

NR'S COPY

SM2A-08-SC106

# APOLLO

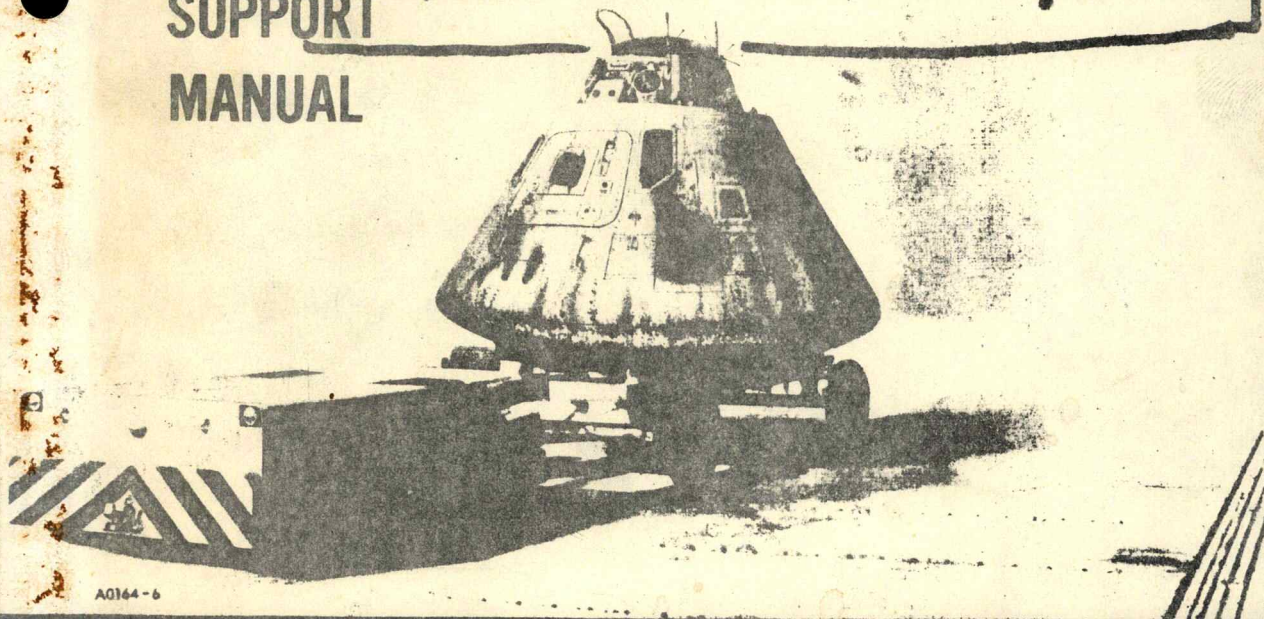
## POSTRETRIEVAL

## PROCEDURES

### FOR NASA RECOVERY TEAM

CONTRACT NAS9-150 EXHIBIT I PARAGRAPH 10.7

2951  
COMPLETED ON-  
NASA BOARD USS PRINCETON  
SUPPORT MAY 26 - MAY 31, 1969  
MANUAL



MISSION 10  
APOLLO  
505/106/LM4

PREPARED UNDER DIRECTION OF  
NASA-MSC LANDING AND RECOVERY DIVISION  
RECOVERY SYSTEMS BRANCH

SM-2A-1202D

SPACE DIVISION  
NORTH AMERICAN ROCKWELL CORPORATION

TRAINING AND SUPPORT DOCUMENTATION D/671



# ADDITIONAL PROCEDURE

ZCZC419

VV SAA 835

QTUZYUS RUWTDRA0209 1441950-UUUU- RUHHKSF.

NR UUUUU

O 241950Z MAY 69

FM NASA MSC HOUSTON TEX

TO RUHHKSF/USS PRINCETON

INFO RUHNSFA/CTF-130 KUNIA HAW

BT

BT

UNCLAS FROM DOD MANAGER/HOUSTON RCE ROCH

SUBJ9 POSTRETRIEVAL PROCEDURES MANUAL CHANGE NO. 3

CTF 130 PASS TO NASA REP NOISINGTON

PRINCETON PASS TO D. STULLKEN NASA TEAM LEADER

THE FOLLOWING IS A NEW/POST RETRIEVAL PROCEDURE.

A. PROCEDURE TITLE: TAPE SAMPLE

THIS PROCEDURE IS TO BE PERFORMED IMMEDIATELY AFTER MICROBIAL SAMPLE (PROCEDURE 24).

B. SAFETY: NONE

C. PHOTOGRAPHIC REQUIREMENTS: NONE

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D. TOOLS AND EQUIPMENT

QUANTITY ITEM

2" X3/4" STRIPS OF SCOTCH TAPE  
PLASTIC BAGS

E. INSTRUCTIONS:

1. TAKE ONE TAPE SAMPLE OF EACH LOCATION LISTED BELOW.

A. BELOW LEFT COUCH FOOTREST NEXT TO ~~COMPARTMENT A1~~ FIRE EXTINGUISHER.

B. PANEL 122 NEXT TO MARK BUTTON.

C. RIGHT HAND GIRTH SHELF BELOW WINDOW

D. LEFT HAND GIRTH SHELF BELOW WINDOW

E. BOTTOM SIDE OF F2 TEMPORARY STORAGE COMPARTMENT (REFERENCE

APOLLO 10 PRP4 PAGE 119)

F. RIGHT HAND GIRTH SHELF BELOW PANEL 220.

G. TOP OF AFT BULKHEAD WIREWAY UNDER LEFT COUCH NEXT TO  
COMPARTMENT ~~A8~~ A1.

2. FOLD STICKY SURFACE OF TAPE OVER ON ITSELF

3. PLACE EACH TAPE IN PLASTIC BAG AND MARK LOCATION OF SAMPLE  
ON BAG.

4. RETURN SAMPLES WITH ROUTINE COURIER.

JAMES SENDS...

BT

0209

CO - XO - OPS - NASA - Apollo team

(1)



items known to have been removed from the CM and shipped to Houston. The crew got away with some items and more than likely ~~these items~~ not all of these items were logged out. Items to be removed according to the ASHUR have been circled and the quantity pulled out of the CM and shipped to Houston has been marked beside the "S/C quantity" column.

