

# NASA Facts

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## **STS-107 Mission Management Team Telecon January 21, 2003, 7:50 a.m.**

Linda: OK ah good morning we're ready for roll

Conference Center (CC): Thank you, do I have the MER conference room

You do thank you

CC: Ron Dittimore?

CC: Is Ron Dittimore's location connected?

We're here

CC: Thank you

CC: Weather office?

Comment: ???

CC: Is that the weather office?

Weather office here, sorry

CC: Thank you

CC: OSF Action Center?

Oh, yes we're here

Alex McCool?

Uh, Marshall here

Thank you

CC: Colonel Jim Halsell

We're here

CC: EMSR

Good morning, we're on

CC: Mike Key

Mike Key's here

CC: Mike Leinbach

Loud and clear

CC: John Cowart

Loud and clear

CC: Scott Southwell?

CC: Do I have Scott Southwell connected?

CC: I do show that line connected, we will check back

CC: Jack Keifenheim

I'm here

CC: Michael Fuller?

Loud and clear

CC: John Hammad

Good morning the LCC is here

CC: And Linda Ham

Right here!

CC: At this time I would just like to inform all parties that today's call is being recorded by the request of NASA, thank you, you may begin

LH: Okay, good morning and welcome uh I hope uh those who got a three-day weekend had a good weekend I know most people were uh here working though. Ah let's see let's start with a status from Phil Engelauf in MOD.

PE: Okay, we got a lot of stuff to talk about today I guess but the good news is the orbiter and crew are all doing real well uh right now our cryo margins have gone up to two (2) days four (4) hours and they are continuing to increase uh we're working on uh projection for what we think that's going to look like at end of mission but uh ah at best we can forecast right now the cryo that we're going to have left over is going to actually put us above the orbiter down weight but uh by end of mission but we think like it's going in the order of maybe 150 lbs Linda and uh if you think about a 230 thousand pound orbiter that's less than a 10<sup>th</sup> of a percent uh so we're proposing not to do anything right now with that other than just log it.

LH: The uh orbiter you guys so you think it's going to be about 150 lbs above the 230 you may want to send a Chit to the MER let them evaluate (RE talking in the background, something about 233 limit) I guess you are already assuming that you get to burn the OMS down as far as you can ??? fading

PE: That's the first week you know short of powering up load to try to burn off some of this extra cryo and with the heat mode issues we have been wrestling with that doesn't sound like a good idea right now so uh (LH: Right) we would like to watch this for a while. See what else we can do (LH: Okay) Ah, we had previously had some problems with the ergometer uh with the crew not being able to adjust the load in the uh auto mode I guess, it turned out to be a switch position error that has been resolved (background noise)

LH: We had two of them right, one in the mid-deck and one (talking in the background...) Hab Ergometer (which one was it.....fading can't understand) (okay)

PE: Ah, the right RCS tank temperatures are running a little bit high they are about 2 degrees above the limit right now and we're discussing I guess switching heater strings to see if we can get that to control to the lower set (background noise) to uh, I, I honestly don't know if that is a combination of attitude and heater function or maybe we just have a thermostat that's controlling high.

MER/Don McCormack: My guys didn't tell me that ....I don't know if we are on the "B" heater or...anybody down at the MER...??: (MER:we are on the "A"

heater) we are on the "A" heater series (MER:because of one warm starboard side attitude, so we can go to "B" if needed.)

LH: Okay, it's because of the warm attitude?

MER: Yes, less heater operation. That's the reason we have the high set point B heater.

DM: How's switching to the "B" heater going to help you here?

PE: Uh, because the high set point is what turns on the heater because right now the heater is off

LH: I thought you were violating the upper limit

MER: No, lower limit of 78 degrees

LH: Oh, okay

PE: I'm sorry, I mis... I guess I misinterpreted whatever ....

MER/Don McCormack: Okay so we dropped below the dot limit on the "A" heater and the environment is keeping the "A" heater from coming on and so we can go to "B" to get the heaters on

MER: That's correct

DM: Okay

LH: Okay, that makes more sense

PE: I apologize for ...

LH: Alright, thanks

PE: ....misunderstood for what I read

PE: Ah, everything else that I have to talk about is the water separator situation in the HAB

LH: Yeah why don't you go ahead...oh wait I think I had a question for you on the cyro. How much LiOH do we have?

