EVANS The first day I didn't use them at all, and my eyes felt a little bit like maybe they were getting a little bit red or something, just a little bit tired, so I put some eyedrops in. The next day I got my sunglasses out, looked out the window a couple of times, and then needed to look at the map or something back inside. I put my head down and couldn't see the map, so I had to take the sunglasses off. So I finally said heck with it. I didn't wear the sunglasses the rest of the time. In a good portion of the visual observations, I felt that color was an important part of it. If I had sunglasses on I couldn't get a true picture of what the color is, so I didn't wear them.

CERNAN Unusual or unexpected visual phenomena or problems experienced - I focused during rapid acceleration or deceleration with no problems.

EVANS No problems with me.

CERNAN Visual details - Sunlit versus down-Sun areas - Let me talk surface, and you can talk about orbit. Driving the Rover down-Sun into the west was a very degraded operation. There was no way that you could do any shadowing. We did it for a great part of the time. You just had to sort of look through the down-Sun effective zero-phase area to make sure you could see

CERNAN (CONT'D) what was coming up. Driving up-Sun, again, was a degraded mode of driving. It was very bright. Everything that you were looking at was effectively washed out. But when you drove up-Sun you had a capability of either shielding your eyes with the hard-cover visor or your hand. As soon as you did that, you had absolutely distinct and perfect vision as to what was ahead of you. It was a case of being able to have the right geometry of the Sun versus your direction of driving.

CERNAN Vision without outer visor during EVA - In effect, I never used mine. I used the protective visor and the gold visor almost the entire time except when I was in the shade and I lifted my gold visor. I hardly ever, except for occasionally driving into the Sun mode of operation, used the hard-cover visor at all. I never used the side hard-cover visors and just very seldom used the center hard-cover visor.

Distance judgment versus aerial perspective during EVA - The size and distance you certainly had to multiply by a factor of 2, and maybe I would go so far as to say a factor of 5 in many cases, because there are no references on which to base size or distance.

Well, I think the Moon horizon and the Earth horizon at sunrise and sunset have been discussed in detail in the past, but there is nothing unusual experienced which I didn't expect.

CERNAN (CONT'D) Eye irritation during photos at window and EVA - I never wore sunglasses and in effect never had any. I take that back. One day, prior to PDI day getting in the LM, my right eye started watering for some reason but did not impair vision. I put some eyedrops in it and it seemedto soothe it. I never did anything else to *my* eye again until, one day on the way home, I got some chlorine in it, and I washed it out and put some more eyedrops in it. Beyond that, I had no eye irritations at all. We had chlorine all over that spacecraft. That's the way I washed my hands everyday, chlorinate the spacecraft.

Helmet visor reflections - I had no particular problems with the helmet. My gold visor got very dirty and dusty and scratched up very early in the first EVA, and I cleaned it as the ground prescribed before each EVA, but it really didn't do much good. I just learned to live with it, and it really didn't degrade the operations much at all.

EVANS Well I think most of these are pretty much not applicable to lunar-orbit-type stuff. I used your LEVA and I didn't even notice any scratches on the thing while I was out. Unless you want to talk about the eye irritations during the photos at the windows. This was essentially on the first day in lunar orbit, I think. And, for some reason, I never even noticed it from then on. I never did use the eyedrops from that point.

CERNAN Medical kit - An adequate quantity of medications was supplied. I think there were certainly adequate quantities of medication in both vehicles. We brought the medical kit back from the LM. Why I don't know, but we did bring it back. Yet, in spite of bringing it back and having the command module kit there, we ran out of biomed sensor electrolyte sponges on the last day of the flight.

EVANS The sponges themselves are packed in packages of six, so you throw one away every time.

CERNAN I will say one thing. I did change my sensors one time on the lunar surface. The sponges in the LM medical kit were about half the thickness or a little bit better than half the thicknesses of the sponges in the command module medical kit. So when I put those sensors on, I put two sponges under my sensor instead of one because I didn't feel that one sponge would do the job. Two sponges were just a little too much, but I did use two sponges. Packaging of the kit was fine. Adequate instruction for use - As far as I'm concerned, there is no instruction for use on anything in the medical kit. If you want to take a Lomatil, there is nothing that says diarrhea. You don't know whether you can take one, you don't know whether you can take two. If you take two, you don't know whether you can take a Seconal with it. So, effectively, there are zero

CERNAN (CONT'D) instructions. Even if the instructions were there, I'm sure you would have to talk to the ground before you take them away.

