

ASTP JOINT CREW ACTIVITY BRIEFING
Houston, Texas
February 26, 1975

Participants:
Richard H. Truly, astronaut
Milt Rein, Public Affairs Office

REIM: All right, ladies and gentlemen, we'll get started here with the in-flight crew activities. We have Richard Truly, who is one of the support crewmen, who will give the briefing on that. We'll start it off. Go ahead, Richard.

TRULY: Okay. Well, you're in luck for a couple of reasons. One is, I don't have nearly as many slides as Ken did, and there is no way that I can talk as long as Cernan did, so this - this will be a short - or - but if you do have a number of questions, I can stay as long as you'd like. I'm a newcomer to ASTP, I've been doing something else until about the first of December, and since then, I've been spending most of my time learning to pronounce things like Nicolai Rubavishnikov. So there's a lot of the ASTP history, and also, some of the hardware details that at this moment I don't know. I'll be spending the next few moments before flight, in preparation with Bob Crippen and Bo Bobko, so that we can be CAPCOMMS. What I'd like to talk about today is a brief overview of the activities that will begin at the docking and extend over the next day and a half, and so that you'll have an idea of some of the things that's going to be going on. A crew activities plan will be published at a later date so that you can have that to look at in more detail, but I can tell you what we'll be doing here. The guys have been - the cosmonauts have been here in town for the last - this is the third week. And a good deal of their training during this trip is going to be covering these couple of days that I'm going to brief this afternoon. One - one thing that I think will be of interest to you, that I thought I would cover before I show the Vugraphs, is the business of language and what you'll be hearing over the air-to-ground and during these days. Very simply stated, the language that will be spoken will be the language of the listener. In other words, if - in general, transmission during the rendezvous, for example, from Soyuz to the Apollo, will be made in English. The transmission from Apollo to Soyuz will be made in Russian. Communication to the MCC Moscow would be in Russian. One to MCC Houston would be in English, no matter which - whether cosmonaut or astronaut said it. The reason for this is pretty straightforward, we don't want to - For a couple of years, the guys have been training and talking to each other, and we don't want to get into a situation where - where Leonov reverts to his Russian accent and Stafford reverts to his Oklahoma twang and - and because, very quickly, we could saturate the listening party. So we've - so on orbit you will - and probably both will saturate me. So on orbit, when you hear them talking, you will generally hear a mixed conversation and so to - which will be a problem I'm sure for the news media and we'll have to depend on a good bit of translation to make it turn out right, which we're planning on doing. All right, can I have the first slide, please?

Could you drop it down just a little bit? And later I'll have to ask you to shift it back up to - Let me - let me take a couple of minutes here and - this looks sort of crowded, but one of the problems that I had in

coming new to ASTP was that there were so many transfers, so many hatches, two control centers; furthermore, most of the time the crewmen in the documents are referred to as AC, SC, FE and you don't have names. I made myself a little score card, which is these Vugraphs, which will let you very quickly tell some of the major things that's going on. So, let me talk just a second about the format and then we'll talk about the day and a half activities. In this far left column is local time in Moscow. The second column from the left is local time in Houston. The - Next to that column is the ground - the STDN networks sites. These little short passes are, for example, this is Madrid, this is the Soviet Union, and these are all our sides. This is of importance, these dotted lines coming down the left side are ATS AOS times. It doesn't mean - I don't want to leave a wrong impression though - it doesn't mean that we will automatically have ATS coverage during this time, because we do have to be in the proper attitude and have the high gain antenna tracking the satellite, but this is the - these are the opportunities. This dark column is spacecraft night - night and day, so each of these is a space - this is a spacecraft sunrise and this is a spacecraft sunset. This column is ground elapsed time. There was a question earlier - it is - it happens to be Soyuz ground elapsed time. The Apollo - not that it makes any difference but, after we launch Apollo, we will sync up the Apollo clocks - clocks and that's what this time represents. If you need to know how - if you want to know for some reason how long Apollo has been up at any given time just subtract 7-1/2 hours from it. The rest of this chart is related to this picture of the spacecraft itself. Very briefly, of course, this is the command module the docking module, the Soyuz orbital module, and the Soyuz descent vehicle. We already talked about the hatches. Let me review them again for you, very quickly, because they are important in these 2 days. There's a tunnel hatch here, which is hatch 1; another docking module hatch, hatch 2; this is tunnel 1; hatch 3, tunnel 2; hatch 4; and then the hatch between the orbital module and the descent vehicle called hatch 5. I've drawn this chart in such a way that the vertical lines on the chart at any given time represent a closed hatch. For example, at 51 hours and 45 minutes, which is just prior to docking, we've - we have the tunnel hatch closed, we have both hatch - we have this hatch closed, this hatch closed, and we have the hatch - or then the Soyuz has the hatch closed between the descent vehicle and the orbital module. I have also sprinkled liberally through here, just so you can keep up with who's where, the names of the guys as - and which vehicle they're in, because it - After a while you'll see it gets complicated just keeping up in your own mind with who's doing - who's doing what and where they are. For example, again, just before docking, Stafford, Slayton, and Brand are all in the command module, and Leonov, Kubasov are in the descent vehicle preparing for the docking. Okay. One other thing, I've - there's a number of places in here where we actually open a hatch and perform a transfer, if you will, from one nation's spacecraft to the other. And where those events occur, I've put the proper names and a little arrow so you can tell who's going, and again in which direction. Could