PE: EOM plus three (3)

PE: Then you have three (3) extra cans that were earmarked no pun intended for the rats ah and uh (noise in the background) I guess you have a little margin to play with there if you wanted to

LH: So, they're not using it

PE: My understanding was that that was after you closed off the HAB. That was supposed to be allocated for ..(LH: right, for them)...for supporting them (LH:weather contingency)

PE: Uh, um....

:LH: That if we send...

PE: Right

LH: Is it a can a day or something?

Vanessa Ellerbe: Ah, ...I'm not sure if it is a can a day ...it's about...that's normally what they predict (someone speaking up in the background) one can a day (someone coughing in the background)

LH: Okay

VE: But it's in there for the extension

Noise can't be made out what is being said if anything.....

PE: Twenty-seven rat equivalent units, I think we have done this on another flight...laughing

LH: Okay...

PE: Uh, but but we can go look at some other options for maybe using uh residuals out of other cans to support the rats or something like that see if we maybe (LH: Yeah...) we can schedule us another can or two (2) (LH: Okay) but uh

PE: Ah, okay then with the water separators uh I think since the last meeting, we the last MMT we had just to give a short history uh on flight day three (3) I believe it was we uh had a problem where we tried to do the condensate transfer to the CWC we weren't getting uh any flow uh we did an inspection they found water uh down in the bay under the floor and we concluded that the rotary separator which I guess is essentially the equivalent of the orbiter hum seps {humidity separator} same hardware functionally uh appeared to have a block output they thought perhaps it was the bellows on the collecting tank were stuck

and not letting water go into the tank they mopped up uh an estimated two (2) quarts of water with towels and uh, uh switched to rotary separator two (2) which then appeared to work nominally?? and the water did go into the tank so we think we've absolved the bellows on the collection...collection tank

LH: What do we think was blocked.

PE: Ah, if you can, can visualize the system there are two (2) parallel pump seps or rotary separators (LH: background...thank you) uh run one at a time okay, uh they output into a check valve and then the output of the two systems is manifolded together into a single line that then goes into a collecting tank. Uh, rotary separator one (1) uh was flooding and put free water out on the floor so uh when they switched to rotary separator two (2) it went into the tank correctly so we believe that absolves the bellows on the tank and it...any... if you hypothesize blockage it would have to be in the output leg either at the check valve or somewhere in the plumbing prior to the common part of the line between the two

LH: Okay

PE: Uh, we run on rotary separator two (2) for uh another day or so and yesterday afternoon, I guess about 4:00 local time here or so we uh got a phase-to-phase short on the bus. uh That equipment uh stopped running and we opened circuit breakers on two (2) phases it appeared to be a B-to-C short to ground.

LH: Bus

PE: The uh Hab inverter bus if I'm...I think its correct

LH: Okay

PE: And uh we looked at a couple of possible theories of either residual free water from the flooding with rotary separator one (1) getting into some of the electronics down there uh the initial look at that, people have discounted that theory because of the boxes, the power generating boxes uh in trans...the power equipment down there uh is all in steel and conformally coated so they don't believe that there is any chance that water uh in the power system per say could have caused uh the signature that we saw...it is possible that uh water might have gotten on to the connector uh for the rotary separator two (background noise) and caused a short internal to the connector, if that theory is correct and we didn't damage the rotary separator it's possible that drying it out uh (coughing in the background) could, could uh show that box could still be ok or that rotary separator to be okay there's also every reason to believe that rotary separator one (1) is operable if we turn it back on but we do want to try to dry that out. And so we are developing....

LH: Why do you think it would work and not be clogged again?

PE: Ah, if you can unplug the clog but as far as the rotating equipment it should be okay.

