

SL-II MC-109/1
Time: 20:02 CDT 1:12:02 GET
5/26/73

PAO This is Skylab Control 1 hour and 1 minute ground elap - I mean Greenwich mean time. We have had data acquisition through Hawaii tracking station. We'll stand by for resumption of air-to-ground communications. This pass is only 5-1/2 minutes long. This is Skylab Control standing by.

CC Skylab, Houston to Hawaii for 5 minutes.
PLT Roger, Houston. Stand by one, we're trying to get the PB on the VTR and Pete will have a chat with you.

CC Skylab, Houston. We've got about 4 minutes left on this pass. Can you give us a report?

CDR Be right with you, Houston.

CDR Okay, Houston. We had a clean deployment as far as rods clearing and everything, but it's not laid out the way it's supposed to be. And we've got pictures of it on the VTR for you. Now right at the moment, we've operated voided the rod in and out a couple of inches short stroke-wise rapidly, which has improved the deployment. But the problem seems to be that the folds in the material have taken too much of a set. And it is more fully deployed in the front across the upper skirts. But, there are two folds emanating from the set, 3 folds emanating from the center deployment plate; one to each side and one towards the base skirt. So, in effect, we have a trap-ezoid which is the smallest dimension toward the base of the vehicle. Now, that's as far as we've gone. We're open for suggestions. I have the feeling that if we pulled it all the way in close to the vehicle that it would touch in the back and along the sides. It might possibly help the folds out of the material and if we did push her back out again and gently oscillate it in and out, as we have in the past, which seems to improve it. But, I think we've gotten about as much out of it as we're going to get. My guess is we've only got about 12 to 14 feet at the back end with perhaps 18 to 20 at the front end. And I don't even know the dimensions of the sail.

CC Okay the dimensions are supposed to be 22 by 24, Pete.

CDR Well, it's possible that we've got it completely backwards and we could turn it 180 degrees. That would - which way do you want - which dimension do you want the 24?

CC Twenty-four is the length of it, 22 feet should be the width.

CDR Okay. Then it is in fact a square. I mean a rectangle.

CC Yes.

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CDR Is that right, Houston, it's a rectangle?
CC Roger, it's rectangular and the center,
of it - the hub is off center on the rectangle. There's
to be the poles that are pointed back toward the ATM should
be the ones that have a length without fabric on them.

CDR That's the way it is.

CC That's the way it should be.

CDR If you are able to dump our TV we, I
think, give you a pretty good TV of it. It just does look
to me like the end aft toward the aft skirt has got three wrin-
kles. One coming between the aft skirt line and one on each
side running along you know running outboard to the side.
And that it's pinched the fabric, you know, It's taken a
permanent set. And the front end, which has the strings on
it, that's pretty well deployed.

CC Okay, we're about 15 seconds from LOS.
We'll think about it and we'll talk to you at Vanguard.
We hope to have a plan then. Vanguard is coming up at 30.

CDR Three zero, Roger.

CC Skylab, Houston. If you can still read,
we'd like to terminate that Bat A charge and get Bat B to
charging. And also, if anybody is free, we'd like to start
them on the water flight servicing.

CDR Okay, we were just going to ask you
that.

PAO This is Skylab Control. We've had loss
of signal through the Hawaii tracking station. Coming up
on Vanguard in 21 minutes. There was considerable applause
in the viewing room from the people who are involved in
designing, fabricating, testing the parasol when it was re-
ported that it had deployed with a few wrinkles in the after
end of it - end pointing - facing toward the telescope
mount. Meanwhile, here on the ground, discussion is underway
on how would be the best way to try to shake the wrinkles
out. And, hopefully, over Vanguard, some word will be passed
up to the crew on how would be the best way to correct the
problems and get the full 22 by 24 foot dimensions out
of the parasol for the optimum solar shading. We'll come
back up at Vanguard in 20 minutes. At 01:10 Greenwich mean
time, this is Skylab Control.

END OF TAPE

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PAO This is Skylab Control 01 hours 21 minutes Greenwich mean time. Eight minutes now, out of Vanguard - Vanguard Tracking vessel, and we should have further reports on retraction of the main stem of the Skylab parasol. Here in the Control Center, there are several little discussion groups scattered around the room, on how the best way to shake loose the folds in the canopy. The main consensus seems to be to pull it down fairly close to the workshop and either go solar inertial and leave it as is, or perhaps rotate it rapidly to try to use this centrifugal force of the rotation against the aft ribs to shake out the wrinkles in the fabric. And we'll be coming up on the reset in the control moment gyros over Vanguard, which will require some TACS thruster firings. And perhaps the plume from the thrusters may have some effect in shaking out the wrinkles in the canopy. We'll be back up in 6-1/2 minutes for the Vanguard pass at 01:23 Greenwich mean time. This is Skylab Control.