A great amount of photography was completed on board the Princeton. This film is due to arrive Houston June 2, 1969.

Please direct all questions concerning the capric post retrieval work accomplished on "Charlie Brown" to MILT HEFLIN, MSC X 3361.



Aft ht shield inspection & photo (CE-32 thru CE-36)

Place cm on transportation dolly

Inspect/photo positive pitch bumper below hatch (CE-224)

Visual inspect side crew hatch exterior/photo (CE-111)

Move cm to work area and secure

Place work stand into position

Install vision blanket

CONCURRENTLY

Inspect/photo negative pitch engine (CE-204)

Install vent plugs and electrical ground

Tape radiation discs and open hatch install safety pin

~~\_\_\_\_\_~~  
Commence microbial sampling in following order:

Top of X-X head strut

Aft bulkhead below center couch head

center support head beam - left

couch support head beam - right

CCR rotational hand controller

CMP rotational hand controller

Left leg pan

Middle leg pan

Right leg pan

Girth shelf left

Girth shelf - right

Top of orbital cable stow (volume 113)

Ledge below left side window



Top of volume A4

Aft bulkhead in front of A4

Waste disposal rim (inside R9)

Top of drink water gun

Commence tape sampling as follows

Below left couch footrest next to fire extinguisher

Top of Aft bulkhead wireway under left couch next to A4

Panel 122 next to mark button

Bottom side of F2 temporary stowage compartment

Right hand girth shelf below Panel 226

Left hand girth shelf below window

Right hand girth shelf below window

Remove Pressure Garments

Power CM Down (Photo if needed)

Panel 278 & 275 Photo ident C1-70a Caption: Panels 275

MOC Panel 3 Photo ident C1-22a " Panel 3

Panel 250 Photo ident C1-1

MOC Panel 5 Photo ident C1-15a " Panel 5

Panel 226 Photo ident C1-8

Radiation survey meter Photo ident C1-31a " Survey meter

If water inside remove (take sample)

Photos

Fecal compartment panel Photo ident C1-4

Panels 351 & 352 Photo ident C1-44

Panel 326 Photo ident C1-45a Caption: Panel 326

Panel 304 Photo ident C1-26

Panel 305 Photo ident C1-50

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Volume B5 Photo ident 21-25

Volume B6 Photo ident 21-34

Record switch positions on following p.

Panel 351

Panel 352

Panel 326

Panel 304

Panel 305

Empty volumes with urgent items per diagram

Commence water sampling

Use APE if required

Remove DSE



ZCZC417ZCZCPA253

LV SAA831

OTTUZYUB RUWTDRA0207 1441900-UUUU--RUHHKSF.

ZNR UUUUU

O 241350Z MAY 69

FM NASA MSC HOUSTON TEX

TO RUHHKSF/USS PRINCETON

INFO RUHHSFA/CTF-130 KUNIA HAW

SA

BT

UNCLAS FROM DOD MANAGER/HOUSTON RCC/ROCR 047.

SUBJ: STOWAGE LIST UPDATE

PRINCETON PASS TO D9 STULLKEN NASA TEAM LEADER

THIS LIST CONTAINS ENTRY STOWAGE LOCATIONS OF ALL ASHUR ITEMS TO BE  
REMOVED ONBOARD THE RECOVERY SHIP AND SUPERCEDES ALL PREVIOUS  
STOWAGE LISTS. USE RETURN URGENT RE RETURN ROUTINE

| ITEM    | STOWAGE LOCATION                         |
|---------|--|
| 00101   | 1 IN R3                                  |
| 00101.1 | 1 ON CAMERA, 5 IN R3, 1 IN 16MM BAG - B2 |
| 00102   | 1 IN 16MM BAG - B2                       |
| 00103   | 6 IN 16MM BAG - R13                      |
| 00104   | 1 IN B3                                  |
| 00105   | 1 IN B3                                  |
| 00106   | 1 IN B3                                  |

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|          |   |
|----------|---|
| 00107    | 1 IN B3                                   |
| 00108    | 1 ON CAMERA, 2 IN R13, 3 IN 70MM BAG - A8 |
| 00108.1  | 3 IN 70MM BAG - R13                       |
| 00112    | 1 IN R1, R3, R13, 1 IN A8                 |
| 00114    | SEE STOWAGE DATA BELOW                    |
| 00114.2  | 1 IN R1                                   |
| 00114.3  | 1 ON CREW - IN POCKET                     |
| 00114.4  | 1 ON CREW - IN POCKET                     |
| 00114.5  | 1 IN R12                                  |
| 00114.6  | 1 IN R2                                   |
| 00114.7  | 1 IN R3                                   |
| 00114.8  | 1 IN R2                                   |
| 00114.9  | 1 IN R2                                   |
| 00114.10 | 1 IN R12                                  |
| 00114.11 | 1 IN R3                                   |
| 00114.12 | 1 IN R12                                  |
| 00114.13 | 1 IN R12                                  |
| 00114.14 | 1 IN R3                                   |
| 00114.15 | 1 IN L1 TRANSFER (XFR) KIT - R2           |
| 00114.16 | 2 IN R3                                   |

TOR/21302/2  
6/1/3

#2108

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|          |   |   |                            |
|----------|---|---|----------------------------|
| A0114.17 | U | 1 | IN R3                      |
| A0114.19 | U | 2 | IN L4 XFR KIT - R2         |
| A0114.20 | U | 1 | IN R2                      |
| A0114.21 | U | 1 | IN L4 XFR KIT - R2         |
| A0114.22 | U | 1 | IN L4 XFR KIT - R2         |
| A0119    | U | 1 | IN A5                      |
| A0127    | U | 1 | IN B8                      |
| A0128    | U | 4 | IN U4                      |
| A0130    | R | 1 | IN U4                      |
| A0138    | U | 1 | IN R3                      |
| A0140    | U | 1 | IN R2                      |
| A01018   | U | 1 | IN A5                      |
| B0100    | R | 1 | IN R8                      |
| B0105    | R | 3 | IN R5                      |
| B0105.1  | R | 5 | IN HELMET STORAGE BAG - R6 |
| B0106    | R | 3 | IN A8                      |
| B0107    | R | 1 | IN A8                      |
| B0109    | R | 1 | IN A8                      |
| B0112    | R | 3 | ON CREW                    |
| C0100    | R | 1 | IN B1                      |