EVANS We'll talk about the EKG on the thing. Let me make a comment. To me, we changed those things way too often. You had it on for 12 hours and you took it off and the next day you put the crazy thing back on again. If you've got it on, keep it on for 24 hours, something like that. Then let the other guys have a 2-day break on it. If, you're going to cycle it that way, don't keep changing the thing every 12 hours.

CERNAN One thing about the sensors - Sometimes it's more inconvenient to change the sensors than it is to keep them on. Much of the time, where the guy was going to take them off rather than go through the inconvenience of taking them off and cleaning them up and getting them prepared and putting them on, whenever he had to put it on later, he'd just leave them on throughout that period.

Housekeeping continues to be the major operation of space flight, particularly in spacecraft as small and as requiring as the command module and LM. Maybe in Skylab it's going to be more so, because the spacecraft is bigger. Changing sensors, for instance. As soon as you change one sensor, you've got about four or five small, loose articles in your hand.

CERNAN (CONT'D) You've got to contain them. You've got to put them in a small garbage bag and then eventually put them in a big garbage bag, and every time you have a loose article with no place to put it, it's a housekeeping problem, automatically. I don't know what else you can say about that. The thing that was good as far as the command module is concerned was that we had an extra temporary stowage bag that we put up in the tunnel. That was kind of a temporary jettison bag that we filled up. As soon as it got full we would stick it into a big jettison bag and shove the jettison bag underneath the couch somewhere. It's an effective way to keep track of the junk and the trash because it's got a spring-loaded door and you shove this stuff up in the bag.

CERNAN The thing about housekeeping is that it takes you anywhere from 1 to 3 days to effectively unstow the spacecraft to get at those things you need on a cyclic-type basis. Those things you need to keep living, eating, sleeping, and working with. And you have to find convenient temporary secure stowage locations for all these things. No one can really dictate whether it's going to be particularly convenient to you; but; once you do this, your housekeeping problems begin to minimize. But it's just a case of setting up those living accomodations which are compatible with three individuals who are trying to live compatibly

CERNAN (CONT'D) together, both in taking care of their personal items like spoons and toothbrushes and taking care of spacecraft operational items like cameras and chlorine packages and filters and what have you. It's too inappropriate to put a lot of those things back in their original launch stowage configuration position.

Shaving - I shaved once before PDI, once after PDI, and once before reentry, and I think it's one of the most clean feelings a guy can get in the spacecraft.

SCHMITT It's great. I could only shave about a third of the face at a time, maybe a fourth, so that's the way you do it. You put a little bit on and shave that part off and start again. I've got a recommendation on the razors. And Gene didn't have that problem. I guess my beard is a little thicker or something, but I couldn't use a two-bladed razor. I could get one scrape out of the thing and it was full. There is just no way to clean it out and it just wouldn't cut anymore. The single-blade razor is the one that evidently has enough room in there. Even though it got plugged up with the shaving cream, it still worked okay.

CERNAN Dust - I think probably one of the most aggravating, restricting facets of lunar surface exploration is the dust and its

CERNAN (CONT'D) adherence to everything no matter what kind of material, whether it be skin, suit material, metal, no matter what it be and it's restrictive friction-like action to everything it gets on. For instance, the simple large tolerance mechanical devices on the Rover began to show the effect of dust as the EVAs went on. By the middle or end of the third EVA, simple things like bag locks and the lock which held the pallet on the Rover began not only to malfunction but to not function at all. They effectively froze. We tried to dust them and bang the dust off and clean them, and there was just no way. The effect of dust on mirrors, cameras, and checklists is phenomenal. You have to live with it but you're continually fighting the dust problem both outside and inside the spacecraft. Once you get inside the spacecraft, as much as you dust yourself, you start taking off the suits and you have dust on your hands and your face and you're walking in it. You can be as careful in cleaning up as you want to, but it just sort of inhabits every nook and cranny in the spacecraft and every pore in your skin. Although I didn't have any respiratory problems, I think the LMP, which he can comment on later, had some definite local respiratory problem immediately after the EVAs due to the dust in the cabin.