LH: Right

PE: Ah, and I don't know if folks have looked at the possibly of swapping ducting between the two (2) so you can you can tape the output of rotary separator one (1) down the same path that rotary separator two (2) was pumping down. But the short term plan was to uh, we've got an IFM in work, I think there is a meeting at 10:00 here local time to go over the first draft on that to get under the boards under the floor boards remove the ducting that is required to get into these areas mop up any free water with towels use the DC vacuum cleaner to try to draw off any residual water. uh For rotary separator two (2) they were going to disconnect the connector and try to uh look at the terminals with the meter to try to verify there isn't any internal short within rotary separator if were to try to re-power that, uh and then once we think we have those boxes cleaned up and if we have ruled out any possibly of short then with the ducts removed go ahead and run the rotary separators for about an hour to try to, with-with no load on them, just to further dry them out, get air flow through them, uh and-and that process that IFM is still all in work, In the mean time the first reaction after the lost of the second rotary separator was to take the air by-pass valve uh to-to 100 percent by-pass to keep from flowing air over that uh interchanger, the payload heat exchanger, I'm sorry the cabin heat exchanger in the Hab uh in order to avoid condensing more water down in that volume with no way to get rid of it, the result of that is the HAB air temperatures in the cabin have gone up as well as the water loop temperatures because we have backed off on the flow through the loop. uh What we are trying to do to keep to the Hab temperature down and they've stabilized now at around 80 degrees I think they peak at about 84 degrees and we've gotten them back down to 80

VE: Right, they're pretty much around 76

PE: 76 now?...okay ah, what we have done uh is essentially we're shunting the heat load in the cabin air back into the orbiter by we took one of the flow proportioning valves back out to the interchanger to get the orbiter mid-deck air temperature cooler so that the air we send down to the Hab is cooler. Result of that is that the flight deck is pretty cool, I can't give you the temperature but subjectively the crew reported is pretty cool, the mid-deck is comfortable and the Hab is in the warm side, uh but the crew has said it's in an acceptable condition for the time being. Ah, we have gone back to flowing air over the cabin heat exchanger in the Hab. Basically we're running it pretty low uh dew point in the vehicle right now, we're down to 36 degrees I think, uh which is pretty good and what that allows you to do is still flow some air over the heat exchanger since we

have gotten the water up above the dew point you can put air across there without getting condensation and the inspection we've done under the floor board uh a couple of hours ago in this shift I guess, has only shown us just a minimal few drops of collection down there so...

LH: Orbiter heat exchanger...what was it in before?

PE: Both in Payload

LH: We swapped one back to Orbiter, so one's in Payload and one's in Orbiter...

PE: Interchanger, it puts more cooling in the Orbiter basically once you get colder air temps...

LH: In the Orbiter

PE: In the heat exchanger in the Orbiter

LH: And then we just exchange air and that's how we're getting the ....

PE: We're cooling the air in the Orbiter and shipping it back into the space hab rather than letting the space hab cool the air (someone coughing in the background) ....

LH: Okay

PE: Uh, there has been one impact to that because of the reduction in cooling back in the Hab, we do have one experiment, VCD I believe, is shut down and we would like to recover that as soon as we can. There is a temporary fix uh in work or shorter quicker fix I should say in work to get under the floor boards and this was pre-flight approved IFM in the Spacehab to basically adjust some of their manual flow proportioning valves, there is a collection of valves down there that they can use to adjust the amount of water flow through the racks or across the heat exchanger and their going to go ahead and uh, uh I believe to try to adjust those valves to see if they can get enough cooling back to start VCD.

LH: And this is something that I was hearing we have done before!

VE: Right yep, that action has been on the books um basically the configuration we're in now is we're in the logistics double module configuration is where we are and fill in for Kelley, the Spacehab folks are caucusing in on this morning, but they feel they can stay in this config indefinitely throughout the mission and they are going to probably to bring that forward as the preferred scenario.

Kelley Beck: Right, that's what we were talking about to try to avoid the more complicated IFM if we can position these valves to get the experiment water loop

the temperature that will support the VCD experiment then we can carry out all our operations and as Venessa said our module temp's around 76/75 degrees or so, yesterday we when we started having to rise the temperature the crew didn't even notice when we went from 70's, low 70's to like 76/77 two out of three crew members didn't even know the temperature changed. One crewmember noticed it was a little warm but they didn't think it was too uncomfortable...

LH: When do we think we're going to do this?

KB: (conversation being carried on in background....I think the manual) There're looking at it now, I suspect that they're reviewing the procedures and we may be able to do it I would expect something on this shift but I haven't got a timetable from them.

LH: (several conversations start to take place) Is VCD the only one that's shut down?

VE: Yes, VCD is the only one that's shut down (conversation in the background...BCB) and their next activity was for flight day seven for tomorrow so...

