

PAO                Ok, good afternoon and welcome to our Change of Shift Press Conference. This will also be - we have with us also Dr. George Fictl the Mission Scientist who will be doing the Science Briefing in the evenings now. The Spacelab Mission Manager will continue to do the status updates in conjunction with the morning change of shift. We have also to my immediate right Bill Reeves the Flight Director from the team that just got off console. And we'll start out with Bill. One other thing, since Dr. Fictl has already briefed this morning, in detail on the science that had occurred up to that point, this will be rather abbreviated - from his standpoint since he hasn't had a lot of time to prepare for this one too. Ok Bill, go ahead and if you want to do the Orbiter stuff.

REEVES            Ok. It's going to be pretty short on the Orbiter part of it. Orbit is still 190 by 189. I'm going to give you the stats on NUSAT. NUSAT is 296 nautical miles ahead of the Orbiter and we're still opening at around 10 nautical miles per rev. Orbiter is still well behaved, everything is going nominally, crew is performing very well. We don't really have any new system anomalies at all. In fact the IMU's are performing so well we haven't even had to do a star of opportunity alignment, we cancelled all the alignments altogether. So with that I guess I'll just turn it over.

PAO                Yes, we'll turn it over. George, if you want to go ahead and take your part.

FICTL            Ok, everything is proceeding smoothly on the mission, as far as the science is going. We're getting lots of data. In the materials science experiment area, the FES is continuing to grow some tryclysine sulphate crystal. We've observed some lateral growth of the chrystal, but by and large it is growing nominally. The naper crystal growth system is performing excellently. We're getting good crystal growth in the mercury iodide substance within that facility, the mercury iodide crystal growth facility is performing nominally. The geophysical fluid flow cell completed one 6 hour run and they're currently performing one 3 hour run. In the life science area, the monkeys and rodents are performing well. They were observed during this particular shift. They appear to be well adjusted to flight. One of the monkey's is coming out of the earlier adaptation problems that it'd had in the beginning of the flight and it's food consumption and water consumption is improving. The AFT is performing very well. As far as the aurora experiments go, we have completed 3 additional aurora passes. These are not as visible or as prominent as yesterdays pass that Don Lind acquired but nevertheless there is quite a bit of good information there. Including some aeroglow observations off on the southern horizon. The geomonic observations that we got from NOAA later today confirmed that these should be low level intensity as the geomonic field is in a rather mild state of - a fairly mild



state. ATMOS is doing very well, we have completed a total of 7 sunrise occultations, 13 sunsets, and 5 sun calcs. We have picked up an additional 4 sunsets, so we have a total of 20-24 total runs have been made - with a mix of rises, sets, and calcs. So we're getting lots of data, and the science output is very good for this mission. And I'll turn it over.

PAO                   Ok, and we'll open it up for questions here in Houston. Dave Dooling.

DAVE DOOLING (HUNTSVILLE TIMES)   Ok, before we get down to the subject that everybody really wants to do I just wanted to clear up a little bit on the crystals. Some of the chatter I've heard indicates that they're having some difficulties on the FES and the VCGS. That they're having to modify the procedures, change things frequently in real time because that lateral growth on the FES and coming in I was hearing that the VCGS - they're wanting to get out the reference crystal and compare it. Apparently they were getting - I got the impression there was some growth there they hadn't quite expected.

FICTL                I probably missed that on the way over here. Was that a late call down?

DOOLING             In about the last 10 minutes or so.

FICTL                I probably missed that, but as I mentioned during the morning briefing, these facilities here behave differently in space because of the absence of convections. That's one thing they still have to work with and it will involve changes of temperature. So that's probably one of the things that's taken place in the VCGS system. As far as the FES system goes, the fluid experiment system, there is some lateral growth taking place off the - from the seed crystal. If you remember, if you look at those pictures, they want to have linear growth - the tv pictures that have been coming down.

DOOLING             Right, yes (garble)

FICTL                There is a little bit of an anvil or a hook coming off the side. There was a little bit of concern whether the cap was closed. But they're monitoring that and there is plenty of margin yet.