CERNAN (CONT'D) In sputum - I didn't spit up anything. I didn't feel any aerosol dust problem at all until after rendezvous and docking when I took off my helmet in zero-g and we had the lunar module cabin fan running the whole time. I did all the transfer with my helmet and gloves off, and I'm sorry I did because the dust really began to bother me. It bothered my eyes, it bothered my throat, and I was tasting it and eating it and I really could feel it working back and forth between the tunnel and the LM. Ron, did you feel any effects of the dust when we docked and rendezvoused, particularly?

EVANS Only when I stuck my head up in the LM. When I climbed up in the tunnel I could definitely tell there was a lot of dust up in the LM and you could smell it. It's a difference, so I think you noticed it from that standpoint, but there never really was dust in the command module. The only time you ever got any dirt in the command module was when you touched something that had dirt on it. But as far as dust floating around in the command module - I don't think it ever did.

CERNAN After rendezvous and docking - After the CDR and LMP had been living with this dust for 3 days on the lunar surface, there was a compelling urge on both of our parts to get clean. We spent about 2 or 3 hours prior to going to bed doing nothing but effectively taking soap and water and trying to wash as

CERNAN (CONT'D) much of our body as we could to get free from what is really sort of a dirty feeling due to the dust. Even with soap and water it was sometimes very difficult to get clean, and the dust would get under your fingernails and other places on your body.

Radiation dosimetry - personal radiation dosimeters - Were the PRDs worn for the entire mission? Yes, with the simple exception that after rendezvous and docking, when the LMP and CDR stowed their suits, we did not transfer the PRDs. The CDR's was in the suit PGA bag for 1 day when it was retrieved. The LMP's was in a PGA bag for 2 days when it was retrieved. Radiation survey meter - Was it activated at any time? I thought about it, but what good would it do?

Personal Hygiene - Adequacy of wipes, size and numbers - As far as I'm concerned, the wipes might just as well be thrown off the spacecraft. They are too small to do any good. I never cut open a wipe bag. Now I think the CMP may have a change of heart.

EVANS I used them all the time. Whenever I had one with a meal, I would cut one open and I'd just use it to wipe off my hands and mouth. When you dip out of a spoon-bawl, part of it gets on your fingers. So you'd lick your fingers and then wipe it off

EVANS (CONT'D) at the end of the meal. That's the only thing you could use them for.

CERNAN I think the tissues, and it turned out there were plenty although the way we were using them for a while we weren't sure, and the towels are the two most important items of personal hygiene.

In use of the potable water, both hot and cold, for personal hygiene - Yes, we used it and we used it effectively just like you'd wash with a washrag in your bathroom. We used it with soap and/or water and used two or three towels, one with soap, one with plain water to rinse, and one to dry. And it turned out that there were plenty of towels also. And that closes that.

But I'd like to make one comment about personal hygiene and eating habits and defecation and urination habits in a spacecraft like the command module. I just personally feel very strong that we have a long, long way to go to make space a convenient, comfortable, habitable area in terms of defecation devices, in terms of urination devices, and in terms of personal hygiene to keep adequately clean and feel adequately clean. I think from what I understand of Skylab that we're taken some major steps in the right direction in terms of

CERNAN (CONT'D) defecation capability, in terms of showering capability, and in terms of one other very important thing, the ability to exercise. I think if we can handle those types of living habits and learn how to handle them in Skylab, I think that one of the major modes of operations in space is going to be upgraded greatly. You do them in the command module because you have to, but because of the size or because of the facilities that you have at hand, it's a messy and sometimes a dirty and almost an unsanitary operation. But you make the best of what you can and the best certainly works. But I think Skylab is a step in the right direction. I don't know all the details of their hygiene facilities, but the thought that's going in to it I'm sure is based upon the same comments we've made here.

EVANS I'd like to make one comment on the urine busses, as we call them. First of all, the little check valve in there is ineffective to me. You may as well have an on/off valve on this thing, because the check valve creates such a back pressure *that* every time I wanted to urinate I felt like I had to force it. If there is some way to get rid of that back pressure that you have to overcome in order to urinate, it would make it a lot more pleasant operation.

SCHMITT (CONT'D) The appetite inflight versus preflight was less again except when we were testing the preflight food, when I also had a low appetite. No notable differences in the taste of food. The things I liked in preflight I also liked in space. The things I didn't like in preflight I also didn't like in space. I didn't notice any differences. I tended to start to prefer to eat the wet packs in preference to any of the other solid foods. I would strongly recommend that the wet packs be used in preference to the rehydratable. You probably will get a different opinion from the other crewmen. The juices were good. After the ones and only period of difficulty with loose bowel movements I did cut out the potassium-indicated foods. I can't say that had any effect or not, but I did not have any other loose bowel movements before the end of the flight. The first bowel movement after flight, on the Ticonderoga, was normal, the second was very loose, the third was normal, and the fourth and fifth were very loose.