you slide it up now just a hair and let me - so we can see the - Yes, I think that's fine. Okay. Basically this is July 17th, 1975. It's - It's about 10:30 in Houston, we've - It's the third day of our mission, and during this day we got up this morning and did the rendezvous. We've just completed the various burns that complete the rendezvous, and the command module is stationkeeping on the Soyuz. Docking occurs at this point, which is over Western Europe, I believe physically, and it is coincided with station coverage, both of the AT satellite and the Soviet ground station. At the docking, there are four hatches closed between the guys. Our crew is in the command module. The Soviet crew is in the descent vehicle. The next couple of hours are spent in a bunch of checklist activity. The Soviets are taking off their pressure garments, and we are now - Let me back up just a second. On yesterday - other words, the day after our launch and the day prior to the docking, we did open up the docking module and do a several-hour systems checkout. But there is - there is a good more - bit more procedures to do in the docking module, mainly moving stowage around and preparing for the transfer itself. One time that I've left off this Vugraph, because I didn't think that it would be important to you, but it is important to the crew, is the fact, that prior to each transfer - in other words, when we start separating crewmen and closing hatches between them and changing pressures we want to make darn sure that we have some good time base. And so prior to each transfer, there will be a radio communication between spacecrafts that will set watches to zero. And - so there will be a running watch time that goes along during each of these events. And the checklist itself, as long as we have no contingencies, for example, at 30 minutes in the first transfer, if Leonov and Kubasov can look in their books and tell what's going on on the other side of the - on the other side of the hatch. Okay. We closed hatch 2. Vance stays for this first transfer in the command module. Tom and Ike get in the docking module during this period of time that we equalize pressure between the docking module and the Soyuz. A few minutes before this hatch opening, their checklist will open hatch 4. One of the reasons that our nominal procedures for transfer are lengthy is - is that we do pressure integrity checks that last several minutes between - for each tunnel prior to allowing the hatch to be open. Those pressure - if you were in a contingency, naturally you're - you're not that interested in perfect integrity, you want to make sure that there's not a gross leak and then go through the hatch, but that's one of the things that lengthens the check. Okay. At this point is where the hatch opens between the docking module and the Soyuz. It's about 2 something in the afternoon, in Houston; about 10:20 at night in Moscow. And it's at this point that we'll see the guys meet each other for the first time. The checklist activity that follows that occasion, right in here, is - is - one of the important ones is to hook up the power and the communications and the television electrical connections across the tunnel, and to move those J-boxes, that Cernan talked about, to the appropriate spacecraft. There's a period - Cure.

REIN: Would you wait for the mike? Wait for the mike, please.

SPEAKER: When you start this zero watch time now, is it going to be negative reporting from there on out? And if no one says anything, the other guys assume that everything is going on schedule, is that right?

TRULY: Generally, there are certain preplanned reports that generally have to do with - with hatch openings and pressurizations.

SPEAKER: Okay.

TRULY: For example -

SPEAKER: You do that in addition to your negative reporting ... reporting....?

TRULY: Yes, that's right. For example, right here, there is a place in the checklist - in the Soviet checklist that says, 'Inform Apollo, I am ready to open hatch 4.' That kind of a thing. But - but generally, there's not a lot of - there's not a lot of talk.

