

APOLLO 13 MISSION COMMENTARY 4-15-70 CST 7:08A GET 89:54:00 371/1

CAPCOM Aquarius, Houston. Over.

SC Go ahead, Houston.

CAPCOM Hi, Jim. We've got a flight handover
in about 2 minutes and we'll have a temporary lapse of time
and you don't need to switch antennas. Over.

SC Okay, fine.

END OF TAPE

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CAPCOM Aquarius, Houston. Through Madrid for a
COMM check. How do you read?
SC Loud and clear, Joe. How me?
CAPCOM Okay, Jim.
SC Apollo, Houston. Aquarius.
CAPCOM Aquarius, Houston. Go ahead.
SC Okay, Jack's up with me now. (GARBLE) general
procedure for making these lithium hydroxide measures and
soon as he gets done helping he'll be ready to copy, and teh
he'll (garble)
CAPCOM Roger, that Jim. Are you going (garble)
Go ahead.
SC (GARBLE)
CAPCOM Okay, Jim, I didn't copy your second thought.
Over.
SC I just knocked the headset over here trying
to get set.
CAPCOM Okay, Jim, the way I thought it might be best
to do it would be to have you gather the equipment and let
us talk you through the procedure while you do it. Maybe you
could give Jack the headset and uh - and uh - get the equip-
ment together and we'll talk you through the procedure. I
think it'll be a little easier to do that way than if you
tried to copy it all down - and then go do it.
SC Okay, do you have any equipment listed on this
(GARBLE).
CAPCOM Okay, I think the equipment you'll need will
be two Command Module lithium hydroxide canisters, a roll of
the gray tape, the two LCG's because we're going to use the
bags from the LCG's and one - one LM cue card - one of the
cardboard cue cards which you will cut off about an inch and
a half out from the wrench. I think that's all we'll need.
Over.
SC Okay. (GARBLE) Okay, Houston.
SC Apollo, Houston.
CAPCOM Go ahead, Jim.
SC Okay, that's two lithium hydroxide canisters,
one roll of that special gray tape, two LCG's which were going
to use the bags from one LM cue card and (GARBLE)

END OF TAPE

CAPCOM Okay. That's affirmative, Jim. If you'll just cut the cue card which is a handy piece of paper the right size about an inch and a half from the rings. Cut off the ring holes in other words so you'll have a card about 11 inches long and probably 6 inches wide.

SC Okay, pardner, I'll have it ready to go.

CAPCOM Okay.

SC (inaudible)

SC Okay, Houston, Aquarius.

CAPCOM Aquarius, Houston. Go ahead.

SC We have gathered the material, and I can put Jack on the headphone and you can copy (garble)

CAPCOM Why don't you put him on the headsets, Jim, and I'll read it out to him.

SC Okay.

SC Okay, Joe.

CAPCOM Okay, Jack, did anybody ever tell you that they got a 60 day extension on your income tax. Over.

CAPCOM Yes. I think somebody did tell me that I could get a 60 day extension.

CAPCOM Okay, right. Okay, I'm ready to start in on the procedure. When you answer me back, speak up into the microphone because our downlink is pretty noisy. The first thing we want you to do, and we'll do this on one canister and then let you go ahead and repeat it on the second. So take one of the LCG's and cut off the outer bag. By cutting

END OF TAPE

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CAPCOM - and cut off the outer bag by cutting along one the heat seals; do it carefully and close to the heat seal because we may have to use the outer bag if we damage the inner bag. So go ahead and do that, and we'll do the next step.

AQUARIUS Okay, take an LPG, cut the outer bag by the heat seal, be careful not to damage the inner bag. Right?

CAPCOM Right. Just cut along one side.

AQUARIUS Hey Houston, Odessey, Aquarius has done that.

CAPCOM Okay, Jack. Now remove the inner bag from the outer bag, and cut the inner bag also along one of the heat seals down one side.

ODESSEY Remove the inner bag from the outer bag, cut the inner bag also along one heat seal on one side.

CAPCOM Okay, that's correct. Do that, and report.

ODESSEY Okay, Joe, we've got that done.

CAPCOM Okay, Jack, now you can put the LCG itself, that is take it out of the inner bag, put it in the outer bag, and stow it some place; we recommend U1, but you can stow it wherever its convenient.

ODESSEY (garble)

ODESSEY Okay, Joe, we've done that.

CAPCOM Okay, now pick up one of the lithium hydroxide canisters and let me describe which end is which. Its approximately square on one of the vented flat ends, has the strap, and that end we call the top, the end opposite we call the bottom. Is that clear?

ODESSEY Right. Okay, I've got it Joe.