The size of food portions and the meal portions - My appetite was very low the first day and gradually increased over the next 2 or 3 days. It remained essentially the same after about the third day. The most acceptable foods were the wet packs and the juices. The fruit cake was good. It was possible to eat too much or to get to the point where you didn't want any more, The chocolate was good. Of the dry crackers or cookies,

SCHMITT (CONT'D) the graham crackers were probably the most tasty. The peanut butter and jelly sandwiches were quite good.

Food preparation and consumption. Rehydration went nominally. The nominal gas was present. Food temperature - I tended to prefer the foods that were warm or hot, and the hot water was quite adequate for warm foods. We actually missed the warm foods in the LM where hot water was not available.

I did not notice a water flavor. The water was reasonably tasty. I did not notice a high chlorine tase of any kind. All of the gas content did make it a little bit uncomfortable to eat at times. Thimble packages worked pretty well. Those that were divided I tended to cut off the other end of the package, the water insertion end, and use them as a squeeze package.

Spoons worked perfectly adequate. I tended not to use the fruit in the cans because of the messiness of opening those. I think the technique that Ron worked out of opening it in or near your mouth is a good one. Puddings and this kind of thing were very good. It was only the canned fruits that I tended to avoid because they were inconvenient to use.

Food bars during the EVAs I think were good to have, although I never ate more than half of one. It wasn't because it was

SCHMITT (CONT'D) untasty. It's just because of maybe a lack of interest in eating and using that time during the EVAs. Before and after EVAs, in the LM, I ate very well. There were some things we avoided. In my case, after having corn chowder once, which stimulated a major bowel movement, although not a loose one, I did not, thereafter, eat the corn chowder. I did not eat the cocoa because I tended to feel I got a little more gas from cocoa and an aftertaste. I did not eat the sea food items, shrimp and the lobster bisque and these sort of things, because in preflight I had noticed they tended to have a long after-taste. Otherwise, I think all the other foods were certainly acceptable. Many times I did not eat potato-base foods because they were very filling.

Food waste stowage - I don't know how the germicidal tablet worked. The pouch was okay. It would have been nice to have had a little dispenser that was easier to use than the pouch. I don't know whether that would be possible to do or not. Seems to me it would - a little tube dispenser of some kind, where it came out more easily. We generally cut the corner off the pouch and squeezed them out. It was a little inconvenient, nothing major. We used the germicidal tablets in all the juice bags, the food bags and the wet packs. I did not use them in the tea and coffee.

SCHMITT (CONT'D) Undesirable odors - Undesirable odors were at a minimum except for the occasional passing of gas. I generally had almost continuous passage of gas most of which apparently was not with significant odor. Only occasionally it seemed to be objectionable to the other crewmen. I think most of that was a water gas. Upon starting to eat, there would be an increased desire to pass gas. An increased pressure in my stomach apparently was transmitted almost immediately into the bowels. After eating I would pass gas for a couple of hours.

Quantity of foods eaten on the lunar surface - I think it was high, although probably no more than half of the food that was available. It's hard to say exactly. I think that could be worked out maybe with a detailed look at the menus. To estimate the quantity would be very difficult.

Fecal container - We used a blue bag, which is not a bad way to defecate unless the stool is loose. If it's loose it's just about impossible to use. The best thing you can do is to work out some prevention of loose stools rather than trying to handle them. Loose stools is one of the major hygiene, sanitary and operational. problems that you can have on a flight. I can't emphasize that more. If it happened on a daily basis, you would eventually cut the efficiency of the crew member as much as 30 percent. I think it's important to try to understand why

SCHMITT (CONT'D) Apollo 17 was different than Apollo 16 in the delay of the problem of loose stools till about the 11th or 12th day. The CDR had no problem with loose stools. My personal opinion at this point, based on very little information other than observation in flight and thinking about levels of electrolyte intake, is that with the electrolyte quantity down from the imposed on Apollo 16 we did not reach an electrolyte saturation problem until the 11th or 12th day. When that saturation level was reached, I suspect that the electrolyte we were eating was dumped or concentrated in the intestines and tended to act pretty much as a laxative, an epsom salt type laxative, concentrating water in the stool. I think it's important that we reduce the electrolyte intake so that saturation is never reached.