SPEAKER: It may be obvious to you, but it's not to me. Why do they set their watches to zero? What's the point of all that?

TRULY: The point - Well, I guess we could have written the procedures a different way. One way to stay glued together is by timing the checklist, in other words, by saying that - you know, by practicing this. And at 55 minutes into the checklist, I'm going to open hatch 3. And so those times are just printed in the checklist, and the guy has it on his watch, and it's just a - it is a simple way, it could have been done a different way.

SPEAKER: Supposing you're 7 minutes behind now ... start for some other reason. You're automatically zeroed, it doesn't make any difference.

TRULY: That's right. That's right, Al's right. For instance, if we set watches to zero, we have a plan right in the flight plan to set watches to zero. For example, right here, if we're running late and we - we decide to start the whole activity here, the zero still counts. Okay.

SPEAKER: Excuse me. Regarding this timing, is this the moment while the CT time will go to zero? We leave Apollo CT and we go on to the joint group CT time, you might say?

TRULY

No. That's been done on the first day. After Apollo launches and several hours after the Apollo launch and prior to the sleep period of the first day, we sync up the Apollo and Soyuz clocks and we're running on this time, both spacecraft. Okay? After - It's about supper time, and at about this point in the flight plan the four guys, two astronauts and two cosmonauts, will eat a meal together over in the Soyuz. And Vance will eat his meal over in the command module. Following the meal, there's a very short period where some of the scientific experiments, samples, and so forth, that are to be transferred across to the other spacecraft, are swapped. And also, there's a Soviet experiment that goes into the docking module furnace that needs to be inserted and - and so - and that's done at this time to let the thing - to let this thing cook overnight; it takes several hours. After that point, this is the point where the two astronauts go back into the docking module, they close these two hatches - we - the astronauts close this one, the cosmonauts close this one. They - Then they've got to reequalize pressure between the docking module and the command module and hatch 2 reopens here. And what happens in between the bottom of this chart and the top of the next chart I'm going to show you is - is a sleep period. Each guy sleeps in his own spacecraft overnight and the second day's activities start in the morning. Could I have you put this one - this Yugraph - and then put the other one on this left one, please. Okay. The - and - and could we move it up just a hair? That's fine. Okay. The first Yugraph was the first day that we're docked. These two Yugraphs is the entire second day. Okay. It's get-up time for the guys, it's very early in the morning, 2 something in Houston. It's midday in Moscow. This transfer - to make a long story short, all these transfers I've talked about a little bit, but they're - they are a very ordered series of pressure equalizations and hatch openings and closings, for example. The end result of this transfer is that the flight engineer, Valeri Kubasov, and Vance Frand are in the Soyuz and Alexei Leonov, Tom Stafford, and Deke Slayton are in the Apollo and this is called the second joint activity period. I'd - I would like to tell you some of the things that you can expect that will happen during this period. There will be a - we're going to get some interior views of each module of both spacecraft. In other words, there will be an opportunity to get some TV from inside the Soyuz and we will get some TV from inside the docking module for the people - the Russian people. There'll - There'll be an exercise period during this joint activity period where a cosmonaut will try out, in orbit, our Apollo exercise equipment. And Vance will have an exercise period in the Soyuz that will try out the Soviet exercise equipment. There will be a - we are going to - You remember on the Skylab mission we had a bunch of science demonstrations? We are going to carry some simple science demonstrations, Vance will, across to the Soyuz and - and they will be done and put on film over in the Soyuz and then we'll bring them home. If the weather's good we're going to - we're hopefully going to get some out-the-window television of the Soviet Union on a ground pass that starts somewhere around the Black Sea and continues over Southern Russia and sunset

is about halfway across the Soviet Union. This, generally, takes this period of time down in here - we've, excuse me. Prior to the transfer beginning, we had breakfast, each in our own spacecraft. At this point we will - we will have a joint meal with Leonov joining these two guys eating Apollo food in Apollo. And Vance joining Kubasov eating the Soviet space food and - and - over in the Soyuz.

SPEAKER A question on those simple science demonstrations. Are we going to get a list of that stuff prior to the flight?

TRULY Yes.

SPEAKER Or is this all out of the surprise box routine?

TRULY No. No, there will be a list of them. But I don't think - I don't think they've even been chosen yet.

SPEAKER Okay.

SPEAKER Following up that same question. Are any of these planned as television science demonstrations? Or are they primarily film, as you just mentioned?