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|         |   |     |                         |
|---------|---|-----|-------------------------|
| C0100.1 | R | 1   | IN B1                   |
| C0100.2 | R | 1   | IN B1                   |
| C0101   | R | 8.1 | IN L3                   |
| C0101.1 | R | 1   | IN L3                   |
| C0101.2 | R | 3   | IN L3                   |
| C0101.3 | R | 2   | IN L3                   |
| C0101.4 | R | 1   | IN L3                   |
| C0101.5 | R | 1   | IN L3                   |
| C0106   | R | 6   | IN A8                   |
| C0107   | R | 2   | IN A8                   |
| C0108   | R | 2   | IN A8                   |
| C0109   | R | 2   | IN A                    |
| C0110   | R | 12  | IN A8                   |
| D0101   | U | 1   | IN 1014 FIL 1 BAG - R13 |
| A0200   | R | 3   | ON PGA                  |
| A0201   | R | 3   | ON PGA                  |
| A0202   | R | 3   | ON WATCHBANDS           |
| A0203   | R | 3   | ON PGA                  |
| A0204   | R | 2   | ON CDR                  |
| A0205   | R | 1   | ON CDR, 2 ON LMP        |



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|         |   |  |
|---------|---|--|
| 80200   | R | 1 ON CDR, 3 ON CMP, 1 ON LMP             |
| 80200   | R | 1 EA IN SLEEP RESTRAINING ASSEMBLY (SRA) |
| 80200.1 | R | 1 EA IN SRA                              |
| 80200.2 | R | 2 IN FOOD CONTAINERS                     |
| 80200.3 | R | 2 IN SRA                                 |
| 80200.4 | R | 2 IN S/C                                 |
| 80200.5 | R | 2 ON CREW                                |
| 80200.6 | R | 2 ON CREW                                |
| 80201   | R | 1 IN SRA                                 |
| 80201.1 | R | 1 IN SRA                                 |
| 80201.2 | R | 1 ATTACHED TO I.U. PGA                   |
| 80201.3 | R | 1 IN SRA                                 |
| 80201.4 | R | 1 ON CREW                                |
| 80201.5 | R | 1 ON CREW                                |
| 80201.6 | R | 1 ON CREW                                |
| 80202   | R | 3 ON CREW                                |
| 80203   | R | 3 ON CREW                                |
| 80204   | R | 3 ON PGA                                 |
| 80205   | R | 3 ON PGA                                 |
| 80206   | R | 3 ON CREW                                |

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|         |    |                                   |
|---------|----|-----------------------------------|
| 80209   | R  | 1 IN PGA BAG                      |
| 80200   | U  | 3 ON PGA                          |
| 80201   | U  | 9 IN CWS POCKETS                  |
| 80200.1 | R  | 6 ON CREW OR IN S/C               |
| 80200.2 | R  | 6 ON CREW OR IN S/C               |
| 08327   | NA | 4 IN A3, A4, B5, B6, 2 IN ECU, AG |
| 08305   | U  | 1 IN R13                          |
| 08400   | U  | 1 IN A8                           |

JAMES SENDS

BT

0207

CD — XD — OPS — NASA — Apollo 10 kg —

(8)



210700Z  
 CTF 12100 HUSTON 6204 1401025-0000--RUHNSFA  
 ZNR 07000  
 O 221702Z MAY 65  
 FM NASA NSC/HOUSTON TEX  
 TO RUMKSP/USC PRINCETON  
 INFO RUMNSFA/CTF-138 KUGIA NAV  
 SA  
 BT

TOR / 2201Z  
 PRI  
 C/C

UNCLAS FROM DOD MANAGER/HOUSTON NSC/ROCR  
 SUBJ: MASTER LIST FOR RETURNING ASKUR ITEMS AND POSTRETRIEVAL  
 PROCEDURES MANUAL CHANGE.  
 PRINCETON PASS TO D. STOLLKEN NASA TEAM LEADER: CTF-138 PAS TO  
 HOUSTON  
 IS EFFECTIVE 20 MAY 1965.

#1692

THE FOLLOWING ITEMS ARE TO BE RETURNED URGENT:

| ITEM    | QUANTITY | ITEM     | QUANTITY |
|---------|----------|----------|----------|
| AB100   | 1        | AB114.9  | 1        |
| AB101   | 12       | AB114.10 | 1        |
| AB101.0 | 6        | AB114.11 | 1        |
| AB102   | 1        | AB114.12 | 1        |
| AB103   | 1        | AB114.13 | 1        |
| AB103   | 1        | AB114.14 | 1        |

Co - Ya Ops - NAV  
 NASB RED

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|         |   |          |    |
|---------|---|----------|----|
| AB107   | 1 | AB114.15 | 1  |
| AB108   | 6 | AB114.16 | 12 |
| AB108.1 | 3 | AB114.17 | 1  |
| AB114   | 1 | AB114.19 | 12 |
| AB114.2 | 1 | AB114.20 | 1  |
| AB114.3 | 1 | AB114.21 | 1  |
| AB114.4 | 1 | AB119    | 1  |
| AB114.5 | 1 | AB127    | 1  |
| AB114.6 | 1 | AB128    | 1  |
| AB114.7 | 1 | A1018    | 1  |
| AB114.8 | 1 | DB101    | 1  |

| ITEM  | QUANTITY |
|-------|----------|
| DB200 | 3        |
| DB201 | 9        |
| DB203 | 1        |
| KBAB4 | 1        |
| U-10  | 1        |
| U-11  | 9        |
| U-14  | N/A      |

B. THE FOLLOWING ITEMS ARE TO BE RETURNED ROUTINE

201726Z (9)



1-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1043-10

AC:12

THE FOLLOWING ITEMS HAVE BEEN DELETED

E. THE FOLLOWING ITEMS HAVE P/N CHANGES

| ITEM    | NEW P/N            |
|---------|--------------------|
| A0114   | SKB32100079-201    |
| B0112   | BW-1043-005        |
| B0112.1 | BW-1043-07         |
| B0113   | ACL-101000-05      |
| A0203   | SEB12100033-201    |
| A0202   | SEB12100039-002    |
| B0200.1 | ATL-100002-21/35   |
| B0200.3 | ATL-103006-18/19   |
| B0200.5 | ATL-201123-01      |
| B0200.6 | ATL-201121-01      |
| A0301   | ATL-100000-67      |
| B0201.1 | ATL-100004-06      |
| B0201.3 | ATL-103006-18 c-19 |