DOOLING             Ok. And I heard some discussion about not putting cell 3 in the preheat. That was not part of a large discussion about cutting cell 2 short was it?

FICTL                No. I understand that cell has gone into preheat. That's what I understood when I talked to the PI's last.



DOOLING Ok.

PAO Jules Bergman.

JULES BERGMAN (ABC-NEWS) George, I have 2 questions. I gather the DDL did not work properly and do we have a spacesick monkey? Number 2 monkey? Judging by his not eating and not drinking? Is this based on the air to ground from Thornton?

FICTL Ok. The DDM, they're currently still doing malfunctions. Taylor had a malfunction procedure to run earlier today. He ran through that and went then he went to lunch, and in the meantime the DDM team put together another malfunction procedure which was uplinked and Taylor is probably working that. As far as the spacesick monkey - I shouldn't call it that, I'm using your words - -

BERGMAN Trick, trick, trick!

FICTL We understand from the RAHF people, the Ames Life Science people, is that there was some adjustments to space and the monkey was shown a kind of balled up position in the tv pictures, indicating possible adaptation problems. But from the counts within that facility they can monitor the water intake and the food intake and from that they conclude that he's recovering well and becoming adjusted. Now Paul Callahan might want to make some additional comment on this.

BERGMAN Now before, Paul, you do, now how can you be sure that it was uptight or clenched when Thornton pointedly declared that the cages were not large enough?

PAO Ok, if you'll take the mike over there.

CALLAHAN Yes, I did not hear Bill say that the cages were not large enough. The monkey was oriented in the position where he was lateral to the cage rather than - rather horizontal to the cage bottom rather than vertical to the cage bottom. The sort of adaptation, I appose that the monkey demonstrated was very simply the type of pose which would say, "I'm a little bit drowsy and I really don't feel all that great. I'm not really feeling all that bad, but I don't feel all that great." And it's the talk, sleep "don't bother me too much" type of position that a monkey takes.

PAO Yes, ok. Dan Molina, right here.

DAN MOLINA (NBC) I'd like to preface my question by saying that continually discussing the bodily functions of monkeys is as distasteful to us as it is to you gentlemen. However, we're hearing some rather testy air-to-ground now, to the effect that there is now monkey feces in the crew compartment and that



Colonel Overmeyer is not at all happy about it. Can you comment on that at all?

REEVES I heard that comment over the airwaves just as I was walking out of the MOCR, I didn't even have a headset on at that time. But the only assumption that I can make at this point and time since I don't know very much about it is that it must have been carried back to the Orbiter on someones person. Because we do have a positive airflow from the Orbiter cockpit to the module. And so any particulate matter in the air should not work it's way back into the Orbiter. We are blowing 48 cubic feet per minute of air into the tunnel and it picks up another 77 cubic feet per minute of air half way through the tunnel and so we're blowing 125 cubic feet per minute into the module. And that should contain any particulate matter.

MOLINA Well of course again with that statement from Colonel Overmeyer, the question of contamination comes up again.

REEVES Well, I can't comment any further since I don't - I just heard it as I walked out the door. So I don't even know what's taking place at this point in time.

PAO Ok, now right here.

SANDY GILMORE (CBS-NEWS) To follow-up on Dan's question. The Colonel did say "We have, " he said, and I think I'm quoting him directly - and I don't think this was on the cross talk problem, this came directly over. Something to the effect that "Feces in the cockpit isn't much fun, guys!" Is this the first that you had heard that this might be an annoying problem for the crew?

REEVES I did not hear that comment. I just heard someone in the room, as I was walking out the door, mention the fact that the air to ground had just stated that there was some feces in the cockpit. And that's I'd heard about it.

GILMORE Would that cause concern, sir?

REEVES Well, I'm sure it would. But I can't address it now until I know how much or what they're talking about.