TRULY The - I think the science - A number of these things, I believe, are planned to be available during the TV. I think - I believe the science demonstrations are a film recorded thing. I - I'm not sure. We also have a video tape - we do have a video tape recorder like we flew in Skylab down in the lower equipment bay in the command module. So, even if we are LOS from the ATS satellite, we could record on VTR, but I don't know whether that's scheduled to be recorded or not. Okay. The top of this chart just repeats the bottom hour or so of the left chart. Again, this is the noon meal, it's about this time that we would - would set the watches to zero for this particular transfer. Again we go through a transfer, the end result of this transfer being that the two commanders, Leonov and Stafford, end up in the Soyuz. And Kubasov is with Ike and Vance in - over in Apollo. The - one of the things we did, in designing who went where, was to make sure that - Number 1, we left a cosmonaut always in the Soyuz, an astronaut always in the command module. We never - we designed it so that a cosmonaut was never alone in the docking module to do the transfer. And finally, we've made sure that each guy get a period of time in the opposite nation's spacecraft. We are presently trying to work out the mechanics of a joint news conference with the Soviet Union, like which language do we do it in, how do we coordinate between control centers to ask questions, and all the myriad of things that I'm not very familiar with. That's - those negotiations are in work. Assuming that we're successful and we arrive at a way to do that, it would be done at about this point in time, during this ATS pass. Following -

following that occasion there's an opportunity right here, I - as I said before, in the morning, weather permitting we're going to get some out-the-window TV of the Soviet Union. There is an opportunity during this period to get some out-the-window TV of the ascending pass of the east coast of the United States for the Soviet people. There's a good bit of the experiment work that goes on right in here which is the microbiological sampling. I wasn't here this morning, but very briefly a sample - samples are taken either - both body samples are taken of each crewman, and spacecraft samples are taken at this point in the mission, and eventually they end up over in Soyuz and are flown home. And then we take the same samples on orbit in the command module several days later to get a look at the growth pattern. This is a fairly short joint transfer period. It's at about this time that we start the final thing of the day. By now it's about 2 o'clock in the afternoon in Houston. The end result of this, and I left off the names at the bottom, the end result of this transfer is, is that - the same as yesterday afternoon, all of the astronauts end up in the command module and the two cosmonauts end up in the Soyuz. The reason it looks a little complicated here is, is that the - it's just the mechanics of the microbiological crew sampling. Deke - The equipment has been over in the command module, some of it. Basically what happens is, is that Deke transfers over - Deke and Kubasov get in the docking module, they go through the transfer, when these two hatches are open - opened. Deke transfers over and does the crew sampling for these two guys and then - and that's done during this period. Deke then transfers back to the docking module, Valari comes over to the Soyuz, and it's at this point that the guys - Tom is the last one to leave the Soyuz and - and this is the face to face farewell, at least of the two crews. They close the hatches, at that point and what occurs next is an evening meal, each in their own spacecraft; a sleep period. And then the next day's activity is what Ken Young talked about, which is the EVA flyaround, and the redocking and then an Apollo separation maneuver and we start drifting away from Soyuz. So, in very brief form, this is sort of the way those 2 days will go, or the way it's planned now.

SPEAKER Dick, Gene earlier said that the only time there were more than two people in the Soyuz was at that first meeting and meal and - but on the end - the last activity shows periods where there are three in there.

TRULY He was wrong.

SPEAKER Thank you.

TRULY No. No. There are brief periods in here when there are three guys in here. But it's only to accomplish - this - in a way we would never bring the third guy into here if it wasn't for the experiment requirements. He just jumps over, does the sampling, and then gets back out. But there are short periods of time when there are three guys - and there are four guys for this entire period on this side of the command module hatch, so it's just -

SPEAKER Dick, for that first meal, with four crewmen on the Russian side, do you plan to have two having lunch - or whatever it is - in the docking module and two in the orbital compartment?

TRULY No. If you squeeze real hard - this - in the - in the orbital module there's a - it's almost like a little one-g arrangement, there's a little bench and they actually have a little table. So if you squeeze real hard you can get four astronaut- and cosmonaut-size people around the benches. And so I think the way they plan to do it is do all the meal preparation and kind of gather up all that stuff and then sit down around the table and have supper or lunch or whatever it turns out to be.

SPEAKER Once you opened hatch 5, that stays open during the entire scene?