END OF TAPE

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Time: 20:28 p.m. CDT, 1:12:28 GET
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PAO This is Skylab Control 01 hours 28 minutes Greenwich mean time. About a minute and 56 seconds out from Vanguard tracking ship nearing the end of revolution 178 for the workshop. After Vanguard, we again have a long gap of about an hour before Hawaii. Hawaii pass will be almost due overhead, 81 degrees elevation, maximum elevation. And we expect another status report from the crew on the retraction operation of withdrawing the center support rod, taking off the rods as they bring it in. Forty-five seconds to acquisition. However, occasionally we get acquisition ahead of the clock time. So, at this time we'll bring up the circuit for the Vanguard pass, which has a duration of 10 minutes and 2 seconds. Skylab Control standing by.

CC Skylab, Houston through Vanguard for 9 minutes.

CDR Go ahead.

CC Roger. First off, we'd like to get Joe to tell us what he saw out the window. We would like to know if the rods are approximately in the same plane.

SPT Well, we don't think so, Houston. We can see the ends of all the rods. It's completely free of anything and there's nothing hanging it up.

SPT And if you want to know what it looked when it deployed I can see the thing stickin up, bunched in the middle, billowed a little bit at the top and at the bottom, and when they deployed it, all four legs came up. The front legs, that is, the forward ones closest to the command module, came up smartly. It looks as if they actually went over center a little bit, then bounced back. The back ones did not come up, it looked like, all the way - didn't come to 90 degrees. They went slowly and they just kind of drifted to a stop.

CC Okay. What kind of an angle do you think they made with the plane of the first two rods?

SPT It's your guess, but I guess 30 degrees, something like that.

CC Okay, we would like for the CDR and the PLT to go back in the workshop and pull her in and we'd like for you to pull as many rods in at one whack. Undo the rod break and bring in about three at a time and then remove them and we want you to complete the procedures down to step 43 so you've done a full retraction and got the rod A configuration proper. And we're going to be doing a nominal H-cage at the end of this pass and we want to get it in close.

SPT It worked.

CC Skylab, Houston. We'll give the time for that reset so that you can be sure and have the rod brake on when we start it.

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SPT Roger.
CC Skylab, Houston the time for the reset
is 01:36. That will be the time for the nominal H-cage. 01:36
and we'll warn you again at - close to that time.
CDR Understand 01:36. That's two minutes
from now, but we'll hustle.
CC Roger, and once we get the parasol re-
tracted, we do not plan to do anything more with it tonight. We're
going to take a look at it, and we think we've got almost a full
deployment and pulling in will do the rest for us.
SPT I understand.
CC And for the CDR, we're not too concerned
about getting it all the way down before the reset. The main
thing we want is that you do have the rod brake on when the
reset starts or the nominal H-cage starts.
CC Skylab, Houston we're going to give you
a little more time here. We're going to delay that reset to
40.
CDR Okay. 40.
SPT Okay, we're pulling it in Houston. Be
advised the rods we're pulling in are quite cool and feel very
nice to the touch.
CC Roger, copy.
CC SPT, Houston. Did the CDR, PLT take
a rest between the Hawaii and Vanguard?
CC SPT, Houston.
SPT Go ahead.
CC Roger, we'd like to know if the CDR,
PLT took a rest between Hawaii and Vanguard?
SPT They took a break, Houston.
CC Roger, copy.
SPT Okay, Houston, we got it in.
CC Okay. I understand you got a full re-
traction and you've followed - completed the checklist through
at least 42.
SPT I didn't say that. We're presently
double checking that. We got it all the way into the mark
on rod Alpha and ~~we~~ rod brake clamp thing tightened down.
CC Roger, sounds good. We're going to
start the reset - the nominal H-cage immediately. Now, for the
rest of the evening, we'd like for you guys to go back and if
you haven't eaten already, eat, and we're going to try to get
on with the nominal flight plan.
SPT Okay, good enough. Also rod B is gathering
frost as it lays here in the fiery workshop,
CC And we'd like to insure that you do

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complete step 41 there, Paul. We'd like to make sure we get the push rod knob A on there and the set screw in.

PLT That didn't work, Hank. It's a little tough getting these two sections separated. We'll get on that as soon as we can.

