini IV spacecraft is now directly above the Mederia Islands about 600 miles due west of Casablanca at the start of revolution 44. Through the voice remoting station at Antigua, Grand Turk Island and Bermuda, the spacecraft communicator here in Mission Control relayed to the Gemini IV some updated times for flight plan activities nearing the 44th revolution, including horizon scanner, sunset and moonset checks, and Apollo night orientation checks. We now have a tape of the Gemini IV voice contacts with these stations. The tape follows. This is Gemini Control.

CC This is Cap Com, Gemini IV, read you loud and clear.

FLT. Roger, reading you loud and clear. I have a flight plan update and if your too busy to copy, we'll just be standing by.

CC Okay, just another minute or two . . .

FLT Ground 1 has signal.

S/C This is Gemini IV. Go ahead with what you had.

FLT Roger, Jim. Would you prefer these in Greenwich mean time, or elapsed time? Over.

S/C Give them in G.m.t.

FLT Roger, Okay. G.m.t. - 11 54 00, horizon scanner sunset check.

BEM Bermuda has TM solid.

S/C Stand by just a minute.

FLT Rog. Standing by.

S/C Okay, go ahead with

FLT Roger. Time 10 15 00, horizon scanner moonset check.

S/C Okay 10 15 00 horizon scanner moonset check.

FLT Roger. You got the previous one of 14 44 00 horizon scanner sunset check.

S/C It was 11 54 wasn't it?

FLT Roger. The first one was 11 54 and the second one was 12 15.

S/C Okay, I got that.

FLT Next one is 12 22 00 Apollo yaw orientation nightcheck

S/C Okay. . . . of Apollo yaw orientation moon check

FLT Roger 12 58 00 horizon scanner thruster check

S/C Okay 12 58 horizon scanner thruster check

FLT Roger 12 59 00 horizon scanner track check

S/C Roger horizon scanner track check at 12 59

FLT Roger and out. 13 14 00 one attitude thruster check

S/C Say again, 13 14?

FLT Roger that's 1 attitude thruster check.

FLT Did you get that last one, Jim?

FLT Gemini IV, this is Houston

FLT Gemini IV, Gemini IV, Houston Cap Com, Over

S/C Go ahead Houston, Gemini IV

FLT Roger. Did you get that one attitude thruster check?

S/C This is Gemini IV, I'm not getting that . . .

FLT Roger. We will get the rest to you at the Canaries.

This is Gemini Control, 68 hours, 30 minutes after liftoff. The Gemini 4 spacecraft is now over the eastern sector of the Indian Ocean on a track that will pass directly over the Canarvon tracking station for a pass lasting 8 minutes and 20 seconds. The spacecraft communicator at Canarvon will alert the crew to watch for the lights of Melbourne, Australia which the people of Melbourne have turned on for this pass of Gemini 4. This is Gemini Control.

This is Gemini Control. The Canarvon, Australia tracking station is presently in contact with Gemini 4 spacecraft at 68 hours, 44 minutes after liftoff. We will now proceed with the tracking.

CC: How 'bout pushing down on your lead again.

CC: Okay, lets a problem

S/C: Very Good

S/C: Looks like I'm starting to iche a little.

CC: Say again.

S/C: I say I look like I'm starting to inche a little

CC: I know what you mean.

CC: Flight, Canarvon

F: Go

CC: Okay, he is looking real good, he's got his, uh, platform all powered up, it looks like its lining up right, the computers on prelaunch and everything looks fine.

F: Roger, wonder if you can get an estimate from him as to how long it took to warm up.

CC: Alright. How long did it take you to warm up the platform?

S/C: 35 minutes. I turned it on 11:50 - at 12:15 I got the

active arrow light which indicates it had warmed up.

CC: Okay, 25 minutes, thank you.

S/C: Roger, I didn't start lining it now until about 12:30  
after

CC: Roger

F: We have that, Canarvon

S/C: command, I started with a pretty bad reference because  
I tried to get this MSC pack on. It took about 15 minutes,  
17, minutes to align properly.

CC: Ah, roger, I understand.

CC: Looks like your cohort woke up, huh?

S/C: Yeah, I'm pretty busy here, he has to come along  
he only got time for about 15 minutes

CC:

S/C: so I guess your're having too much  
trouble.

CC: out

CC: Flight, Canarvon

F: Go ahead, Canarvon

CC: I think that the next time you have a site where he is  
going a little OMS thrusting, I show OMS show right and OMS  
show left which is an impossibility.

CC: I think the next time you come over a site with  
you can do the checking.

F:] Roger

S/C: CapCom Canarvon, Gemini 4

CC: Go ahead.

S/C: I see some lights shining on the clouds down below me.

CC: Alright, that should be Melbourne.

S/C: Okay, tell them I thank them for lighting the night for me.

CC: Oh, very good, they'll appreciate that.

S/C: Tell them the next time they ought to get these clouds out  
of the way so I can see the city and not just the clouds.

CC: That's the same way I feel about this.

CC: to yaw maneuver. to yawing, Gemini  
4?

CC: Canarvon

F: Roger, Canarvon, how 'bout giving us a run down on that?

CC: Okay, he looks real good, he seems to be in a real good  
mood. Sounds a lot better than he did yesterday. His clocks

look pretty good except ~~xx~~ for that same old lag in the FCT.

Showing activity on the OMS and all thrusters just about.

His horizon scanner seems to be working real well. We only

had one horizon search during the pass with small little time.

F: Roger

CC: And he, the AC volts are 25.7 and they stayed steady throughout the pass. He said his platform lined up real well. Took him between 15 and 17 minutes to align it.

F: Roger

CC: And he thinks he saw some lights, I believe they might have been Adelaide, but he thinks they're Melbourne so we let it go at that. The one thing is like I just mentioned to you before. My OMS yaw right and my OMS yaw left bi-levels are coming on sometimes exactly at the same time and if he makes a OMS maneuver or over another site, then tell me whether or not I've got a problem here.

F: Roger, GNC has something here he wanted to say.

GNC: Ah, Canarvon CapCom, just wanted to confirm that he wasn't rolling and that, I'm sure your systems man was probably watching that, so, uh, I'd like to confirm that wasn't roll control that you were seeing.

CC: Hold on a second

S/C: It was a roll control when we saw the search.

GNC: What I was wondering, Harry, was that, uh, when, uh, you said that both of them firing at the same time, could that have been roll control because you know he's got to fire one left and one right.

CC: I don't think so, they're both going off at exactly the same time.

GNC: Okay, we'll take a look at it.

CC: Okay

This is Gemini Control at 69 hours 9 minutes after lift-off. The Gemini IV spacecraft is now passing over the Society Islands in the Southcentral Pacific toward the end of the 44th revolution. During the pass over Australia, 20 minutes ago, the crew reported they could see the glow of city lights, but next time tell them to move the clouds so that we can see the city itself, they said. Melbourne, Australia, had turned on all its lights as a welcome to the crew of Gemini IV. Spacecraft systems and medical data relayed to the ground during the Carnarvon pass all looked good. This is Gemini Control.

This is Gemini Control, 69 hours 40 minutes after lift-off at the beginning of the 45th revolution. The Gemini IV spacecraft is now in the Central Atlantic, about 400 miles south of the Azores and is in 3 minutes from contact with the Canary Islands tracking station. We now have a tape of the pass over the stateside tracking stations which we will run at this time. This is Gemini Control.

CC Gemini IV, Gemini IV, Houston Cap Com. Over

S/C Houston Cap Com, Gemini IV. Go ahead.

CC Roger. How are you coming on your checks, Jim?

CC Gemini IV, Houston Cap Com, how are you coming on your horizon checks? Over.

CC Gemini IV, Gemini IV, Houston Cap Com. Over.

S/C Go ahead Houston, Gemini IV.

CC Roger, Gemini IV. How are you coming on your horizon checks?

S/C We are coming along pretty well. We've got . . horizon scan thruster and the . . .

CC Roger. I would like to remind you that the horizon scan thruster check should not be commenced until you can confirm Canaries AOS. Canaries will give you a call at AOS. Over.

S/C Roger. We will wait for Canaries' AOS.

CC Roger. We are interested in the cabin humidity. Is there any noticeable water in the cabin? Over.

S/C We were just talking about that a few minutes ago. The humidity is staying low and at about 63 percent and there is no noticeable moisture. We have been doing a great deal of operation faceplate and gloves off.

CC I understand faceplate open and gloves off.

S/C Affirmative

CC Roger. We would like to know how much color film remains, just an estimate for the Hasselblad camera and the 16 mm camera. Over.

S/C . . .

CC Roger. We are interested in an estimate of how much unexposed colored film you have for the Hasselblad and the 16 mm cameras,

. . . Texas, go local

CC Gemini IV, Gemini IV, Houston Cap Com. Over

S/C Go ahead, Houston, Gemini IV.

CC Roger. Can you give us an estimate of how much colored film you have remaining of the Hasselblad and the 16 mm cameras.

S/C Roger. We have one magazine of Hasselblad film left and a little under two magazines of 16 mm left.

CC Rog. I understand. You two ready to come home yet?

S/C Say again.

CC You two ready to come home yet?

S/C I'm sure tired of looking at this ugly face, it needs a shave.

CC We are getting tired of hearing that silly voice, too, McDivitt.

. . . Hello, Frankie

. . . How are you doing?

S/C Well, I'm waiting until 12 58 so I can fire my thrusters again.

. . . This is the most fun you have had in two days, I'll bet.

S/C Yeah, it is the first time I have fired the thrusters in 2 days.

. . . Have at it, flight time hogs.

S/C Too bad this isn't . . . I would have my requirements in already

. . . Well, I heard that Ed White was a flight hog, Jim, but I always thought that you were a 55 minute mission man.

S/C I think we will stay up here until we run out of fuel.

. . . Right, well don't ever land with them full.

S/C . . .

CC Everything is real good down here, saw both your wives yesterday and everything is in good shape.

S/C Okay.

CC We are thinking of extending the mission about a week.

S/C . . .

CC Okay, Frank said he would be up as soon as he can make it.

S/C . . .

CC Say again Gemini IV.

S/C I say, where am I?

CC You don't know?

CC It looks like you are just about southeast of the tip of Florida, probably about over Cuba.

S/C I've got it, I thought it was an island . . .

CC Gemini IV, can you give us a reading on OAMS source pressure, temperature and quantity?

S/C Roger. The quantity reads 55 percent, but keeps going up and down. That's a pretty good average number right now.

CC Well your OAMS thrust temperature is 70, pressure is 1900.

CC Roger. We've got 55 percent, 70, and 1900

S/C That's affirmative.

CC Gemini IV, this is Houston

S/C Go ahead, Houston

CC Roger. It looks like you have used about 15 pounds at a first guess OAMS.

S/C I've used how much?

CC A first cut at it Jim, looks like about 15 pounds so far.

S/C I have used 15 out of 10.

CC Yeah, that's right. 15 out of 10 available for these checks.

S/C Well, we haven't used that much at all.

CC Okay.

. . . Go to Bermuda aircraft

CC Gemini, this is Houston. That's just a rough guess on the OAMS usage. We will get a better cut at - after Canaries. You are still looking good.

S/C Okay, I've got a question. . . supposed to perform at 1340 which is . . . . thruster check. Is that the attitude thruster . . . Check?

CC Okay. Stand by one.

CC That's affirmative, Jim. That is a <sup>one</sup>/attitude thruster failure check.

S/C Okay

CC Gemini IV, this is Houston. You guys really sound great, and we will see you later tonight.

S/C Hokey doke.

End of Tape

This is Gemini Control, 70 hours, 9 minutes after liftoff. The Gemini 4 spacecraft is now in the central Indian Ocean about 1700 miles west as you are east of the Island of Madagascar, and 7 minutes from radio, telemetry and radar tracking contact with the Canarvon, Australia tracking station. The spacecraft will be entering darkness just prior to crossing the Australian coast. This is Gemini Control.

End of tape

This is Gemini Control 70 hours 39 minutes after lift-off. The Gemini IV spacecraft is now over the south central Pacific 1700 miles east of the Fiji Islands near the end of the 45th revolution. Gemini IV at this point in the Mission has traveled about 1 and one-quarter million miles. We have a tape of the pass over the Carnarvon, Australia, tracking station 20 minutes ago. The tape follows. This is Gemini Control.

CC Gemini IV, Carnarvon, do you read?

S/C Roger. This is Gemini IV

CC Loud and clear, how are you doing?

S/C How are you doing?

CC A little tired. You are looking real good down here.

S/C Everything is going okay up here . . . . . at 1320

CC Roger. Have you ..... checks?

S/C Yeah. We did

CC Okay, very good.

S/C I made a medical pass type one on the pilot over Texas at 14 13 15  
. . He hasn't been to sleep, about to go to sleep, it would be better  
for him to go to sleep without a medical pass test. . . make  
a medical pass on him right now.

FLT That's okay, Flight, Carnarvon go ahead

CC Okay

. .

FLT Carnarvon Cap Com, this is Houston Flight

CC Go ahead

FLT Ask him if he checked any MDIU quantities while the platform was out.

CC What's that, Flight

FLT Ask him if he checked any MDIU quantities while the computer and platform were out.

CC Roger

CC Come in Gemini IV, Carnarvon

S/C Go ahead

CC Did you ever check any MDIU quantities while the computer and . . .

S/C No, we didn't

. . .

CC Flight, Carnarvon

FLT Go ahead.

CC We are not getting that adapter C-bend at all. Can I turn it off to go to reentry?

FLT Roger

CC Blood pressure looks good, pilot

CC Can we have some information on your food and water.

S/C . . . is his temperature okay?

CC That's affirmative, he can take the probe out now.

S/C Affirmative on the second meal of the third day at the present time, and I've had 7 swallows of water since the last report.

CC Okay. Have you had a chance to sleep at all since your last orbital pass?

S/C No, I don't believe so.

CC Okay, that's all we need now. . .

S/C How about a 15 minute nap now

CC Say again

S/C I thought about a 15-minute nap. We have been pretty active in the last 2 hours.

CC You were asleep on the last pass or so. We noticed that, but our boys will have to wake you up.

S/C Right. Give me 15 minutes.

CC Okay. Time is running out

S/C Roger

FLT Hello Cap Com, this is Houston flight

FLT Carnarvon Cap Com, Houston Flight

CC Go ahead flight

FLT What kind of attitudes has he got?

CC . . .

FLT Say again, what kind of attitudes -?

CC When I get them on amp my computer fires out

FLT Aw, yes

. . . .

. . . . .

FLT Okay, you got any C-band now?

CC Computer beacons on and off so we can't lockout.

FLT That's too bad. Well, okay.

FLT Could you get good track over the Canaries?

CC Say again

This is Gemini Control, 70 hours, 58 minutes into the mission. There is presently an exchange of conversation between the CapCom here in <sup>U</sup>Houston Control Center and the Gemini 4 crew. We will now join that conversation. This is Gemini Control.

CC: You're doing great.

S/C: Hello there, how are you?

CC: Just fine, after a long night's sleep.

S/C: Well, we had a lot of short night's sleep.

Everything's going fine, thanks.

CC: Ah, you're doing a great job.

CC: Jim, we took a hack on your accelerometer bias down here, while your platform was powered up, and it looks good to us.

S/C: Okay, thank you.

CC: Roger, and I'd like to advise you that any MSC ten film that you have left over you could use for targets of opportunity at your own option.

S/C: Okay, that's got a couple.   
 we tried, we couldn't get anything.

CC: Rog, and uh, for concerning S5 and S6 you'll have some more weather over the Canaries and the pass over Africa on this rev looks good for a 6.

S/C: Okay. Did you issue any around the Canaries last time?

CC: Roger, they're still supposed to be there.

S/C: Okay,

CC: I didn't read you that time, Jim, say again.

S/C: I said I'm still trying to get my partner here to go to bed but he doesn't seem to be able to make it.

CC: Understand you're still trying to get your partner to sleep, is that right?

S/C: That right.

CC: Okay. Ed, you can turn your quantity readback off.

CC: Jim, this is Houston, your passes over Canarvon, uh, we have not been receiving data from Canarvon, uh, when you uh, go around the next two passes, particularly the second pass from now would you attempt to maintain a fairly zero zero attitude.

S/C: Okay, Canarvon says he's been having an awful lot of rain, could that be part of it?

CC: That could possibly be, they're had a tremendous amount of rain during the past few hours.

S/C: What time am I going to get to the Canaries?

CC: What time are you going to get to the Canaries, is that what you want?

S/C: Yeah, I want to know whether I should start looking for my hemo \_\_\_\_\_

CC: Roger, Canaries OAS is 1432

S/C:] Roger

CC: Gemini 4, this is Houston.

S/C: Go ahead, this is Gemini 4.

CC: Roger, have you been pulling your head sets when you go to sleep?

S/C: Yes we have, the last couple of times.

CC: Roger, this helps a lot, right?

S/C: Yes, it does.

CC: Okeydoke, Jim, I'll be turning you over to the daylight crew.

S/C: Okay, when are they going to promote you to the daylight crew?

CC: I don't know, it sure would be nice to come to work at 8 o'clock in the morning.

S/C: Well, you can always go home and come back at 8. How 'bout that?

CC: Listen, have a good trip, we'll see you late tonight.

S/C: Okay

End

This is Gemini Control, 71 hours 14 minutes into the mission. And for the last three days we've started each message with the ground elapsed time. Of increasing significance today throughout the day will be another clock here in the Control Center one labeled GMTRC or Greenwich Mean Time to retrocommand. That clock presently reads 22 hours and 4 minutes. We have just changed shifts here in the Control Center and we have a visitor, Chris Kraft's son. His name is Gordon, he is 13 years old and his dad is showing him around his console, how it works, and some of the many switches and many lights that he follows in the course of his 8 hour shift. We are in the 46th revolution with the spacecraft over the central Atlantic Ocean. We lost contact with the Bermuda station about 2 minutes ago. Canaries should acquire about one minute from now. This is Gemini Control.