TRULY That's right.

SPEAKER Do you envision any occasions when an interpreter might get on the line to explain some Russian to the Americans or some English to the Russians or -

TRULY Air-to-ground?

SPEAKER Yes. Have you practiced that - is there any reason to? In listening to those -

TRULY Yes. Frankly, I can - I can imagine conversations where that might be helpful, the language is a problem. I think you'd be surprised, frankly I've - as I've said I'm a newcomer and so I've only become personally acquainted, for example, with the cosmonauts in the last couple of 3 weeks and I've been very surprised at their - at me being able to speak no Russian, at their ability in English. It's sometimes slow and there is an accent but - but I can envision a case where it might help to get an interpreter on the line, and if necessary we'll do that.

SPEAKER Isn't an interpreter assigned to the CAPCOM? There's one assigned to the flight directors? Is that right? You just bring them over to the -

TRULY That's right. But I think that would be a gross error. I think the CAPCOM and the flight director ought to have the same interpreter. We've got enough problems in staying - understanding each other and if we had a different interpreter or translator, I don't think - I think that would be a mistake. Between the CAPCOM? -

HEIN They're right together there.

TRULY Yes. The CAPCOM and flight director sit next to each other so if the occasion arises to have to do something like that I think it won't be difficult.

SPEAKER How many hours in total do you anticipate to make available on TV live coverage during these 1.5 days?

TRULY I'm sorry, I don't know. I just don't know. The - again the - These AT'S passes are all available for real-time television. One of the - one of the problems is that if we use real-time television, we cannot dump real-time telemetry data. So there will be a television plan to cover selected events and I don't know - don't know what the number of hours is. It will be a good bit of television though, I'm sure.

SPEAKER Is there any time or any contingency that you have agreed upon when one language might become prime? Ever get into that?

TRULY Not that I know of.

SPEAKER Is there a final authority? In other words, take a hypothetical situation where there might be a problem during the docking phase and the Americans might say "We've got to undock hardly, now." The Russians say, "No, we can't do it right now. Let's wait another 3 minutes." Has it ever been discussed who the final authority will be in the event there is an emergency situation similar to that?

TRULY I'm not sure I can answer - I - I don't - I don't know. I'm sure it's been discussed but I'm not familiar with it. I would say this though, that there are - we have gone to great trouble to identify selected contingency situations and one of them is a hurried undocking. And so we have spent a lot of time and negotiated word by word a set of procedures for a number of cases and that is one of them. I - however, I don't think that procedure assures that we - you have a GO as fast as you can get it for an undocking for both spacecrafts. So what would happen in a situation like that I personally don't know.

SPEAKER Does an American general pull rank over a Russian colonel? I suppose it might get down to that. Thank you.

TRULY No. I don't think so. They are both spacecraft commanders on this mission.

SPEAKER Dick, why is it that the Soyuz crew keeps their PJ's on through docking when our troops take them off after achieving orbit? Do you know?

TRULY Well, I anticipated that question and I'm not sure I know the full answer to it. From our - the answer to it from our side is simply that - that our guys are behind the tunnel hatch in the command module. We have previously, the - the expected loads on the docking module - on the docking system which is another hatch down the line are such that - that we just don't require it and we have done dockings previously with command module with higher expected loads or the three sigma loads were - could have been higher - so that we don't require it. Frankly, I think that they are - the Soviets are extremely pressure conscious as - as you might expect. They have chosen to do the docking wearing their pressure garments and that would be a good question to ask them, I guess. I don't know the answer.

SPEAKER Following up on that for half a second. Have the crew safety details, arrangements, suggestions, on their side of the flight plan come from them? Or have any come from us and conversely, have the crew suggestions - crew safety suggestions on our side entirely come from us, or any from them?

TRULY Jules, I'm sorry, I don't know. I have been totally unattached to the history of negotiations which lasts backwards in time for a couple of years. I've never been in a single one of them, I've spent my time since I have been working ASTP and getting - trying to get familiar with the hardware and preparing for this particular phase of the - thinking about this. I don't know.

REIN You have a question right here?

SPEAKER If I understand it correctly during all previous American manned flights, each astronaut is permitted to carry out some unscheduled activity during the flight. Can we expect some surprises like this on this flight?

SPEAKER Golf clubs?

