

52-1

SKYLAB MISSION COMMENTARY 5/14/73 1:10 CST 18:04 GET 5:32 MC27/1

PAO This is Skylab Control at 5 hours 32 minutes, ground elapsed time, in the mission of Skylab 1, currently over the southern tip of the African continent. There's been a change in the expected time of the press conference with Skylab Program Director, Bill Schneider, Cape Kennedy newsroom. It will now be no earlier than 10 p.m. eastern daylight time, instead of the earlier predicted 9 p.m. That is a 1 hour delay in the press conference with Skylab Program Director, Bill Schneider, at Kennedy Space Center newsroom. At 5:33, ground elapsed time, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 18:45 CST 6:15 GET MC28/1

PAO This is Skylab Control, 6 hours 15 minutes into the mission of Skylab 1. A little over a minute, now, until acquisition at the Hawaii tracking station. A matter of interest on this pass on Hawaii will be some attitude excursions that were noticed just as we left Honeysuckle station, where the vehicle apparently drifted off inertial - solar inertial attitude. As we come across Hawaii, the gyros aboard the spacecraft and the spacecraft attitude will be examined closely by telemetry to see if the vehicle has returned to the desired attitude, or whether it's still drifting. To repeat again an earlier announcement, the press conference with Skylab Program Director, Bill Schneider at Kennedy Space Center newsroom has been delayed to no earlier than 10:00 p.m. eastern daylight time. That would be 9:00 p.m. central. We'll stand by here as the Skylab workshop attitude problem is sorted out during this Hawaii pass and the subsequent stateside pass. At 6:16 ground elapsed time, this is Skylab Control.

PAO This is Skylab Control. The guidance controller here in the control room has confirmed that the vehicle has returned to solar inertial attitude. However, there are some apparent problems in some of the gyros which control the spacecraft attitude. Flight controllers are continuing to sort out these problems at this time. Some 2 minutes remaining until we have loss of signal at Hawaii, 9 minutes out of Goldstone for a stateside pass on this fourth revolution of the Skylab space station. At 6:19 and standing by, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 20:15 CST 7:45 GET MC29/1

PAO This is Skylab Control, 7 hours, 44 minutes ground elapsed time. Skylab orbital workshop presently over the Guam tracking station, with some 5 minutes remaining during this pass over the Western Pacific. Skylab Program Director Bill Schneider has issued the following statement. "The launch of Skylab 2, the manned launch, has been recycled for 5 days to Sunday, May 20, because of the incidents which occurred during the Skylab 1 deployment. The recycling will permit further evaluation of alternative flight plans to maximize scientific returns from the Skylab mission." Program Director Bill Schneider will hold a press conference at 9 p.m. central daylight time at Kennedy Space Center newsroom. At the Houston end, the Flight Director, who has been on the flight director console during most of the day, Don Puddy, will take part in the small briefing room in the building 1 news center at Johnson Space Center. To repeat the statement issued by Skylab Program Director Bill Schneider: "The launch of Skylab 2 has been recycled for 5 days, to Sunday, May 20, because of the incidents which occurred during Skylab 1 deployment. This will permit further evaluation of alternative flight plans to maximize scientific returns from the Skylab mission." Some 45 minutes away from the press conference, 9 p.m. central, 10 p.m. eastern daylight time, with participants at Houston and Kennedy Space Center. We understand that the prime crew of Skylab 2, will return to Houston tomorrow. At 7 hours 47 minutes, ground elapsed time, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 20:47 CST 08:15 GET MC30/1

PAO This is Skylab Control, 8 hours 15 minutes, ground elapsed time, in the Skylab 1 mission. Skylab orbital workshop presently over the Texas tracking station, nearing the end of the fifth Earth orbit. Reminder to newsmen, both at Kennedy Space Center and Houston, some 15 minutes away from a press conference, which will have participants at both ends, Houston-Cape line. Skylab Program Director Bill Schneider will be at Kennedy Space Center; Flight Director Don Puddy and Gene Kranz, who's chief of the Johnson Space Center Flight Control division will take part in Houston. The oncoming Flight Director, Milt Windler, went around the room, talking to the flight controllers and asking them to examine ways to get the most out of a reduced power situation for the modified mission, which will be resumed on the delayed launch of Skylab 2. To repeat the earlier statement by Skylab Program Director Bill Schneider, "The launch of Skylab 2 has been recycled for 5 days to Sunday, May 20, because of the incidents which occurred during Skylab 1 deployment. This will permit further evaluation of alternative flight plans to maximize scientific return from the Skylab mission." The prime crew for Skylab 2 will return to Houston, Tuesday morning. Thirteen minutes until the press conference starts and at 8 hours 18 minutes, ground elapsed time, this is Skylab Control.