CAPCOM Okay. Now then, we want you to take the tape and cut out 2 pieces about 3 feet long, or a good arms length, and what we want you to do with them is to make two belts around the sides of the canister, one belt near the top and one belt near the bottom, with the sticky side out; wrap it around, sticky side out, as tight as possible. It'll probably take both of you to get it nice and snug. Over.

ODESSEY (garble) Okay, now we've got to make the belt real taut.

END OF TAPE

SC Okay, Joe.
 CAPCOM Okay, Jack (garble)
 SC (garble)
 CAPCOM Jack -
 SC (garble) the one around the bottom all done.
 CAPCOM Okay, fine. The next step now is to anchor that tape and the way we want you to do that is to cut about a 2-foot line from the roll and then tear it lengthwise so that you have two strips about 2 feet long and about a half an inch wide. And you'll wrap those around the canister at right angles, more or less, to the tape that you've got so that it goes across the top and across the bottom and when it goes across the top and the bottom, put it so that it's outboard of the center hole and try to get it over one of the ridges between the screens so that it won't block the flow. Is that clear? Over.
 SC Yeah, Joe. Very good.
 CAPCOM Okay, press on.
 SC Okay, I've got a (garble) and we tear it lengthwise (garble) all the way around at right angles and anchor it (garble)
 SC Joe, should we fire (garble) PTS down, right?
 SC (garble)
 CAPCOM I didn't quite copy that, Jack. Say again.
 SC Okay, that will be the sticky end down on the container right?
 CAPCOM That's correct. I forgot to say that.
 That's right.
 SC (garble)
 SC Okay, Joe, Qauarius we've got that set.
 CAPCOM Okay, Jack, the next step is to get the EVA Q-card and use it to form an arch over the top of the canister, just tuck one short end under one ridge on the top the other one against the ridge on the other side so that it forms a rounded up arch over the top of the canister. You see, Jack, what we're going to do is slip the bag over this whole assembly and the Q-card will serve to keep the bag from being sucked down against the screen. Over.
 SC Okay, I got that, Joe.
 CAPCOM Okay, and when you've done that, to hold the arch in place, just run a strip of tape across the side of the - that is across the top of the arch and anchor it down to the sticky strips along each side.
 SC Okay, I got that set. Okay, let me just repeat it here. EVA Q-card form an arch over the top

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SC bringing it under the side here, when
we're through anchor the tape from the sides across the top
of that anchor to the other side.

CAPCOM That's correct.

SC Okay, it worked.

SC The top.

SC Across the top.

SC (garble)

SC Look, you're going to have to cut
the Q-card.

SC (garble) the only thing we're (garble)
here (garble)

SC (garble)

END OF TAPE

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AQUARIUS Okay, Joe, we've done that belt, and its all fixed in securely.

CAPCOM Okay, Jack, the next step is to stop up the bypass hole which is the hole in the center of the bottom of the canister; we want to stop that up because we don't want to bypass the flow, and I forgot to tell you to get something to stick in that hole. We recommend that you either use a wetwipe or cut off a piece of sock and stuff it in there or you could probably even crumble up some tape and use that; over.

AQUARIUS Okay, we'll start plugging up the bypass hole.

CAPCOM Okay.

AQUARIUS Plug that hole. How about a piece of your towel?

CAPCOM Sounds good.

AQUARIUS Okay, Houston, Aquarius; we have the bypass all plugged up.

CAPCOM Okay, Aquarius. The next step is take the inner LCG bag that you cut open, and slip it over the top of the canister, when you do that, orient it so that the ears of the bag, the corners that stick out on the closed - are oriented along the open ends of the arch, cause we're going to snip one of those corners to stick the hose in. Pull it down until it fits snugly over the arch. Over.

AQUARIUS Okay, Joe; slip the bag over the canister so that the arch is at the bottom of the bag and the ears are along - I guess it would be at the side of the arch.

CAPCOM Depends on what you mean by sides - the open end of the arch.

AQUARIUS Right - the open ends of the arch. Okay.

AQUARIUS Okay, Joe, we've got that done.

CAPCOM Okay, now press the bag against the sticky belts that we put on the sides of the canister; if there is any excess material, just kinda pleat it, so that it makes a fairly tight seal, and then take another 3 foot strip of sticky tape and wrap it around the outside of the bag opposite the bottom - the bottom sticky belt - to make a nice tight seal.

AQUARIUS Okay. You want 2 strips down here, to make a tight seal. Okay.

END OF TAPE

SC Okay, Joe we've got the canister inside the bag, two strips are around the side of the bag, real tight, and both sealed.

