

PAT COWINGS Well, the Autogenic Feedback Training Experiment really has three objectives. Our primary objective of course, is determine whether or not our treatment, our Autogenic Feedback Training, is successful in inabling crew members to suppress, or at least reduce the severity of symptoms associated with Space Adaptation Syndrome. Teaching people to voluntarily control their own bodily responses; like heart rate, blood flow, breathing, sweating, has been successful in the course of our 12 year ground based research program, in inabling them to suppress the symptoms of motion sickness as we know it on the Earth. Of course, we are privy to the state of health of the crewmen on this flight, and we'll be very much looking forward to the postflight debriefing, to find out just how successful we were. Spacelab 3 actually represents only the very beginning in a series of test that we intend to conduct, wherein we hope to collect data on eight individuals, who've had the preflight training and control of autonaomic responses, and eight other individuals who are our control subjects. The second objective, a very important objective, in fact, is that we have now for the first time a means of objectively observing the nature, the level of severity, and the frequency of incidences, if you will, of Space Adaptation Syndrome as it occurs in flight. If I could have a viewgraph, please? I've heard a lot of people asking questions about what we've been calling the latest thing in "astronaut underwear?" A biosuit. I have one here, also. The purpose of this garment is to hold in place, as inatrusively as possible, a number of electrodes, transducers, and sensors, designed to measure the crewmen's physiological responses continuously during his waking hours. There are three holes in the front for three EKG electrodes. The two bands on the chest and abdomen measure respiration. The garment has one long sleeve and one short sleeve, and there's a reason for that. It's not just because it gives it sort of a gladiator effect. It's that everything designed into this garment really serves a purpose. The long left sleeve serves to hold down additional cables, where electrodes mounted on the subject's wrist and on the little finger of his left hand. There is one other cable that goes to a wrist display, I think you can see it in that picture, which is actually a tiny computer terminal, on which the subjects who have received our training can monitor their own heart rate, respiration rate, in other words, have biofeedback. For the controls, and also for the other subjects, this terminal allows them to input events like, having an episode now, push the button. Okay. It tells them when it's time to change their tape. It also tells them how to mark the tape, telling us which crewmen's data is this, and which tape is this, so that we'll be able to assest the data postflight. I don't think I need that viewgraph, anymore. I just brought, in case anyone wanted to see, a set of this underwear. It's, I haven't been asked for marketing rights, yet. (LAUGHTER) This one has been signed by some crewmember we've worked with in the past. As you can see, it's very utilitarian. It's lightweight. And, there are the 51-

holes for the transducers, cable harnesses are tied down with little velcro flaps. So, really, when you have it on, you can't really see that you have it on underneath your clothes. The most obtrusive thing about our system, something we hope to correct in future flights, time and money allowing, is to reduce the size of this instrument, the Autogenic Feedback System. This instrument contains an eight channel digital cassette recorder capable of collecting more than 28 megabytes of data, for those of you who care about that little sort of numbers. It also includes the analog digital electronic, in fact, a little computer for operating the data collection sequence in this experiment. You can leave that here. It has pouches for spare tape, so the crewmen can replace them in the middle of the day, and there's also a little diagnostic log book that's kept in a pocket, so the crewmen can write down on an 8 item checklist, just how he's doing during the Mission. I won't take too much more time. I do want to say that what we do know so far about this Mission is that the crew have apparently been able to perform our inflight procedure, something we were concerned about. The size of the box doesn't seem to impede their performance of other tasks, because the module is really quite roomy. So, we're really very pleased with how our experiments proceeded thus far. Thank you.

VOICE Thank you, Pat.

PAO Okay. We'll go to questions now here. We'll start with Dave Dooling, Huntsville Times.

DAVE DOOLING (HUNTSVILLE TIMES) George, I'm a little surprised at what you said about the DROP Dynamics Module, about the changes in the experiments, because it's great that Taylor got it fixed, but he was going into it already behind the game, and now you're talking about the additional experiments being added which means that some of the stuff that was already planned will have to be dropped. You're talking about what seems to be radical alterations to the protocol.

FICHTL No, he is going in with a block of time. And, that as you know, he's not going to be operating in the automatic mode. And he is starting rotation experiments and going into a very expository, he's approaching it in a very expository manner. He's selected a series of droplets to look at and they think they've scoped out enough work that they can cover the water front on the rotation experiments. Okay? Now, they've identified some time in the end of this shift, 3 hours in the end of this shift, and tomorrow. And there's an additional 6 hours, 6 1/2 hours, in the end of day 6, where he potentially can do some more experiments. So, there 12 hours of additional time, so that brings him up to about 34 hours of experiment time. Within the 48 hours that they had originally planned, there is some margin in the sense that, they allowed for performing a new DROP for each one of those experiments. But the plan is once he 51-

generates a DROP, is to stick with that DROP and then continue with it, and try to get as much out of it as he can. So they feel he can get up to about 80 to 90 percent of their science, plus the additional work that they want to accomplish.

DOOLING Okay. So, he's been approved then for that overtime that was being discussed this morning.

FICHTL We understand that there is a request going in and we understand from the flight surgeon that Taylor can stay up as long as he feels that he can and can turn in when he's ready.