LH: Oh! so...we got some time

KB: We got some time but it...like it's a published IFM the other IFM was not published so we had (someone coughing in the background) to go through all the rigors of developing the IFM, and reviewing procedures, now we just need to ....

LH: It's not only that, but if you go in there and your going to try to power something that you think shorted...it's probably

KB: Exactly, exactly....

LH: It's probably something that you really don't want to...

KB: We'd rather not....

PE: You have to exonerate that first and there's you know two possible branches out of that procedure that either you do or you don't and then by not....

LH: Okay

KB: So, we're hopeful that this is going to work and we won't have to do the more complicated IFM...

LH: Okay, so the adjusting manual flow proportioning valve we think we'll get done sometime between today and tomorrow which we don't even need it until we do the next VCD run which is scheduled for tomorrow, we all think it's going to work (someone coughing in the background ) we think the only thing we're going to need to do to keep the cooling and humidity at the right level.....

PE: We hope that's the case I guess...

KB: Right! and Linda, just so you, we may start it but what they're going to do it's pretty slow, one of the valves they're going to adjust only very slightly watch it, look at it, see what kind of response we get, so it could take awhile to get to the desired temp for the VCD, but we may be able to at least get it going and see how the response...

LH: What is the desired temp for VCD?

VE: Their water temp desired is 65 degrees

LH: And what is it now?

VE: Ah, um I think the water temp is in the 70's, about 5 to 10 degrees above what they want (talking in the background)

LH: Okay, I'm hearing about 5 to 10 degrees above what you wanted, alright, ah and back on on the more elaborate IFM for cleaning up uh the water uh first I wanted to ask you orbiter guys, did you see this on your data on the fuel cells?

DM: No, ???? I don't think we did, can anyone else down there answer that or Larry here ....

Larry: I looked at the...when I heard it over the loops looked at the mainly the AC on the orbiter and-and so forth and I saw ...I saw nothing there.  
(conversation in the background) I heard them talking about AC and just to be sure I pulled up just to look at the orbiter AC stuff and didn't see anything

PE: I believe the Eagle did see it in the hab data and verified that it was a short there-there was a short term theory that-that we either maybe got some flooding that slowed down the pump or something like that, but (coughing in the background, can't understand what is being said) we found traces that we think the electrical load exchange between the phases you-you confirmed that....

Larry: Right, right...and I did see some of the data they pulled and it definitely showed up in the hab phases (talking in the background...but it didn't show up)very significant uh signatures...(talking in the background...okay) it was definitely something going on.

PE (??): Is it 3 amp breakers that I guess that it popped

LH: Okay...

Larry: All the Orbiter breakers are 3 amps and those probably are too

Three people talking at once....oh yes....3 amps breakers...I can't....

LH: And you said two...two of the phases two circuit breakers popped...

PE: Box, B and C

LH: Okay...so... you are going to continue though to develop this IFM in case you need it in the future

PE: I think so...

LH: As planned...

KB: Yeh, I think the folks are still looking at it, right now though I-I suspect the emphasis is on getting the loop in a position to support the VCD, but they are, we've got you know in addition to the hab team, we have the EGIL, ECOMM, MMACS, folks also helping since we got some experience with the Hum Seps in this kind of water collection so they're all doing their part looking at the different pieces of the IFM, but certainly right now the emphasis is trying to get the config to support VCD

LH: Okay... Yeh, I agree with you at a 100 percent, I don't really want to re-power something that we think may have shorted so, if we get around to coming to that piece before we go power it, I would like to have an MMT and make sure that everybody really wants to buy into trying something like that so...

PE: I understand ....I think that...

LH: It sound like we're not even going to need to have to address something like that but you never know

PE: I don't thing that IFM is supposed to be ready until at least the end of the day today and possibly later, but I'll probably recommend continuing to develop that just for whatever future requirement might show that your going to need that

LH: Okay and in the future if you think you're going to need it just give me a call and we will set up an MMT or something that might have shorted

PE Okay, that's all I had and my apologies to Space Hab if I misrepresented anything in their equipment.