END OF TAPE

SKYLAB MISSION COMMENTARY 5/14/73 23:00 CST MC31/1

PAO                      This is Skylab Control. Ten hours 30 minutes ground elapsed time. The mission of Skylab 1 presently off the southern tip of the African continent and the island of Madagascar. At the beginning of the seventh earth orbit or revolution, which ever term you prefer. The cabin pressurization sequence, which had been underway, has been terminated for the time being to allow some thermal responses to balance out. We have no estimate yet as to when the pressurization will be resumed. But at the time the sequence was stopped over the Vanguard tracking ship which is hove to off the southeast coast of South America, the pressure was at 1.9 pounds in the habitable area of the Skylab space station. We're some 51 minutes out now from the next station which will be Goldstone. The next two REVs, there will be only Hawaii and Vanguard which will track the spacecraft. Flight director Milt Windler is having numerous conversations with the individual flight controllers and sorting out how best to manage the resources available. Still tracking the gyro problems in the ATM guidance system. And at 10 hours 32 minutes ground elapsed time this is Skylab Control.

END OF TAPE

PAO This is Skylab Control at 11 hours 20 minutes. During the last few minutes here in Mission Control, Flight Director Milton Windler has accepted a recommendation from the Marshall Space Flight Center to make an attitude change in the Skylab workshop. This change will, in effect, change the attitude or the angle at which the Sun is shining on the side of the workshop. Now what we're finding is that as a result of the loss of the micrometeorite shield or panels, the thermal characteristics of the workshop now are different than had been planned. Normally, with those micrometeorite shields in place, they are coated with a coating that reflects sunlight. The workshop itself is not coated with the same reflective materials. Consequently, the amount of solar energy absorbed is higher and we're watching an increase in the temperature. There is no concern in that temperature increase at the present time, but in order to keep it from going beyond acceptable limits, the workshop will be placed in an attitude that directs the Sun more toward the end of the vehicle, the end at which the command module would be docked once the rendezvous and docking is accomplished. At the present time, the workshop is in an attitude with the Sun shining directly on the solar panels of the ATM, the Apollo telescope mount, this also places the Sun shining directly on the side of the workshop. The plan is to pitch up about 90 degrees, again placing the Sun more toward the end of the multiple docking adapter, to stay in this attitude for one revolution and then to pitch back 45 degrees in a compromise attitude which continues to reduce the amount of solar energy absorbed by the workshop, but also places the solar panels in more of an opportune position to provide the electrical current necessary for operating the vehicle and reducing any unnecessary drain on the batteries. This maneuver is going to be performed over Goldstone. We're about 15 seconds now from regaining radio contact with the workshop over the Goldstone tracking station. It will take about 13 minutes maneuvering with the attitude control system to place the vehicle in the desired attitude. We're standing by for confirmation that the attitude change has begun. We expect that to begin momentarily. This is Skylab Control, we have a relatively low elevation pass over Goldstone; we're waiting for a good solid telemetry lockup before the command is initiated to begin that attitude change. We're getting solid data now and we're getting a recommendation to go ahead and attempt to command the attitude change. We have about 1-1/2 minute of acquisition remaining at Goldstone. Once this command is initiated, the 13 minute maneuver is an automatic maneuver. This is Skylab Control, we've had loss of signal through Goldstone without getting the command initiated to make that attitude change. We did not get the solid data from the ATM that we thought we needed to initiate that maneuver, and we'll take a look at the situation over Vanguard, however, scheduled to acquire there in about 17 minutes. And we'll attempt to get the necessary data lockon and get the command initiated at that point. This is Skylab Control at 11 hours 31 minutes.

END OF TAPE

PAO This is Skylab Control at 11 hours 45 minutes. Now, we have reacquired the workshop over the tracking station at Vanguard. And, we're standing by to confirm we've got good data. Valid data will allow flight controllers here in Mission Control to send the proper command to initiate an attitude change maneuver. This maneuver again will be - it's about a 13 minute maneuver using the thruster attitude control system on the workshop. Pitching up 90 degrees, this will change the angle at which the Sun is striking the side of the workshop, an attempt to control the temperatures in the vehicle. We do now have confirmation that we've got attitude data, and that the attitude looks good on the orbital workshop.

PAO We've got a confirmation now of good solid lockup on the data.