End of Tape

This is Gemini Control. We are on the 46th revolution coming up on Canton Island. Mission Director Chris Kraft has decided that based on the present apogee and perigee no further adjustments will be necessary in the orbit of Gemini 4. We have no further maneuvers to adjust the lifetime. He's entirely satisfied with the lifetime which presently reads 99 miles perigee 164 miles apogee, both in statute miles. The crew will be advised of this decision on the pass coming across the United States in approximately 10 minutes.

The weather around the globe looks like this this morning. In the western Atlantic it is partly cloudy, winds of about 10 knots, seas running 2 to 4 feet. This is also true of the eastern Atlantic. Generally, the Atlantic is calm. The mid-Pacific area, partly cloudy conditions, ceiling 15,000 feet, the winds running 5 to 15 knots, seas 2 to 4 feet. The western Pacific, the weather has been consistently poor throughout this mission. It remains that way. Frequent showers in the area south of Japan of which our ships are congregated should that area become necessary as a landing area is experiencing frequent showers and they are expected to continue today. Overcast includes winds 15 to 20 knots and seas running 8 to 10 feet. This is Gemini Control.

End of Tape

This is Gemini Control, Houston, 72 hours 56 minutes into the flight. Our oxygen quantity at the present time is reading 21 pounds remaining in contrast with approximately 50 pounds at lift-off. This usage read is right on the expected curve. In the electricity department, we have remaining 1,032 amp hours left in contrast with 2,200 amp hours at lift-off. This is about 150 amp hours below the expected usage rate. In the OAMS fuel department, at lift-off we had 360 pounds. We now have 175 pounds remaining. In the past 24 hours, we have used about 15 pounds, and throughout the course of this day we expect to use an additional 40 to 45 pounds performing various maneuvers, yaw checks, and we expect to use the horizon scan mode a good deal today which is demanding in the fuel department. We will hold in reserve 130 pounds for our preretro OAMS burn. The worldrange of stations is green in all respects. All equipment is functioning properly. Jim McDivitt and Ed White have eaten in the past 24 hours the following:

McDivitt has taken in 1,755 calories, pilot Ed White has taken 1,950 calories. McDivitt has drunk 1600 cc of water, and the pilot has drunk approximately the same amount.

McDivitt has slept in the past 24 hours about 5 hours, 4-1/2 of which he described as sound sleep and about 1/2 hour of dozing. Ed White has slept 6-1/2 hours, about 4 of which were described as sound and 2-1/2 as dozing. Jim McDivitt is awake now, and Ed White is dozing and attempting to get some additional sleep. In the pass across the United States, completed a few minutes ago, McDivitt and White were advised to run the

next - most of this day with the awake pilot with his helmet off and his gloves off. They were instructed for the sleeping pilot to leave his faceplate open and attempt to shade the window to keep the sun out of their eyes in order to sleep. McDivitt advised that they have been doing very close to this for the past 12 hours. He said neither had taken his helmet off. However, he indicated they would attempt that. The idea behind this instruction is to get an even closer - an even sterner test of the humidity factor in the cabin. We are very pleased with it here. The environmental officer is quite pleased with the performance to date. We are showing humidity reading consistently at about 60 percent. McDivitt advises that the cabin temperature has run a very steady 65 degrees. Over Guaymas, we completed a medical pass on McDivitt, took his blood pressure before the use of the exerciser and following, got very good values there. We are prepared to play for you the tape conversation of the pass across the United States at this time.

CC Gemini IV, your blood pressure is received, start exercise on your mark.

CC Gemini IV, Guaymas 30, do you read?

S/C Roger. Do you read?

CC Roger. Gemini IV. Start your exercise on your mark. We have received your blood pressure.

S/C Roger. Mark

. . . Texas acquisition TM . . .

Your . . . full scale

CC Gemini IV, your blood pressure is received, we're standing by for your third water and . . . report

S/C Roger . . .

CC Say again, Gemini

S/C I had a lot of water, I don't know how many gulps, but after I had about 20 or 30 gulps along with a couple of meals in the last 2 hours -

CC Roger. I understand . . . Charley

S/C That's right. I haven't been to sleep for about 2 or 3 hours. Ed can sleep for about 5 or 6 so I probably won't go off again for 6 or 7.

CC Roger. I understand. Thank you, and out

CC Gemini IV, Houston Cap Com

S/C Houston, This is Gemini IV

CC Gemini IV, will you turn your computer on.

S/C Roger. One of the computers on, the . . . went out on the other about 10 seconds

CC Okay. Go ahead and turn your TM switch to command and your quantity read switch on also.

S/C Okay.

CC Gemini IV, Houston Cap Com

S/C Go ahead

CC I've got quite a bit of information to pass up to you, Jim. First, is your 48-1 time. Tell me when you are ready to copy.

S/C Okay. Go ahead.

CC Okay. At 24 ft/sec forward, that's 40 seconds, 120 ft/sec aft, that's 2+32, at 17 20 20, 2+53, 8+55. Then your 48-1 time without burn, 17 14 37, 7-41, 14-29.

S/C Got it.

CC Okay, now I've got other information to pass up to you here. We would like for the pilot who is asleep to leave his faceplate open and his gloves off, and then we would like for the pilot who is awake to take off his helmet and gloves and use a lightweight headset for communications, if he can. We would like for you to continue this way up until about 3 hours prior to retrofire. Then once in orbit, at your convenience, we would like for you to take a wet and dry bulb reading at any station and give us a report of what it was and what time you took it.

S/C Okay. We have had the gloves off now for the last 12 hours, but mostly headset . . . when we are sleeping we generally put that visor cover over it to keep the sun out of our eyes.

CC Roger.

S/C The humidity is staying down around 60 percent.

CC Roger. Okay, Jim, We have decided that you have got a little bit of fuel - got some fuel that we can play with here in the flight plan. So we would like for you to go to the horizon scan mode for the next 8 hours. That 's until elapsed time of about 80 30, and we want you to use the primary scanners. We don't want

you to do any controlling in yaw, and if the scanners break lock, don't control in roll or pitch either. We want to see if it breaks lock, we want to see if it will reacquire.

S/C Okay. You want the horizon scanners in the next 8 hours.

CC Affirmative

S/C 80 hours elapsed time.

CC Roger

S/C Okay, Gus, for . . . pressure, we haven't been able to do much with D burn, because we haven't been given the fuel for it. We want to save a little . . . for that.

CC Okay. We got no problem. Go ahead and use your D-9. Now on the - got an Apollo landmark number 2, and we would like for you to be in attitude for that at 17 19, G.m.t. of 17 19, and the target will be 16 miles north of track, and you should be pitchdown about -30 degrees at that time. We would like for you to track this as close as possible and get some pictures, using the 16 mm camera with the 75 mm lens with a nominal lens setting.

S/C Okay will do.

CC Okay, do you want me to repeat any of that?

S/C Apollo number 2 at 17 19, 16 miles north of track, pitch of 30 degrees and use 75 mm lens, and then -

CC Roger, and really have at it and track it close, use your reticle

S/C Okay

CC Okay. Your orbit . . . runs 9 and 10, do as scheduled in the flight plan. Do it just as you previously planned to do it. Just for information, 9 is scheduled at an elapsed to 75 30, 10 at 75 50.

S/C Okay, we will go to the orbit . . runs 9 and 10 as scheduled to 75 30 and 75 50.

CC Roger. Okay, we are going to come up with some more tracking tasks for you, I think, and we want most of this to be done pretty tight.

S/C Okay. Very good.

CC Okay. I've got a map update for you if you want it now.

S/C Okay. Go ahead.

CC Okay. 170 degrees east at a G.m.t. of 17 00 00. That's rev 47.

S/C Okay. 170 degrees at 17 00 00 rev 47.

CC Roger. You can bring your quantity readoff. You can bring your computer off also.

Go to Bermuda on the ground

CC Gemini IV, Houston, how do you read now?

S/C Loud and clear.

CC Okay, did you get the quantity readoff and computer off.

S/C I'll get them now.

CC Okay. Flight would like to know if you are going to try sleeping with your helmet off. Try sleeping with your faceplate open, I'm sorry.

S/C I don't know. The sun really gets in your eyes. I don't think we will try that. Ed just tried sleeping with helmet up and then down - right now he just tumped it up. He is having a tough time with the helmet. I tried it and I can't do it.

CC Okay, can you put the shade over it anyway?

S/C Yeah, you can sleep with it just about half open. How about that?

CC Okay.

S/C Actually, the last 2 hours or more, maybe it is as much as 24, we haven't been too careful about keeping our faceplates closed and our wristbands off, because obviously the humidity is going up.

CC Yeah, of course, that's what we are trying to do, we are trying to get a good hack on what is happening there and see - maybe we don't have a problem like we originally thought.

S/C I don't think we do. Especially, Ed hasn't had his faceplate closed in the last 12 hours, and I only had mine closed when I was sleeping.

CC Okay. Go ahead and do what we asked there as soon as you can and give us those wet and dry bulbs so we can get a good plot on this thing.

S/C Okay. I have been worried . . . and the temperatures have been running - the dry bulb are running between 72 and 75, and the wet bulb between 60 and 64. So the relative humidity is staying pretty

close to around 60 percent.

CC Very good.

S/C There is no difficult moisture. There isn't any moisture on that . . . paper, and unfortunately . . . clutter up the wall and I can't take the temperature, but the most temperature I can fight is about 65.

CC Roger.

This is Gemini Control on the 47th revolution around the earth with the spacecraft northeast of Australia. In the recent Canarvon pass we got what Dr. Berry described as some of the best medical data he's seen yet. He is extremely pleased with the quality of the telemetry and with the values he saw. As we crossed the Pacific Ocean the Canton Island station should be in contact, Hawaii should have a good contact on the order of 3 to 4 minutes and then as we cross the United States the pilots plan to perform an Apollo landmark investigation check. From the Cape they will receive an update, a computer update for the values necessary before a 51-4 landing, if that should become necessary between now and the 51st revolution. We are prepared to play for you at this time the conversation between Gemini 4 and the Canarvon Station.

CC: Gemini 4, Canarvon capcom. You look good here on the ground, we are standing by if you have any thing you need.

S/C: Roger, Capcom, Gemini 4 on

CC: Okay, with your switches on and continue on

S/C: Roger, thank you.

S/C:] Canarvon Cap Com, has it stopped raining yet?

CC: Let me take a look outside.

CC: sticking his head out the window, wait a second

S/C: Okay

F: Canarvon, what attitude mode do you show on the ground?

CC: Horizon scanner, primary

F: Right

CC: Thank you.

CC: It has stopped raining, a little bit wet, tho.

S/C: Very good. We sure wild farms in the last couple of days.

CC: about 3 inches of rain today, the people around here can really use it for the sheep, it's a low time of the year.

S/C: Ah, right. Kangeroo but I can't through the

CC: Your buddy awake.

S/C: No he's sound asleep

CC: Flight, we're not getting too much radar data.

F: Understand.

CC: This problem, I believe, is internal to this station.

F: Roger

CC: Flight, those horizon scanners seem to be looking real well.

Just getting a teeny bit of drift on the roll but no at all.

The pitch is holding real tight and the, but, uh, just a teeny bit of roll but very, very little.

F: Roger  
End Tape

This is Gemini Control Houston 74 hours 6 minutes into the flight. The spacecraft at this time is over New Mexico, we, uh, have not had any voice contact as yet with the pilots this pass because they have been performing an Apollo landmark check; however, we expect momentarily they will have that completed and Gus Grissom has a good deal of information to relay out to them, including the morning news. Stand by for a live transmission from the Gemini 4 spacecraft.

F: Guaymas, Houston Flight.

Gys: Go ahead, Houston Flight

F: Did you have contact?

Gys: Roger, I was calling ~~you~~ <sup>ed you about three time,</sup> but apparently ~~you couldn't~~ you couldn't hear me. All systems are green.

F: Rog. Did you talk to the crew?

Gys: I contacted them, I said he was Go.

F: Rog.

F: Are you sure, was that a local problem there, Guaymas?

Gys: I don't know Flight, I don't think so. My M & O assures me that everything was working allright.

F: Did you hear him, voice control?

VC: Negative, flight, he is cut in with talk, we didn't hear anything come past here.

F: You mean you copied the same thing I copied?

VC: Affirmative

F: Rog

CC: Gemini 4, Houston CapCom.

S/C: Go ahead, Houston, Gemini 4

CC: Ah roger, would like to give you your 51-4 time.

S/C: Okay, go ahead

CC: Okay, 25 feet per second forward, 41 seconds, 128 aft

2+32 at 23+1602 2+428+45. Then with burn is 23+10+17 7+05 14+17.

S/C: Okay, got 'em.

CC: Okay, would you turn the computer on.

CC: Jim, did you get your computer on.

S/C: Roger, I just got it on a minute, couple of seconds ago.

CC: Okay, fine.

CC: Hey, Jim, we've decided not to do an orbit adjust so you just make one burn prior to retrofire.

S/C: Okay, how big is it going to be?

CC: It'll be about 130 feet per second.

S/C: Okay, what's with the water right now?

CC: Say again?

S/C: What's my current order?

CC: Standy by, I'll get it for you. This means we've got some extra fuel to play with so we're in the process now of working in some other tracking tests, some other things into your flight plan and we'll be passing up to you as you go along. So we're going to do a little more controlling.

S/C: Very good

CC: Your orbit right now is 86.3 by 141.6. Staying up very very well.

S/C:] Very well.

CC: Did you do a main battery check on the last orbit?

S/C: I'll do it, do you want it right now?

CC: Well, can you do it? We can wait a little while until Ed wakes up, if you want.

S/C: Nah, he'll be asleep for a while, I'll try to do it.

CC: Hey, do you want me to read the news to you while you are trying to do that?

S/C: I'll tell you what, why don't I wait until its in the Canaries, how 'bout that?

CC: Yeah, that's a good idea.

S/C: Then I can do it when I talking.....

CC: Okay, that's good, hey, uh, you don't go over the Canaries.

S/C: You don't go over the Canaries this pass?

CC: Nah, but you can do it between now and Canarvon

S/C: Okay

CC: Okay, here's Haney's news release. It says in the morning paper that you're not going to go for 5 days. This came up in a press conference last night and in answer to the questions Chris said it looked like we had the consumables to make it but we had no plans to do so.

S/C: Roger

CC: Okay, there seems to be a move on in Rome to make Pope John the 23rd a Saint, even though it may take a hundred years or so.

S/C: Roger

CC: And the Dome Stadium ren.....controversy is still going on. Then there's a nice story about Chris and the Control Center and your flight team and ~~the~~ your families in the Chronicle this morning ~~kh~~.

S/C: Very good

CC: And the last item, the Cards finally beat the Astros 4-3. Took them 12 innéngs to do it.

CC: That's about it. The rest of the news is Gemini 4.

S/C: Okay, I missed that last part, but I guess it's okay.

CC: Okay, it was just about today's ballgame.

S/C: Okay. How are things going down at the Control Center?

CC: It's worked better than anybody had reason to expect.

F: Really great, Jim.

CC: Hey, Jim.

CC: Gemini 4, CapCom

F: Gemini 4, Houston Flight

F:] Gemini 4, Houston Flight

S/C: Hello, Houston Flight, Gemini 4

F: We're real pleased with the way the Control Center is working down here, the guys really have done a great job and deserve a lot of credit. Tremendous place.

S/C Roger, thank you. Glad to think things are working out.

F: Roger

CC: Gemini 4, Cap Com, do you want to turn off your computer.

S/C: Roger

CC: Okay

End Tape

This is Gemini Control Houston 74 hours, 39 minutes into the mission. At almost precisely 24 hours, correction, 23, 23 hours from now, we should have retrofire. We are in our 48th revolution with the spacecraft on the crossing the seventh, the, uh, southern tip of Africa coming up on a night time period in a very few minutes. We've been out of touch since loss of signal at Bermuda. Perhaps 15 minutes ago. During the next hour the spacecraft will perform some orbital navigation checks between Hawaii and Guaymas. It has been running in the horizon scan control mode now, for the, uh, past two hours. It uh, will continue that mode for, throughout most of the day. All in all we're looking fine and dandy here in the Control Center, we have another visitor coming up, expected shortly, Congressman Teague of the Manned Space Fl., Manned Space Subcommittee of the House Space Committee. Congressman Teague is from College Station. This is Gemini Control. End Tape.

Gemini Control here 75 hours 10 minutes into the mission of the 48th revolution with the spacecraft northeast of Australia. Gemini IV got its updates on future planned landing areas, contingency landing areas in the pass over Carnarvon, and there was no other business to take up at that time. They are still flying in the horizon scan control mode. We here in the Control Center, the controllers have taken a luncheon break. In the course of taking mine, I chatted with the gentleman from a local catering firm that has handled our cafeteria about 2 steps off the Control Room floor. His food certainly is worthy of mention. He has provided around-the-clock cafeteria service since lift-off. You get a nice luncheon spread, sandwich, etc. for about 95 cents, Sausage, eggs and coffee for about 50 cents. He tells me since lift-off he has served more than 2800 cups of coffee. I couldn't resist asking what the planned usage rate was, and he said, "like everything else in the mission, that's just about as expected." This is Gemini Control.

END OF TAPE

This is Gemini Control Houston, 75 hours 38 minutes into the flight. Within the last minute, we acquired the Gemini IV spacecraft by the Guaymas station. We are reading solid TM now on the ground from Guaymas, and momentarily we expect Gus Grissom and Jim McDivitt to get into conversation. Texas has acquisition. Stand by and let's tune in live for this pass across the United States, which will probably be the last good one today.