Water-Chlorine taste and odor was not apparent to me except during chlorination. Iodine taste and odor was very slight, apparent in the LM water, but not of any significance to the LMP.

Physical discomfort - No physical discomfort for the LMP other than tiredness on occasion and sore muscles and the bruises under the fingernails in the case of EVA work.

Gas/water separator didn't work very effectively and I'm sure that's been discussed elsewhere.

SCHMITT (CONT'D) Intensity of thirst during mission - Never really was thirsty, even during the EVAs, although I did stop to take a drink of water occasionally. But I never drank all the water in the insuit drink bag.

Work, rest, and sleep - The difficulty in going to sleep is variable. When seconal was used, there was generally no difficulty in going to sleep. When it was not used, I guess there was a tendency to stay awake a little bit longer. On other occasions, the action of Seconal did not seem to affect the rate of going to sleep. There was a tendency a couple of nights to go to sleep and wake up fairly soon after going to sleep, within an hour. The second time it took a little longer, sometimes an hour to go back to sleep. But, I feel that the medical log reports for the LMP were valid and probably an average of 5-1/2 to 6 hours of sleep per night was good. I don't think, except for maybe one night, that I went much below that. The sleep was never continuous for more than 3 hours without waking up. I feel that 6 hours is adequate sleep for the kind of work we were doing. The programing of 8 hours is necessary in order to get 6 hours because of the periods of wakefulness and for the difficulty in getting the cabin organized and everybody to bed at the programed time. So maintaining an 8-hour sleep period is mandatory in order to obtain the

SCHMITT (CONT'D) 6 hours required to perform the mission without getting tired or getting behind the power curve with respect to sleep.

Restraints - I had the feeling that I wanted to have my head and limbs restrained in order to get a good sleep, although I did sleep at times without that restraint. My personal opinion is to make them smaller with a somewhat more feeling of restraint. When I slept in the couch, I tended to put a shoulder strap over my head and chinch it down very lightly so that I had that feeling of head restraint. Probably one of the biggest things that made sleep difficult was the loss of sensory perception of limb position in zero gravity. When they were not being moved, you lost that perception. It came back immediately upon moving them. In general, the other crewmen did not disturb my sleep. I'm not sure why I would awake when I did. It did not normally seem to be the activities or the restlessness of the other crewmen. In one or two cases, I think it was the other crewmen, but most of the time I don't think it was.

Exercise - I ran maybe a mile and a half on the afternoon of the day of launch, keeping up to the daily running program that had continued for several months prior to launch. In flight, every day except PDI day and rendezvous day the LMP did some kind of exercise. Particularly running in place against the LEB, using the arms and shoulders on the Y-Y strut of the seat

SCHMITT (CONT'D) in order to provide an artificial gravity of sorts. And that seemed to be the best way that I could find to get significant heart rates. I think the medical people should have the information on those heart rates. The heart rate that I was capable of generating before my arms got tired tended to decrease, I think, with mission duration. On the day before entry, it got back up to 120. I'm not sure how much motivation had to do with that - motivation versus deconditioning. After some isometrics under the right-hand couch for 5 to 10 minutes, then I would run in place for 5 to 7 minutes, something like that. I did not use the exerciser. I found these other methods seemed to be better for my Own personal needs.

Muscle soreness during or after flight. The only muscle soreness that I can say I recognize was the very extreme soreness post EVAs, but that had disappeared by the next morning. And that was in the hands, soreness in the hands. After the bicycle exercises on the Ticonderoga, the next morning after the first exercise my calves were sore, and they remained sore after the second exercise on the bicycle. Within 24 hours, there was no noticeable soreness in the calves.

At the conclusion of each of my running-in-place exercises, I was perspiring, not to a drippy extent but to a damp extent. Never got any real visible drops of prespiration, but I did

SCHMITT (CONT'D) feel damp, particularly around the head. After a few minutes of just floating quietly, that perspiration generally evaporated.

Oral hygiene - I brushed about every other day and had no discomfort in the mouth. I did not use the dental floss and the toothbrush was perfectly adequate. The toothpaste seemed to me to be a little less abrasive than you might desire, but it did freshen your mouth and seemed to clean the teeth adequately.