CC Okay.

CC Okay, we're almost LOS now, we'll be picking you up over at Hawaii at 37.

PLT Okay.

PAO This is Skylab Control. We've had loss of signal through the Vanguard tracking ship. With a successful retraction and clamping of the center pole of the Skylab parasol. The brake set prior to the time the commands were sent to reset the control moment gyros using the thrusters on the orbital workshop. Still 18 minutes remaining of nightside pass. It will likely take a couple of dayside passes before a trend is observed of reduced temperatures - temperatures coming down. Acquisition directly over the Hawaii station in 55 minutes. At 01 hours 41 minutes Greenwich mean time, this is Skylab Control.

END OF TAPE

SL-II MC-112/1

Time: 20:58 CDT, 1:12:58 GET
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PAO This is Skylab Control. 01 hours 58 minutes Greenwich mean time, 38 minutes away from Hawaii. Skylab cluster crossing the east African coast in the straights between the Island of Madagascar and the continent of Africa. Here in the Mission Control Center there's a great deal of confidence that the recently deployed Skylab parasol will have a good effect on the internal temperatures of the Skylab workshop. Johnson Space Center Technical Services Division Chief Jack Kindsler just spoke to the group of people in his division and other elements of the center and support contractors in the viewing room, and expressed the belief that as the parasol gets warmed up by the Sun during the next couple of dayside passes, the wrinkles in the after end of the canopy which apparently were set by the cold soak during the early part of the deployment will indeed flatten out. And that the parasol will provide the designed effect of lowering the temperatures, and acting as a parasol in name and indeed for the Skylab workshop. 37 minutes to Hawaii. At 02:00 hours Greenwich mean time, this is Skylab Control.

END OF TAPE

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Time: 21:19 CDT 1:13:19 GET
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PAO This is Skylab Control 2 hours 19 minutes Greenwich mean time. Skylab cluster now over north central China, midway through the 179th workshop revolution. Seventeen minutes out of Hawaii. Thirty-eight minutes remaining in the current dayside pass. And flight controllers will be observing the workshop temperatures during the next couple dayside passes to see if there is a trend of temperature reduction in the workshop structure and in the atmosphere. It will probably take at least 2 revolutions for the temperatures to begin a downward trend. And hopefully through the night, the workshop will be in a comfortable temperature, by the start of tomorrow's crew workday. People here in the Control Center are well satisfied with the deployment of the Skylab parasol. And as the inventor of the parasol mentioned in his pep talk to the people in the viewing room who had built and tested the device, he felt that the wrinkles seen in the after end were a result of cold soak and that as the Sun warmed up the canopy, the wrinkles would flatten out. We're looking now at a handover from Flight Director Neil Hutchinson to Milt Windler at about 10:15 central time. And anticipating a press conference shortly there after, perhaps 10:30 p.m. central. Participants will be William C. Schneider, Director of Skylab Program NASA Headquarters, Flight Director Neil Hutchinson, and Jack Kinsler who is Chief of the Technical Service Division Johnson Space Center, the man who's brainchild the parasol was. Fifteen minutes out of Hawaii. at 02:22 Greenwich mean time, this is Skylab Control.

END OF TAPE

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PAO This is Skylab Control 2 hours 36 minutes Greenwich mean time. We have acquisition now, even though the clock says we're some 15 seconds away, through the Hawaii station. Almost directly over the Hawaii station. 81 degrees elevation angle maximum. We'll see how the solar sunshade or Skylab parasol is working as we read temperatures on this pass. See if they're coming down.

SC See you over Hawaii for 10 minutes.

CC Okay, we got a lot of things we want to talk about on this pass. I guess I'll get on with it. First off we're planning a medical conference at Vanguard, which is about 03:04. That will be the next station contact after this one. The next item is that we have a requirement that one of you wear the OBS tonight, since we don't have any (garble) in the Command Module, and depending upon the CSM fan, we're recommending the SPT.

CDR Okay.

CC And for the SPT, we'd like to get his opinion on - we can only - we can't dump all of the VTR tape to get that pictures back of the parasol, and we'd like to know whether it would be better to lop off the first part or the last part. In other words, about where in there was the pictures of the deployed parasol?

SPT Hank, if you might get the pictures of the actual deployment at the beginning, and the pictures most actually representative of the configuration in which we ditched it down are at the end, and you can take your choice.

CC Okay, thank you.

SPT Hey, Hank.

CC Go ahead.

SPT I got to apologize profusely, but I inadvertently opened the circuit breakers to the amp hour integrator number 8, and it's reset to zero onboard.