END OF TAPE

This is Gemini Control, Houston, 76 hours 11 minutes into the mission. We're in the 49th revolution. In the last pass across the United States toward the end of that pass, comparing notes with the ground, Jim McDivitt noted some trouble in his ON/OFF switch in operating the computer. The indications are that the switch may have been stuck in the ON position. There are several ways around this switch, the most important of which is the Master IGS power switch. McDivitt was advised to turn the IGS power switch off and leave the computer in the ON position. We're unable to confirm whether he received that transmission as it occurred toward the jag end of his U.S. pass. We will confirm it at subsequent stations, however. We're ready to play for you at this time the tape of the pass. The conversation begins approximately at Texas. There was no conversation during the first half of pass. Let's have the tape.

CC Gemini 4, Guaymas Cap Com.

S/C Go ahead, Guaymas. Gemini 4.

CC Roger. All systems are green. We've got a change in time for your D-9 experiment, run 4.

S/C Ok. Stand by one.

S/C Go ahead, Guaymas.

CC Roger. Start at sunset on rev 50 at 20 51 Zulu.

S/C @0 51 Zulu?

CC That's affirmative. Flight, Guaymas Cap Com.

Flight: Go ahead.

CC All systems are green. We passed up that information.

Flight: Roger.

CC That TR clock looks like about one second leading.

Flight: One second leading?

CC Yeah.

CC Texas has acquisition.

CC Gemini 4, Houston Cap Com.

S/C Go ahead, Houston. Gemini 4.

CC Jim, would you turn your computer on.

S/C Roger.

CC Ok. I've got another experiment to pass up to you here.

S/C Ok. Just a minute.

S/C Go ahead, Houston. Gemini 4.

CC Hey, Ed, you're awake.

S/C Hi.

CC This concerns the zodiacal experiment which is going to be on 5. And they want to find out if they're going to get any fogging of their film from the attitude control thrusters. So

we'll likely use your 35mm Conterax and you can use either black and white film or color. And set it wide open at F18 with the range set at 8 feet. Then we'd like for you to put the camera against the window and hold it so that the nose isn't in the field of view. Then we'd like two sets of photographs. One should be in pulse mode and have the spacecraft pointed straight down to black earth - this will be - I'll give you a time to start it - this will be at the black earth on night side and then give one pulse up pitch - pitch pulse up - and get a picture with the shutters of the camera open in a bulb position. And as you come up through the horizon, why, get another picture with pitch-down pulse with another frame of the camera and again let the shutter wide open at that time. And then we want the same type of picture - we want a picture pulse up with the horizon view, with the black earth view and a picture pulse down with the horizon view and the black earth view.

S/C Roger - I got a pulse up and pulse down with the bulb position on the 35 mm black and white or color. Set it up in 18 at 8 feet.

CC That's affirmative.

S/C Ok. Will do.

CC Ok. We recommend you do it on rev 51, starting at about 21 40 GMT.

S/C Roger. Rev 51, about 21 40.

CC Roger. You can turn your computer off now. We checked your load in it and it's all ok.

S/C I have a question on the D-9 experiment. Is that the Apollo run Number 4 or is that the other - the Air Force run Number 4?

CC It's Air Force run.

S/C Ok. When are we going to do the Apollo run 4? That's the one where we take all those --

CC Didn't you do it?

S/C . . .

CC Didn't you do it? Didn't you do the Apollo one?

S/C No. We haven't done that one yet.

CC Ok. We'll schedule that for you.

S/C Ok.

CC Ok. Jim, would you press on your sternal leads? Hey, and we have indication that you're using about two amps more than we think you should. We're wondering what is the position of your suit pan, or do you have something else on that we don't know about.

S/C Yeah, we have the suit pan at two - we'll turn them back to one.



CC Cycle it one time, now, Jim.

S/C . . .

CC Say again.

S/C Yes. Can you tell what mode we're in down there?

CC Affirmative.

S/C Ok. We're going to catch-up as soon as it switches over there.

CC It's a catch-up.

S/C Did it switch on?

CC It sure did. Switch it back to off.

S/C Houston.

CC Go ahead, Jim.

S/C What mode are we now?

CC You're in catch-up.

S/C Is that what it shows down there?

CC It shows you in catch-up and on, that's correct.

S/C Ok. My ON/Off switch must have failed in the ON position.

Hey, ground.

CC Go ahead.

S/C We're going to switch the IGS power off and let it go back to prelaunch and just turn the IGS power on.

CC Just stand by on it, Jim.

CC Did you get that?

CC Gemini 4, Houston Cap Com.

S/C Go ahead, Cap Com. This is Gemini 4.

CC Leave your computer the way it is for a few minutes. Ok?

S/C Ok. I'll leave it switch off, in prelaunch, with the computer light burning. Actually, the computer's on, I guess.

CC Roger. We got all the experts pouring through the books, here.

S/C Ok.

CC Hey, Jim. Did you have your HF on when you passed over Ascension in the last orbit?

S/C Well, I did have my HF on but I was reading somebody in UHF.

CC Yeah, they gave you a call.

S/C I answered him UHF but I never got a response.

CC Ok. Fine. Hey, we're still thinking down here. Gemini 4, do you still read?

CC Gemini 4, Houston Cap Com.

CC Gemini 4, Houston Cap Com.

CC Gemini 4, if you read turn your IGS off.

End of Tape.

This is Gemini Control Houston, 76 hours 41 minutes into the mission on the 49th revolution. Just had a pass at the northern edge of the Carnarvon contact zone. We are satisfied now that in the pass that McDivitt heard our broadcast as he went down the Eastern Test Range. We are satisfied that he has left his computer switch in the ON position, and over on the upper right wall of the cabin over Ed White's right shoulder, he has put a switch there, the IGS switch in the ACME position. Earlier, we had - indications were that we had asked them to put that IGS switch in the OFF position, but reconsideration with the Guidance Navigation and Control people here thought it best to put it in the ACME position, which means attitude control maneuver electronics. This will leave - this allows electricity to flow through the ACME circuits which control the maneuver thruster action. We expect contact with the Rose Knot Victor in 67 minutes from now. Meanwhile, we have the tape for you from the Carnarvon pass. It is very brief and it is noisy. Here it is at this time.

S/C Hello Carnarvon, Gemini IV, over and out

CC Roger, is your computer switches in the ON position, your AC power switch in the ACME position.

S/C Computer switch is ON and AC power in ACME, is that right?

CC That's affirmative.

S/C Okay.

FLT Where did he have it?

CC What position were you in?

S/C It was in - . . . switch ON and AC power in IGS.

CC Roger. I understand

CC What load were you in?

CC What computer load were you in?

S/C ..... Computer ON ..... AC power switch in IGS

CC Okay

FLT Carnarvon ask him to describe again what happened when he turned the switch to the OFF position, and after he's done that , if he hasn't said so, ask him if he saw a mal .

CC Roger

CC Tell me what happened when you went to OFF position.

S/C Carnarvon . . . Gemini IV

CC I read you loud and clear.

CC Go ahead Gemini IV, I read you loud and clear

S/C Carnarvon, Gemini IV

CC Gemini IV, Carnarvon Cap Com

S/C Carnarvon, Gemini IV

CC Gemini IV, Carnarvon Cap Com

CC Gemini IV, Carnarvon Cap Com

CC Gemini IV, Carnarvon Cap Com. Over

CC Gemini IV, Carnarvon Cap Com

FLT You had very low elevation this pass, Eddie, he may not be reading us.

CC That's probably true, I'm getting a lot of dropouts.

CC Gemini IV, Carnarvon Cap Com

S/C Carnarvon, Gemini IV, do you read?

CC Read you loud and clear, how me?

S/C Loud and clear

CC Okay, tell me briefly what happened when you went to the OFF position over the mainland.

S/C I went to the OFF position ... nothing happened

CC Did you get a malfunction light?

S/C What

CC Did you get a malfunction light?

S/C No, I didn't. I got the malfunction light when I turned the AC power from IGS to ACME.

CC Roger, I understand.

S/C .....

CC Did you copy that play?

FLF No. I'm not sure I understood it, but keep . . . . him, and we will get a briefing from you, if you understood it.

CC Okay, .....

CC Gemini IV, Carnarvon, how do you read?

END OF TAPE

This is Gemini Control, 77 hours and 28 minutes into the mission and we've just started the 50th revolution. For the last revolution around the earth, we've had - encountered a little difficulty with the onboard computer switch. The ON/OFF switch has been acting up. We've tested the circuit breakers on it and looked at it. It isn't acting just exactly as it should. I am pleased to report that all other systems on board are entirely green at this time. This particular switch is the subject of considerable conversation that we have on tape - conversation first with the Coastal Sentry Quebec, then a brief conversation with the Hawaii station and then as the spacecraft swung down the western Central American coast, through Houston. It's also worth noting that throughout the course of this flight, we have mentioned time and again, Gus Grissom, the Capsule Communicator on this shift, and at his side every day has been John Young who was also at his side some 76 days ago, during their flight in GT-3. John, during the course of this flight, has been just as silent as he was during that GT-3 flight. Gus has done all the talking. We're prepared to play the tape for you now and we'll listen to that tape at this time.

S/C CSQ, Cap, Gemini 4.

CC Roger. Do you have a computer malfunction light on?

S/C Negative. But I sure have a pretty combination of switches. I've got the ACME power on and I've got the computer on - my computer light finally went on and finally my malfunction light went off.

CC Can you tell me when your computer light went on and when your malfunction light went off.

S/C Ok. When we put the ACME . . . . I changed to ACME and I put the power in the computer, the computer light went off, the malfunction light came on, but the computer light came back on again and the malfunction light stayed on and then some bulbs got dimmer. A little while later, about three or four minutes after we went to ACME power, the computer went out. The malfunction light stayed on for about another four or five minutes and finally it went out.

CC Roger.

Flight: Send us a message on that CSQ. Describe it.

CC Say again.

Flight: Send us a teletype message.

CC Roger.

CC Flight, all of his systems look good.

Flight: Roger.

S/C Station calling Gemini 4, say again.

CC Roger, Hawaii, calling Gemini 4. Would like to remind you you have critical tape dump over Guaymas. Acquisition time of Guaymas, 20 25 03. Did you copy? Over.

S/C Negative. I did not copy.

CC Roger. Your critical tape dump over Guaymas. Acquisition time, 20 25 03. Did you copy? Over.

S/C You said we have a critical T/M dump over Guaymas at 20 25.

CC Roger.

S/C Who am I talking to?

CC This is Hawaii.

S/C Roger, Hawaii. Can you tell me how I am doing on my electrical power?

CC Roger. Stand by.

Flight: You're doing great.

CC Roger. Flight reports you are doing great.

S/C Above or below the predicted?

Flight: He hasn't used as much as we predicted and we predict he's got plenty of power left.

CC Roger. You have not used as much as predicted and should be well ahead.

S/C Rog.

CC You're fat by approximately 160.

S/C Roger. Understand I've got 160 amp power more than we had planned.

CC That is affirmative.

S/C Ok.

S/C Have they got my computer figured out yet?

Flight: Negative.

CC Negative on that, Gemini 4.

Flight: We're working on it.

CC They're working on it at the present time.

S/C Ok.

CC Flight, Hawaii.

Flight: Go ahead.

CC We did send a TX. It was rejected on our first transmission. Retransmitted and it was accepted.

Flight: Rog.

CC All systems looked good on the ground. Negative malfunction light.

Flight: Rog.

CC Flight, Hawaii.

Flight: Go ahead.

CC We have had LOS.

Flight: Roger.

CC All systems looked Ok on the ground, Flight.

Flight: Roger.

CC Gemini 4, Houston Cap Com.

S/C Ok, Houston. This is Gemini 4.

CC Roger. Gemini 4, we would like for you to bring your IGS - your power switch - ease your power switch back to IGS and your computer switch on. And we'd like for you to watch - when you do that we'd like for you to watch for a rise in amperage to make sure it comes on.

S/C Ok.

CC We want you to leave this on till you just about finish your pass over here. We want to check the computer memory.

S/C Ok. It's going on now.

CC Guaymas, go ahead with your pass.

CCG We're having a little difficulty locking up on T/M.

Flight: Roger.

S/C Houston, Gemini 4. I've got the malfunction light on now. It won't go out.

CCG Gemini 4, Guaymas Cap Com.

S/C Roger, Guaymas, Gemini 4.

CCG Roger. I'm not receiving T/M. I'm getting it intermittently now.

CCG Gemini 4, Guaymas Cap Com. We're standing by for a tape dump.

S/C Roger. You want me to dump it or can you just dump it by command?

CCG You'll have to dump it.

S/C Ok. Tape playback coming on continuous.

CCG Flight, Guaymas.

Flight: Go ahead.

S/C Be advised I can't get my malfunction light on my computer now.

CCG Roger. Did you copy, Flight?

Flight: He now has his mal light off?

CCG He's got it on and he can't get it off.

Flight: Rog.

CCG Gemini 4, we've still not received your dump.

S/C Ok. I've got the tape playback continuous.

CCG Guaymas Cap Com, Houston E Com, get a transmitter on.

CCG I have still no modulation, Gemini 4.

S/C Ok. Stand by.

Flight: Has he got the transmitter on?

CCG That's affirmative. I've got a carrier, Flight. No modulation, though.

Flight: You're sure that isn't the Aq aid?

CCG Negative. People are cued up for a dump.

S/C Guaymas, Gemini 4. All the switches and circuit breakers are on. You ought to be getting it.

CCG Roger, stand by.

CCG Flight, I think you're right. T/M says he can't tell for sure whether it's Aq aid or the dump.

E Com: Guaymas, Cap Cpm, this is Houston E Com. Have that T/M switch to real time/delayed time and you'll get it.

CCG That's how he turned it on, I assume. Gemini 4, Guaymas Cap Com.

S/C Go ahead.

CCG Did you place the telemetry switch to real time and dump time?

S/C Real time and delay time?

CCG That's affirmative.

S/C Ok. You can't command anything on, that right?

CCG I got it now, Gemini 4.

S/C Roger.

CCG We finally got it, Flight.

Flight: Roger.

CCG Do you want a computer summary, Flight?

CCG Houston Flight, Guaymas Cap Com.

CCH Gemini 4, Houston Cap Com.

Flight: Stand by.

CCH Gemini 4, Houston Cap Com.

S/C Go ahead, Houston, Gemini 4.

CCH Roger. Would you check your indicator light test circuit breaker and make sure - and turn it off and see if it turns off your mal light. Over on your left panel.

CCH Do you know the circuit breaker I mean, Jim?

CCH Gemini 4, Houston Cap Com.

CCH Gemini 4, Houston Cap Com.

S/C Go ahead, Houston, reading you loud and clear.

CCH Roger. Turn off your indicator light test circuit breaker on your left circuit breaker panel.

S/C Roger. I already have, Gus, and it didn't turn off the light.

CCH It doesn't do it any good, huh?

S/C Negative.

CCH Will you turn your quantity read on for ten seconds?

CCH Jim, we show that the memory is ok. We're showing about the same thing you are otherwise.

S/C Ok. Let me cycle the computer mode up to - say, catch-up. and then prelaunch.

CCH Ok.

S/C That didn't seem to do any good.

CCH You have the computer switch on and your power switch in IGS, right?

S/C Affirmative. I have the computer switch on and the power switch in IGS. Let me switch the computer switch off and back on.

CCH Jim, What I told you about your memory isn't correct. We have - we're not able to check your memory this pass.

S/C Ok. Be advised that even when I turn off the computer operate switch I still have the malfunction light on.

CCH Roger. How about going to catch-up and hitting that Start Comp.

S/C Ok.

CCH Nothing happens when you hit your reset button, huh?

S/C Yeah, the light goes out and goes back on in a couple of seconds. Just like there's a malfunction.

CCH Ok. Have you hit Start Comp?

S/C Yeah. That's what turned the computer light on.

CCH Ok, Jim. Go ahead and put your EC power switch to ACME. Leave your computer switch on.

S/C Computer switch on. Ok.

CCH We'll work on it. We'll give you an answer when we get one.

S/C Ok. Be advised when we go to ACME . . . for just a short time very dimly and then go out.

CCH Say that again.

S/C . . .

CCH Ok.

End of Tape.

This is Gemini Control Houston, 78 hours and 11 minutes into the mission. Mission Director Chris Kraft has just advised the Coastal Sentry Quebec in the western Pacific to pass up to the Gemini IV spacecraft in approximately 5 minutes the time-to-retro values for a 63-1 landing. This would be in the primary landing zone for the 63rd revolution. We are now in the 50th revolution, and this pass is taking the spacecraft over the northeast coast of South America. During the course of that pass over northeast coast of South America, the pilots were to energize the flux gate magnetometer and the electron proton spectrometer, two devices used to measure the strength of the magnetic field which dips to its lowest point over the earth just off the coast of South America. Both pilots were scheduled to eat - they are scheduled to eat right now. They should have started a few minutes ago. In about half an hour, it will be Jim McDivitt's turn to go back to sleep. Flight progressing very nicely at this point. We still haven't quite figured out what's wrong with that computer switch which has been acting up, but it is not of critical concern. Reviewing the electrical circuits involved and hope to have a solution shortly. This is Gemini Control at 78 hours and 12 minutes into the flight.