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00103.1 SEB32100025-001/003

00103.2 75101-382

00310 V36-782048

00321 850253-1

00327 ME901-0213-0061

00337 V36-787095

00348 V36-661194

00360.1 V36-788020

00376 V36-715120-31

F. THE FOLLOWING ARE NEW ITEMS  
COLUMN HEADINGS ARE AS FOLLOWS.

1. ITEM NO.
2. NOMENCLATURE
3. PART NO. (P/M)
4. QUANTITY
5. REMOVAL LOCATION
6. DISPOSITION U - URGENT R - ROUTINE
7. SPECIAL REQUIREMENTS

| 1        | 2             | 3               | 4 | 5  | 6 | 7   |
|----------|---------------|-----------------|---|----|---|-----|
| AB114.22 | LUNAR ORBITAL | SKB32100025-006 | 1 | R2 | U | N/A |

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PHOTOGRAPHS - LM

|       |               |                 |   |    |   |     |
|-------|---------------|-----------------|---|----|---|-----|
| AB138 | DATA CARD KIT | SEB32100025-301 | 1 | R3 | U | N/A |
|-------|---------------|-----------------|---|----|---|-----|

|       |               |                 |   |    |   |     |
|-------|---------------|-----------------|---|----|---|-----|
| AB140 | DATA CARD KIT | SEB32100025-302 | 1 | R2 | U | N/A |
|-------|---------------|-----------------|---|----|---|-----|

|       |            |     |    |    |   |    |
|-------|------------|-----|----|----|---|----|
| CB110 | BREAD PACK | N/A | 12 | A8 | R | CE |
|-------|------------|-----|----|----|---|----|

|       |                        |                 |   |         |     |     |
|-------|------------------------|-----------------|---|---------|-----|-----|
| EB110 | APOLLO COLOR TV SYSTEM | SEB16100977-301 | 1 | MSC     | VIA |     |
|       |                        |                 |   | DOWNNEY |     | N/A |

|         |                  |                 |   |      |  |  |
|---------|------------------|-----------------|---|------|--|--|
| EB110.1 | CAMERA, COLOR TV | SEB16100977-701 | 1 | A-11 |  |  |
|---------|------------------|-----------------|---|------|--|--|

|         |             |                 |   |    |  |  |
|---------|-------------|-----------------|---|----|--|--|
| EB110.2 | MONITOR, TV | SEB16100977-703 | 1 | A6 |  |  |
|---------|-------------|-----------------|---|----|--|--|

|         |                   |                 |   |    |  |  |
|---------|-------------------|-----------------|---|----|--|--|
| EB110.3 | CABLE, TV MONITOR | SEB16100977-705 | 1 | A6 |  |  |
|---------|-------------------|-----------------|---|----|--|--|

|         |            |                 |   |      |  |  |
|---------|------------|-----------------|---|------|--|--|
| EB110.4 | LENS, ZOOM | SEB16100991-301 | 1 | A-11 |  |  |
|---------|------------|-----------------|---|------|--|--|

|       |                |               |   |         |   |     |
|-------|----------------|---------------|---|---------|---|-----|
| B0209 | SHIELD, HELMET | ATL-502003-02 | 1 | PGA BAG | R | N/A |
|-------|----------------|---------------|---|---------|---|-----|

|  |            |  |  |  |  |  |
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|  | PART II. POSTRETRIEVAL PROCEDURES MANUAL |  |  |  |  |  |
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PAGE 166 (CHANGED 1 MAY 1969)

UNDER INSTRUCTIONS: CORRECT INSTRUCTION 1A TO READ:

ON PANEL 326, VERIFY, PLACE SURGE TANK AND REPRESS PNO VALVES

TO ON.

JANES SENDS

BT

0204



**INTERIM  
CHANGE BULLETIN**

SM2A-08-SC106

*APOLLO* 10

505/106/LM4

# **APOLLO POSTRETRIEVAL PROCEDURES**

## **COMMAND MODULE**

Contract NAS9-150  
Exhibit I; Paragraph 10.8

PREPARED BY NORTH AMERICAN ROCKWELL CORPORATION  
AEROSPACE AND SYSTEMS GROUP  
TRAINING AND SUPPORT DOCUMENTATION  
DEPARTMENT 671

Published under authority of

THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION—MSC  
LANDING AND RECOVERY DIVISION/RECOVERY SYSTEMS BRANCH



NASA  
APOLLO SUPPORT MANUAL  
INTERIM CHANGE BULLETIN

This ICB is issued to expedite release of information required to supplement existing Apollo Support Manuals.

Manual No. SM2A-08-SC106 Date 28 March 1969 SD No. 68-1041 Sheet 1 of 1  
ICB No. 1

Insert Procedure 6 and Procedure 21 in appropriate places in printed Manual, dated 7 March 1969.



**INTERIM  
CHANGE BULLETIN**

SM2A-08-SC106

*APOLLO* 10

505/106/LM4

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SD 68-1041

9 APRIL 1969

14



NASA  
APOLLO SUPPORT MANUAL  
INTERIM CHANGE BULLETIN

This ICB is issued to expedite release of information required to supplement existing Apollo Support Manuals.

Manual No. SM2A-08-SC106 Date 9 April 1969 SID No. 68-1041 Sheet 1 of 1  
ICB No. 2 Sequence No. \_\_\_\_\_

Replace the following pages with pink pages:

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**INTERIM  
CHANGE BULLETIN**

SM2A-08-SC106

*APOLLO* 10

505/106/LM4

# **APOLLO POSTRETRIEVAL PROCEDURES**

## **COMMAND MODULE**

Contract NAS9-150  
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NASA  
APOLLO SUPPORT MANUAL  
INTERIM CHANGE BULLETIN

This ICB is issued to expedite release of information required to supplement existing Apollo Support Manuals. Information delineated by this ICB will be incorporated within the next scheduled change or revision of the applicable manual.