Sunglasses - I used the sunglasses most of the time to look at the Moon in particular. I wore them in the cabin during PTC when the Sun was coming in the windows, up through PDI day. After that I didn't use them in the LM except occasionally to look out the window at the lunar surface. After rendezvous I didn't find the desire as great to use the glasses. Initially, it seemed as if some of the moderate to light headaches that I had might have been the result of the sharp contrast of lighting that we were exposed to as much as it was to any kind of vestibular disorientation. So I'm not quite sure whether which was which, but the headaches did disappear by the third day. By post rendezvous, I did not feel the need even to look at the surface through the sunglasses. It was as if my eyes had started to self-compensate for the increased brightness that we were exposed to. Partly, I used my glasses because they do have a small correction for

SCHMITT (CONT'D) my astigmatism, and that did increase the resolution with which I could view the surface. Looking at the Earth and translunar coast with the sunglasses, I often did that for the correction. I used the binocular and the sunglasses and it did seem to help the resolution of viewing cloud patterns and geographic locations. When I used the sunglasses they seemed to be very adequate in terms of the level in which they reduced the brightness. As soon as I looked in the cabin to look at instruments and this sort of thing, the glasses did inhibit the observation of those instruments and the lettering on the panels, and I would push them up on my forehead for cabin work.

Unusual and unexpected visual phenomena problems experienced - Let me reference you to the description I tried to make of the sunrise color-banding in the Earth-orbit portion of the flight. We talked a lot on the tapes about the orange, yellow, and red hues to the gray in lunar orbit around the edge of Serenitatis Basin. That is also on the tapes and most of that orbital descriptive work was in the post rendezvous timeline. My solar corona sketch is in my crew notebook and I'll have to get that for reproduction. And I think the only other thing I would add is that with the sunset corona, I was able to see very strong linear streamers very close to the Sun. With the sunrise, I don't recall ever seeing strong streamers or bright streamers down close, within a solar diameter or two. But the

SCHMITT (CONT'D) most diffuse and broad streamers were quite obvious and are covered in the sketch and I think in some verbal descriptions on the tapes. I noticed no eye focus problem during rapid acceleration and deceleration. The best viewing Sun angle for viewing lunar topography was the low Suns, and the best Sun angle for seeing albedo and color differences was directly down Sun or zero-phase. Often, during the EVAs, I would have the gold visor down three-quarters to protect most of my face from the Sun. But for close-in detail I would look through the lower one-quarter, where I'd just have the clear helmet available in order to see more detail without looking directly into the Sun. When we were driving up-Sun with the Sun on the visor (having had some problems with the hard-shell visor movement), I mainly used my arms to shade the helmet or the LEVA so that I could see up-sun. And that worked fairly well.

Distance judgment versus aerial perspective - The distances and sizes I used were compensated by some early estimates of crater size based on the size of the LM and ALSEP distances and items like that, although I never did feel comfortable with the numbers I used. I was doing it on a subjective basis as a result of those early observations rather than on what the crater really looked like. The craters always seemed to look smaller than I felt I knew they were, although probably never

SCHMITT (CONT'D) by more than a factor of 2 or 3. Distances would have to be the same, or the same way through judgment of haw far away from something you are. It generally results in an underestimate. You always think you're closer than you really are.

I think the tapes cover some comments on the Earth illumination at the horizons. Briefly, right at the terminator horizon of the Earth, you get sharp shadow definition of cloud features. At the sunlit horizon from lunar distance that's a very clear definition between the black of space and the upper portion of the Earth. In Earth orbit and near Earth, you can see the gradation of that horizon caused by the atmosphere. At night around the Earth, there's a very clear horizon glow all around the Earth. Air glow, I guess you would call it. And the horns of the crescent Earth are much sharper and elongate compared to those of the crescent Moon, as if light was being defracted into the atmosphere and in extending the length of the horns of the crescent. With the setting and rising Sun around the Moon, you would get a - in the case of the setting Sun - a few reflections off of the high peaks some significant amount of time after the Sun had set. And the same would apply conversely to the rising Sun. The first indication of sunrise, in addition to the solar corona brightening, was a few bright areas

SCHMITT (CONT'D) on the peaks near the terminator that were high enough to catch the first morning rays and reflect them back around toward the spacecraft.