END OF TAPE

Gemini Control here, 78 hours 45 minutes into the mission on the 50th revolution. At this time, Jim McDivitt, who was programmed to catch a little sleep in this period, is still up. He is talking now to the Guaymas station as the spacecraft swings along the Mexican coast. He has been describing whether they are going to put their various items of equipment, got it all laid out, H just broke us up here by saying after reeling off a long list of storage spots, someone reminded him that it was pretty crowded up there and he suggests that we could just barely see out the windows. Earlier we had an outstanding pass in the Pacific area where he was in touch with the Coastal Sentry Quebec. Then the range tracker ship immediately after CSQ, and then Hawaii. That tape is ready. We now have the tape and will roll it for you at this time. This is Gemini Control.

CC Gemini IV, CSQ, do you copy?

S/C Go ahead CSQ, you want a . . . . on the pilot, is that right?

CC On the Command Pilot. Skip the temperature and just give us the blood pressure.

S/C Okay.

CC Is the pilot awake?

S/C Yes he is.

CC Will you give me your status on main batteries?

S/C Roger. Just a minute.

S/C Okay, we've got full scale on the . . .

CC Turn the . . . . switch off

CC Gemini IV pilot, CSQ, do you copy?

S/C I did

CC Roger. on your main - main batteries

S/C Roger

CC Roger, advise the command pilot first blood pressure is good

CC Go ahead exercise on your mark

S/C Main batteries are on 9 and 22 and one-half.

CC What is your status for the 63rd rev?

S/C Status is GO

CC Roger. We are GO/also, I am going to have to change your .....  
on the ground  
with the 63-1 TR.

S/C Roger. I've had my battery readout . . . at 9 and 22 5.

CC Roger got that. and the adapters all reading around 2 and 24 and 1/2.

CC You say amps reading 2 and voltage 24.5

S/C Roger about  $2\frac{1}{2}$

CC Roger.

CC Be advised that the - Houston does not know yet what the problem  
is on that computer. You will still be advised later.

S/C Thank you

CC Okay, we got a full cut on the blood pressure?

CC Your 63-1 G.m.t. RC time , I've got it when you are prepared to  
copy.

S/C All right go ahead.

CC 63-1 16 hours 56 minutes 01 seconds.

S/C Roger. 63-1 16 56 01

CC Roger. That second blood pressure is good.

CC Has the command pilot been drinking water?

S/C Affirmative. I guess I have been drinking water . . . had a meal.  
.....  
.....

CC He is halfway through one meal.

S/C Affirmative.

CC How much water?

S/C About 10 gulps. . . . in the last 3 hours.

CC Roger. Copy

CC Okay. I have some flight plan items for you, when you are prepared to copy.

S/C I'll try it.

CC Roger. Experiment MSC 2 and 3, on and off by preschedule time.

S/C Roger. Do you have a ..... on that?

CC Roger. The MSC 2 and 3 . . . forward start at 23 hours 49 minutes end at 15 minutes on revolution 52. Are you clocked out on the ..... mission?

S/C Roger. End of Experiment MSC 2 and 3, 15 minutes. The next day read 52.

CC Houston flight, CSQ

FLT Go ahead.

CC Did you copy?

FLT Affirmative. Loud and clear.

CC Gemini IV, Hawaii Cap Com

S/C Hawaii, Gemini IV

CC Roger. I would like to complete your flight plan update. I would like to confirm you have got item 2 MSC 2 and 3. Are you ready to copy?

S/C Roger. We are ready to copy, but speak slowly, you're breaking up.

CC Roger. Item 2, MSC 2 and 3 FBF high, start at 23 49 Lulu, end at 00 15, rev 52. Did you copy, over.

S/C MSC 2 and 3 fall in forward at 23 49 end at 00 15 rev 52.

CC Roger V8 experiment. Check number one. Start at 23 57. Check number 2, start at 01 30. Item number 4, onboard map update, rev 50 ..... node 102 degrees east at G.m.t. of 21 26.

Item 5, if possible, F6 photos of tropical storm off the west coast of Mexico, tropical storm, Victoria. Item number 6, delete Apollo landmark run number 7. Area is too cloudy. Did you copy? Over

S/C Roger. I copied all the information.

CC Roger. You look good here on the ground, Gemini IV

S/C You look good up here also.

CC Roger.

CC Hawaii Cap Com standing by

S/C Roger

CC You copy, Flight?

FLT Roger, loud and clear

CC Roger, We got the Tx time here for Guaymas and LOS.

FLT Rog.

CC Gemini IV, Guaymas Cap Com

S/C Go ahead Guaymas, Gemini IV

CC Roger. All systems look great. FLight would like you to think about where you plan on stowing the equipment. They would like to come up with a ..... So in the next few hours, if you could, we would like you to think about it and maybe tell us where you are going to put all the things.

S/C Okay, we have already thought about it, and we thought about it quite early in the ball game. We are going to put the . . . pack back down in the wheel well, foot well at the righthand side, poke it back down where it was at the launch.

CC Rog.

S/C We are going to take the cables and Ed is going to hold it between his legs, about level with the bottom of the seat.

CC Roger

S/C We are going to put the gun back in the ..... box.

CC Roger

S/C We are going to put the film in the center food box

CC Say again

S/C We are going to put the film, the . . . . film

CC Roger

S/C We are going to put the camera in the lefthand foot box.

CC Roger

S/C We are going to put the . . . in the middle . . . box

CC Roger

S/C And all the refuge is going in the righthand food box.

CC Roger

S/C I think that takes care of it.

CC Roger. We got it.

S/C Okay, the refuge that doesn't fit in the righthand food box will go either in the lefthand food box or in the sidewall box where we have got the film.

CC Roger. Did you copy all of that, Flight?

FLT Roger

S/C The sleeves on the .... suit in that extra thick garment on one of my legs will be stowed in my foot well on the left side.

CC Roger

S/C And I think that takes care of it.

CC Sounds like you are kinda crowded up there.

S/C It is pretty deep, I can just barely see out the window.

CC We will see you tomorrow.

S/C Okay

CC Did you copy all of that, Flight?

FLT Loud and clear

FLT Tell him flight wants to know how much the refuge weighs.

CC Gemini IV, flight wants to know how much that refuge weighs.

S/C About 3,000 pounds.

CC I'll pass that along.

FLT The packages that the food came in, the defecation bag, the ...  
urine bag, and a lot of waste paper like that, so it shouldn't  
be too heavy.

CC Roger

FLT He got the point the first time.

End of Tape

This is Gemini Control, 79 hours 8 minutes into the flight, on the 51st revolution. The spacecraft just left the southeast coast of South America and entered dark - entered another night. It will probably be out of contact with our stations this pass. The pass will carry it over Pertoria and Tannarive. But Tannarive's voice contact reported up earlier has not functioned this afternoon. Then the pass will swing up across the Indian Ocean along the China coast and back across the Pacific. The shift is about to change again. The team led by Gene Kranz. Many of the flight controllers are coming in now, conducting the normal kind of changers shift briefing that goes on. This is Gemini control.

END OF TAPE

This is Gemini Control. It is 79 hours and 39 minutes since Gemini 4 lifted off at Cape Kennedy last Thursday morning. The spacecraft is now in its 51st revolution around the earth and at the present time is over southeast Asia on the night side of the world. We have just had a shift change here at the Mission Control Center. Gene Kranz has again taken over as Flight Director from Chris Kraft and his White Team has moved into the consoles. Before leaving the Flight Surgeon console at Mission Control Center, Dr. Charles Berry said the astronauts are in great physical condition. At this time, in spacecraft Gemini 4 command pilot Jim McDivitt is a sleep period. Pilot Ed White is taking pictures of the attitude control thruster plumes, according to our flight plan. This is Gemini Control.

End of Tape.

This is Gemini control at 80 hours and 8 minutes into the four-day flight mission of Gemini IV. The spacecraft is on its 51 st revolution of the earth and is now over the Pacific Ocean. As the spacecraft passed over the Coastal Sentry Quebec our tracking ship in the Pacific a few minutes ago pilot Ed White received directions for test that may clear up the question as to whether or not the spacecraft computer is functioning properly. On instructions relayed to Gemini IV from the MCC, White turned the computer switch to OFF Position. He then turned on the AC power to the inertial guidance system and then again turned the computer to ON position. He was asked to let the computer run for approximately 90 minutes to two hours. This may warm up the switch mechanism if it had been cold. If the test is successful the computer will be left on for the rest of the mission - the computer switch. Pilot White acknowledged the message. He also reported sighting tropical storm Victoria, located off the coast of Mexico. We will now play back the voice tape between the Coastal Sentry Quebec and the spacecraft. This is Gemini control.

S/C Gemini IV to CSQ, do you copy?

CC Roger. Houston request that we pass the following info to you, regarding the computer problem. Do you copy?

S/C Roger, go ahead.

CC Roger. They report that in ground testing on spacecraft GT-2 and GT-3 the same problem was encountered and that it apparently

was caused by the computer being too cold. And Houston request you to take the following action. Do you copy?

S/C Roger. Copy and standing by.

CC Roger. Computer switch to OFF, AC power switch to IGS, then computer switch to ON. Do you copy?

S/C Roger. Computer OFF, AC ON, computer ON.

CC Roger. After about 20 minutes start punching the malfunction light to see if it will reset and extinguish.

S/C Roger. Then wait 20 minutes see if it resets and extinguish.

CC Roger.

Flight CSQ, Houston Cap Com Houston Flight.

CC Go ahead, flight.

Flight Roger. If he doesn't get the light to extinguish the first time, have him keep doing it at intervals of 5 to 10 minutes.

CC Gemini IV, if the malfunction light doesnot reset the first time, keep turning it at intervals of 5 to 10 minutes.

S/C Roger. If it doesn't reset the first time, try at intervals of 5 to 10 minutes.

CC Roger.

S/C If we get that thing running again do you want us to leave it on operate?

CC Roger. It will be left on for the rest of the flight.

S/C Seems like a good idea to me.

CC Say again.

S/C

S/C That sounds like a pretty good idea to me.

CC Roger. This is an attempt to get the computer warmed up and also recharge the ACVU which is probably run down at this time

S/C Roger. Understand . . .

CC Roger. All systems look good on the ground and that is all we have unless you have something else to report.

S/C Report to the W men the <sup>sighting of</sup>/tropical storm Victoria, the clouds and outer extremities . . . that we passed over . . . .

CC Roger, understand.

S/C . . .command pilot . .

CC Say again about command pilot.

S/C The command pilot is retiring for the evening.

CC Roger.

S/C . . .

CC Roger. We'll be seeing you next pass.

S/C Roger. Thank you very much.

CC Roger

Flight CSQ Cap Com Houston Flight

CC Go ahead flight.

Flight Roger. Tuck did he ever get your TX?

END OF TAPE

This is Gemini Control at 81 hours 21 minutes into the mission. Gemini IV is on its 52nd revolution around the earth and is now over China. The apogee of our revolution is approximately 161 statute miles, the perigee is about 98 statute miles. As Gemini IV passed the Rose Knot Victor tracking ship in the Pacific, a short while ago, pilot Ed White advised that the computer light switch is still on. Indicating we still have the computer problem. Rose Knot Victor ship personnel reported they were able to see the spacecraft as it passed over their station on the night side. We will now play back the voice transmission tape made during that pass. This is Gemini Control.

Flight Hawaii, Cap Com Houston flight.

CC Go flight.

Flight Roger. Will you query the astronaut and see if he has attempted to powerup the computer as we indicated over the CSQ?

CC Roger, will do.

CC Gemini, Gemini IV, Hawaii Cap Com.

S/C Come in Hawaii, Gemini IV.

CC Roger, we would like to find out if you tried the procedure that was given you over CSQ on your computer.

S/C Affirmative, the procedure was given me 10 minutes ago and I have 10 more minutes to wait till I try to reset.

Flight We heard that Hawaii.

CC Roger, Gemini IV we heard that.

S/C How is everything down there?

CC You are looking good here Gemini IV.

S/C Roger. We are all fine up here.

CC Roger.

CC Gemini IV, RKV Cap` Com.

S/C . . . . garbled

CC Roger. We are showing the indication here on the ground of the computer being in a prelaunch mode. We are also showing a malfunction indication. How does it look up there?

S/C . . . . and I have been unable to reset it.

CC Roger, flight advised that it may take a little while and continue attempting to reset it during this rev.

S/C Roger. Will do.

CC` All of your systems look good here on the ground. We will stand by for the rest of this pass.

S/C Roger. They are all good up here, also.

CC Roger.

S/C Flight, we have an indication of a valid pos on the computer do you want a summary? Onboard computer summary?

Flight Roger, go ahead.

S/C Okay, we are sending it now. We are showing in indication of FEP lagging by 5 minutes here on the ground. Could you give me a readout on ground elapsed time, please.

Flight Roger. Ground elapsed time on my MARK will be 80 hours 30 minutes. 2 1 MARK. 80 hours 30 minutes.

S/C Roger, thank you. We are a little off here. Thats about a 2 second error in SET

Flight Roger.

S/C  $T_R$  is right on.

Flight Roger.

S/C We are showing a fluctation in AC voltage. It's fluctating between 26.8 and 27.3.

Flight Roger.

S/C Local printout on the data on the computer looks pretty good from here.

Flight Say again.

S/C We made a local printout of the onboard computer and it looks pretty good from here.

Flight Okay.

END OF TAPE

This is Gemini Control. The Gemini IV spacecraft passed over the Coastal Sentry Quebec tracking ship in the Pacific Ocean a few minutes ago. The spacecraft is 81 hours 41 minutes into its mission and on its 52nd revolution of the earth. Coastal Sentry Quebec flight controllers advised pilot Ed White to leave the computer switch in the ON position and said it might take a few revolutions to "lineup". The tracking ship also advised Ed White that the spacecraft looked in GO position from the ground. White replied all systems are GO here, also. We will now play back that voice tape.

CC Gemini IV, CSQ Cap Com. Do you copy?

S/C Go ahead CSQ, Gemini IV.

CC Roger. Flight advises it may take several orbits for your computer to come on line. Would like for you to leave the computer in the prelaunch mode and then will advise you later.

S/C Roger, I understand. Leave it in the prelaunch mode.

CC Roger. The ground will follow trend data and advise you later.

S/C Roger, I understand.

CC Be advised also, that you have a critical tape dump over Hawaii and also a medical pass.

S/C Roger, I understand.

CC That's in about 7 or 8 minutes.

S/C Roger.

CC Also we have a new computation on your orbit. Perigee 85.3  
Apogee 139 with a three day life time.

S/C I understand, 85 and 139.

CC Roger.

CC Gemini IV, give us your quantity read switch for about 15 seconds.

S/C Roger

CC Roger, we've got it.

Okay we've got your quantity.

S/C Quantity off.

CC All systems look GO down here.

S/C Good, they are all good up here, also.

CC Roger.

END OF TAPE

CC Gemini IV, Hawaii Cap com. We have your temperature. You can start your blood pressure and stand by for our surgeon.

S/C Roger, coming right up. We are dumping blood.

CC Roger, I have a radar track, okay.  
Gemini IV, Hawaiian surgeon.

S/C Go ahead Hawaii, Gemini IV.

CC We are having some difficulty recording blood pressure on the ground but the data is being remoted to Houston. We will try it once more.

S/C Roger, pumping it up. Full scale.

CC Houston flight, this is Hawaii Cap Com.

Flight Go Hawaii.

CC Are you receiving our blood pressure there.

Flight Affirmative

CC Roger, we are not copying it here on the ground.

Flight Okay, I'll tell you when its full scale, if you need it.

CC Okay, we have a valid blood pressure, standing by for exercise on your MARK.

CC We can handle that flight.

Flight Okay

S/C MARK.

Flight Hawaii your biomed data is excellent.

CC Roger.

CC Flight, Hawaii we are experiencing dropout on TM.

Flight Roger, we are experiencing dropouts on your data back here too.

CC Modulation on dump is still coming through good though.

Flight Roger.

CC Gemini IV, Hawaiian surgeon be advised we had telemetry dropout and may have missed your second blood pressure. Have you transmitted yet?

S/C Roger, I've transmitted.

CC Roger, would you give us one more, please.

S/C Roger, coming up. Got a full scale.

CC Looks like this will be a good one. Standing by for your food, water and sleep report.

S/C Roger. I started on the meal 1 of day 4, I've had about 8 swallows of water. I slept about an hour and a half this last 4 hours.

CC Roger, was it good sleep?

S/C It was a good sound sleep and I don't feel that I require any more.

CC Roger, thank you Gemini IV. Back to Hawaii Cap com.

S/C Roger

CC Gemini IV, Hawaii Cap Com. I have a D-9 update for you. When you are ready to copy.

CC Gemini IV, Hawaii Cap Com.

Gemini IV, Hawaii Cap Com

S/C Go ahead Hawaii, Gemini IV.

CC Roger. I have a D-9 update for you when ever you are ready to copy.

S/C Roger, ready to go.

CC Apollo run 4. Your start time 00:02:45. Stop time 00:03:21. Did you copy, over?

S/C Roger, understand. Apollo run 4, 00:02:45, 00:03:21

Flight Hawaii, those are hours and minutes as given.  
Hawaii Cap Com, Houston Flight.

CC Go, Hawaii.

Flight Roger, those times were incorrect. They are hours and minutes.

CC Roger.

CC Gemini IV, Hawaii, Cap Com.

S/C Go ahead, Gemini IV

CC Roger, those times I gave you were in error. That is 02 hours 45 minutes for your start time. 03 hours 21 minutes for your Stop time.

S/C Roger, 02 45 and 03 21. I copied them also.

CC Roger.

S/C I've been advised by last MSC that I passed through the anomalie. I didn't feel I had a good dial reference small-end-forward on I'm going to repeat with my small-end-forward/this run to be sure we have a good run. I'll do a modified version of the Apollo Number 4.

CC Roger, understand.

Hawaii, Cap Com standing by. Everything looks good on the ground.

Flight Stu you can tell him his coolant temperatures are coming up some what so we are optimistic about being able to get this computer on line.