TRULY I don't know what to expect. I've never known what to expect before. There are - I'm sure things will happen that - that weren't planned but I don't know how to answer that otherwise. There's plenty of time and plenty of air-to-ground time and they're all vibrant personalities. I don't know what - I don't know what it will turn out to be.

REIN Any more questions? Right here.

SPEAKER This one is not feared toward a scientific world. Where's the liquor cabinet kept?

TRULY Well, we're not carrying any, just like on previous missions. On this - on this mission we - There was a time on Skylab that

we were going to carry wine, but somewhere along the line that got deleted and I don't think there's any vodka [sic] on this mission or anything else.

SPEAKER Are the Russians carrying any?

TRULY Not to my knowledge.

REIM Is there any more questions? All right, that will - we'll wind it up for today. I might remind you all, all the news media people, and others that are here for this activity, they are invited to a little get-together about 6:30. Yes. That will be over in the Nassau Bay Hotel at - what is it, Riley - Is it - 504, 506, suite?

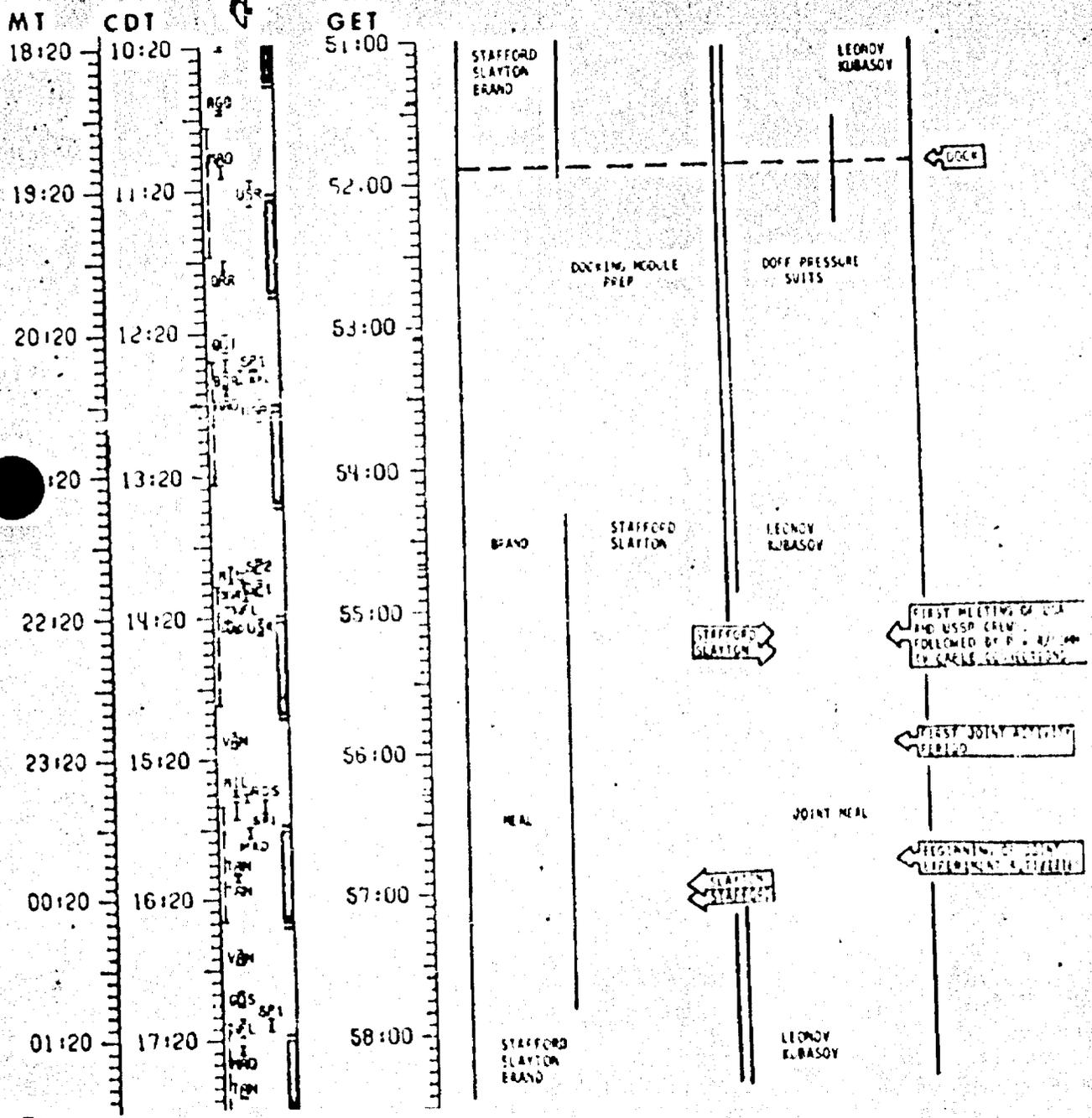
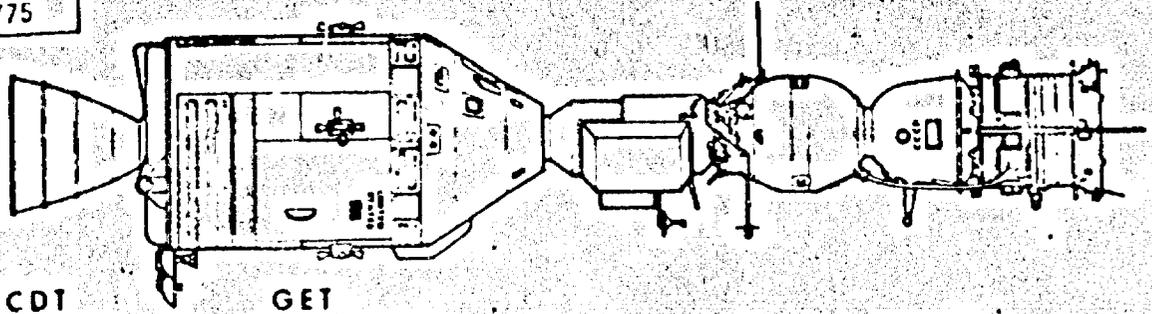
SPEAKER Just listen for the noise.