GILMORE And to follow-up, if I could. The other thing that was inadvertently overheard because of this cross talk problem, I think Dan alluded to, but the statement was made, and I'm not sure who it was I think it was the Colonel saying quote - and he didn't mean this to go out over the air obviously because it was followed up by the NASA man saying "Remember you're being overheard here." He said, "How many years did we tell them," excuse me "How many years did we tell them these cages would not work." And I'm wondering what input the astronauts had had into the construction of those cages and whether they're having



mentioned in the past if that's true that the cages would not work had been taken into consideration.

REEVES Well, I personally can't comment to how much participation the crew had in the design of the these cages since I didn't get assigned to the Spacelab flight until 6 or 8 weeks before flight myself, so may be Dr. Fictl can.

FICTL I know that the crew, during the design phase was involved somewhat, but through the review of the facilities and the design process went approximately 5 years - Paul, would you say?

CALLAHAN Approximately, yes.

FICTL There was input there into the design.

REEVES I might also add that this is the purpose of flying these cages is to determine how good the design is, so we're learning from this flight.

PAO Back here with the New York Times.

DICK LYONS (NEW YORK TIMES) Dr. Fictl, just to pin one thing down please. Is there now aboard Challenger, a spacesick monkey?

FICTL I don't think I'm qualified to make that statement. I would like to defer that to Paul Callahan.

PAO Ok, and if you could move the mike over here again.

CALLAHAN I depends upon what you define as a spacesick monkey, of course. This monkey has not, do our knowledge, actively regurgitated. He has shown some signs of licking his lips, which would indicate that he is probably not frankly nauseous, but a little bit queazey. Now if you're willing to define that as spacesickness, then of course you would have to say he is spacesick. I am not willing to say that it is spacesickness, I'd say that it was space adaptation syndrome which has not involved frank sickness.

LYONS If Senator Garn is a 10, how would you rate (garble)? A 2?

CALLAHAN Unfortunately, as you probably have guessed, I was very heavily involved in putting together this particular flight while Senator Garn was on, and I did not see one bit of news during that time. If you can tell me, did Senator Garn actually regurgitate, then I would probably place this monkey at a 1 or a 2, yes.

LYONS One or two (garble)



PAO                   Ok, back here, and then we'll come back to Dave. Whoap, yes right back there on the third row.

ANDY CLOSEN (WRTR)   A couple of Orbiter questions. First, before we heard that the heater on one of the RCS jets had failed and you had hoped that the temperature would remain around 50 degrees. Has this happened?

REEVES               Yes, that was R4D, one of the thrusters, primary thrusters. And the temperature has stabilized at 55 degrees. And it has been there for many hours now. In fact if you'll watch a plot of the temperature coming off, it's stabilized so we have no concern about it at this time.

CLOSEN               And was the patch for the displays sent up?

REEVES               Yes it was and everything is back to normal ops. That was a successful patch.

PAO                   Ok, right next to you.

PAT JONES (NSI-DIAL-A-SHUTTLE SERVICE)   Going back to the monkey's, but on a slightly different pitch, do you have any better conception yet of what the precise problem with those crumbling food bars is?

FICTL                We understand the food bar problem what we discussed in the POCC was the fact that they might be a little drier than planned. And Paul, you might want to comment further on this.

CALLAHAN            I believe he said monkeys, and actually the food bars are the rodents so it's a rodent food bar that we are flying. When we loaded the animals on the pad, the humidity of Spacelab was considerably lower than we had expected. Now that's not say that we don't have a problem that we're going to have to take a look at - obviously we have very dry food bars and we might have to take a look at some other agent which provides which provides for the moistening rather than water. We might also have to look at a possibility of better protecting the food bars while they are in Spacelab in a dry environment. I believe you probably heard Dr. Thornton mention that the second set of food bars did not look dry, but they looked ok. I think now that we are up to a humidity that this problem should not repeat itself, but naturally we are somewhat concerned about it and we are going to take a further look at it.

PAO                   Ok, Dave and then we'll go to Jim.