CC Roger, I understand.

Gemini IV, Hawaii Cap Com. Be advised your coolant temperatures are coming up and do we do feel optimistic about your computer problem. Did you copy Gemini' IV?

Flight I think he did Hawaii.

CC Roger, flight. Did you copy on the experiment, the MSC experiment.

Flight Roger. He says he is going to do a modified version of same.

CC Roger.

End of Tape

This is Gemini Control. Our Spacecraft Gemini IV is now over the east coast of South America on its 53rd revolution over the earth. Ground elapsed time is now 82 hours and 11 minutes since lift-off. A short while ago the spacecraft passed over the Rose Knot Victor, our tracking ship off the east coast of ~~Pura~~<sup>Pera</sup>. Pilot Ed White was advised that Pegasus satellite would pass over the spacecraft at a slant range of approximately 300 statute miles, as he approaches the Coastal Sentry Quebec tracking ship in the Pacific Ocean. White acknowledged the data and reported that command pilot Jim McDivitt is still asleep. He said the computer light will now blink off when the switch is pressed but does come back on. Flight director Gene Kranz interprets as a sign that the warm up test will square the system away. We will now play back the voice transmission made as the spacecraft passed over the tracking ship. This is Gemini control.

CC Gemini IV, Gemini IV, RKV Cap Com.

S/C . . . Gemini IV.

CC Roger, we are showing the pumps on in both loops on the ground.  
Is that correct?

S/C Roger, I turned the secondary pump on (garbled)

CC Roger.

S/C Do you have any . . . .

CC Say again.

S/C . . . Garbled

CC I do not understand, say again, please.

S/C Roger. Hawaii was trying to give me some type of message concerning the . . . system when we had elapsed. Do you have that message for me.

CC Roger, we sure do. Indications are that the system is beginning to warm up somewhat and that we feel the computer will come on before long.

Flight Roger, have him turn the secondary loop back off, please.

CC Roger, would you turn the secondary loop back off, please.

S/C Say again, please.

CC Roger, would you turn the secondary loop off again, please.

S/C Secondary loop OFF.

CC Roger. I have a Pegasus update for you.

S/C Alright, go ahead.

CC Roger. That's Pegasus will be on the horizon, light of flight near CSQ, your 53rd rev. If you track in pitch you will be in 90 degrees pitch up. G.m.t. 02 hours 28 minutes. Slant range 268 nautical miles. Do you copy?

S/C Roger. I understand Pegasus is my 53rd rev, near the CSQ area 090 vertical, and 02 28.

CC Roger, slant range 268 nautical miles.

S/C Roger, 268 nautical .

Flight Okay, less get that repress valve, RKV.

CC Roger. We are showing approximately 950 pounds on your oxygen.

Would you turn the repress on and run that primary oxygen pressure down, please.

S/C Glad to.

CC Will you bring it on down to about 850?

S/C I would rather not right now. The command pilot is sleeping and I don't have him suited up the flight helmet.

CC What do you think flight?

Flight I didn't read that.

CC White says the command pilot is sleeping and he isn't suited up and he doesn't want to bring it down too far.

Flight Okay. That's dealers choice.

CC Roger, we concur.

CC Gemini IV would you attempt another recheck on that computer malfunction.

S/C . . .

CC Roger

CC This is RKV standing by. We have about 3 minutes left.

Gemini IV, RKV standing by. We have about 3 minutes left.

S/C RKV, thank you.

CC Everything looks good here from the ground.

Flight RKV, Gemini IV is calling 'you.

CC Gemini IV, RKV.

S/C Roger (garbled)

CC Roger, thank you. We saw you during the last pass.

END OF TAPE

This is Gemini control. It has been approximately 30 minutes since we had voice communication with the Gemini IV spacecraft. Since that time it has been out of range of our tracking stations. At present is over the Indian Ocean and the next voice contact will be established over the Pacific with the Coastal Sentry Quebec tracking ship. We are now in the 53 revolution and the spacecraft is coming up into a sunrise. At the present time we are approximately 17:15 hours from the termination of this four day mission. This is Gemini Control.

End of Tape

This is Gemini Control. After 83 hours and 14 minutes of flight, the spacecraft Gemini 4 is now over the Pacific Ocean on its fifty-third revolution and heading for South America. Passing over the Coastal Sentry Quebec tracking ship, we had voice contact with the flight crew, our first in approximately one hour. While out of voice contact, Pilot Ed White was busy, according to the Flight Plan with various experiments including the measurement of radiation both on the inside and the outside of the spacecraft. He uses sensors to get this data. Ed also was supposed to eat a meal during this time period. In the Mission Control Center, our flight controllers took advantage of this lapse of voice communication to take a hasty meal. We will now play back the voice tape of this voice conversation between the spacecraft and the Coastal Sentry Quebec tracking ship. This is Gemini Control.

CC Gemini 4, CSQ Cap Com. Be advised of your tracking stations. Do not exceed 45° pitch. We've got a critical tape dump. If you are not tracking Pegasus, please go to critical tape dump attitude. Please advise. Gemini 4, CSQ. Do you copy? Gemini 4, CSQ. Do you copy?

S/C CSQ, Gemini 4.

CC Are you tracking Pegasus?

S/C Just a minute.

CC OK. We've got a critical tape dump. Are you in attitude?

S/C It'll be a little hard to track Pegasus and be in attitude.  
What do you want me to do?

CC Don't exceed 45° pitch. We want the tape dump.

S/C Roger. Understand. If I track data from the Pegasus,  
I've got to get up to 90.

CC OK. We want the tape dump, so omit Pegasus.

S/C Roger.

CC Let me know when you're in attitude.

S/C Roger. Gemini 4 is in attitude.

CC Roger. I have an orbital map update for you.

S/C I understand. Let me know when you've got the tape and  
I'll go back up to tracking.

CC Roger. Will do.

Flt Chuck, let him go track. Let him go track.

CC Say again, Flight.

Flt Tell him to start tracking. If he had an acquisition,  
have him start tracking Pegasus.

CC I didn't copy, Flight. Say again.

Flt Tell him to start tracking Pegasus if he sees it.

CC Gemini 4, CSQ. Have you spotted Pegasus?

S/C Negative. I haven't got the attitude. If my time for the pass isn't finished when I get my tape dumped, I'll get back up.

CC Will do. OK. Your map update: ascending node red 53, longitude 35° East at 01 hours 51 minutes.

S/C Roger. Understand. Longitude 35° East at 01 hours 51 minutes.

CC Roger. Would you reset your malfunction light?

S/C Roger. I've tried to reset it quite a few times. It has to be reset.

CC Roger. I also have some CLA and PLA updates, if you'd care to copy. I'll give you just one and let RKV pass the rest to give you a chance to go back to tracking.

S/C Roger. Got it.

CC Roger. 54 Delta. 86 01 + 49. 03 02 14 10 + 36.

S/C Roger. Got it. Have you got my tape?

CC We're still receiving modulations. Stand by. Go ahead, Gemini 4. We shall track the Pegasus. Gemini 4, CSQ. Do you copy? Gemini 4, CSQ. Do you copy?

S/C Roger. We copy.

CC Roger. We've completed tape dump. Houston Flight, CSQ.

Flt Go, CSQ.

CC OK. We've got all the tape dumped, and I'm watching his pulse attitude maneuver system. He's evidently gone back to track.

Flt OK.

CC I've passed up the 54 Delta and that's all.

Flt Roger.

CC We got about three seconds off on the malfunction light.

Flt Three seconds off?

CC Yeah, about three seconds.

Flt Roger.

CC All other systems appear to be OK. Get all of that, Flight?

Flt Roger.

End of tape

This is Gemini Control, 83 hours and 39 minutes of accumulated flight time. The Gemini IV spacecraft is now over Argentina, near Brumas Aries. We are just starting the 54th revolution. Passing over the Rose Knot Victor tracking ship off the west coast of Peru a few moments ago, voice communication was ruled out so that pilot Ed White could complete a space navigation experiment using the sextant. Command pilot Jim McDivitt is still in his sleep period. The Rose Knot Victor reported that everything looked good from its position and that the computer malfunction light is still on. This is Gemini Control.

END OF TAPE

This is Gemini Control. After 84 hours and 10 minutes of flight the Gemini IV spacecraft is passing over Africa on its 54th revolution. Approximately 30 minutes has elapsed since our last voice communication with the crew. Meanwhile the check of the MCC consoles shows that our flight mission is in a GO condition at this time. Dr. Daune Catterson reports the pilots are in very good condition physically. The medical data is coming in solid, via telemetry from the spacecraft. The flight crew is catching up on their sleep and are eating and drinking to the satisfaction of the medical personnel. Gemini IV spacecraft systems are all GO according to Flight Director Gene Kranz. The only deviation from the normal is the malfunction indicator in the onboard computer. Our flight controllers are still working on that problem. This is Gemini Control.

END OF TAPE

This is Gemini Control, 84 hours and 45 minutes have elapsed since the Gemini IV spacecraft left its launch pad on June 3, at Cape Kennedy. It is now on its 54th revolution and is over the Pacific Ocean. We are now approximately 12 hours 54 minutes from the time this flight will terminate. Our recovery controllers report the landing point of Gemini IV will be at 27 degrees 29 minutes north latitude and 73 degrees 25 minutes west longitude. This is 140 miles due west from the initial impact prediction. This change is due from the slight and expected variation in the actual insertion conditions during launch and in the expected variations in the ground track. Retrofire is scheduled to commence at 16 hours 56 minutes 1 second G.m.t. With splashdown 17 minutes later in the Atlantic Ocean. At this time our prime recovery vessel in the Atlantic, the aircraft carrier USS Wasp is steaming toward that landing point. It's estimated time of arrival there is 0800 G.m.t. That will be at 2 a.m. Monday, Central Standard Time. We will now play back the latest voice tape between the Coastal Sentry Quebec, our tracking station in the Pacific and the Gemini IV spacecraft. This is Gemini Control

CC Gemini IV, CSQ Cap Com, Do you copy?

S/C Roger, CSQ, Gemini IV, read you loud and clear.

CC Roger, we have some CIA and TLA data. Will you prepare to copy?

S/C . . . prepared to copy.

CC Roger. Area 55 delta. 82 01 + 44 04 34 10 9 + 57. Area 55-3  
. . . burn 55 aft 109 forward. 1.31 2 + 17. 05 140  
02 + 33 08 + 57 How is it going?

S/C . . .

CC Did you copy the last?

S/C . . .

CC Roger. Area 56 delta. 81 1+42 06 06 36 9 + 11 13 + 39 did you  
get that one?

S/C Roger

CC 96 bravo split burn 55 forward 106 aft 1+ 31 2 + 15  
06 57 55 6 +42 Area 57 Bravo split burn 55 forward 103 aft  
1 1 + 31 2 + 10 08 27 38 7 + 22 do you copy?

S/C Roger

CC Roger Area 57-2 86 1 + 49 07 42 52 7 + 12 11 + 52 58-2

S/C Go ahead

CC 58-2 94 1 + 59 09 16 42 5 + 49 10 + 41. Area 58 bravo split burn  
55 forward 91 aft. 1 + 31 1 + 54 10 00 10 9 + 03

S/C Go ahead

CC Area 59-2 104 2 + 12 10 50 54 4 + 26 9 + 45 Do you copy?

S/C Roger.

CC Roger. We are reading 960 on your primary O<sub>2</sub> pressure. You  
might watch that.

S/C Roger. . . . Would you give me the first reading again.

You came garbled.

CC Roger. The first reading - 55 delta 82 1 + 44 04 34 10  
9 + 57.

S/C Roger and then the next one 55-3

CC That was 55 ah delta, 55 delta. Do you copy?

Gemini CSQ did you copy that?

End of tape

This is Gemini Control. The spacecraft Gemini 4 is now off the west coast of Chile, just north of Santiago. It is beginning it's fifty-fifth revolution at 85 hours and ten minutes ground elapsed time. While passing over the Canton Island tracking station a few minutes ago, Pilot Ed White reported he had completed the D9 space navigation experiment using the sextant to make star-to-horizon and star-to-star measurements. He also reported he had not been successful in an attempt to track the Pegasus satellite over the Pacific Ocean. Command Pilot Jim McDivitt is nearing the end of his sleep period. This is Gemini Control.

End of tape

CC ....

Flt Say again, RKV.

CC Say again.

Flt Say again your last, RKV.

CC Roger. We have no running light on the computer, and we do have malfunction light.

Flt Roger.

CC Gemini 4. Gemini 4. This is RKV Cap Com.

S/C Roger. RKV Cap Com.

CC Gemini 4. Gemini 4. This is RKV Cap Com. We want to take a check on your computer malfunction during this pass. We would like to have you depress it and hold it for five seconds. Give me a mark at the beginning and at the end.

S/C Roger. Will do. Mark.

CC Roger. Thank you. We'll be standing by on the next pass for medical type one on the command pilot if he is awake. The time of that will be approximately 05 hours 58 minutes.

S/C Roger. 05 58.

Flt RKV Cap Com. Houston Flight.

CC Got you, Flight.

Flt Roger. Will you have him stand by for voice remoting over Kano this pass. That should be about 20 ....

S/C RKV. This is Gemini 4.

CC Gemini 4. RKV.

S/C You might find out if they want to get a type one medical pass on the pilot. He'll be going to sleep in a little bit.

CC Roger. I'll check that now. Flight, did you copy?

Flt OK. Go ahead if he wants to.

CC Roger. We're not going to have time during this rev, I don't think, for it.

Flt RKV Cap Com. Houston Flight.

CC Flight. RKV.

Flt Roger. I think he meant if the command pilot didn't wake up, did we want a type one on the pilot next pass; and that's affirmative.

CC Roger. We'll do that. Gemini 4. This is RKV. That's affirmative. If the command pilot is not awake, we'll take a type one on the pilot.

S/C Roger. Do you want that on the next rev or now?

CC Roger. That'll be on the next rev.

S/C Roger. If I am asleep then, the command pilot will do.

CC Roger. Do you want to give us a blood pressure on this one?

S/C Roger. I've started temperature, so I'll start working on the blood pressure.

CC Roger. You're at full scale. Flight, we had a short drop out on our dump TM.

Flt Roger.

CC You're at full scale. That's a good blood pressure. Can you give me your report?

S/C Roger. ....

CC RKV surgeon. Roger. Good report. Thank you.

End of tape

This is Gemini Control. Spacecraft Gemini IV is now 85 hours and 46 minutes into its mission. At the present time it is over the Nile river in Egypt. In a voice communication with the Canô Nigeria tracking station, a remote conversation between the Houston Mission Control Flight Director and Spacecraft communicator. Roger Chaffe our spacecraft communicator relayed instructions to the pilot, Ed White. Gave him a preliminary instructions for landing Gemini IV spacecraft at the end of 63 revolutions. The instructions that he passed on were for a Mercury type descent. This was a preliminary instruction and this may be updated later. Ed White reported that he is ready for D-9 tracking exercises on his next revolution, revolution 56 and he got a start time from the ground station. This is Gemini control.

End of tape

This is Gemini control at 86 hours and 9 minutes into the 4-day flight mission. Our spacecraft now on its 55 th revolution around the earth is passing the Pacific Ocean. We have a weather report from the recovery area. There are waves of 3 to 4 feet. Visibility is good and winds are east southeast at 15 knots. There are widely scattered showers in this area. The prime recovery vessel USS Wasp is on its way to the predicted impact point which is located at 27 degrees 29 minutes north latitude and 73 degrees 25 minutes west longitude. The Wasp is expected to reach this area at 0800 Greenwich time. That will be 2 a.m. Monday, Central standard time. Due to the indicated malfunction in the onboard computer Mission Director Chris Kraft is readying for a zero lift type reentry. The flight crew has been given preliminary retrofire instructions for this reentry. This is Gemini Control.

End of Tape

Mission Commentary Transcript

Tape 154, page 1

This is Gemini Control, after 86 hours and 39 minutes of flight. There are just about 11 hours remaining before the end of our mission. The Gemini IV will soon be passing over the Rose Knot Victor tracking ship located off the west coast of Peru. The Rose Knot Victor will take a telemetry data relay from the spacecraft. Gemini IV is about to start the 56th revolution of the earth. Spacecraft commander Jim McDivitt is ending his sleep period and pilot Ed White will begin one. Our flight surgeon here in the Mission Control Center is highly pleased with the physical condition of our flight crew throughout this mission. This is Gemini Control.

END OF TAPE

This is Gemini Control, 87 hours 9 minutes after lift-off. The Gemini IV spacecraft is now passing the north sector of the Serrai Desert, south of Bengosie, Libia, on the 56th revolution. The spacecraft is on a track that will take it over Northern India, Viet Nam, Philipine Islands and New Gennia. This is Gemini Control.  
END OF TAPE.

The Gemini IV spacecraft is now over the Canary Islands tracking station and during this pass the Canary spacecraft communicator is now discussing with the crew some of the orbital track updates as well as some of the tests being conducted with the onboard computer. We hope to have a tape on this momentarily. This is Gemini Control.

END OF TAPE

This is Gemini Control, 88 hours 47 minutes after lift-off. We now have a tape recording of the pass over Canary Island tracking station, just completed. The tape follows. This is Gemini Control.

CC Gemini IV Canary Cap Com.

S/C Go ahead Canary, Gemini IV.

CC Roger, everything still looks good from here except the computer. I have a map update for you.

S/C Okay, standby just a minute.

Flight Get the results of the tests first, Canaries.

CC Roger. Gemini IV, Canary Cap Com. Disregard we will get the I'd like to get the results of the computer first.