Manual No. SM2A-08-SC106 Date 1 May 1969 SID No. 68-1041 Sheet 1 of 1  
ICB No. 3 Sequence No. \_\_\_\_\_

Replace the following pages with pink pages:

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# APOLLO 10

AS505/106/LM4

## APOLLO POSTRETRIEVAL PROCEDURES

### COMMAND MODULE

Contract NAS 9-150  
EXHIBIT I, PARAGRAPH 10.7

Approved By

  
PROJECT ENGINEER  
SYSTEMS EVALUATION SECTION

  
CHIEF, LANDING AND  
RECOVERY DIVISION

  
CHIEF, TEST DIVISION  
APOLLO SPACECRAFT PROGRAM OFFICE

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## LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page.

TOTAL NUMBER OF PAGES IN THIS DOCUMENT IS 316 CONSISTING OF THE FOLLOWING:

|            |       |
|------------|-------|
| Title      | Basic |
| A          | Basic |
| i thru iv  | Basic |
| 1 thru 310 | Basic |

\*The asterisk indicates pages changed, added, or deleted by the current change.

Manuals will be distributed as directed by the NASA Apollo Project Office. All requests for manuals should be directed to the NASA Apollo Spacecraft Project Office at Houston, Texas.



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| Safety . . . . .                                |  |
| Command Module Positioning/Inspection . . . . . |  |
| Couch Removal . . . . .                         |  |
| Photographic Requirements . . . . .             |  |
| Tools and Equipment . . . . .                   |  |
| Postretrieval Procedures . . . . .              |  |

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| 2  | Engine Vent Plug Installation . . . . .                   |  |
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## Procedure

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|----|---|---|---|---|---|---|---|---|
| 23 | Engine Vent Plug Removal                  | . | . | . | . | . | . | . |
| 24 | Microbial Sampling Procedures             | . | . | . | . | . | . | . |
| 25 | Deleted                                   | . | . | . | . | . | . | . |
| 26 | Radiation Survey/Safing                   | . | . | . | . | . | . | . |
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| A  | Reaction Control System (RCS) Anomaly     | . | . | . | . | . | . | . |
| B  | Pyrotechnic Anomaly                       | . | . | . | . | . | . | . |
| C  | Emergency First Aid for Propellant Injury | . | . | . | . | . | . | . |



## INTRODUCTION

### PURPOSE

The purpose of the Apollo Postretrieval Procedures manual is to identify and define specific postretrieval procedures to be accomplished by the NASA Recovery Team. The manual is designed for recording the condition of the CM structure, internal and external equipment, control/switch and circuit breaker positions, and instrument readings at the time of retrieval.

### NOTE

Refer to the following page for a listing of regulations which must be adhered to by all personnel associated with CM postretrieval operations.

### SCOPE

This manual specifically defines and provides:

- a. The suggested sequence for accomplishing individual postretrieval procedures on board the recovery ship or at an interim port. (Refer to flow charts located on pages 9, 10, and 11.)
- b. Suggested safety precautions, required tools and equipment, photographic requirements, instructions for accomplishing the specific task, and packaging instructions for components removed during postflight operations.
- c. Anomaly procedures. (Refer to procedures (A), (B), and (C), located in the back of this manual.)



— IMPORTANT —

GENERAL

Following recovery and positioning of the CM, certain precautions must be taken to prevent associated personnel and spectators from exposure to known and unknown hazards. Accordingly, the following statements must be strictly adhered to:

1. Following recovery and positioning of the CM, the area shall be immediately policed for any loose items, i.e., pieces of ablator, thermal protective coating, etc. Any items found during this policing operation shall be identified and packaged for return shipment to MSC.

NOTE

Under no circumstance shall CM particles/debris be allowed to remain in the general area. All recovered components shall be transported to the confines of the postretrieval area for identification, packaging, and stowage, within the area and/or another authorized area selected by the NASA Team Leader.

2. Following positioning of the CM on the hangar deck (or appropriate postretrieval operation site) the immediate area shall be roped off (sized as necessary/space permits). In addition, guards shall be positioned at strategic locations to prevent access by unauthorized persons.
3. Upon initiation of CM postretrieval operations, items removed from the CM shall not be removed from the enclosed (guarded) area until appropriately packaged and labeled. Items that are removed from the CM, and not removed from the immediate area, shall remain within the confines of the restricted area.

NOTE

- Under no circumstance shall CM components/equipment be allowed to remain in the general area without being properly identified, packaged, and/or stowed in an authorized area.
- The NASA Team Leader shall be responsible for the establishment and adherence of regulations related to shipboard operations.



## SPACECRAFT POSTRETRIEVAL PROCEDURES

### GENERAL

This document details the Apollo Command Module (CM) postretrieval procedures to be performed on board the recovery ship. The on-board NASA-MSC representative shall select and accomplish those tasks which require immediate attention.

### NOTE

- NO PROCEDURE (CONTAINED IN THIS MANUAL) SHALL TAKE PRECEDENCE OVER CREW EGRESS OR AID.
- All inspection records and photographic data shall be forwarded to the MSC Mission Evaluation team.
- One copy of the marked-up manual shall be returned to NR-Downey via RASPO/ASPO.
- IF THE REMARKS COLUMN IS BLANK, PROCEDURE WAS PERFORMED AS OUTLINED (NO PROBLEMS ENCOUNTERED).

### SAFETY

The NASA Team Leader shall be responsible for ensuring that all personnel are aware of the potential dangers associated with CM recovery and post-retrieval operations. Hazards which may be encountered during postretrieval operations are:

- Toxic fumes from hypergolic propellants
- Raw propellants
- Flash fires
- Unexpended pyrotechnic devices.

The probability of raw propellant contamination and flash fires is increased once the CM is hoisted from the water. Accordingly, protective clothing and equipment are provided to minimize this danger to personnel.

For specific information relative to anomalies, refer to the procedures identified as (A), (B), and (C), located in the back of this manual. Procedure (A), RCS ANOMALY, provides information pertaining to the containment of RCS fires and propellant leaks. Procedure (B), PYROTECHNIC ANOMALY identifies the various explosive devices and related safety precautions. Procedure (C), EMERGENCY FIRST AID FOR PROPELLANT INJURY, provides basic first-aid instructions which must be accomplished if an individual comes in contact with raw propellants or vapors.