DOOLING Considering that he had to be coaxed to bed last night, could we expect to see him working a 24 hour shift?

FICHTL I don't know if the 24 hours would, he's pretty enthusiastic and right now we plan 3 hours for Taylor.

PAO Okay. Betty Luman.

BETTY LUMAN (UPI) At about 5 o'clock Don Lind and Bob Overmyer were expressing some concern on FES and crushing some crystals and possibly the escape of some material. Was there any hazzard or what were they worried about.

FICHTL Well, I think in any Spacelab operation you want liquid to get loose and into a cabin. The material that's in there is trioclycine sulfate, it's slightly acidic, is not hazardous to the (garble). But as I mentioned, to get an amount of material loose into the cabin is not a very good thing, expecially if it's not water.

LUMAN Were they going to do what the ground has suggested in trying to tighten that and crush those crystals, or are they going to leave them there?

FICHTL I understand that Don Lind suggested that they close the cap, open it up, look at it, and then close it again. Now, that procedure, I don't know if it's been performed yet or not. When I left they were in the process of trying to do that.

CRAIG COVAULT (AVIATION WEEK) Back to the old Mission extention question. I understand there was a meeting today, a rather formal meeting, that took that up and that there was some exploration of it, at least instigated by the NASA headquarters people. What can you tell us about that?

FICHTL At the moment, I'd rather not discuss that. We discussed it in detail with the PI's. Dr. Adelson was informed of the kinds of things that we could do with the 24 hour extension and we have backed his decision, but I want to cover that first with the PI's. Should say though, that right now there's insufficient energy for an extra day.

VOICE Yes. Our consumable status is still, the 15 hours, bouncing in between 15 and 17 hours of powered up time beyond the normal 2 day extension, so it's insufficient to support another day of fully powered up Spacelab ops.

COVAULT Unless you bend a Mission rule and come home with only a one day worth of margin?

FICHTL That's true story, but the results of the meeting today were and our intentions are to acquire a nominal end-of-mission landing on Monday.

PAO Getter, now?

JOHN GETTER (KHOU) Yes. I had one for Pat. Pat, how many hours preflight training do you consider necessary to bring a person up to speed on this?

COWINGS We have given these crewmen 6 hours of preflight training, but I don't want you to get the idea that it was 6 hours on a Tuesday afternoon. It was administered in half hour training sessions and for this Mission was spread out over a 7 month period of time.

GETTER Has any crewmen ever worn any part of this? What about, I saw some names on there, Gary Payton, for example who have flown.

COWINGS We had a Navy voyage, if you will, of this experiment earlier this year, on 51-Charlie, yes.

PAO Okay.

GETTER And what were the results of that experience in terms of your experiment?

COWINGS I have a secret security clearance, and that would be violating the crewmen's privacy if I were to really release that information.

GETTER Well, in general were you pleased?

COWINGS We've got a lot of information from that flight that really helped us conduct Spacelab 3 as successfully as we did. We learned how to change some of our procedures. We made

the box detachable from the belt so that it was easier to move around in tight spaces. We changed some of our procedures. One thing that Gary told us that, I never would have thought of, is that during launch this instrument is mounted under the crewmen's mid deck launch chair, okay. And post insertion, the crewmen's instructed to crawl under there and pull it out. We practiced that in all our classes. Gary found that it was much easier to, in the real world, to unbolt the chair from the deck, leave it hanging in the air, and then get the pouch out from underneath it. And that was something that we couldn't practice on the Earth

PAO Jules Bergman.

JULES BERGMAN (ABC NEWS) George, Spacelab 3 had 15 investigations. Now, the wide field camera failed. The urine collection devices, somewhat less than a success, in other words, there's no crewmen's urine in it, there is water in it. So of the 15 experiments, how would you rate, what number would you put on the successful experiments.

FICHTL Let me backtrack here to just to address to your monitoring system. The primary objective of that experiment, was the calibration and that's what they're doing, water as you referred to.

BERGMAN That's not what the Press Kit says.

FICHTL Well, the information that I'm working off with, says that. But, now let me finish though. Bill Thornton did a IFM, or he did an analysis of the fluid flow, you know, liquid and gas, into the orifice of that system. And he came up with a fix, about what it amounted to was changing the orifice location, it's just turning it around 180 degrees. If I'm not mistaken, I believe they are going to try and implement that in subsequent shifts so that the second thing that you were referring to, looks like it might take place. Wide Field Camera did get one observation off. A one minute observation, but nevertheless, it did get an observation off. So, if you want to talk about pure numbers, we've got, what, 14.2 experiments, successful?

PAO Okay.

FICHTL I think it's a pretty good score card.

BERGMAN I think it's . . .

VOICES . . . good score card. Right.

PAO Mike Meecham, and then we'll come back up here.
Mike Meecham's with his hand up back here.

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MIKE MEECHAM (GANNETT) For Pat, please. All of the indications we've had, have been several comments that the crew has just been in great shape since day 1, quote, unquote, from Mr. Overmyer. Does that relate at all to the research to the biofeedback kind of thing that you've instructed them in? Is that a result of that, or is it just happen stance that this crew apparently not felt an ill effect from flying in space? Can you talk a little bit about that, please?

END OF TAPE