LH: I have a question on uh another uh anomaly I saw on an anomaly report that happened even before this and that was just a water Space Hab water pump...one of the two had degraded flow...well

KB: Right, you know water pump two (2) was degraded flow and the concern there was that it was degraded it wasn't severe enough to really declare it failed but the concern was whether it could support both the water cooled experiments we brought them on line, they would have to do a real time analysis is what I understand, so we just swapped to the alternate pump and it's being working find ever since.

LH: So, if we had to swap back....

KB: If we had to swap back they would take a look at it to make sure it could support, really they..I don't think they got far enough along and maybe the Hab folks if they looked at it in more details, but I don't think they got far enough in the analysis before they got overcome by the rotary separator events.

LH: Right, uh but....

Kelley: We believe it's a good pump but we just don't know if it can support VCD and CM-2 simo {simultaneous} and after all this they may have more information now from what we have learned going back and looking at it more close. So we can go back and look

VE: : I don't want to speak to you guys, but basically right now they believe the water pump two (2) is..one (1) is still viable but you're right, they haven't had time to look at that, I mean...

LH: So, one (1) is the one with the degrade flow and two (2) is working now and....(someone in the background states: the other way around...talking in the background, 1...yeh...)

LH: one-one (1) and it's fine and two (2)is degraded

VE: Right

Silent

LH: Okay and just VCD would be the only thing you think would be impacted if we had a swapped back to the other loop...

LH: Okay...that poor thing, VCD ...okay, let's see, so Phil anything else

PE: That's all I got Linda

LH: Okay

LH: MER

Don M.: Okay, let's see, since we last met we met um we got three new items on our board down there and that's a problem with the 70 millimeter Hasselblad camera that was jamming uh also a suspect fuel cell monitoring system data cable in the crew that works trouble shooting procedures went to a spare cable and they were able to get the FCMS data and then also a failed DSR20 VTR and uh they got work around using a V10 and uh then the camcorder. uh Additionally what got brought up during at a meeting last Friday was 02 tank 7A heater uh wasn't working in the manual mode, it did work in the auto mode and uh the plan is to just use these nominal plan for tank usage now. Uh an update to the story I gave Friday on the AC2 phase B uh current. The guys have gone back to look at data, more data and uh they have seen more occurrences which uh they are calling miniature occurrences of this thing, uh they're a half to one an half seconds in duration and you see a drop of phase B of 0.2 to 0.3 amps and you see a corresponding increase in uh phases A & C uh they're occurring during periods of constant load uh just see these guys happen, uh additionally they look back at uh, they've looked at some of the data and they looked at some data from January 13<sup>th</sup> on the pad where they had a vent door run and they also saw a vent doors 8 and 9 and you saw a signature that was very similar to what we saw uh pre-launch when we're re-positioning the vent doors. Uh, they also went back and looked at the STS-109 data and uh they-re reviewed there it's not indicated it occurred during STS-109 so anyway it's obviously not impacting the mission in any way uh it's most likely it's in that inverter some problem in that inverter or the wiring uh to the panels and uh it's just something we're going to have to trouble shoot when we get back.

LH: Okay

MER: Uh, we'll be sending some guys to support this meeting at 10:00 this morning or ECLSS, EPDC and uh also safety guys will be supporting this meeting this morning at 10:00

LH: Right, and Scott you guys will have some flight people there

Scott Johnson/Safety: Right, sure it sounds like you guys have already addressed most of the concerns we had with the uh running the humidity separator two, but we'll have folks there supporting that.

DM : And we will look at this potential weight issue too...and uh...

LH: Yeah, we'd are try to think if there is anything smart to do to get rid of the weight

DM: And uh

LH: You're not powered down at all right to B or anything like that

KB: We are in group B

LH: Pardon me...

KB: We are group B...

LH: Why!!

KB: For our original plan....

LH: I know, but...laughing....

KB: Actually they're working on that we got an updated power profile from Space Hab and there're taking a look at to see this time how much we have and we can talk about how to get rid of it.

LH: Right, you just don't want to get too much heat

PE: You don't want to dump heat load into the cabin maybe there if there are things we can do with external heaters that go directly into the freon they'll dump the heat into the Orbiter

LH: Right or maybe we could power off and I don't know FES some more to get rid of some of the water...laughing (PE: . . .we can look at it...laughing)

LH: Okay...

MER/Don McCormick: That's it's...