ELECTRICAL GROUNDING. After CM positioning and prior to commencing any postretrieval operations, Recovery Team personnel shall establish an electrical ground. Utilize the grounding cable provided as part of the on-board equipment. Attach one end of the cable to the CM; any point of the forward compartment inner structure (preferably a gusset) may be used as a ground point. Attach the free end of the cable to a deck "pad-eye." (Refer to procedure (1), sheet 3 of 4.)

#### COMMAND MODULE POSITIONING/INSPECTION

Following retrieval, the CM shall be positioned on the Apollo spacecraft transportation dolly, spacecraft cradle, or sandbags—exercise care in placing CM on dolly (cradle) to prevent damage to sensors and ablator.

#### NOTE

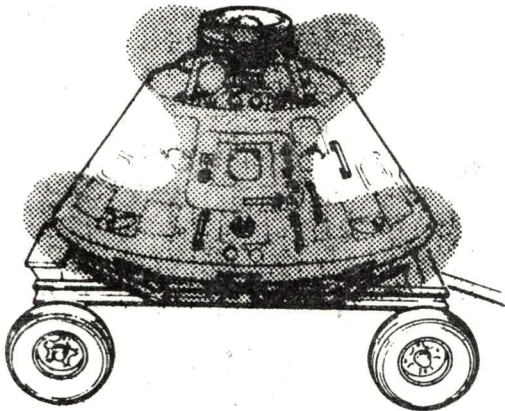
If possible, photographs of the aft heat shield should be obtained prior to positioning the CM. (Refer to PHOTOGRAPHIC REQUIREMENTS, procedure (1), sheet 3 of 4.)

The CM shall then be checked for propellant leaks and/or an accumulation of propellant vapors. Should propellant leaks be detected, it shall be the responsibility of the NASA Team Leader to determine the course of action to be taken. An accumulation of propellant vapors or leaks will normally necessitate "CM washdown" to eliminate hazardous conditions. (See illustrations titled "CM Danger Areas" and "CM Washdown/Fire Fighting.")

#### NOTE

- CM washdown (other than the CM RCS washdown) shall be performed following retrieval—use low pressure fog nozzle.
- Prior to CM washdown, obtain photographs of CM window and aft heatshield. (Refer to procedure (1) for requirements.)

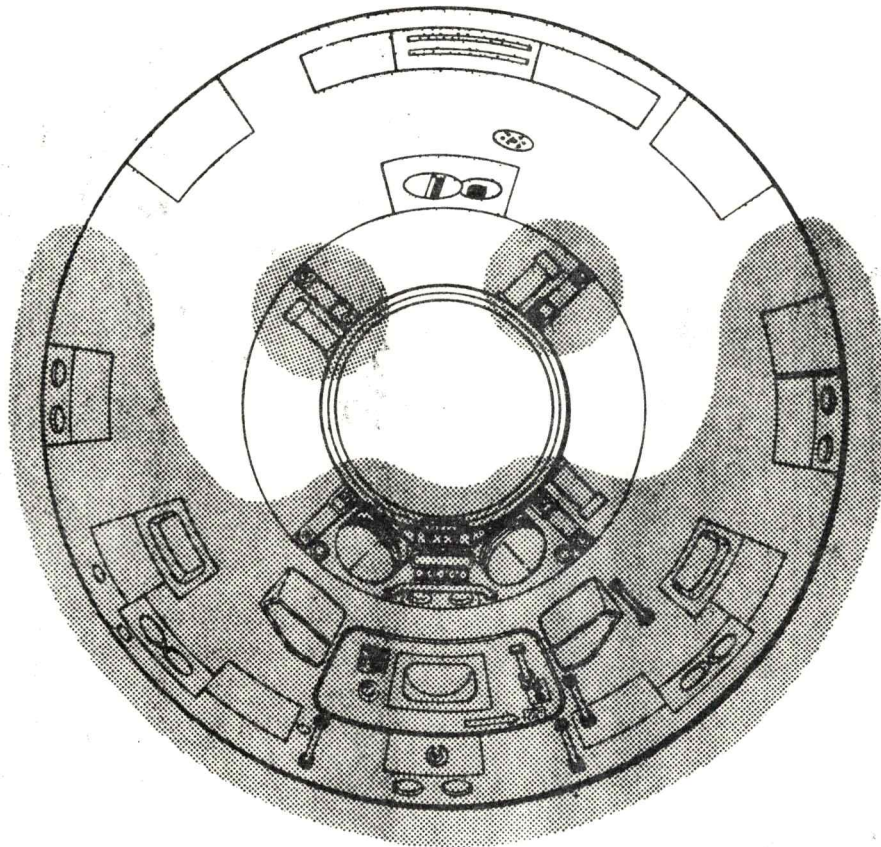




NOTE

- Should propellant leaks or vapors be detected, attempt to establish a safe condition by dousing the contaminated area with large amounts of water.
- Utilize low-pressure water spray to avoid damage to charred areas.
- Surrounding areas should be washed down.