S/C Roger, nothing happened. I - when I put something in the IVI . . . (garbled)

IVI's just as they were. It's impossible to put anything in through the MDIU and when go turn the computer power off and comeback on it the reset . . . I still get the malfunction light back on in a second or two.

CC Roger, I understand. You put the IVI's in and nothing happened. Nothing could go in through the MDIU. When you tried turning it off you still got your malfunction lights back and nothing happened when you started . . .

S/C That's affirmative.

Flight Okay Canary, carry on.

CC Roger. Here is your map update when you are ready.

S/C Okay, go ahead.

CC We are on rev 56, longitude at 33 degrees west at G.m.t. 06:17:00.

S/C Roger, thank you.

S/C I tell you Canaries I think our computer died when we turned  
the power off and the switch back on.

CC Say again.

S/C I say, I think our computer died when we turned the power  
off with the switch stuck in the ON position.

CC I think everybody else is thinking the same thing.

END OF TAPE

This is Gemini Control, 89 hours 9 minutes after lift-off. The Gemini IV spacecraft is now crossing the islands of Barneo and Celebes on a track that will pass over the Australian cities of Darwin and Townsville in the 57th revolution. Gemini IV's retrofire will occur some 8 hours and 30 minutes from now, at the end of the 62nd revolution. The landing point of the spacecraft will be at 27 degrees 29 minutes north latitude by 73 degrees 25 minutes west longitude or 430 statute miles east of Cape Kennedy and 590 statute miles southwest of Bermuda at the beginning of the 63rd revolution. The prime recovery vessel the carrier Wasp was estimated to arrive at the landing point at 2 a.m. Central Standard Time, 25 minutes ago. This is Gemini control.

END OF TAPE

This is Gemini Control, 89 hours 39 minutes after lift-off. The Gemini IV spacecraft nearing the end of the 57th revolution is now in mid Pacific on a track that will pass over the South American cities Yakiel, Columbia and Caracas Venezuela. At the start of the 58th revolution the spacecraft will be in brief contact with two stateside ground stations before establishing contact with the Canary Islands. This is Gemini Control.

END OF TAPE

This is Gemini Control, 90 hours 9 minutes after lift-off. The Gemini IV spacecraft is now in radio telemetry and radar tracking range of the Canary Islands tracking station early in the 58th revolution. Within the next 6 to 8 minutes Gemini IV will pass directly over the North African cities of Tripoli and Bengasi. During the pass over the tracking ship Rose Knot Victor, at the end of the last revolution telemetry readouts indicated that all spacecraft systems were GO. And that the medical readout showed that the crew was also GO. Cabin pressure was 5.2 pounds per square inch. We have a tape of the just completed pass over the stateside stations. The tape follows. This is Gemini control.

Flight Gemini IV, Gemini IV, this is Houston Cap Com, over.

S/C Hello Houston, this is Gemini IV.

Flight Roger, hello there Jim. We'd like a prop quantity readout, please.

S/c Roger. Propellant quantity readout, Just a minute.  
It looks like about 48 percent.

Flight Roger, I understand 48 percent. There will be no medical data passed at Canaries this time around. No medical data passed at Canaries.

S/C Okay.

Flight And I've got a change to this Apollo landmark you've got coming up this rev.

S/C Roger, standby a minute. Okay, go ahead.

Flight Okay. You can change - delete sequence 12 and sequence 14.  
You will be on this orbit, orbit 58 at time 09:40:22. Minus  
6 degrees yaw and minus 30 degrees pitch.

S/C Okay. It will be sequence number 14 at 09:40:22, minus 6 and  
minus 30.

Flight Roger and understand that will be a sleep during this time,  
is that correct?

S/C That's correct.

Flight Okay and we want to just advise you to use all the film you'll -  
this is your last experiment. Use all the film you have at  
your option and Jim is here and we would like to discuss  
this reentry with you a little bit. One other thing, Jim,  
we have increased the lifetime of your aft thrusters to  
131 ft/sec and you will see no split burns on OAMS retro.

S/C Very good, very good. I was wondering what you were going  
to do about that.

Flight We've been holding on to that for awhile. Thought we'd  
surprise you. Here is Jim.

Gemini IV this is Shaky here.

S/C Hello there, Shaky here, how are.

Flight Fine. What is your feelings on a roll in reentry versus a  
90 degree bank angle? We are recommending rollin here.

S/C Yeah, it's not very imaginative but it gets the job done so why don't we go ahead with it.

Flight Roger, here is the format which we will send up to you for a rollin reentry. We will give you the delta V and delta T for your OAMS burn. We will give you the GMTRC. We will give you a RET of .05g. And then you will also get the RET of drogue, of main and of landing. Your procedure will be at retro to go <sup>to</sup> full left, heads down. At the RET of 05g you will go into a 15 degree roll rate. When you reach 100,000, when the altimeter comes off the peg, go to full left. How does that sound to you Jim.

S/C I think I blocked part of you out. Right at retrofire we go to full left, and at .05g or that time we go to 15 degree per second and at 100, 000 we go to full left again.

Flight That's right. The only difference between the format before is that instead of the RET of 400,000 would give you 05g RET when you start your roll rate.

S/C Okay, that sounds good.

Flight This will give you a trim angle into the atmosphere, a roll rate and then a full left at 100,00 again for your drogue and main deploy.

S/C Okay, very good.

Flight Shades of Mercury, Jim.

S/C I was going to say, I bet you Flight Directors were thinking up this one. That's what I say, not very imaginative but

I guess it gets the job done.

Flight Roger.

I have a bet with your wife that you will get within 5 miles, now you have got to hold up my end here.

S/C Lucky, I'm going to try to hold up my end too.

Remember when I said we'd never make a closed loop.

Flight Does look like we'll make one on this time.

S/C Yeah.

Flight Hay Jim, we are still going to pass you your updates for 60 through 64 4 with the bank angles in, just the same as we have been passing them, with exception of 63.1.

S/C That's affirmative. Don't change those . . . the final one

Flight Roger. That will come up just as it has been coming up and you will get them at Canaries.

S/C Okay.

Flight Jim, what is your general physical condition? Are you feeling pretty tired now or you pretty good?

S/C No, I'm pretty sleepy and tired and I suspect Ed probably is too.

Flight Right O. I understand you are pretty sleepy and tired.

S/C Roger.

Flight We are going to try to hold off the last couple orbits just to prepare for the reentry.

S/C Yea, it's going to take us about 3 or 4 hours just to get all this stuff packed.

Flight Right O.

Tape 160, page 5

Flight Gemini IV this is Houston. It looks like you are going to have good weather in the reentry - in the splash area.

END OF TAPE

This is Gemini Control, 90 hours 21 minutes after lift-off. We now have a tape of the recent pass by Gemini IV over the Canary Island Tracking Station. Let's listen to that tape now. This is Gemini Control

C/C Hello Canary, Gemini IV.

CC Roger. I have 10 retro updates for you.

S/C Okay, go.

CC 60-1, 92, 1+57, 12, 1254, 6 +00, 10+51, 61-1, 104, 2+11, 134806  
4+23, 9+40, 62-1 113, 2+23, 152205, 3+16, 10+48, 63-1 127, 2+40  
165557, 2+25, 15 degree/sec roll, 64-4 101, 2+07, 194130, 4+27  
9+43, 59 bravo 105 2+13, 113244, 10+18, 60 bravo, 120, 2+32,  
130556, 10+58, 61 bravo, 93 1+58, 144502, 11+04, 62 bravo,  
85, 1+47, 161808, 10+29, 63 bravo, 82, 01+44, 174843, 10+07,  
and that's it. Do you have it?

S/C We got 'em.

CC You are still looking good and we are standing by.

S/C Okay.

Canary, Gemini IV here again.

CC Go ahead.

S/C I'd like to have you remind Houston Flight Director that we're not going to be able to readout any  $\Delta V$ 's we are just going to have to do the . . . on time.

CC Roger, will do.

S/C Okay.

Tape 161, page 2

CC Houston Flight, Canary Cap Com, did you copy?

Flight Canary this is Houston Cap Com, roger we got that. We  
understand.

END OF TAPE

This is Gemini control, 90 hours 39 minutes after lift-off. The Gemini IV spacecraft is now passing South of the city of Gecarta in the Indian - Indian Esin Island group in the 58th revolution. The spacecraft will be within voice range with the Carnarvon, Australia tracking station in about 7 minutes from now. It is unlikely that there will be too much conversation between the crew of Gemini IV and the Carnarvon during this brief pass. This is Gemini Control.

END OF TAPE

This is Gemini Control, 91 hours and 1 minute after liftoff. We now have a tape recording of the pass over the Carnarvon tracking station in the 58th revolution. Let's hear that tape now. This is Gemini control.

CC Gemini IV, Carnarvon Cap Com, Over.

S/C Carnarvon, Gemini IV.

CC Okay, you are looking good here on the ground, how are you doing?

S/C Very fine up here.

CC Roger.

S/C Hey, I finally saw you in the daylight.

CC Do you see the ground?

S/C Yes, I can see the ground now and I can say it is - quite flat.

CC Roger, how does the weather look over the whole coast?

S/C Well let's see. I don't know which way I'm pointing right now. Looks pretty good along the coast.

CC How much ground do you see? .

S/C . . . Let me just fly along here and I will tell you.

CC Roger.

S/C I got the sunshine now and I can't see anything.

CC Okay.

CC Flight, Carnarvon

Flight Go ahead. Go ahead Carnarvon.

CC Okay. We are showing 40 degrees on the radiator outlet.

And the Ac control valve is showing 43.5. He's on the sunny side. It should get down when he gets over the darkness. We don't want to turn on the secondary loop. You concur?

Flight Stand by.

Affirmative, do not turn on the secondary loop.

CC Roger.

Flight How does everything else look Ed.

CC He looks real fine, he sounds real good.

Flight Roger.

CC He just saw Australia on the ground for the first time since the mission started.

Flight We read that.

END OF TAPE

This is Gemini Control, 91 hours 10 minutes after lift-off. The Gemini IV spacecraft now in the Mid Pacific on a track that will pass over Costa Rica and Haiti as it begins its 59th revolution. During the pass over the Carnarvon, Australia tracking station, earlier in the 58th revolution the crew remarked that they saw Australia for the first time during the mission. Up to now it has been pretty well covered by clouds. This is Gemini Control.

END OF TAPE

This is Gemini Control, 91 hours 39 minutes after lift-off. The Gemini IV spacecraft at the beginning of the 59th revolution has just entered voice telemetry range of the Canary Island tracking station and is now nearing the Madeira Island. During the pass over the North American Stations the spacecraft communicator in Mission Control here passed to the crew of Gemini IV, orbital track information as well as instructions for the command pilot to waken the pilot and get a couple hours sleep himself before the time of the landing, some 6 hours from now. This is Gemini control.

End of tape

This is Gemini control, 91 hours 44 minutes after lift-off. We now have a tape recording of the recent pass over the stateside tracking network which we will now play back for you. This is Gemini control.

Flight Gemini IV, Gemini IV, Houston Cap Com, over.

S/C Go ahead Houston, Gemini IV.

Flight Roger, Jim. We'd like your quantity read switch on for about 15 seconds and I have a map update if you are ready to copy.

S/C Okay, go ahead with the map update.

Flight Okay, at the end of rev 59, ascending mode longitude 124 degrees west. G.m.t. 12:10:00.

S/C Okay. 124 west and 12:10:00.

Flight That's affirm and Jim, we recommend down here that you go ahead and wake up Ed and try and get about 2 or 2 1/2 hours sleep yourself until an elapsed time of about 94 hours. This will give you about 3 1/2 to 3 hours 45 minutes prior to retro. From 94 on, over.

S/C Okay. I've still got an hour or so of sleep here, I think. I just dozed around the dark side. I'm getting a little here and there.

Flight Well we talked a lot about it and it looks like Ed is getting some pretty good sleep and we would like to see you get about

at least 2 hours sleep or 2 1/2 prior to getting ready for  
retro. Over.

S/C Roger, will do.

Flight We have got acquisition for about another 6 minutes. We'll  
just stand by.

S/C Okay.

Flight Gemini IV, Houston. You can turn your quantity read off.

END OF TAPE

AFT Canary Cap Com, AFT.  
AFT Canary Cap Com, AFT.  
AFT Voice control, AFT  
VC Voice control  
AFT Would you ring Canaries please.  
VC Roger, go ahead.  
AFT Canary Cap Com, AFT  
CC Canary Cap Com, go ahead.  
AFT Allrighty. Did you get our mission instruction for your  
pass.  
CC Roger.  
AFT Okay, any questions.  
CC Do you want us to remind him that he has an aeromed pass  
type I on the pilot at Carnarvon?  
AFT Stand by 1.  
AFT Canary Cap Com, AFT.  
CC Go ahead.  
AFT Yeah, go ahead and remind him of that so he can get the  
temperature bulb in his mouth.  
CC Okay, do you want any special summaries from us, or just  
the main.  
AFT I want a main and a contingency E.  
CC Main and E, roger.

END OF TAPE

This is Gemini Control 92 hours 11 minutes after lift-off. The Gemini IV spacecraft is now over the Indian Ocean on a track that will pass almost directly over the Carnarvon Australian tracking station 10 minutes from now. The Command Pilot is scheduled to sleep at this time and a type I medical data check, that is, oral temperature, blood pressure before and after 30 seconds of exercise will be made on the Pilot. This is Gemini Control.

END OF TAPE

This is Gemini Control 92 hours 39 minutes after lift-off. The Gemini IV spacecraft is now in the mid-Pacific over the Society Islands nearing the end of the 59th revolution. We now have a tape of the pass by Gemini IV over the Carnarvon Australia tracking station some 15 minutes ago. Let's roll that tape now. This is Gemini Control.

S/C Go ahead Carnarvon, Gemini IV

CC Gemini IV, Carnarvon. Will the Pilot put the oral temp probe in his mouth please.

S/C All right.

CC . . . radar track, Carnarvon  
Roger.

CC Gemini IV, stand by for your Australian space doctor.

S/C Sure will, . . .

CC Gemini IV, this is Carnarvon surgeon. We are ready go with the blood pressure.

CC Gemini IV, Carnarvon surgeon. Would you keep the temperature probe in your mouth while we are doing the blood pressure.

S/C Roger, will do.

CC That's good source, . . .

. . .

CC Could you list your . . . nap phase, Gemini IV.

S/C Roger, the pilot just woke up. This is 8 02, day 4, had 5 swallows of water and had a very good nap for 5 hours.

CC Roger, I got that, thank you very much.

S/C Roger, I feel fine.

CC Gemini IV, Carnarvon Cap Com. You're looking good here on the ground, how are you doing?

S/C Roger, everything's great.

CC Okay, do you need anything at all.

S/C No, everything seems to be pretty good shape up here.

CC Okay, we'll just stand by in case you need us.

S/C Roger, how's everything down there.

CC Real fine. The weather has cleared up, everybody's happy, we'll be standing by for you.

S/C Roger, did it finally stop raining?

CC Say again.

S/C Did it really stop raining?

CC Roger, a young gal sitting next to me did a rain dance.

S/C Real good, that's supposed to bring rain, isn't it.

CC I don't know, the lady who did the dance can't tell.

S/C . . .

CC It stopped.

Flight Carnarvon Cap Com, this is Houston Flight.

CC Go ahead Flight.

Flight Ask him if he got a briefing on the retrofire procedures.

CC Say again flight.

Flight Ask him if he got a briefing on the retrofire procedures.

CC Roger.

CC Gemini IV, Carnarvon Cap Com. Did you get a briefing on the retrofire procedures.

S/C Roger. I haven't again, but about 4 or 5 hours ago I have.

CC Copy that Flight.

Flight Roger, we copied that.

S/C We do a retro with a go to manual retro . . .

CC That is affirmed.

S/C Roger.

CC That right flight.

CC Flight, Carnarvon.

Flight Not quite. We are thinking of letting the TR count down on automatic retrofire with a manual backup plus a rolling reentry.

CC Flight. Okay, that will be an auto burn, automatic countdown at TR, and backup with a manual retrofire.

Flight That will be a rolling reentry.

S/C Roger. Roger. We are going to make a manual TR.

CC Your clock seems to be working real fine. I think that they are going to let it go for an auto and then let you back it up.

S/C . . .

END OF TAPE

This is Gemini Control, 93 hours, 9 minutes after liftoff. The Gemini 4 spacecraft is now over the mid-Atlantic at the beginning of the 60th revolution. We have a late weather report from the prime area which reads as follows:

The U. S. Weather Bureau Spaceflight Meteorology Group said this morning that the weather conditions in the Western Atlantic Ocean remain very good for the termination of GT-4 some 300 miles east of Palm Beach, Florida this morning. The aircraft carrier Wasp reports scattered clouds, mostly above 1500 feet, together with visibility of over 10 miles. Southeast winds of little less than 15 knots have raised the sea of about 3 feet, which is considered very good for the Gemini spacecraft. Isolated showers within a 50 miles radius will present no problems. Temperature is forecast to be about 78 degrees. This is Gemini Control.

End Tape

This is Gemini Control, 93 hours 16 minutes after liftoff. We now have a brief tape of the voice transmission between the Gemini 4 spacecraft and the stateside tracking stations toward the end of the 59th and the beginning of the 60th revolution. We'll roll this tape now. This is Gemini Control.

S/C: Gemini 4.

CC: Roger, Gemini 4, How are you doing Ed?

S/C: Pretty good, had a good night's sleep hours

CC: Ah, roger, we're discussing this reentry profile and we'll get you the final data up just as soon as we come up with it.

S/C: Ah, roger.

CC: It looks like now, however, we're going to power up your platform about 45 minutes earlier than the flight plan calls for. It'll be elapsed time of 95 + 1.9. That'll be over Canarvon on the 61st rev.

S/C: Roger.

