

SL III MC-1216/1
TIME: 17:07 CDT 30/22:07 GMT
8/26/73

MEDICAL
SCIENCE
CONF = MSC

PAO Skylab Control at 22 hours 7 minutes and 33 seconds Greenwich mean time. We're approaching acquisition of signal at the Carnarvon tracking station. This pass through Carnarvon and Honeysuckle will last approximately 16-1/2 minutes. It is reserved for a private - an open loop conference on medicine with Dr. Story Musgrave, the astronaut taking over part of the time as the spacecraft communicator. The on-duty spacecraft communicator is Richard Truly. We will be live for air-to-ground on this pass for the medical science conference with Dr. Story Musgrave and the three members of the Skylab crew. We're live for air-to-ground.

CC Skylab, we're AOS Carnarvon and Honeysuckle for 15 minutes and we will be using the DAS.

CDR Okay. Go ahead.

CC Okay, and this is your med science conference. We'll be covering the cardiovascular, the vestibular, and the bone and muscle and diet in that order.

SPT Okay, Story, go ahead.

MCC And most important here, we'd like to get your comments and any revision or changes in that protocol that you'd like. Starting off with M092, we think you're doing very well at mission day 30 to be getting to the 50-millimeter mercury level. As you can remember, on SL-II, Joe and P.J. got down to 40 millimeters of mercury about the last 10 days. And mission day 5 when two of you dropped down to 40 millimeters, it was probably due to a little dehydration, from not eating very much and possibly a little residual motion sickness. And we're wondering if you have any symptoms running at 50 now?

SPT Well, I think you can tell pretty well from the way our blood pressures and heart rates are running. If anything, each of us seem to be improving at this stage. Our heart rates are lowering and our blood pressures are maintaining more there normal range. And so I would think if anything, any symptoms are minimizing as time has progressed over the last three weeks.

CDR Story.

MCC Go ahead.

SPT He's just transferring mikes. Just a minute.

CDR Okay, the only symptom I've noticed, incidentally I agree with you about the dehydration, because the urine volume had gone way down, and also the water, and I've built it back up, but I'll tell you what I noticed in me. When I get to push I can feel a little tingling in the arm that's wearing the blood pressure cuff, because when it squeezes

M092

TINGLING

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MSC

it apparently doesn't have enough pressure to really get out toward the end. Then when it's at 50 I can feel a little tingling in my right shoulder then, in addition to my left arm, so apparently it's pumping the blood down there and there just isn't that much to go around, but there is, however, enough to keep going with the rest of the test. But I can tell when I'm at those two levels, simply by referencing my arms and how they feel.

MCC Okay, while you're on the subject of tingling, have you noticed any in the feet or the legs, when you're not in the can?

PLT No, everything's normal, all the rest of the time, as far as I can tell. It just feels a little bit like you do when you get up in the morning, you know, a little fast, and all of a sudden you feel a little faint. I don't feel faint, but I feel that tingling in my arms and I really feel it's the blood just isn't around there. That's been pumped somewhere else.

MCC Okay. The reason I brought that question up is the last 10 days of SL II, those crewmen did notice tingling in their feet. Especially with contact with any structure.

CDR None of us as far as I know have ever noticed it. We'll start looking out for it, though.

APT That's negative here, Story.

MCC Okay. Now, we're going to continue to run on up to 50 millimeters with the lower body negative pressure, at least until we have two successive aborts. One important thing we've been seeing is that your heart rates during the control period - that's at rest are elevated over the ground values. And with M171 during the control period, they're about even to the preflight values, and in spaceflight all along, Mercury, Gemini and Apollo, inflight we've seen lower heart rates than on the ground.

SPT That puzzles me a little bit too. The only way to explain the 92/171 rest period differential, I suppose might be the anticipation of events to come, and I suppose that could elevate it a little bit, but why it's not dropping lower, my own for example, say 65 or 70 at the moment instead of down in the 50s, I don't really know the answer to that, Story.

CDR I'll give you an opinion, which isn't worth a darn, that all before we just never had done any work, and so it just gradually decreased, partly from zero g and partly from inactivity. Whereas now, we're working all the time, exercising and moving around, jumping here and there and everything else, so our heart stays up. It's doing a lot of work.

high resting
heart rate

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MCC Yeah. I think both of those are real excellent points. The resting heart rate in anticipation of exercise is really not a baseline heart rate, and also that your standard basal metabolism during the day is a little bit higher. I think it's a real good observation.

MCC There's one other thing. On the lower body negative pressure, I see that you're using a saddle position of 66.7 versus 99.10 for the crewmen in that order. And I know it's real important, having been in the water tank with it, that the friction along your back tends to hold you out and in zero g, it's only the saddle that's holding you out, but if you get more abdomen in the lower body negative pressure, you're going to pull a little more blood, because the (garlel) subatmospheric pressure is really in the esophagus and the rest of the intestines. We wondering though, if you think you've arrived at the right level on a saddle position.

SPT I think we're all happy with the present position, Story. And we do believe that the iris with respect to our hipbones is very close to the position it was on the ground level. And so we think that we were not fooling the system there, but were pretty close to the way that it should be.

CDR Not only that, but I've noticed up here when you get down inside it, it hurts. That rubber seal when you get your stomach down inside, really squeezes, and that was a phenomena I'd never noticed on Earth. I assume it's because I never got that deep down in the can. Now up where our hips are right on it, by the way, your hips are at different positions with each pressure. When you start off, they're out a little bit. By the time you get to 50, they're down at the point they are all the time on the ground, which is right at the edge of the metal iris.

MCC Okay, fine. That's just the way we want it. And, Owen, those - -

SPT Hey Story. I had one other question, which probably can't be answered right now, but I would appreciate it on the teleprinter, and that's the interpretation of the leg volumes. Now we of course expected larger leg volume increases, because not in one g, the blood is not pooled in the leg. I'd like to know what the larger increases that we do see are interpreted as in terms of total blood volume and so on, and if you get a chance to work up a little answer, and answer on the teleprinter, I'd appreciate it. Over.

MCC Okay. We'll sure do it. Now the SL II

MSE

1092

★
LEG
VOL
QUES

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crews noticed a little bit of venous distension in their legs at rest and outside of the can. Have you noticed that too?

*Venous
distension*

SPT I've noticed no distension in the legs.
The only thing I have noticed is a very slight distension in the neck. I can see the veins in my neck a little more prominent than I think I could a month ago, but the leg veins look normal to me.

CDR Same here.

PLT Hey Story, I got a question.

MCC Go, Jack.

*MANUAL
BP
QUES*

PLT Yeah, when can we quit taking manual blood pressure measurements. Seems like we got enough to have calibrated the system by now.

MCC Okay, we're still using those. They're extremely helpful to us, and have you been taking them mostly on the left arm with the manual pump up to the cuff, or the right arm?

PLT Right arm.

SPT And also, I just quit taking those, because the message only asked for three in a row.

MCC Okay. And moving on here, since we're running out of time. In terms of PVCs or premature ventricular contractions, we did see those earlier on Owen, and during the EVA on Jack, at the third level of M171 and on the CDK at one of the (garble) to the M092. You'll be interested to know that we've not seen them during any of the later M092 or M171 runs, and we saw none on the last EVA.

SPT That is interesting. Any suggestion you might have as an explanation. We'd appreciate that on the teleprinter.

MCC Okay. Just at the moment, we agree with you that you are increasing your proficiency and fitness on M171 and other areas and this may have a part in it.

SPT Thank you.

MCC Moving on to M131 on the OGI, both -

*★
PVC
QUES*

END OF TAPE