

SL-II MC-114/4

Time: 21:36 CDT 01:13:36 GET
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CDR Roger
CC We're about 30 seconds from LOS, Skylab.
We'll be coming up on Vanguard, as I said, at - it'll be
about 09 now, and we'd like to say, you guys did a tre-
mendous job down there. We've got everybody smiling here,
now that we've got that parasol out.
PLT Okay. Thank you. And tell those people
that I'm awful sorry about that breaker. I thrashed it around
(garbled) in that heat exchanger break, but I just flipped
it up with my toe.
CC And if you still read us, we'd like to
get that (garble) system activated.
CDR Roger, you got a page number for that, Hank?
SC Okay, that's page 2-137.
PAO This is Skylab Control. The Skylab
cluster has gone over the hill from Hawaii tracking station.
It is now just north of the equator in the Central Pacific.
Twenty minutes to Vanguard. The trend in temperatures as
shown on the numerous different measurement points through-
out the workshop is definitely downward. And as mentioned
by spacecraft communicator Jack Hartsfield, it's likely
that the workshop atmospheric temperatures will be below
100 degrees Fahrenheit by tomorrow morning. They're now
around 120 to 125. We're still estimating around 10:30
for the change of shift press conference in the Johnson
Space Center news room. Participants again. Skylab
Program Director, William C. Schneider. Flight Director
Neil Hutchinson, and Jack Kinzler, Chief of the Johnson
Space Center Technical Services Division, who will discuss
his invention. Eighteen minutes to Vanguard where there
will be a medical consultation on a private loop. And at
2 hours 50 minutes Greenwich mean time, this is Skylab
Control.

END OF TAPE

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PAO This is Skylab Control 3 hours 6 minutes Greenwich mean time, a minute and 55 seconds away from the tracking ship Vanguard. Skylab cluster crossing the western coast of South America. We'll come across over the horizon from the tracking ship Vanguard in the next few moments. The command will be up-linked to the spacecraft through the Vanguard to go to solar inertial attitude even though we are, at this time, still in darkness, 24 minutes away from the spacecraft sunrise. After Vanguard, it will be more than an hour before the next tracking station, Hawaii. About an hour and 2 minutes between LOS, Vanguard and AOS, Hawaii. We will stand by for Hank Hartsfield's first call to the crew.

CC Skylab, Houston. We're with you for another 4-1/2 minutes.

SPT Okay, Houston. We've had a - well we just had another one. We keep getting ACS MALFS, CMG SAT, and rate gyro problems. We have a single talkback in the Y-axis rate gyro and gyro 1. We're not solar inertial. We are in ATT HOLD CMG off the solar attitude. And we'd like you to share with us if you have any knowledge what the heck is going on.

CC Okay, what we've done is maneuver back to an attitude that should be approximately solar inertial. We're in ATT HOLD, we're not in the solar inertial mode. We have also seen the rate gyro failure that - well, at least, redundancy management has claimed that one of the rate gyros in the Y-axis has failed. And that's about the status as we see it now.

SPT Is this the same kind of failure that they have been seeing for 2 days?

CC That is affirmative.

SPT Okay, I'm going to INHIBIT it then, on caution and warning it's going about every 30 seconds. And our CMGs are remarkably close to saturation when they worked just a short while ago. And is that because of the rate gyro drift?

CC Okay, that saturation is due to maneuver, Joe.

SPT Well okay. It wasn't that bad earlier in the maneuver but I still believe you. And what is your ground figure for TACS percent (garble)?

CC The last figure I saw was 51 percent. In fact, we're showing 51.6 percent now, Joe. Okay, we got a couple of other items for you. We recommend that you leave all the hatches open tonight. No need to close them up. And we'd also like to inform you that there will

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not be a trim burn tomorrow. We only have 5 foot per second capability and we're going to try to use it at the optimum time.

SPT Okay, no trim burn. We will leave the
hatches open tonight. One to 5 feet per second above.

CC That's above the SMRCS red line.

SPT Okay.

CC SPT Houston. We'd like you to select
1 and 3 in the Y AXIS. And you may get another failure
alert there until we can get the drift correction in.

SPT Okay, you don't want me to do any DAS
work, just select it on the panel, right?

CC We'd like you to select it through the
DAS.

SPT Oh, Okay.

CC Skylab, Houston. As soon as you get the
gyros configured, we'd like you to do a nominal H-cage. We're
about 20 seconds from LOS. We hope you guys get a good
night's rest, and we'll see you in the morning.

SPT Gyros and then a nominal H-cage, Okay.

CC And Skylab, if you get a chance, we'd
like you to put the evening status report on channel A.