CC: Gemini 4, Houston, have you been using quite a bit of OMS attitude control, oh, for the last orbit dispersal?

S/C: Ah, negative, Gemini 4.

CC: Roger, understand

Mission Commentary Transcript

Tape #171, page 2

S/C: Gemini 4, , horizon scann the whole  
time, hasn't been much in the way of attitude

CC: Roger, we got that, Ed.

End Tape

This is Gemini Control 93 hours 42 minutes after liftoff. The Gemini 4 spacecraft is now over the central Indian Ocean on a track that will pass directly over Perth, Australia, the city that traditionally greets American astronauts by turning on all its lights. We have some corrections to the earlier announced distances of the landing location. The latitude and longitude are the same, 27 degrees by 29 minutes north latitude by 73 degrees and 25 minutes west longitude. The location is 440 statute miles east of Cape Kennedy and 625 statute miles west of Bermuda. This is Gemini Control.

End tape

This is Gemini Control 94 hours 2 minutes after lift-off.  
We now have a tape recording of the recent pass by Gemini IV over  
the Carnarvon Australia Tracking station. Let's roll that tape now.  
This is Gemini Control.

CC Gemini IV, Carnarvon Cap Com.

S/C Go ahead Carnarvon, Gemini IV

CC Roger. We'd like you to take and place your reentry  
C-band beacon to the continuous position.

S/C Roger. Reentry C-band going to continuous.

CC Roger. Your antenna selected reentry position.

S/C Roger. I've got it on reentry.

CC Roger. I want you to leave it in that position for the  
remainder of the flight.

S/C Roger. I got that.

CC Okay, I've got a map update for you if you're ready to copy.

S/C Stand by 1 please.

CC Got good TM solid here.

S/C All right, go ahead with the update.

CC Rev. 62, longitude, 168 degrees east, and that will be the  
G.m.t. of 16 35 00.

S/C Roger, we've got 62, 168 degrees east, 16 35 00.

CC Roger.

S/C I was looking for you on that pass but you kicked on too early.

CC All righty.

CC Got good solid beacon track at Carnarvon.

Flight Roger Carnarvon.

CC You are looking good here on the ground.

S/C Roger. Everything looks good up here.

CC The Pilot's asleep, is he.

S/C Roger, he is asleep.

S/C He is asleep and . . .

CC Say again.

S/C . . . .

END OF TAPE

This is Gemini Control, 94 hours, 9 minutes after liftoff. The Gemini 4 spacecraft is now over the south central Pacific, about a thousand miles east of the Fiji Islands. The spacecraft is within range of the voice remoting station on Canton Island. We are now midway through the 60th revolution. Gemini 4 is now 3 hours and 30 minutes from retrofire. This is Gemini control.

End tape

This is Gemini Control, 94 hours 30 minutes after liftoff. We are now anticipating radio contact momentarily with the Gemini 4 spacecraft through the Guaymas, Mexico tracking station. We will join this pass through the stateside stations all the way to loss of signal at Bermuda.

This is Gemini Control. Stand by for Gemini 4.

Guaymas has telemetry solid, 130917

Texas has acquisition, TCM solid.

CC: Gemini 4, Gemini 4, this is Houston CapCom, over.

CC: Gemini 4, Gemini 4, this is Houston CapCom, over.

S/C: Go ahead, Houston, Gemini 4

CC: Roger, turn your quantity read switch on and we'd like a prop quantity readout.

S/C: Roger, quantity reads 45%

CC: Understand 45%, and have you had one or two suit fans on?

S/C: We've had two suit fans on for about the last 4 hours.

CC: Roger, understand two suit fans.

S/C: We're back to one now.

CC:] Roger, you're back to one now. And what time did the command pilot wake?

S/C: Oh, uh, about 15 minutes ago.

CC: Roger, 15 minutes ago. Jim, I'm going to pass you the general procedures for the reentry, you'll get the 63-1 updates and the details on your next pass over the states from Gus. The general procedure we'd like for you to follow is after retrofire, roll to the normal condition to a heads down position for full left to 400 K. We will give you an attitude angle to hold down to 400K. Then we'd like you to roll at 15 degrees a second til the altimeter comes off the peg at approximate 100K and back to full lift again til go.

S/C: Roger, understand.

CC: Roger, the only change since we went over this the last time is that we are using 400K instead of .05G.

S/C: Roger, understand.

CC: Gemini 4, Houston, you can take the quantity switch off now.

S/C: Okay

CC: Gemini 4, this is Houston.

S/C: Ⓞ ahead.

CC: We'd like your propellant temperature and pressure.

S/C: Temperature is about 65, pressure is about 1700, 1725, something like that.

CC: Roger, we got 65, 1700-25.

S/C: Roger

S/C: Hey, Houston, Gemini 4

CC: Go ahead, Gemini 4.

S/C: Houston, Gemini 4

CC: This is Houston, Go ahead, Gemini 4

CC: Gemini 4, Gemini 4, This is Houston, Go ahead

S/C: Roger, it's pretty obvious the computer doesn't work, why don't we just turn it off.

CC: Gemini 4, this is Houston, we'd like to go ahead and leave it on, won't go into details.

S/C: Okay

CC: Roger, and the weather looks very good in the recovery area.

S/C: Okay , don't forget I want to be recovered in a hurry.

CC: Roger, they're on their way, all you got to do is hit the spot.

S/C: Okay

CC: Roger, Jim, it looks real good from here, we've got the targeting area and the procedures worked out to get the recovery forces there real quick.

S/C: Okay

CC: And James, this looks about a 8 G reentry.

S/C: Oh that's too much for an old man like me

CC: You can hack it

S/C: Hey, Houston, we just                    our                    , stand  
by.

CC: Gemini 4, this is Houston, how are you doing?

S/C: Very good, we're just taking a couple of pictures,  
that's what the bloopers were for

CC: Oh, you had us shook up for a minute.

F: Don't do that, you give us heart attacks down here.

S/C: Ah, John, come on now, it must have been a long night  
if I were you I'd be looking for a little excitement

CC: Hey, Jim.

S/C: Yeah, go ahead

CC: With this zero ~~g~~ lift/reentry we'll be able to predict your  
IT and have the recovery forces moving to your landing point  
about 15 minutes before you get there...we think that the  
safest and quickest way to get you.

S/C: Right, Chris, I don't disagree with you at all.

CC: Roger

S/C: I just think its old fashion

CC: Roger,

This is Gemini Control 95 hours 20 minutes into the mission on the 61st revolution. (The activity is up somewhat over previous mornings at this time and obviously the reason is we are only 2 hours and 19 minutes from retro command. Flight Director John Hodge from the previous shift plans to stay on through the retro sequence. Stand by one moment. I'm sorry, I was just handed a message by Cris Kraft, I thought it might bear an announcement. It does not. I believe you have been past these splash points earlier, we'll repeat them 27 degrees, 29 minutes north latitude, 73 degrees, 25 minutes west longitude. This is the splash point estimated. It's a point about 440 miles, statute miles, east of the Cape Kennedy, or in relation to Bermuda, 625 statute miles. The WASP has been on the scene there since 2 a.m. this morning. The actual retrofire will occur at approximately 10:54 c.s.t. at a point just north of our Guaymas station. The longitude will be 114 degrees west, the latitude 32.2 degrees north. We have the tape of the conversation between Gemini IV and the Canary station ready to play for you now. This is Gemini Control.

CC Gemini IV, Canary Cap Com.

S/C Go ahead Canary, Gemini IV.

CC Roger. We need the oral temp probe in the Pilot's mouth.

S/C Roger.

Flight The Canaries has TM solid. The spacecraft TR is leading by .5 seconds.

CC Gemini IV, Canary Cap Com. Your systems look good. Stand by for surgeon.

S/C Roger.

CC Gemini IV, this is Canary Surgeon. Leave the oral probe in but pump up your blood pressure cuff.

S/C Cuff is okay Gemini IV

CC Gemini IV, Canary Surgeon. Blood Pressure is received. Standing by for your food, water and sleep report. This is your last medical data pass.

S/C Roger. I'm preparing to eat meal 3 of the 4th day. I've had 6 swallows of water and I had a very fine 5 hours of sleep.

CC Gemini IV, Canary Surgeon. That sleep was all before your last report period. I will ah - Canary Surgeon returning you to Canary Cap Com.

S/C Roger.

END OF TAPE

This is Gemini Control, 95 hours and 40 minutes into the mission. We've just checked with the environmental control officer this morning and he advises 15 pounds of oxygen, both breathing and cabin pressurizing oxygen still remain in the Gemini 4 spacecraft and this usage conforms with the planned usage curve almost on the dot. In the OMS fuel we have 145 pounds remaining. Expect to use about 130 pounds of that for the pre-retro orbital attitude maneuvering burn, which will precede the retrofire by some minutes. As we indicated earlier, the retrofire will take place slightly north of the Guaymas station and the preretro OMS maneuver will take place over the Hawaii station. This is Gemini Control.

End Tape

This is Gemini Control 96 hours 8 minutes into the mission. At this time, the spacecraft is coming across the United States. Gus Grissom is giving Jim McDivitt and Ed White their retro values for a landing on the next pass. Let's cut in on that conversation now, live.

CC 16 50 40, and 7+03.

S/C Ah, roger. Is that 16 50 40 and 7+03.

CC Affirmative. Your attitudes at 400K should be, on the ball should be, 27 degrees nose above the horizon. And this would be - out the window would be 23 degrees.

S/C Roger, 23 it is out the window. On the ball 27 degrees nose above the horizon.

CC What are your attitudes now.

S/C 000

CC Very good.

S/C I just started to aline the platform

CC Roger. Okay, Jim, what control mode are you going to use for the reentry.

S/C . . . Let's try the reentry rate command. I was going to do that anyway, then I decided that I couldn't do it because I didn't have the response because we don't need to quickly . . . . I think I'll use reentry rate command.

CC Roger. You're going to hold roll in, or are you going to turn your roll rate gyros off.

S/C Turn my gyro off.

CC Okay, fine.

CC Okay, you want your time to 50 000 to drogue deploy and to splash?

S/C Roger.

CC Okay. 10+55 to drogue deploy, 17+10 to splash.

S/C Roger, how about main chute.

CC We don't have that one yet.

S/C Roger, understand. 10+55 drogue deploy, 17+10 to splash, standing by for chute.

CC In case you don't get your complete OAMS burn, advance your retrofire time at 2 seconds for each second short - short of your OAMS burn.

S/C Only 2 seconds?

CC Roger, 2 for 1.

S/C They use to be 3 for 1. What happened.

CC Never was, Jim.

S/C It was about a week ago.

CC This is a new week. Remember this is <sup>Delta</sup>  $\Delta$ time now, now <sup>Delta</sup>  $\Delta$ velocity.

S/C Roger.

CC On your check list, did you - when you pulled your drogue pins, did you pull your seat pins also.

S/C Roger, we're just starting on this. We'll get them though.

CC Did you have everything stowed.

S/C Yeah, we got everything stowed as well as we could stow it.

CC Okay, the weather in your recovery area is scattered clouds, you got 10 knots of wind and 4 foot waves. It couldn't be better.

S/C Roger.

CC Okay, the doctor wants to talk to you here for just a second.

S/C Roger.

CC Jim, both of you are in real good shape at the present time and all the ECG's look just fine. Your water intake is come up real well and from our last computation here, both of you appear to be really hydrated for the reentry. I'd like to make sure that both of you do feel completely rested. Is that affirmed.

S/C We're a little tired, but we are as rested as we can be.

CC All right Jim, do you feel that there is any need for item bravo.

S/C Negative.

CC Negative. Okay. I'd like to review with you this blood pressure. You are not going to have the adapter on till after you are on the water. Ed already has it on and we can tell from the data and he is to get one blood pressure after retrofire, one on the chute before bridle, one after bridle, and then both of you every

15 minutes in the water. Affirmed?

CC Gemini IV this is Houston surgeon. Do you read?

S/C I got that surgeon. We remember what they were.

CC Gemini IV, this is Houston Surgeon.

S/C Go ahead Houston Surgeon, I got your message there.

CC Roger. The other thing is the post-landing. We still, just to reaffirm, we'd like no more than that 1 hour in the spacecraft, get your suits off at your discretion if the spacecraft has no leak. The hatch -- open hatch part is strictly your decision. It looks good in the recovery area at the present time for this and remember the pumping exercise we did at the time of the physical and the feet up would certainly be the preferable way. Are there any questions about this at all.

S/C No questions.

CC Roger, we'll look forward to seeing you on that carrier then and surgeon out.

S/C Okay, when you coming out Chuck.

CC This afternoon Jim. I hope to be there shortly after you are.

Flight I hope you beat him. I hope Jim beats you.

CC He better beat me.

Flight Is there anything else we can do for you. Anything else you want Jim.

S/C Yeah, my computer.

Flight I wish I had an answer for that.

CC You'd would have only had to compare it with my performance.

S/C What did you say.

CC I said you'd only had to compare it with my performance.

S/C . . .

S/C You're unbeatable Cris, I just . . . .

CC Rog.

Flight Hey Jim.

S/C Yes.

Flight John just wanted to remind you that the tough part comes after you get back to the States.

S/C I've been resting my arm.

Flight You'd better rest you're voice too.

S/C Listen, I just want to shave. I feel pretty darn wooly like this.

Flight That don't bother, just don't take a bath.

S/C I thought the fumes before were bad.

Flight Say again.

S/C I thought those fumes around 24 hours were bad. You ought to be up here now.

Flight Roger.

Flight Jim, could you give me your last cabin humidity reading that you took.

S/C Roger. I took one about an hour ago. Just before I spoke with doc, and I just took one reading right in the middle of the cabin and it was 75 or 78 and 62 wet.

Flight Ah, roger.

S/C Appreciably since take off.

Flight Roger.

Flight Jim

S/C Roger

Flight We'll be losing you in about 2 minutes here and Wally will get your OAMS burn and Guaymas will catch you down to your retrofire.

S/C Okay.

Flight As near as we can tell, your IMU is in good shape down here.

S/C Yeah, it looks good up here too. Gus, can you give us the Greenwich mean time.

Flight Say again. I'll give you a G.m.t. at 15 35.

S/C Roger

Flight 30 seconds to go. Your TR is very good.

S/C Roger.

Flight 10 more seconds.

Flight 15 35 on my mark. MARK.

S/C Roger, I'd like another one at 15 35 30.

Flight Roger.

Flight 20 seconds.

S/C Make that 32.

Flight Okay.

Flight It will be 15 35 32 on my mark. MARK.

S/C Roger, thank you.

END OF TAPE

This is Gemini Control, 96 hours and 39 minutes into the mission with the spacecraft going over the African continent for the last pass in this Gemini 4 flight. During the interchange you heard live between the crew and the ground during the pass across the United States, there was a reference to Item "Bravo". This is a stimulant, it is specifically dexidrine you heard command pilot Jim McDivitt decline the use of it, he said neither crew member needed it, they didn't plan to use it. You will recall on Gordon Cooper's flight he did elect to take a little dexidrine prior to his reentry. The present calculation calls for OMS pre-retro burn over Hawaii at 10:44, starting at 10:44 Central Standard Time and ending about two minutes and 40 seconds later. The recovery leader is conferring at the present time with the flight director. He advises that the recovery forces should have a good plot on a splashdown point about 6 minutes after retrofire. This will be based on radar data from White Sands, from Eglin, and finally from Grand Bahama Island. This is Gemini Control.

End Tape

This is Gemini Control, 30 minutes 55 seconds to retrofire. We have just lost signal with the Canarvon station. Communications weren't the best this morning, however, the final notes were taken on the settings of the clocks to the angles, all the information pertinent to the retrofire maneuver. In, uh, at 39 minutes after the hour, the Canton Island station should acquire Gemini 4 and the Hawaii station at 42 minutes after the hour over which station the pre-retro OMS maneuver will take place. We're prepared to play for you now a tape of the conversation between Capsule Communicator Ed FanDel and Gemini 4 as it passed over the Canarvon Station. This is Gemini Control.

F: Canarvon, Houston Flight.

CC: Gemini 4, Canarvon CapCom

S/C: Roger, Canarvon, Gemini 4, reading you loud and clear.

CC: Ah, roger, reading you loud and clear, how are you doing with your pre-retro checklist?

S/C: preretro checklist is complete.

CC: I'd like to give you a GMT time hack, 161700.

S/C: pressure 161700.



CC: You're welcome. I am ready to check your thrusters over 9 and 10.

S/C: I've already checked my thrusters number 9 and 10.

CC: Okay, they very good.

S/C: Roger, they're very good.

CC: Okay

CC: Okay, you got your time all set up?

S/C: All set at 360

CC: Okay, in about 30 seconds I'll give you a countdown.

CC: 5, 4, 3, 2, 1, mark

S/C: Roger, down

CC: Okay, very good

CC: ~~xxxx~~ Flight, Canarvon

F: Go ahead

CC: Okay, he looks real good. We got an event timer hacked as GMT, we checked his times indicated and he looks fine, he may be getting our summaries a little later, we have a little RST problem here

F: We copied all

CC: Okay

CC: His TR is leading about 1 second

F: Rog

CC: Do you want us to leave it alone, or do you want to try and sync it?

F: No, I think its okay.

CC: Okay

F:] It was leading by about 1/2 of a second here, Ed,

I expect that's about as close as you can read it.

CC: Roger

CC: You should be getting some good radar from us.

F: Roger, that's affirmative

CC: You need anything else up there, gentlemen.