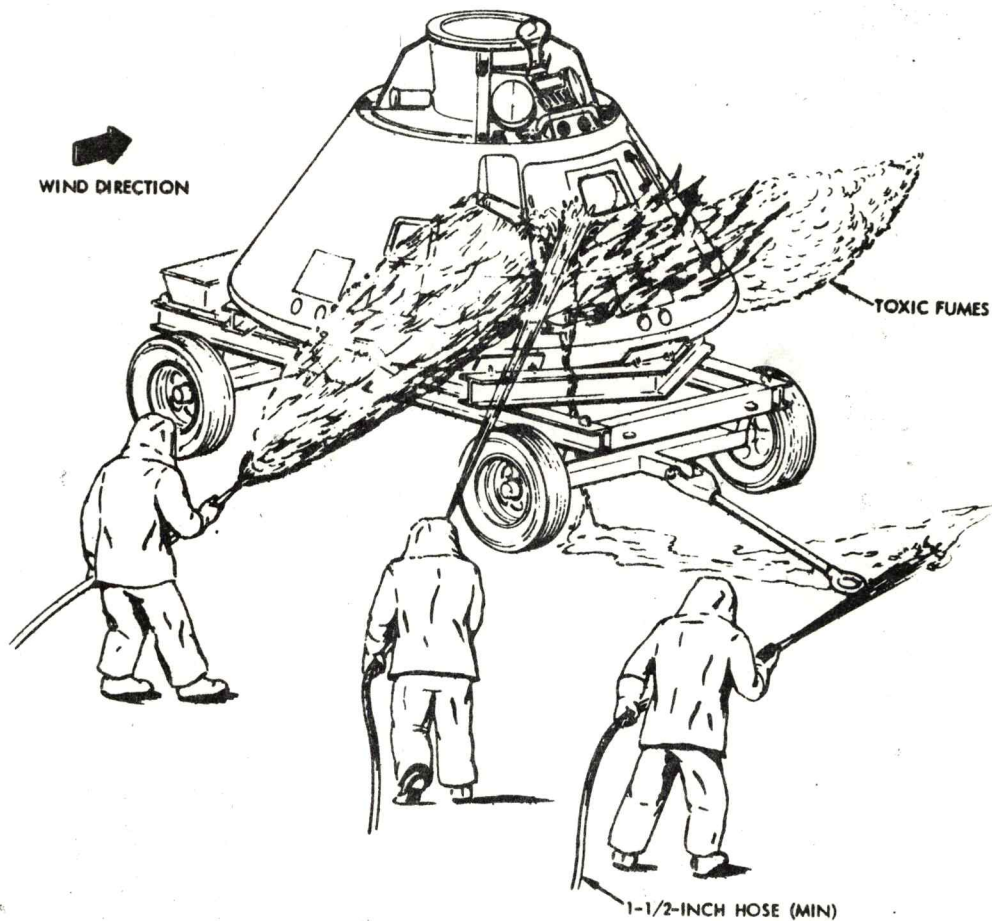
Limit working time in danger areas. The RCS and pyrotechnic devices are to be considered dangerous until verified otherwise.



SM-2A- 858J

CM Danger Areas

26



- 1 Direct water at base of flame.
- 2 Wash propellants away as soon as possible.
- 3 Wash down all equipment exposed to propellants.
- 4 Monitor CM to determine if RCS fumes are present after fire is extinguished.

#### NOTE

- Use high-capacity fog nozzle (low pressure) to disperse and absorb vapors.
- Fresh or salt water may be used to combat hypergolic fires.
- Remain upwind or crosswind when flushing CM with water.

#### Warning

- Do not stand in RCS thruster areas (approximately 20 feet from any nozzle).

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### CM Washdown/Fire Fighting



COUCH REMOVAL

To ease movement within the CM, the center couch may be removed following couch/strut inspection. Refer to procedure (8) for removal instructions.

PHOTOGRAPHIC REQUIREMENTS

Specific photographic requirements applicable to individual postretrieval procedures are included in each procedure. In addition, overall photographic requirements are defined within procedure (1), PHOTOGRAPHIC REQUIREMENTS.

TOOLS AND EQUIPMENT

The following special tools and equipment are provided for use during post-retrieval operations.

| Quantity                       | Nomenclature  | Procedure No.<br>(Ref) |
|--------------------------------|---|------------------------|
| <b>SPECIAL TOOLS/EQUIPMENT</b> |   |                        |
| 1                              | Access panel removal kit, primary recovery ship (PRS) | (19)                   |
| 1                              | Face shield, model 7-11                               | (2)                    |
| 2                              | Geiger-Mueller survey meter                           | (26)                   |
| 1                              | Ground cable*   |                        |
| 1                              | Hatch tool kit  | (3), (4), (22)         |
| 2                              | Legstat (grounding device)                            | (B)                    |
| 1                              | Microbial sampling kit                                | (24)                   |
| 1                              | NASA safety pin                                       | (3)                    |
| 50                             | Polyethylene bags (assorted (sizes)                   | As necessary           |
| 1                              | Potable water sample kit                              | (9)                    |

\*Refer to introductory text; paragraph titled "ELECTRICAL GROUNDING"

## SM2A-08-SC106

| Quantity | Nomenclature                                 | Procedure No.<br>(Ref) |
|----------|--|------------------------|
| 1        | Sample container (liquid)                    | (13)                   |
| 1        | Spring scale (0-40 oz)                       | (16)                   |
| 2        | Vent plug set (PRS)                          | (2)                    |
| 1        | Vent plug set, secondary recovery ship (SRS) | (2)                    |
| 1        | Waste water sample kit                       | (10)                   |
| 1        | Window cover set, P/N MK394-10061-101        | (14)                   |

## MISCELLANEOUS TOOLS/EQUIP

|        |   |             |
|--------|---|-------------|
| 2      | Adjustable wrench, 6-inch                           | As required |
| 1      | Adjustable wrench, 10-inch                          | As required |
|        | Allen wrenches/adapters (assorted)                  | As required |
| 1      | Combination wrench set, 1/4-inch through 1-1/2 inch |             |
| 50     | Containment stickers                                | (26)        |
| 1 ea   | Crows feet, 3/8-inch through 3/4-inch               | As required |
| 3      | Coveralls   | All         |
|        | Dosimeter, pocket                                   | (26)        |
| 1 roll | Electrical tape, 1/2-inch                           | As required |
|        | Film badge, radiation                               | (26)        |
| 2      | Flashlight  | As required |
| 1      | Knife, short blade                                  | (3)         |



## SM2A-08-SC106

| Quantity | Nomenclature  | Procedure No.<br>(Ref) |
|----------|---|------------------------|
| 1 pr     | Leather gloves  | ②, ④                   |
| 1        | Metal snips   | As required            |
| 1        | Mirror  | As required            |
| 40 ft    | Nylon line, 1/4-inch  |                        |
| 50       | Part removal tags   | As required            |
| 1        | Pliers, diagonal  | As required            |
| 1        | Pliers, duckbill  | As required            |
| 1        | Pliers, needle nose   | As required            |
| 1        | Pliers, vise grip   | As required            |
| 1        | Pliers, water pump (10-inch)                                  | As required            |
| 1        | Scale, 6-inch   | As required            |
| 1        | Scissors (X-acto knife - alternate)                           | ②⑦                     |
| 6 pr     | Rubber gloves, long cuff                                      | ②, ②③, ②⑥              |
| 1 ea     | Screwdriver, slot (assorted)                                  | As required            |
| 1 ea     | Screwdriver, torq-set (#1, #2, #3, #4, #6, #8, #10, 1/4-inch) | As required            |
| 1        | Screwdriver, phillips (assorted)                              | As required            |
| 1 ea     | Shim stops (or feeler gage)                                   | ⑧                      |
| 1        | Steel rule, 6-foot  | As required            |
| 1        | Socket set (deep), 1/4-inch drive                             | As required            |

| Quantity | Nomenclature               | Procedure No.<br>(Ref) |
|----------|----------------------------|------------------------|
| 1        | Socket set, 3/8-inch drive | As required            |
| 1        | Stopwatch                  | As required            |
| 2 pr     | Surgeons gloves            | (24)                   |
| 100      | Test stickers (tape)       | (26)                   |