PAO This is Skylab Control. We again have intermittent data and Flight Director Milton Windler has elected to hold the maneuver until we've got solid data. We have about 6 minutes remaining in this pass over the tracking ship Vanguard.

PAO This is Skylab Control. We have a little less than 1 minute of acquisition time remaining over Vanguard. And, we have not at this point resumed solid enough data lock to go ahead with the commanded maneuver change for the workshop. And we will be reacquiring in about an hour at Hawaii. During this pass over Vanguard, the instrumentation communications engineer has been going through a number of troubleshooting procedures to determine the nature of the data problem, to tie it down to either an onboard or a ground station problem, and to determine the proper workaround, as they say. And we now show that we've had loss of signal at Vanguard, we're predicting acquisition at Hawaii in 58 minutes 26 seconds. This is Skylab Control at 11 hours 55 minutes.

END OF TAPE

PAO This is Skylab Control at 12 hours 56 minutes. We have now acquired the orbital workshop on its eighth revolution over the Hawaii tracking station. We have good solid data and we've commanded the start of the maneuver which will change the spacecraft attitude - the workshop attitude for improved thermal control. And that maneuver is scheduled to require about 13 minutes. We have a report that it is progressing smoothly at this time. And we have about 4 minutes 45 seconds of acquisition remaining at Hawaii. We will be reacquiring at Vanguard about 21 minutes after we lose contact in Hawaii. The attitude control change, the attitude change that is being made at this time, is to place the Sun more end - on to the spacecraft. The normal attitude has the ATM, the Apollo telescope mount, solar panels pointed directly at the Sun. This also has the Sun shining directly on the side of the orbital workshop. Without the micrometeoroid panels, which have a thermal coating on them to reflect solar heat - solar energy, we're finding some increases in temperature within the workshop. As a means of getting an assessment of this temperature increase and controlling it, the attitude change is being made. The plan is to leave the spacecraft in the pitched up attitude, pitching up 90 degrees from the present attitude, leaving it in this position for 1 revolution; then pitching back to an attitude midway between the initial attitude and the pitched up attitude and holding it there for one revolution, and then returning to the normal attitude with the ATM solar panels again pointed directly at the Sun. This maneuver is being accomplished with the thruster attitude control system, controlled by the ATM.

PAO This is Skylab Control. We've lost radio contact now with the spacecraft as it passes over the horizon from the Hawaiian tracking station. And we'll be reacquiring in about 20 minutes over the tracking ship Vanguard in the south Atlantic off the coast of South America. Over Hawaii we had good solid data. We commanded the orbital workshop to begin an automatic attitude change. That maneuver was progressing smoothly as we lost radio contact. It will go to completion. The total maneuver is scheduled to take about 13 minutes, and we'll be able to confirm the new attitude over Vanguard. At the present time, our plan is to discontinue commentary operations following the Vanguard pass. The Houston News Center is scheduled to reopen at 6 a.m., at which time commentary operations will be resumed. This is Skylab Control at 13 hours 4 minutes.

END OF TAPE

PAO                      This is Skylab Control. The orbital workshop now is starting its 9th revolution of the Earth. And, we've just completed a 9 minute pass over the tracking ship Vanguard. During that pass we received solid telemetry data from the spacecraft, and verified that the vehicle had maneuvered to the desired attitude, pitching up 90 degrees from the normal attitude at which the ATM solar panels are pointed directly at the Sun. The new attitude has the multiple docking adapter end of the vehicle pointing at the Sun. The ATM solar panels are parallel to the Sun's rays and receiving little or no solar energy. During this period of time, the vehicle is being powered from stored battery power. We plan to stay in this attitude for 1 revolution, allowing the temperatures to drop on the orbital workshop. These temperatures running higher than normal, due to the apparent loss of the meteoroid panels, which in addition to protecting against meteoroid impacts, also have an effect on the way in which the vehicle absorbs and radiates thermal energy from the Sun. And we're seeing, consequently, an increase in temperatures. Engineers here in the Control Center and in the Marshall Space Flight Center are interested in watching the temperature curve as the temperatures come back down to determine the total amount of thermal energy absorbed by the workshop. During this period of time, the pressurization of the orbital workshop has been terminated; we're holding at 2 pounds internal pressure. And once we've gotten a better indication of what the total thermal energy absorbed by the workshop is, we'll continue that pressurization up to the desired 5 pounds per square inch. The plan again, is to hold at the current attitude for 1 revolution and then to pitch up to an intermediate attitude where we're about 45 degrees pitched up instead of the current 90 degrees. At a 45 degree angle, it'll be a compromise attitude with some solar energy being supplied striking the solar panels, and a portion of the energy, still supply electrical energy still supplied by the batteries, staying in this attitude for 1 revolution before returning to the normal attitude with the ATM solar panels pointing directly at the Sun. At this time we will terminate commentary operations. The Houston News Center will also be closing at this time. We will be reopening at 6 AM. This is Skylab Control at 13 hours 36 minutes.