PAO This is Skylab Control. We have ap-
parently had loss of signal through the Vanguard tracking
station. One hour and 37 seconds until Hawaii acquisition.
A very low elevation angle pass, only 2 and a quarter min-
utes long. And then Vanguard an hour and 28 minutes from
now. By then the crew will likely be in the sleep period.
Some difficulties experienced with the Y-axis rate gyro,
which the flight controllers here in the Control Center
feel confident they will be able to sort out and go into
solar inertial rev later than intended. They had planned to
command solar inertial attitude during this Vanguard pass,
but it's been delayed 1 rev until the rate gyro problem
is sorted out. At 3 hours 19 minutes Greenwich mean time,
this is Skylab Control.

END OF TAPE

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PAO This is Skylab Control at 4 hours 32 minutes Greenwich mean time. We're going to play for you now the record-recording of the air-to-ground during the Hawaii pass. As it turns out, the flight director indicated that he needed some additional conversation with the crew at Hawaii. And the crew is still in the process of wrapping up before going to bed and they will be again contacted now at Vanguard and possibly even as late as Ascension. So we are now going to play the Hawaii track and we'll have another acquisition or signal coming up in a little under 15 minutes. This is Skylab Control and here is the air-to-ground.

CC Skylab, Houston. We're AOS over Hawaii for the next 2 minutes. How do you read?

CC Skylab, Houston. We're AOS over Hawaii for about the next 3 minutes. How do you read?

CDR Read you loud and clear. How me?

CC Okay, same here. Sorry to bother you but we've got a short pass, a couple of important items I'd like to get up to you. We're going to be turning on your airlock module primary coolant loop. And that's going to give you a pri cool flow caution or warning loop.

CDR Okay. We're in the process of dumping the condensate plate as soon as we brought the thing on condensate tank filled to the top with water. e're working that problem right now.

CC Roger, understand it filled with water. Okay, we would like on panel 203 for you to take the mol sieve B fan power to secondary.

PLT It's in secondary, Houston.

CC Roger, thank you. We know you have been having some problems still with the APCS and we're going to be trying to work those out for you a little bit later. So, just don't worry about them right now. We're trying to get back to solar inertial and didn't. We'll be trying - -

CC Rog. We said that we should be close to solar inertial attitude. We're not solar inertial mode, we'll be working that ourselves.

PLT Well, you're not even very close. You don't have (garble) Do you know where to go?

CC Probably not.

CDR Well I'm looking out the window and it looks as if you need plus rotation about Y and a plus about X. And I'm not sure of the magnitude, but about 10 degrees or more.

CC I'm sorry, I couldn't copy there. Did you say we were about 10 degrees off?

PLT We are more than 10 degrees off. It's hard to estimate, but it's a plus Y and a plus X rotation.

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We are not going to touch it this time. We're going to let you guys fool with it. We'd like to get in solar inertial once so we'd know what it looked like and if we get off we can get ourselves back on.

CC

Okay, we'll try to work that.

CC

Okay, we've got a pass probably in about oh, Vanguard coming up. We'll be trying to work that then at around 4:46.

SPT

Okay, what is the temperatures doing in the workshop there?

CC

I'll try to get a report for you on that. Meanwhile, we'd like to find out if you did put the SEVA report on channel A or B. We're dumping A right now. We didn't see it there last dump.

SPT

We haven't gotten to the evening reports. It is still about the middle of the afternoon for us. Pete and Paul are working pretty hard on the condensate system. They're cleaning up the command module and stuff like that.

CC

Okay understand. We just want to make sure you did know that we were recording channel A. And you will be putting the medical status report on channel A for us later. Is that correct?

SPT

Yes, and we're going to have a couple of large (garble) I think because we have enough other problems coming up. We're going to stick with it. We are in good shape and we've had our private medical talk. And we don't have anything to report.

CC

Roger. I think all we are interested in there is the food and, you know, whether you took any drugs or not and that kind of stuff.

SPT

We are eating like hogs and drinking lots of water.

CC

Very good.

SPT

- this evening status report and we'll get as much of this to you as we can.

CC

Roger Joe, understand. If you could also put down, we would like sort of a relative amount of time spent between the airlock module MDA and the workshop today. I guess they're kind of interested in what kind of temperatures you were experiencing. You can put that on channel A.

SPT

My off the cuff answer (garble) they can apparently get that by looking at my biomed tonight.

CC

Okay, they were kind of interested in that for the other guys too though Joe. Okay, the skin tents have dropped about 70 degrees. We're going to have LOS here in about 1 minute. We're going to be over Vanguard at 4:46. We were kind of hoping that you guys were going to bed. Do you want us to give a call there or not?