REIM Yes. Just listen for the noise. There'll be booze and hors d'oeuvres, and entertainment.

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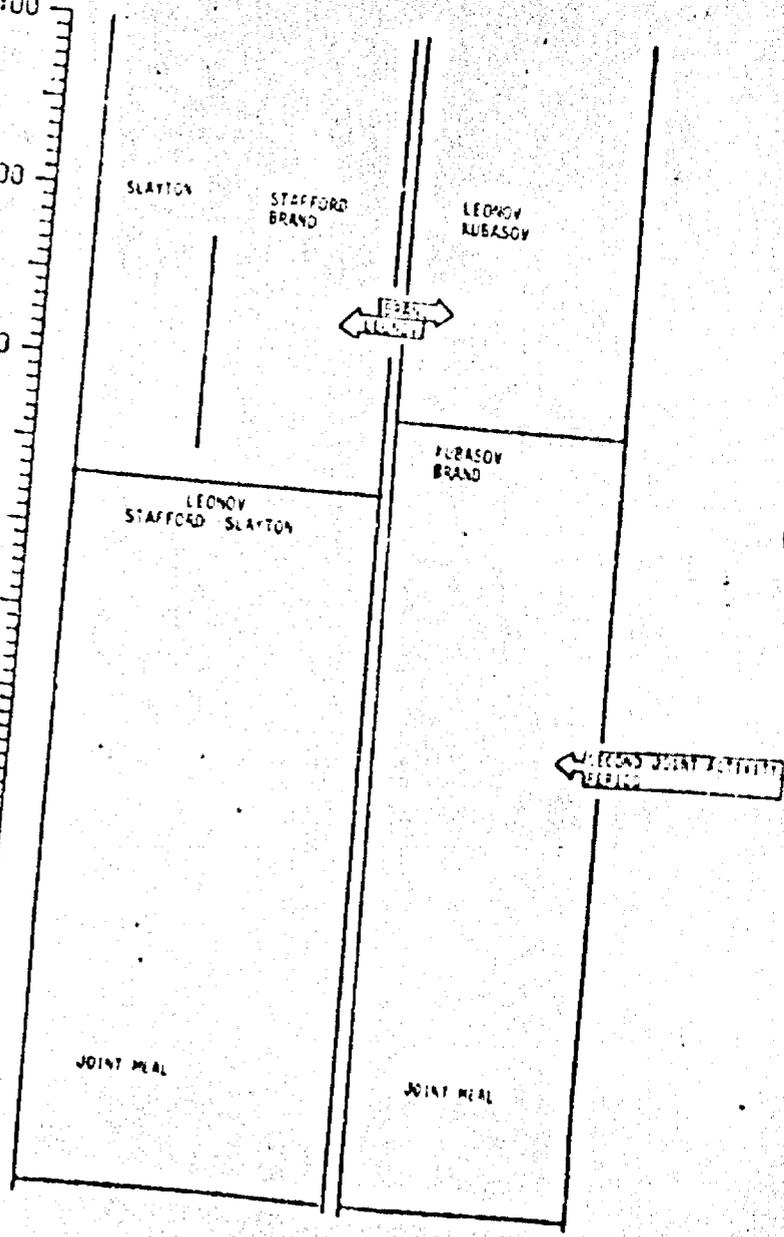
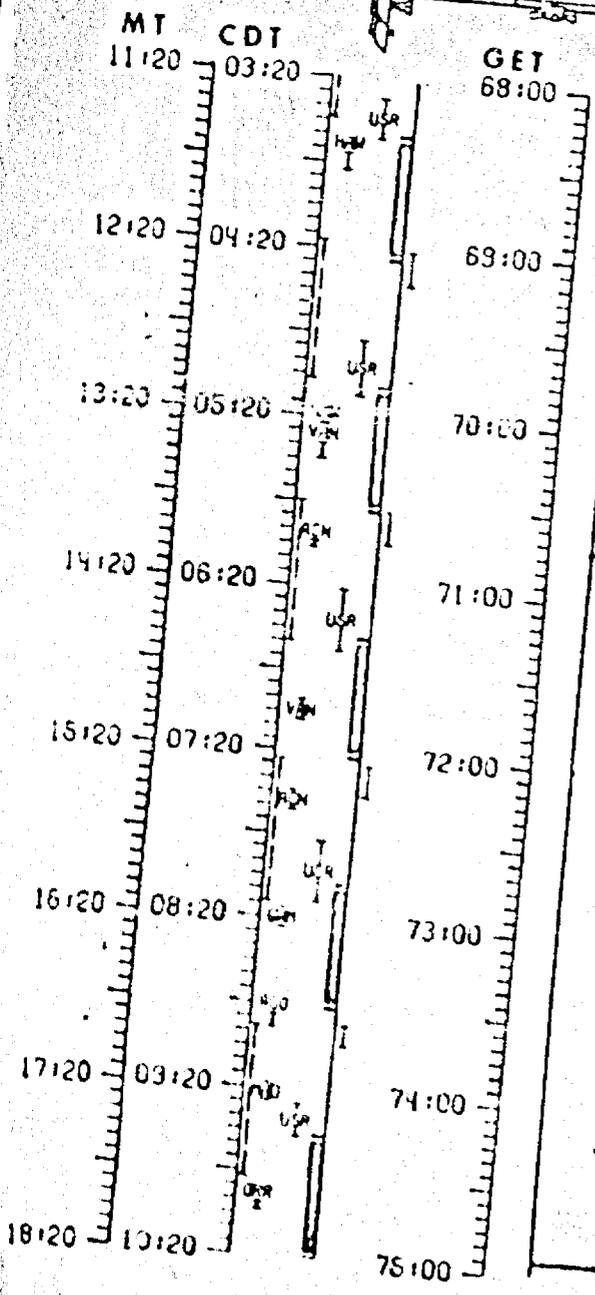
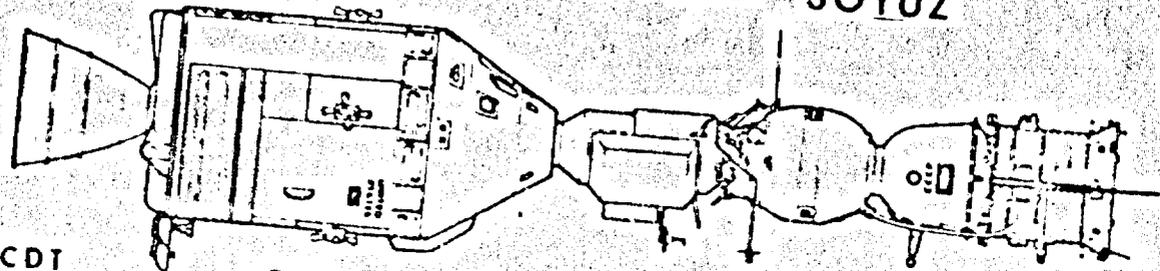
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