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SKYLAB I MISSION COMMENTARY 5/15/73 CST 06:53 GET 18:23 MC-36/1

PAO                      This is Skylab Control. Eighteen hours, 23 minutes since Skylab 1 lift-off. Skylab attitude control has just been shifted to the control moment gyros. Skylab now over the Vanguard tracking ship on the 12th revolution of the Earth. Prior to this time, attitude control has been provided by the thruster attitude control system, the RACS. The control moment gyros are fully spun up now, and just a few minutes ago, additive control was transferred to the gyros. Temperatures on structural members in the orbital workshop continue to run near or slightly in excess of 100 degrees. The orbital cluster was taken out of the solar inertial attitude for two revolutions during the night to allow readings from several temperature sensors which had gone off the scale. This temperature data is being used by the Marshall Space Flight Center in a thermal model in an attempt to determine how serious the problem is and to develop a plan to manage the thermal profile. Skylab, now, is back in a solar inertial attitude. The ATM telescope is unpowered at the present time, and the cluster pressure is holding at 1.9 pounds per square inch - decision having been made that there is no reason at this time to go to the full 5-PSI pressure. At 18 hours 25 minutes, ground elapsed time, this is Skylab Control.

END OF TAPE



SKYLAB MISSION COMMENTARY 5/15/73 7:35 CST 19:05 GET MC37/1

PAO                      This is Skylab Control at 19 hours  
4 minutes since Skylab 1 lift-off. Flight director  
Neil Hutchinson, who has been leading the overnight shift  
of flight controllers monitoring the Skylab workshop,  
will hold a status briefing in the small briefing room  
at the Johnson Space Center News Center at 8:15 a.m. central  
daylight time; 8:15 a.m. central daylight time, briefing  
by Neil Hutchinson, flight director on the overnight shift.  
We've been informed that the Skylab 2 crew plans to leave the  
Kennedy Space Center at 9 a.m. central daylight time for  
their return to Houston. This is Skylab Control.

END OF TAPE

PAO                      This is the Skylab News Center at KSC. The engineering investigation of the inflight anomaly for Skylab and the effect on subsequent mission activities continues at the Marshall Spaceflight Center in Huntsville, Alabama. No new information has been uncovered which reveals the cause of the failure of the micrometeoroid shield during launch and the apparent subsequent fouling of the workshop solar array. The data continues to be analyzed by the engineering team. The data is somewhat incomplete in real time, since some of the events occurred between station passes and the tape telemetry data must be dumped at a ground station, processed and then analyzed. The analysis of the thermal and electrical systems effects continues on an intensive basis. The ATM solar arrays continue to work properly and there is no significant change in the status of the workshop solar panels. They are still in a partially extended position with no new estimate of the extent of their deployment. The thermal condition of the spacecraft is more troublesome than had been anticipated last evening. The meteoroid shield, in addition to providing a protection against small punctures, was painted in such a manner to provide a temperature balance in the spacecraft on the external skin. The two effects have been found to have contradictory mission requirements; that is to maximize the electrical power available, it's desired to point the solar arrays at the Sun constantly; however, this is the cause, this causes the skin of the now unprotected OWS to heat up excessively. Engineering evaluation and computer analysis is currently under way to find an optimum combination of solar oriented and nonsolar oriented orbit. The flight support team at JSC and MFSC, that's Johnson Space Center and the Marshall Space Flight Center, are continuing in their tasks of trying to develop an optimum flight plan for Skylab 2. Obviously the experiment activity which will be possible depends upon the resolution of the electrical and thermal questions. These resolutions are expected prior to the launch of Skylab 2 now scheduled for Sunday, May 20, 1973, at approximately 11 a.m. eastern daylight time. Preparations at the Kennedy Space Center are proceeding accordingly. By Saturday afternoon a full understanding of the technical situation will be available and an assessment of the mission impact will be made. The decision to launch or not to launch will be made at that time. Skylab Program Director, William Schneider, will be available at the Kennedy Space Center auditorium for a brief news conference at 3 p.m. eastern daylight time today, that's a little over a half an hour from now. The Skylab Program Director, William Schneider will be available for a brief news conference at the News Center at KSC today.

END OF TAPE