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SPT Yes.
CC You want us to give you a call at
Vanguard understand.
SPT Roger.
CC And I guess I must have got somebody
there. We would like to verify that you did get the ele-
phant trunk installed between the OWS and the airlock module.
SPT Affirmative.
PAO This is Skylab Control. We have a
note now from Dr. Willard Hawkins on the medical briefing
earlier. This is a private conversation between medical
officers to assess the status of true health. It is not
to prescribe drugs or anything of that sort. Here is the
information given to us by Dr. Hawkins. "The crew has
remained in good physical condition during the first 2 days
in spite of a fatiguing first day and also in relation
to the thermal stress of today in the orbital workshop.
No symptoms of motion sickness have been experienced."
And that is the end of the report. This is Skylab Control
at 4 hours 38 minutes and 8 seconds.

END OF TAPE

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CC Skylab, Houston. How do you read?
CDR Loud and clear (garble).
CC Okay. We're a little bit garbled. I'd
like to talk about maneuvering here a little bit if I could,
to Joe.
SC (Garble)
CC Roger. We are prepared to put a maneuver
to try to reacquire solar inertial and there's some confusion
on our part about whether we should go plus or minus Y. We
understood you to say plus Y awhile ago. We think it's minus.
Will you confirm that?
SPT Okay, let's talk about it. Maybe I'm
getting it wrong. It would appear to take - to require a pitch
above the Y axis. I was going to say toward the CSM, if that
makes any sense to you. As I stand facing the CSM and look
up the Z-axis, the Sun is forward of the zenith. It's -
in other words, it's between the plus-Z axis and the plus-X
axis.
CC Okay, that's a plus-Y. That - we got
up there on the top of the MDA - we got the plus-Y axis indicated
and that still sounds like a plus-Y rotation to us.
SPT Well, I thought it was. What have you
got for X?
CC Okay, about plus 15 degrees.
SPT That sounds right.
CC Let's go back and review that again.
You say the Sun is between the CSM and the ATM?
SPT Yes. That's right.
CC That's a negative-Y rotation.
CC You're right, you're right. Okay, it is
a plus-Y rotation.
SPT Nyaaa nyaaa.
CC Okay. Okay, what we're going to do is
put in a plus-Y rotation of 40 degrees and a plus-X rotation of
15 degrees. We got a maneuver time on it of 15 minutes. If we
don't hack it this time we'll probably suggest turning it over
to you. And before you would ever try to do it, you would need
to - before you ever select solar inertial mode, you need to
make sure that you put in a command to initialize your strap-
downs because they're way off right now.
SPT Understand.
CC And for Pete or Paul, I guess maybe we'd
like to ask a question. Is there any reason that duct 1 flow
would be down now. We've got a substantial drop in it.
SPT (Garble) MDA. Oh, duct 1. No, not that I
know of. I can go check it if you want.
SPT Talking about duct 1 in the workshop,
right?

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CC That's affirm.
SPT We didn't do anything. I'll go check it.
SPT If you're ready, let me give you
a status of our ECS, all right?
CC Okeydoke, go ahead.
SPT Okay, we presently are running both
condensing heat exchangers A, and mol sieve A and B. We just
finished a condensate dump into the waste tank. We have two
ducts. Ducts 1 and 2 were running in the workshop. We got
the airlock module duct fan on HIGH with all the mol sieve
air going to the workshop through that diverter valve. We've
got the MDA fans on low, the CSM fans on low, and the three AM
circ fans we just turned on about 5 minutes ago on LOW.
CC Okay, we copy. We got all four fans
running in ducts 1 and 2. Is that affirm?
SPT Hell I turned them on. I'll go check.
CC Okay.
SPT You still want to leave just ducts 1 and 2,
leave 3 off, right?
CC That's affirm.
SPT Okay. You say duct 2 is the low one?
CC Negative. Duct 1.
SPT Okay.
CC Rog, Joe. We have initiated a new one now.
And it might be - if you got time, it might be wise to take
a look out and see. Looks like we're going the right direction.
SPT Roger.
CC And CDR, Houston. If you got a chance,
I guess maybe we'd like to get an idea about how much longer
you guys are planning on working.
CDR I'm trying to make dinner. I don't think
we're going to work very much longer. I would like to go to
bed, but everytime we do, something comes up. Duct 1 for
600 plus; CSM.
CC Roger, understand. Duct 1 600 plus; CSM.
CDR Duct 2 (garble) 550 and duct 3 (garble)
75; CSM.
CC Roger, copy.
CDR And, Crip, as soon as we get into sun-
shine, I'll give you a hack on the maneuver. I guess it'll
be gone by then.
CC Roger. Also be advised that we're
starting to get a lot of feedback out of those SIAs. If you
might could do a little adjustment. I don't know whether it's
ringing there or not.
CDR Yeah, it is.
CDR Hey, Crip, how much temperature skid
drop are you getting. Does it really look like that the
shield's working?