Eye irritation during photos - I did not notice any. Helmet visor reflections I guess have been very well covered. With the dust and scratches on the helmet, of course, you needed to shade the helmet more and more in order to see with the Sun directly on the helmet.

Medical kits certainly seemed adequate. We did run out of electrolyte and some more should be packaged, I would think, for the comparable amount of time we had, because we actually did not change sensors out according to the Flight Plan. We generally wore sensors longer than the Flight Plan required, which meant had we done it according to the Flight Plan we definitely would have run out of electrolyte early. I think it is a mistake not to have a fairly clear summary of instructions for use of each of the *drugs,* if for no other reason than the no-corn case when a drug might be required. For most of those drugs, they would essentially be of little use to us in a no-comm situation because we would not know exactly what they were for and which drugs could be taken in combination without an adverse effect.

SCHMITT (CONT'D) Housekeeping was relatively easy, in general, except for the waste management portion. Within a day, the routine of where to put things to keep track of them and how to eat and all the normal and more mundane aspects of living were fairly clearly defined in my mind and did not present any serious problem.

Shaving - I did not shave until the day before entry and after the press conference. I felt no significant discomfort from the beard during any of the time in orbit. There was a little bit of stickiness involved with wearing the chin strap but that was insignificant. I think that having a beard or not having a beard has to be purely be a personal item. It cost me about an hour to shave it off, but I think that's comparable to the amount of time it would have taken to stay clean-shaven. It was difficult to shave off. I went through about three of the double-edge blades. And although none of them were seriously degraded, it just seemed that with a new blade the whole shaving process was easier. One thing to do prior to shaving is make sure you set yourself up with a good light. I might have been able to cut 10 or 15 minutes out of the shaving if I'd had better lighting. I also recommend that, prior to using the brushless shave cream, you get a lot of hot water on a *rag* and soak your beard with it. I also washed the beard with soap and hot water before applying the brushless shave cream. In spite of the difficulty in shaving, there

SCHMITT (CONT'D) was no pulling or discomfort associated with it. It was mainly a problem of the clogging of the razor and I think the dulling of the razor but there was no pulling of the beard at all.

Dust - We'll just talk about in-cabin dust. After the first EVA, there was considerable dust in the cabin. It would be stirred up by movements of the suit and the gear that we had. Almost immediately upon removing my helmet, I started to pick up the symptoms that you might associate with hayfever symptoms. I never had runny eyes or runny nose. It was merely a stuffiness in the nose and maybe in the frontal sinuses that affected my speech and my respiration considerably. After about 2 hours within the cabin, those symptoms gradually disappeared. By morning of the next day, they were gone completely. After the second and third EVAs, although I'm sure the dust was comparable, the symptoms were not nearly as strong as after the first EVA. That was as if I either developed a mucous protection of the affected areas or had some way or another very quickly developed an immunity to the effects of the dust.

Let me mention the PRDs. The first couple of days, my PRD resided in my temporary stowage bag because I did not wear the coveralls. After the second day, I wore the coverall pants and the PRD was in the pocket of the pants. After rendezvous, the PRD inadvertently was left stowed in my suit and so it

SCHMITT (CONT'D) resided in the PGA bag for two days before I had it available to put in the coverall pocket. That PRD was in my PGA pocket during the CSM EVA.

Personal hygiene - I think the LM feces bags are superior to the CSM's in that they have a goodly quantity of tissues cut to size and are quite good. I see no reason why those couldn't be the same kind of blue bags in the CSM. Although we ended up having plenty of tissue, there was some concern initially whether we would. And I think had we had any greater problem in loose bowel movements we probably. would have had an inadequate supply of tissues. Tissues are extremely useful in all kinds of personal and cabin hygiene and there should never, if at all possible, be any concern over not having enough tissues. Particularly, if you are using the BUSSes, you tend to use a tissue every time you use the BUSS - at least one. You tend to use one during the meals, and of course a lot of them in the use of the blue bag. Potable water was used for personal hygiene. I washed several times with soap, and post rendezvous I actually washed my hair quite adequately by putting a lot of water on a towel and wetting the hair quite well. Then, just in a normal terrestrial way, I rubbed soap into it and then washed the soap out again with a couple of wet towels. The soap on board seemed to be quite good. It did a good job of

SCHMITT (CONT'D) cleaning but also was not overly sudsy and seemed to wipe off or wash off very well. It did not leave any noticeable residue that was uncomfortable.