LH: Alright, I know you guys are looking at the debris

Don M.: Yeah, uh as everyone knows we took the hit on the somewhere on the left wing leading edge and uh the photo TV guys are completed I think pretty much their work although I know I'm sure they're still reviewing their stuff and they have given us you know approximate size for the debris and approximate area for where it came from and approximately where it hit uh so we are you know talking about doing some sort of "parametric " type analyses uh and also we're talking about looking at what you can do uh in event we really have some damage there but...

LH: Hey, just a comment, I was just thinking that our flight rationale at the FRR from tank and orbiter from STS-112 was that this...I'm not sure if the area is exactly the same where the foam came from that but the material properties and density of the foam wouldn't do any damage. So we ought to pull that along with 87 data where we had some damage, pull this data from 112 or (gentleman states right...) whatever flight it was and make sure that you know...I hope we had good flight rationale then...

Don M.: Yeah, we'll look at that, you mention 87 you know we saw some fairly significant damage area between RCC<sup>1</sup> panels 8 and 9 and main landing gear door down at the bottom on STS-87 we did some analyses prior to the STS-89 so uh..

LH: And really, I don't think there is much we can do, so you know it's not really a factor during the flight cause there isn't much we can do about it, but what I'm really interested in is making sure our flight rationale two flights ago was good, maybe this is foam from a different area I'm not sure and it may not be just ??? Can't maybe correlate it, but maybe try it and see maybe what we have

Don M.: Okay...

LH: Okay, Vanessa

Vanessa: Uh, Linda from the uh payloads perspective uh SpaceHab payloads are operating anomaly all their planned experiments runs have been accomplished today they do have one payload "MSTRS " which is a mini satellite threat reporting uh system demonstration that is an Air Force payload that's being having some command and telemetry problems above that seen by everyone else uh the SpaceHab guys are working with the Air Force to try to help them figure out what the problem it, it's the first flyer payload so, it could be just some learning curve going on there, but were trying to help them out uh also the CM2 payload uh did not complete two (2) of their runs I think on yesterday however uh the customer is very satisfied with the science with the inputs he has received thus far. They may not even ask to have uh that rescheduled. Uh, I will give a quote from the "Code U rep, he says they're quiet happy" Uh, then customers are responding well to the system anomalies uh VCD uh does understand that if they can't get their run today then they could reschedule for the next, for tomorrow then the next day, so uh they're are ok with what is going on there. With regards to the lost of the RDM data, uh just to brief over the weekend we did troubleshooting and several different uh areas basically uh is pointing to a "check sum" error in the EDS MU data and when it gets to the ground um it's

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<sup>1</sup> The reference here to "significant damage area between RCC panels 8 and 9 and main landing gear door down at the bottom on STS-87" does not refer to damage to the RCC panels, but instead refers to damage to Shuttle tiles located on the underside of the wing in an area found on a line drawn from near the main landing gear door to a point located on or near RCC panels 8 and 9. Supporting diagram will be posted separately from this document.

being causing the “EDGA” to crash and they have disabled the check sum on that coming down however there’re still having some crashes when they call from what the call LOS to AOS...

LH: Is it less often, though

Vanessa: It’s less often though but they’re not willing to basically say that you know...right now for the payload there’s 8 of 30 that are impacted by this what happens is Space Hab does a call on their data loop that says, we’re getting ready to have a crash so everybody be prepared...laugh...and everybody, they reboot the EDGA the payloads reboot and ...it’s a new system to the customer but they are dealing with it...

LH: In all these years in of your payloads have they onboard recording or are we record the data on the ground so that post mission will still get the data

Vanessa: A little of both, CM2 the bigger uh their requirement does have onboard recording and then we do have the data recorded on the ground so if the customers do want it we can go and get it. They’re losing about two (2) to three (3) minutes of data when they have...

LH: But..but it’s all available, none of them have lost it permanently...

Vanessa: Correct

LH: Alright

Vanessa: Um, right now they are looking at a ground work around it they’re going to try to do once get pass the “ water separator” laugh... concern where they are going to try to take the Channel 2 data and route it to the backup EDGA and then have it go into the prime EDGA that will avoid crashes for Channel 3 and the forward link and PDI so, it would only be the Channel 2 data and then they will route it into the EDGA and they will get that.