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CC That's affirm. It looks like it's really coming down. Did you hear my last call back when we were - at Guam I gave you a call that we'd dropped 70 degrees.

CC That's skin temp. I'll probably get a hack for you - what the workshop temperature inside - what we think it is. Okay, the next pass is going to be coming up at Ascension at 05:00. And would you like us just to forget that call?

CDR No, we're eating. We're trying to get to bed. I think that everybody shouldn't worry too much if we slipped a day, around here a little bit. Let us sleep in in the morning. (Garble) We're hanging in there. We've had a lot of (garble) come up today. You know - kind of held us back.

CC Rog, Pete. I'm getting an awful lot of feedback there still. We're going to have LOS in about 1 minute. We will give you a call at Ascension and I understand that your recommendation is you'd like to sleep in tomorrow.

CC And we concur.

CC And we would like to make sure that we have the VTR MAIN POWER switch left on because we want to dump it and take a look at that dump - parasol deployment - parasol, rather.

CDR Okay, Crip, and how's that on the squeal now? That should be a little bit better. We've completed everything today, but with all the rest of the little master alarms and the few things that came up, we're running a little behind. We'll sleep in. We'll press on with the day 4 just like it is in the book and hopefully we can catch up. You know, somewhere along in there and then we'll screw our day back around to the right time.

CC Rog, Pete. You're doing a fantastic job. (garble) sleep in.

CDR and besides that (garble) completed (garble).

PAO This is Skylab Control. We have loss of signal at Vanguard. The spacecraft is now traveling over the ocean on rev 181. We'll have acquisition of signal again at Ascension in about 3 minutes. During the conversation, one of the important points that was brought up is the pitch maneuver that has now been commanded at Vanguard. There was some question in the minds of flight controllers as to whether the crew had indicated that the craft was pitched up in their opinion or pitched down. And there was a question here whether they should do a 40 degree maneuver in one direction or the other. They did clarify that. The indication is that the crew - from the crew that there was a pitch up and we are pitched up 40 degrees, so we are now in the process of pitching down and we're also doing a roll of 15 degrees. And hope that we can get the spacecraft properly in solar inertial mode. They are not absolutely certain that 15 degrees is the right number, but

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it gives them a fairly wide range of latitude. They know that it's something a little over 10 and 15 should get them well within range and they have a range of about 9 degrees. They also indicated that there are figures here on - from telemetry data was that we had a 75 cubic feet per minute air flow through duct 1 in the orbital workshop. However, visual inspection there indicated that that indicator was not reading properly. And we have a 600 cubic feet per minute reading which is a proper reading for that duct with four fans operating. Some of the noise you may have noticed earlier was feedback from a speaker intercomm and they did clarify that. They reduced the sound levels there and we got good clear voice after that. No figures yet on what the temperatures are inside the orbital workshop. It's about 70 degrees reduction in temperature on the outside of the workshop, but the inside of the workshop still has it's temperatures now leveling out, all at off-scale high. As you know before we had a lot of temperatures that were below 120 degrees because of their location, but once you have air flowing that 120 degree level is now pretty well spread throughout the workshop with the exception of a couple of temperature scales. Crew is presently eating and trying to get ready for bed. They have now been given an okay to sleep in in the morning. There will be no wakeup call given, and they may be asleep promptly after this Ascension pass which is now 50 seconds away. This again puts them a little bit behind the Flight Plan, but they hope to catch up in the next couple of days. This won't be a problem now that they have the major task fulfilled. This is Skylab Control. We'll be staying live now. In 36 seconds you should hear acquisition of signal at Ascension. The Ascension pass is about a 9-minute and 48-second pass. And that's now just 27 seconds away. They should be finalizing because after that we have a period of over 40 minutes before we have acquisition of signal again at Guam. And during that period we would expect them to have gone to sleep. This is Skylab Control.

CC Skylab, Houston. We're AOS over Ascension for the next 10 minutes.

CDR Rog. Have you all found the Sun yet?

CC We're waiting for you to tell us.

CDR Did you get my (garble) on the first

Skylab record?

CC Negative. You faded out there. Which of the - -

CDR CDR is faded from a dredge airlock completing a complete 360 going through the OWS dome hatch without touching anything and not contacting till in the middle of the airlock. That's as far as we've made it so far. In our world breaking record attempt to go for the dredge airlock through locker AA the command