CC Roger. Copy.

CC And our maneuver plan is here, we're going to take a look at the temperatures, and we think they're coming down. We're prepared to command a solar inertial here over Hawaii. Just let you know, and we're also prepared to back that up at Vanguard as a last choice.

SPT You say you think they're coming down or if they're coming down.

CC Well we're looking at them now to see what they look like.

SPT We just finished weighing all the mol sieve heat exchanges. What do you do with them? Just stand by until tomorrow.

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CC Okay, while we're getting an answer on that, we'd like to know how far you got in the - your checks, have you done the quiescent panel yet?

CDR Yeah. I rated panel 351, which we're leaving UP so that we can have water. I was gonna do 352, 382, and 378, 79, 76, 399, 377, 600, 602, 601, 603, 604 and side hatch tunnel hatch, and that's it. The rest of it's done. BAT B is being charged. I just did an 02 purge.

CC Okay, what we're getting at, Pete, we - we're wondering how you feel about trying to get the VCS dump in tonight, and get some circulation going.

CDR Boy, you bet, we can do that.

CDR Hey, if you think those temps are coming down, and that will help any, that's no strain. We're in good shape up here.

CC Okay, then, in that case, we'd like for you to do Step 1 & 2 on Page 2-62, and following that, on Panel 390, I'd like to get all four OWS heat exchanger fans on. Just place all four of them to 'on'. And tomorrow's flight plan, of course, we'll delete that part of it and do Steps 3 & 4.

CDR You say you wanted the OWS heat exchanger fans on or off?

CC On. O N. After you install the duck, according to Steps 1 & 2 on Page 2-62, Panel 390 in the lock there, we want to get all four heat exchanger fans on.

CDR Will do. How did the temps look?

CC Okay, it looks like to us the temps are coming down, so we're going to put the solar inertial in WORK.

CDR Very good. Very good.

CC Okay, and another thing, Pete, we're looking at two flight plans tomorrow. We - We're just taking a tentative look at a flight plan that doesn't consider anything in the workshop. And we have the other alternative is going as planned with a what we launched with. Now, we'll try to get - We'd like to get your opinion on this, how you feel about working in the workshop tomorrow.

CDR Well Buck, if you bring those temperatures down any at all, I'm guessing, but, we spent the better part of 2 or 3 hours down there, and everytime we'd get hot, we'd come up and take a rest. Now, if the temperatures are coming down, and they've come down at - I don't know - Maybe Paul's got a different idea, but I'd say it was at least 120 in there today, but you can work in there. It's dry. We didn't get any problems with heat, whenever we just got too hot, we'd come up and cool off for awhile and

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cool off and go back to work, so if they come down at all, I would like to stick with our original flight plan, and go start activating it down there.

CC Okay, our best estimate, Pete, is we'll be below 100 degrees in there by tomorrow morning.

CDR Well, what do you think it was in there today?

CC We guess about 125.

CDR Okay. Well, I think we're pretty well calibrated. You bring it down 20. We aren't going to be riding any bicycles or anything, but we can get down there and at least start configuring things, and we'll just press along as best we can. If we cannot, we can come out. As far as the temps are coming down. I think that's great. I'd like to press for the normal flight plan.

CC Okay, I guess we will concur with that then. We uplinked you a contingency on dock procedure in regard to the probe. By hooking them together, you probably got now. That is just a get me home thing. Tomorrow we hope to have a better analysis of the probe for you.

CDR Okay, very good.

PLT Okay, Henry, when we put on the VCS ducts and we turn on the OWS heat exchangers, what do we do about the vent fan. Do you want to unplug the vent and go ahead and fire up that fan, or leave it like it is?

CC Stand by just 1.

PLT That's the A - that's the A-N duct fan.

CC Roger. I understand. Let me get an answer on that right quick.

PLT Okay.

CC Roger. We'd like to proceed with uncapping that duct, and getting the fan going.

PLT Okay. I got this list of SEVA questions. Do we have time for me to go over them with you now?

CC We've only got about 2 minutes left right now in this pass. I guess we'd like to delay those.

PLT Okay.

PLT How about if I record them on Channel A for now and you can listen to them, and if we get a chance, I'll give them to you, and otherwise, they're on tape, and you can listen and see if you got any further questions.

CC Okay. I was just getting ready to come up to you with that. That's real good. Press on with that.

PLT Okay.

CC Skylab, Houston. You're on your way to solar inertial now.

5. Tuesday 10
Bob