Vanessa: So, right now they are coming up with something to minimize the overall impact but today everyone’s living with it and they’re Ok

Vanessa: The patch is suppose to be available maybe later on tonight

Vanessa: FreeStar is very happy uh they reported that for the first time they’ve gotten a visual image of an “ELF” in space and uh they’re just excited about that uh that’s from the MEIDEX payload uh is a visual emission from thunderstorms and yeah! yeah! apparently the dust storms they hadn’t seen any of them yet because there is a cyclone or something ...

KB: Not yet we're hoping the clouds will clear and we will get to seek some dust but so far they have been getting excellent sprites and as Vanessa said they capture the "ELF"

someone making a comment, can't understand

LH: ???dust this time of year

KB: Well we're they are predicting some dust later in the week I want to say they said Wednesday (someone making comments....yeah, Wednesday,

VE: Tomorrow or the next day (several people making comments, hard to understand ... something about someone working in orbiter...laughing...And uh as Don mentioned the DSR20, they do have a work around for that, so uh they are getting the digital data down linked via the camcorder and they're pleased with that as well. So, overall they in terms of payload uh science and operations they are very happy with the mission.

LH: Alright, great...FCOD Bob

Bob Cabana/FCOD: No issues from the crew, Linda

LH: Okay, Space and Life Science

Space and Life Science: Nothing to add

LH: Is the crew getting uh good sleep

Space and Life Science: I think so..

LH: Feeling good

Space and Life Science: Yeah!

LH: Good

Silence

LH: Ah! Integration

Integration/Lambert Austin: Linda the uh... just a little bit more info to the community relative to the debris uh it is, it does...our first occurrence of visual evidence of the debris is later in the flight than the STS-112 occurrence. The quality of the film is not such that it's supports our definitive making a definitive decision on the source of course we will look at any hand held pictures once we get the crew back and that will help a lot the photo folks are off continuing to

work, trying to improve the quality of the film that we do have and but for a quick look analyses in terms of damage assessment we are assuming that the "forward bipod" location as occurred on 112 and for the specific mach number regime where we first see the debris and we are also assuming the STS-112 debris size from the bipod for damage assessment so that data is being made available to the orbiter and the degree or the locations of damage will uh I'm assuming report in an orbiter evaluation of whether or not there is anything unique we ought to attempt or consider for entry based on that kind of a worst case scenario based on the two assumptions, you know the bipod and the size being the same.

LH: And higher machs is going to be worse

Integration: Yes, but that...you know the debris impact locations will be different so that's one of the reasons we have uh....basically like you said give a little bit of parametric set of data to the orbiter so they can decide what the worse case scenario might be.

LH: Okay

LA: That's all

LH: Okay, has ET being working this with you all also

LA: Well, ET is appraised of it uh ....in terms of this damage assessment there's not really anything ET would be doing

LH: Right, but they may be able, I don't know to help you on where they thing it may have come from or ...

LA: Well if we get better quality uh you know film evidence and of course as in the past the ET would like to wait for it any hand held photos that we have from the crew

LH: Alright!

LA: That's all we have

LH: Alright thanks Lambert

Loren Shriver/USA: Nothing new other than Friday we mentioned that there may have been a forward skirt damage that turns out not to be the case after closer look uh it is the same area that was fixed from the previous damage and it's just like it was so, (LH: good news) there doesn't appear to be any damage. And with the sea state you would have wonderful how that happened, things were very calm things doesn't get much calmer than what it was...

LH: Okay, so no damage that's good news

Loren: That was the report yesterday any way...

LH: Okay, Shuttle Processing

Shuttle Processing: Nothing to report thank you

LH: Launch Integration?

Wayne Hale (??)/Launch Integration: We have nothing this morning Linda

LH: Okay, Marshall Projects

Dave Martin/Marshall Projects: We have nothing morning, Linda

LH: Ah, Safety

Scott Johnson/Safety: Nothing else, Linda

Silence

LH: Okay, Couldn't remember when the next MMT was going to be so, uh looks like things are humming along well here uh next MMT scheduled for Friday, 8:00 unless something comes up between now and then and um asking MOD and the folks to call me before they would implement this other IFM uh and we'll probably have the MMT meeting if we need to do that. Thanks....

Disconnecting...thank you for calling the digital reply service.

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