DOOLING             Ok, one for Mr. Reeves and one for George. Twice I have heard Overmyer refer to the Orbiter windows as being splattered and obliterated by the separation motor exhaust from



the boosters. How serious is this in terms of entry? And George, I heard a discussion that - with reference to the DDM possible repair - someone saying that we have people up there who build computers as a hobby and that they ought to tear into some of the other hardware in the lab to replace I presume the inverters on the DDM if it's not just a bad wire. Has there been discussion of actually pulling (garble) boxes replacing them with components from elsewhere in the lab or - -

FICTL Are you talking about Spacelab componenets?

DOOLING He just, whoever it was who was speaking, just said that the components were available - I would guess somewhere in Spacelab possibly in the Orbiter - saying that apparently these are standard components that could be had elsewhere on the vehicle and that they could replace part of the inverter. Has there been any discussion of that kind of - -

FICTL As far as I know there has been no discussion of taking components from other systems, other than those with the DDM and using them for DDM repairs. Now we have the Chief Engineer here for the DDM project who might want to provide some further comment on that maybe after the press conference.

DOOLING Ok, well I'll get him later then. On the Orbiter?

REEVES Ok, on the windows. We heard the comment from Colonel Overmyer and we got several of the astronauts that have flown before and talked to them about it and they all indicated they saw the same problem - or not a problem - they saw the same phenomena. There was a thin coating on the window on the outside of the window that when you look toward the darkness of space it's like looking at a mirror or something. You - the coating reflects back. But that once they reentered and came down for a landing, there was absolutely no problem at all. In fact when you would look at the brightness of Earth through the coating, you couldn't even tell the coating was there. So we're not concerned about it.

PAO Jim Asker.

JIM ASKER (HOUSTON POST) On the DDM, in laymens terms is what Taylor Wang has been doing is going through testing circuits looking for a short, an electrical short in the system?

REEVES I understand they're looking at the component level yet. Looking at - there's 3 draws of electronics. He's looking within those draws, we understand.

ASKER For an electrical short?

REEVES Possibly, yes possibly.



ASKER And has this taken up all his time today?

REEVES By and large.

ASKER Will he be doing it tomorrow too, or do you reach a certain point where there is nothing more that can be tested and he'll just have to - -

REEVES We understand there is still a series of malfunctions that can still be performed and I don't believe the team want's to give up that soon. They still have quite a few ideas yet they want to persue.

PAO Dan Molina.

MOLINA Any further discussion on extending a day?

REEVES No, we haven't been formally requested for an extension for scientific reasons and our consumables are following the nominal predicted profiles and so we're going to get our normal 2 day extension, we can get ok, but to extend another day beyond that, our consumables would be pretty tight at this point.

PAO (garble) Jim.

ASKER A follow-up on that Bill. The folks from Marshall seem to be saying that the folks at JSC have not told them that there would be consumables to do it, and now you're saying you haven't been requested. - -

REEVES Well, it's a 2-way street. I mean it's - first of all you have to have a reason and then you have to have the capability to extend. And you know it's a risk versus gain type of thing. You know, how much of a box do you want to put yourself in. And we would be really stretching it out at this point in time to say that we could go another day beyond the normal 2-day extension.

PAO Ok, and other questions here in Houston. Jules.

BERGMAN Bill, do you still have - are you consumables still running 17-hours over the line?

REEVES Yes, but that is based on a powered down level. That's a stay on orbit level, not with a fully powered up Spacelab. So if you start talking about a powered up Spacelab to do science there is no where near that amount.

BERGMAN Gary didn't tell us that this morning.

REEVES Yes, that's what that 17-hour figure is.



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BERGMAN So you don't have the consumables to do a 2-day extend - to do a 1-day extension?

REEVES Beyond the normal 2-day's that we all ways carry, no we don't. Not at this point.

BERGMAN So you're not going to do it.

REEVES And we're not really - well I won't totally rule it out, but at this point I can't see it. We're not making up enough at this point in time to do it. And you also have to keep in mind that right now we are not running the DDM which was a normal electrical load and we're still running - we're running below predicted but part of that is because we're not running the DDM which was one of the experiments and we didn't the VDWFC ops. So we've made up some power from some of those things to explain part of the make up in consumables.

PAO Ok. That's it, thank you very much.

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