CAPCOM Okay, real fine. Now there's probably a couple of inches of excess bag sticking out around the bottom of the canister; to prevent this from sucking in against the bottom screen we'd like you to trim it off with the scissors and when you've done that we'd like you to cut 2 more strips of tape about twelve inches long or so, cut the - tear them lengthwise to get four pieces 12 inches long and 1/2-inch wide and then use those four strips to secure the bag by passing the strips from the sides of the canister outside the bag around the bottom of the canister and back up the other side and when you do this, just as you did on the top, make them go outward of the hole and in between the screens. Over.

SC Okay. You want me to trim the excess material that's sticking out, trim it at the edge of that canister or do you want any excess left over?

CAPCOM No, you don't need to have any excess. Just trim it approximately level.

SC Okay, let's do that first.

CAPCOM Okay.

SC Okay, now, Joe, you want to cut 4 strips, 12 inches long each, 1/2-inch in diameter tape that along the outside of the bag across the ribs.

CAPCOM That's correct, Jim. That's just for additional security on the bag. When you get those done you'll have - you'll have 2 strips going one way and the other 2 will be perpendicular to them.

SC Okay, Houston, Aquarius we've got four strips in place.

CAPCOM Okay, we're in business now with the bag and the next step to perform is to get ready to put the red suit hose, either the commander's or the LMP's because we're going to want you to have both of these made up eventually, into the top of the bag and to do that you, first of all, have to assure that the - that the red hose is separated from the blue hose. I don't know whether this has been done already but if it hasn't what you have to do is cut the outer Beta cloth sheath down the full length of the - of the hoses and then also cut the rubber ties that secure the two hoses together and the hoses should come apart and the COMM cable should come on. Over.

SC Okay. Take the - I'm going to separate the red hose from the blue hose by cutting your Beta cloth sheath. Okay, that should work.

CAPCOM Okay.

END OF TAPE

SC Okay, Houston, Aquarius. I have the LOP's separated from the others.

CAPCOM Okay, real fine. Now the next step is to cut a diagonal hole in one ear of the plastic bag near the arch. You can pick either one and cut about a 1-1/2 or 2 inch diagonal hole, big enough to slip the red hose through and you've done that you'll just slip the red hose through so that it goes about to the center of the canister. It's not critical except that the opening should be down and then tape the bag to the hose where it goes in so that it's nice and snug. Over.

SC Okay, copy that. We want a 1-1/2 inch hole right here at this ear, put the hose in here head down and toward the canister and tape the seal right here.

SC Let's try it if we have to, we can always make it bigger if we have to (garble)

SC Say, Houston, Aquarius.

CAPCOM Aquarius, Houston, go ahead.

SC Okay, our do-it-yourself (garbled) lithium hydroxide unit is complete. Joe, the only thing different is that our arch on this piece of cardboard is -

END OF TAPE

SC The only thing different is that our arch on this piece of cardboard is not big enough to position the red hose with the inlet down, and the inlet - the inlet to the red hose is lying on its side, but I think it'll still work

CAPCOM Okay, Jack, I concur. I think it'll work too. There's one step that I omitted, which you can do now quite conveniently, and it's this. Where you stuff the towel in the bypass hole on the bottom, we recommend that you cut a few short pieces of tape and just tape that over so it doesn't fall out. Over.

SC Okay. Will do. (garble)

SC Okay, Joe. That's finished.

CAPCOM Okay, Jack. Now the remaining steps are simply suit loop configuration steps to get this thing into full operation, and our ECS people want to hold off on that until the canister you're working on gets to 7.6 millimeters mercury, which will probably be another 45 minutes or an hour yet. We're reading 4.7 now. So what we'd like for you to do in the interim is to set up the second command module canister the same way you just did the first one using the commanders hose, and get that all set and probably about that time it'll be time to switch over. For your information when you've got that done and you've had your breakfast and so on, the next thing I've got for you is a switch configuration list for the command module, which will represent the power down, square 1 starting configuration for all our preentry checks. Over.

SC Okay. We'll start setting up the Commanders (garble)

CAPCOM That's affirmative, Jack. What we have done is marked up the liftoff configuration check list, and we'll run through it whenever you get around to it.

SC (inaudible)

SC (garble)

SC Okay, Houston, Aquarius.

CAPCOM Aquarius, Houston. Go.

SC Okay, Joe. Should this canister be operation now because it's already mounted on the hose.

CAPCOM Well, yes. We haven't completely configured the suit loop to get full flow through there and it's okay the way it is, what I recommend you do with the commanders hose is get the bag all ready, but not slip the hose in until we call you on that. Okay.

SC Okay, will do.

END OF TAPE