E/C: Ah, negative, well, I do still need my computer but

I can't think of anyway to pick it up

CC:] Yeah, I know what you mean

This is Gemini Control Houston. We are 13 minutes from retro-fire and only a minute or two from the pre-retro OAMS burn. Hawaii established contact with the spacecraft about a minute ago. We are standing by for whatever conservation might develop during this pre-retro OAMS burn. We really don't expect too much conservation. The Pilot - the Command Pilot Jim McDivitt will hold his attitudes at 00 during this OAMS burn. We are standing by for a further report from Hawaii. The signal strength was excellent in their opening recognition conversation.

CC Thirty seconds to OAMS burn.

CC 5, 4, 3, 2, 1, MARK. Start burn.

CC Do you see the burn?

S/C Affirmative. Now firing. We have OAMS latitude activity.

Flight Hawaii reports OAMS burn is going on now.

CC Attitudes are 0 180 0 Flight.

Flight Rog.

CC Burn is expected to last another minute or so.

Flight Still look Okay?

CC Looking good flight.

Flight Apparently he is using the forward firing thrusters, small end forward.

CC Attitudes are holding right on Flight.

Flight Roger.

CC We are standing by for your mark, Gemini IV.

S/C Okay.

S/C MARK.

CC Roger Gemini IV. How are your attitudes during your firing.

S/C They were within about a degree.

CC Roger, roger. You look good here on the ground.

Flight Cris Kraft advises here he had a perfect burn. You heard McDivitt report that he was within 1 degree on his attitudes.

Flight Give him an 8 minute mark to retrofire.

CC Gemini 4, this is Hawaii. Stand by for an 8 minute mark to retrofire. 1 Mark.

S/C Roger, mark.

CC Flight, Hawaii, we showed a burn by our stop watch, 2 minutes and 41 seconds.

Flight We agree with that.

Flight That event was probably timed by more people than any other event than ever occurred.

CC I imagine you are right.

CC Hawaii has had TM LOS, Flight. Radar LOS.

Flight Roger. Well done.

CC We going to correct on one second.

Flight Say again.

CC Are you going to correct for that one second overburn.

Flight Negative. It was not 1 second overburn. Yes, it was, I'm sorry. Negative.

CC Roger, we'll go with it.

This is Gemini Control. We have completed the OAMS pre-retro OAMS burn over Hawaii. He should have expended about a hundred and 30 pounds of fuel. This would leave about 15 pounds of fuel in his primary tanks. Just prior to his retro-maneuver over Guaymas he will jettison the equipment section of the spacecraft and then for attitude during reentry he will depend on his reentry control system. He has two independent rings of 8 thrusters each. Each thruster 25 pounds. The reentry control system functions off separate tanks each with about 33 pounds of fuel available for attitude control. California is the next station which should acquire at 51 and one-half minutes after the hour. Guaymas should have him at almost 54 minutes after the hour with the retrofire time planned for 56 minutes. During the retrofire maneuver, the spacecraft will be pitched down at 30 degrees immediately after completion of the maneuver, that will be pitch-down, and the Pilots will have their heads up. Immediately after the retrofire maneuver, they will roll the spacecraft around 180 degrees and assume an angle of 23 degrees off the horizon. They will maintain that angle till they reach a point about 400 000 feet above the earth at which point they will start a roll rate just as we did at the Project Mercury Program. A roll rate of 15 degrees per second. This is Gemini Control.

END OF TAPE.

This is Gemini Control Houston. One minutes ago the Guaymas station established contact with Gemini 4. We are standing by for the retromaneuver. Right about now Jim McDivitt should be jettisoning the equipment adapter. He has just confirmed the adapter has separated from that Gemini 4 spacecraft its leaving the retro adapter section at 30 seconds to retrofire. He has armed the retrorocket circuits and we are counting down for retrofire, 6, 5, 4, 3, 2, 1, retrofire. We are standing by, we have a report on one firing, rocket 3 and rocket 2 have fired, rocket 4 has fired, Jim McDivitt confirms that all 4 have fired. Let's tune in on that conversation with Guaymas.

CC: Do you confirm retro set

S/C: Ed says he sees the pump package

CC: Say again

S/C: Ed says he saw the pump package

CC: Ah roger, their own their way, Flight.

F: Roger

CC: Flight from Guaymas CapCom

F: Go ahead

CC: Did you copy that the auto retro was one second prior to my count?

F: Roger

CC: Still looking good, Flight, I 'm getting activity on ring A and B

F: Roger

This is Gemini Control. We have confirmed the retro set, in our other ear we bring in lots of activity in the Atlantic Ocean as the planes are establishing their call and they are poised and waiting for Gemini 4 to splash down some 440 miles east of the Cape.

CC: Stand by for a mark at TR+3 minutes. Mark, 3 minutes.

GCH Our White Sands Station is tracking the spacecraft right now. This radar data and that from the Eglin AFB in Florida will help us establish with considerable finality the splashdown point.

CC: Gemini 4, Houston CapCom.

S/C: Go ahead, Houston, Gemini 4.

CC: Roger, you started your rolling reentry.

S/C: Roger, I have.

CC: Roger. Your weather is still very good, Jim.

S/C: Okay

GCH Jim McDivitt advises he has started his rolling reentry.

He has started his roll rate.

S/C: (Garbled)

This is Gemini Control. Gus Grissom has just raised Jim McDivitt. He came back with "we're 5 by 5 up here" or something like that, it was a very faint transmission. Grissom is advised that we should have a helicopter over the spacecraft about the time it hits the water. Stand by for further transmission.

This is Gemini Control. We are estimating drogue chute in about 10 seconds. Stand by for drogue chute. We estimate he is at about 40 000 feet now and he should have a drogue chute out although we have not heard a confirmation.

We have a report from the Wasp that it is in contact with the spacecraft. We are not monitoring any transmissions here, they are on the HF circuit and we really didn't have too much hope of reading those transmissions, but we should be hearing from the Wasp.

From the deck of the Wasp we are advised that they have had a transmission from McDivitt that says they read him loud and clear. At this time McDivitt and White should be on their main chute.

As yet we've had no visual sightings but we do have some helicopters vectoring on the area. The astronaut reports to the Wasp that he is on his main chute and everything looks fine. He has been advised by Gus Grissom here, we don't know whether the transmission reached him or not, it was backed up by a transmission from the carrier I'm sure, that a helicopter will be over him in about 5 minutes.

The two pilots have advised the Wasp that they are feeling great.

S/c . . . .

Flight We can't read you Jim, you're fading out too much.

Flight Okay, the R and R can is floating by.

Flight We figure you ought to be touching down in about 20 seconds.

Gus Grissom is advising Jim McDivitt that he should be touching down within the minute. We are standing by for additional reports from down range. The circuit is very noisy and almost unreadable. This is the HF circuit. I emphasize this is the circuit from the spacecraft. Communications have been excellent with the DOD forces in the Atlantic.

This is Dallas . . . aboard the Wasp. The Wasp . . .

This is Gemini Control. Our latest radar fix from the Wasp indicates the ship is about 40 miles from the spacecraft. The spacecraft 40 nautical miles uprange from the Wasp. There are at least 2 helicopters in the area. They should be overhead momentarily. We are still standing by for an advisory from the deck of the Wasp.

We have a report from down said that a helicopter has the spacecraft in visual sighting. It is a confirmed report. He is approximately 5 miles away from it.

This is Gemini Control. We are assuming the spacecraft splashed down at approximately 13 minutes after the hour. That is, approximate splash time. We will confirm it momentarily.

That a 2 engine airplane, an S2E, which has been established as the on-scene commander of this recovery situation is now in voice contact with the spacecraft. They advised the Wasp that everything is okay. They were in contact with the spacecraft at 14 minutes after the hour.

From downrange we are advised that the Astronauts have requested a helicopter pickup. They are on the water and we are standing by. The surgeon here is considering a helicopter pickup. We should know momentarily what his decision is.

Our best estimate right now on the landing point is 230 miles north of San Salvador or 390 miles east of Cape Kennedy.

From the Wasp we are advised that the pickup helicopter, the copter that will pick up the two pilots will be over the spacecraft within 5 minutes from now. The local time here is 20 minutes after the hour.

Admiral Cormick on the Wasp has just ordered the helicopters to proceed with the pickup of the two pilots and to return them to the Wasp. At last report, they were 18 to 20 miles from the spacecraft and were proceeding toward it.

This is Gemini Control. The Wasp now estimates it should be along side the spacecraft or actually pick-up the spacecraft in about 1 hour and 20 minutes from now. They are estimating 12 45 c.s.t. that they should be alongside for pick-up. The helicopter estimate meanwhile for pick-up has been put-off until about 10 minutes from now. This will make it shortly after the half-hour. This is Gemini Control standing by.

The helicopter, an SH3, a Navy helicopter, which is a twin engine jet turban type helicopter is in the area of the spacecraft right now. He has been designated to pick up the pilots.

The helicopter in the recovery area has the green dye which is put out by the spacecraft on landing in sight. We have not yet heard wheather the hatches are open or closed. We are standing by for additional information.

This is Gemini Control. The pilot of the helicopter on scene reports the spacecraft is riding very nicely in the water and everything looks fine. That was the pilots report. The pilot of that helicopter is *Commander Clarence O. Fiske*. The helicopter is designated number 64. Off the Wasp.

From the Wasp, we are advised that their present position is some 42 nautical miles from the spacecraft. They are estimating about 85 minutes before they are on scene and we are standing by to get some word from the Wasp as to whether the pilots are in fact in the helicopter or not.

From the deck of the Wasp, we are advised that 2 more recovery helicopters are in the area approximately 5 miles from the spacecraft and are standing by.

The flight surgeon on the deck of the carrier Wasp, Dr. Howard Minners, has advised that he is most encouraged by the sound of Jim McDivitt's voice. He has just been in contact with him. We could

not monitor the situation here, but Dr. Minners says he is most encouraged with the sound of the report. This is Houston standing by.

We are advised by the Wasp that on being told that swimmers would be deployed shortly to ready the spacecraft for pick-up. Jim McDivitt came back with the reply "Hoorah, hoorah, we are going to the Wasp".

We are just checking our notes here in the Control Center and we are - our best estimate on splash down right now is 12 minutes and 30 seconds after the hour. This contrasts with the 13 minute estimate we gave earlier. This is Gemini Control standing by.

From the Wasp, we were advised that the first of the swimmers is poised and ready to leave his helicopter. Standing by. Meanwhile in the Control Center someone in the Flight Planning Department has put up a slide on the monitor which says "End of the flight plan," and they suggest we tune in for GT-5.

We are advised that one raft and one swimmer are in the water near the spacecraft. The procedure is the first thing the swimmers do in the water is to check on the condition of the pilots, get an eyeball verification of how they look and how they feel. Then they proceed to put a large flotation collar around the spacecraft to assure seaworthiness until pickup which should come in about 1 hour and 15 minutes from now.

We have additional swimmers in the water right now and they are now attaching the flotation collar to the spacecraft.

At last contact, the Wasp reports that Jim McDivitt advised both he and Ed White were feeling great.

This is Gemini Control. We are advised that the flotation collar is just about attached to the spacecraft. They are now finishing the last bit of strapping. We as yet have not heard whether the pilots have left the spacecraft. We are standing by for that information.

The wasp at this time is 36 nautical miles from the spacecraft. 36 nautical miles and proceeding at 30 knots toward the spacecraft. We are further advised that Jim McDivitt declined to leave the spacecraft until he was assured the flotation collar was securely attached to his craft. We are standing by for any further information on the Pilot pickup.

The latest word is that the collar is attached. We are advised here in Houston that the collar is inflated and looks good.

In the recovery area we are advised we have 4 helicopters and 1 fixed wing aircraft, which would be the on-scene commanders aircraft in the area. From the Wasp we are advised that again the pilot's report both are in good shape and are hungry and they emphasize the word hungry. The pilots are in good shape and hungry.

We are advised that the astronauts plan to stay in the spacecraft until - for the length of time that it will take to get one more blood pressure reading. You recall that before retrofire they were to obtain several blood pressure readings while still in the spacecraft while they are still in their spacesuits. They are apparently going to take one final blood pressure reading before departing their Gemini IV spaceship.

We are advised that the hatch is open now on the spacecraft. They did not say which hatch, but we would assume that it was the right hatch. We will stand by for confirmation.

And the swimmers in the water around the spacecraft have just given the helicopter on scene a thumbs-up signal indicating the pilots look great to them.

George, did you hear that the hatch is opening and that the swimmers report they are in good shape.

This is Gemini Control. Some times on these reports at 37 minutes after the hour the rescue helicopter coming in was reported in the area ready to drop the pick-up harness. At the same time both astronauts reported they were in good shape and hungry, as we reported, and now we are advised that one astronaut has emerged from the spacecraft. We don't know which one.

END OF TAPE

GCH: The on-scene helicopters report that the right hatch is open. At 42 minutes after the hour, one of the astronauts emerged, we still don't have his name. And the Wasp now advises whichever astronaut was standing up in the spacecraft and appeared to be coming out had a brief chat with the swimmers and sat back down. We still don't know his name. More than likely it would be Ed White - that's the right hatch. We're advised from the Wasp that one astronaut is/in <sup>now</sup> a raft alongside the spacecraft, we still don't have his name, but he has his water wings inflated and he is apparently standing by for a helicopter pickup on the helicopter hoist. And now from the Wasp we are advised that both men, both men are in a raft alongside the spacecraft and a helicopter is preparing to pick them up. Before departing the spacecraft apparently Ed White did a few quick standup type exercises.

And from the Wasp we are advised that the sling from the helicopter is now being lowered to pick up one of the astronauts. Our communications this morning with the Wasp have been outstanding. We've never had a better circuit into the Atlantic Ocean.

And we have one astronaut in a sling, on the way to the helicopter. No name. We're estimating its about a 30 foot long hoist, it would have deployed at 30 feet and he would be brought in on a winch into the helicopter.

The Wasp, meanwhile, steaming at 30 knots, is now reportedly 28 miles from the scene. We are advised that a second helicopter is being directed to pick up the parachutes the spacecraft, the spacecraft, on water, still floating.

This is Gemini Control. Our plotboard from our recovery room here in Houston shows that the first astronaut was in the sling at 47 minutes after the hour.

One astronaut is about to enter the helicopter, the other is waiting in the raft for pickup. Now the second pilot is on the hoist and on his way into the helicopter.

Now we are advised that both astronauts are onboard the helicopter, both astronauts on board. We do not know whether they still have their helmets on or not, but we assume they would have taken the helmets off, but, they would have kept their spacesuits on.

We are advised the helicopter is now proceeding toward the Wasp, we have no estimate as yet as to when the helicopter will be over the Wasp, we are standing by.

Both astronauts were aboard the helicopter fifty minutes after the hour. Meanwhile a second helicopter which was to pick up the spacecraft parachute reports that apparently the chute has sunk and, uh, we don't know whether they have abandoned the search or not. It's certainly not a critical item.

The Wasp reports both astronauts in the helicopter, smiling and in great spirits, they're about 30 miles from the Wasp right now, proceeding toward it. Meanwhile, here in the control center, Mission Director Chris Kraft ~~is~~ has lighted up his post-splashdown cigar. He's puffing on it merrily, a big cloud of smoke enveloping his head. He's a very happy man.

This is Gemini Control. We're advised that the helicopters should be over the Wasp at 10 minutes after the hour about 17 minutes from now.

This is Gemini Control. We've just been advised from the Wasp that approximately 90 percent of the crew of the Wasp should be..... The helicopter carrying the astronauts is now about 10 miles away. It's in view of the Wasp. They are rolling out the red carpet on deck, preparatory to receiving the astronauts. From the helicopter we are advised that a Dr. on board has taken a quick check of the men and he reports that they are in great shape. Great shape, they are still in their space suits.

Roger, I understand the Wasp can not see the helicopter visually.

From the Wasp we are advised that several helicopters remain on the scene, making a search for the radar and reentry section of the spacecraft, that's the forward tip of the spacecraft out on the nose of it and in some past flights we have been successful in recovering that. We apparently did lose the parachute, the spacecraft parachute, which is jettisoned on touchdown. It usually lands within a half a mile of , within a very few feet, actually, of the spacecraft, floats away rather quickly.

This is Gemini Control. The Wasp is standing by to receive the helicopter bearing Ed White and Jim McDivitt.

And the Wasp advises that Admiral McCormick, Captain Conger is standing by on the deck of the Wasp, the Marine guard aboard has an area roped off X in preparation for receiving Jim McDivitt and Ed White.

This is Gemini Control. Here in the control center there must be fully 50 people, Project officials from the Gemini office, there's Dr. Gilruth, Director of the Manned Spacecraft Center, has just come in and shook Chris Kraft's hand vigorously. They're all smiles.

We're advised that the helicopter is about 20 feet off the flight deck of this time, we can hear the engine noise in our headset. And the prime helicopter touched down at 9 minutes after the hour, the helicopter is on the deck at 9 minutes after the hour.

Marine guards are rolling out the red carpet.

And the door of the helicopter is open. Jim McDivitt is stepping out to a tremendous round of applause from the sailors out on the deck of the Wasp. He is followed by Ed White.

Admiral McCormick is congratulating the pilots right now. He's waving to the crew. They are moving down the red carpet at this time toward the medical area where they will take a quick post-flight physical. I can hear the band playing in the background. They have entered the island area of the ship, headed for the Wasp sick bay for their quick postflight physical, their first of several.

We are advised from the Wasp that all the flags are waving, including the NASA flag, the flap of the WASP, the United States Flag, and of course the Marine Corps

flag, and it sounds like a pretty turbulent scene.

This is Gemini Control. At 13 minutes after the hour. From the Wasp we are advised that the pilots look to be in great spirits as they walk away from the helicopter. They carry nothing.....we have an additional report coming in, I say again, they reportedly look great. He said he could observe that they definitely needed a shave, both of them. This is Gemini Control, standing by.

End Tape