### POSTRETRIEVAL PROCEDURES

The remainder of this document is devoted to individual procedures normally accomplished by the NASA Recovery Team. Procedures shall be accomplished under the direction of the designated NASA Team Leader. Procedural sequence shall be as specified by the applicable flow chart.

Primary Recovery Ship (PRS). If the CM is recovered by the Primary Recovery Ship, accomplish applicable procedure as defined in the Primary Recovery Ship—Postretrieval Procedures—Flow Chart.

Secondary Recovery Ship (SRS). Should the CM be recovered by other than the Primary Recovery Ship, only specified procedures shall be accomplished on board the recovery ship, the remainder of the procedures shall be accomplished at an interim port. Refer to the Secondary Recovery Ships—Postretrieval Procedures—Flow Chart for specific procedural requirements and sequencing.

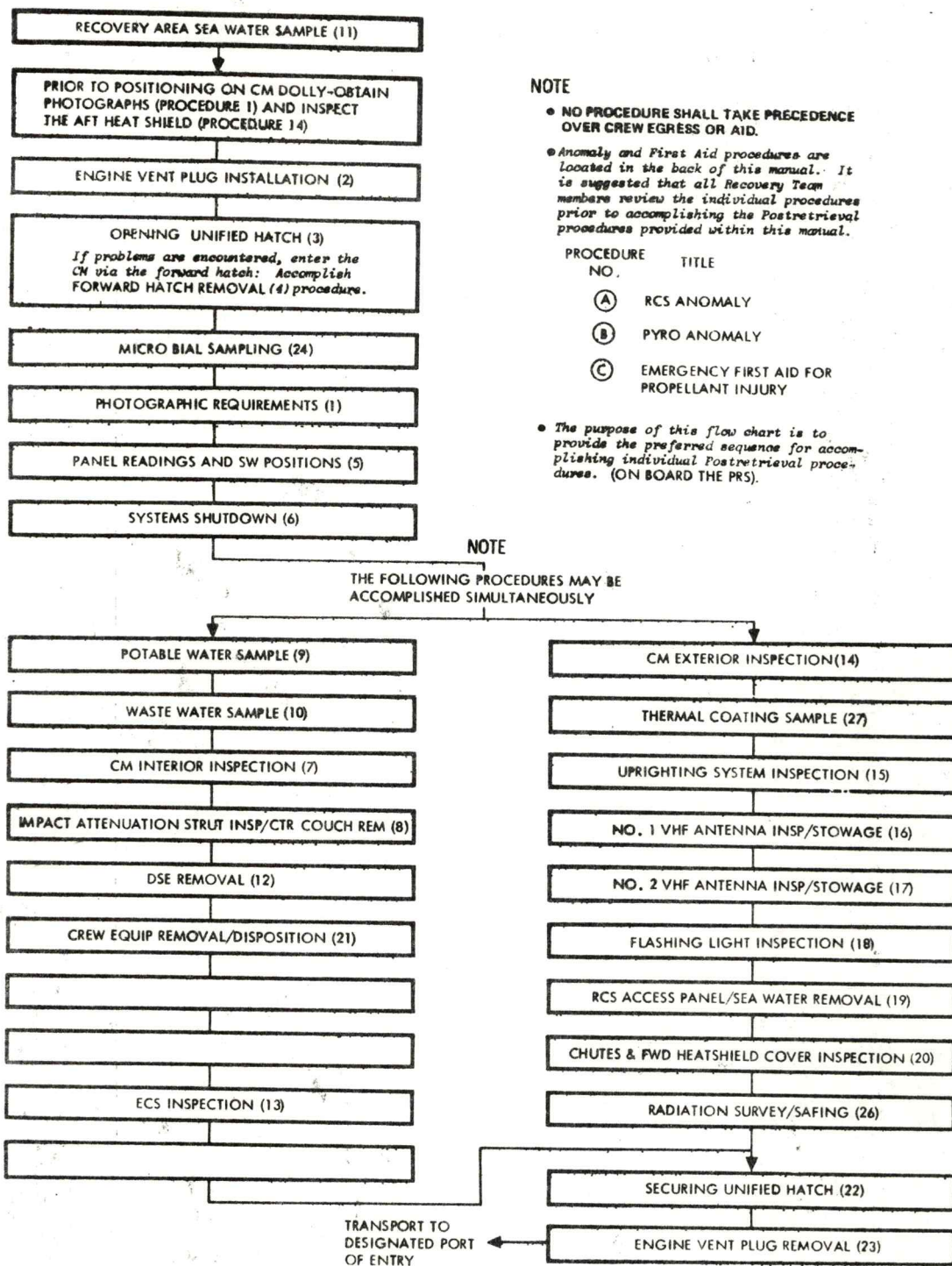
Pad Abort. The Pad Abort (Water or Land Impact)—Postretrieval Procedures—Flow Chart provides required procedures/sequence and applicable cautions/notes to be employed following a pad abort. Should a pad abort occur, real-time decisions will establish procedural sequence following CM recovery and crew egress.

### NOTE

It is required that all procedures in which deviations or abnormalities were noted be completed by writing appropriate comments in the applicable "Remarks" column. Such comments would include:

- Completion of procedure with any deviations from the written instructions.
- Reason(s) for not completing procedure(s).
- If no deviations or abnormalities were noted, Remarks columns may be left blank.





SM-2A 14641

## Primary Recovery Ship - Postretrieval Procedures - Flow Chart

Changed 1 May 1969

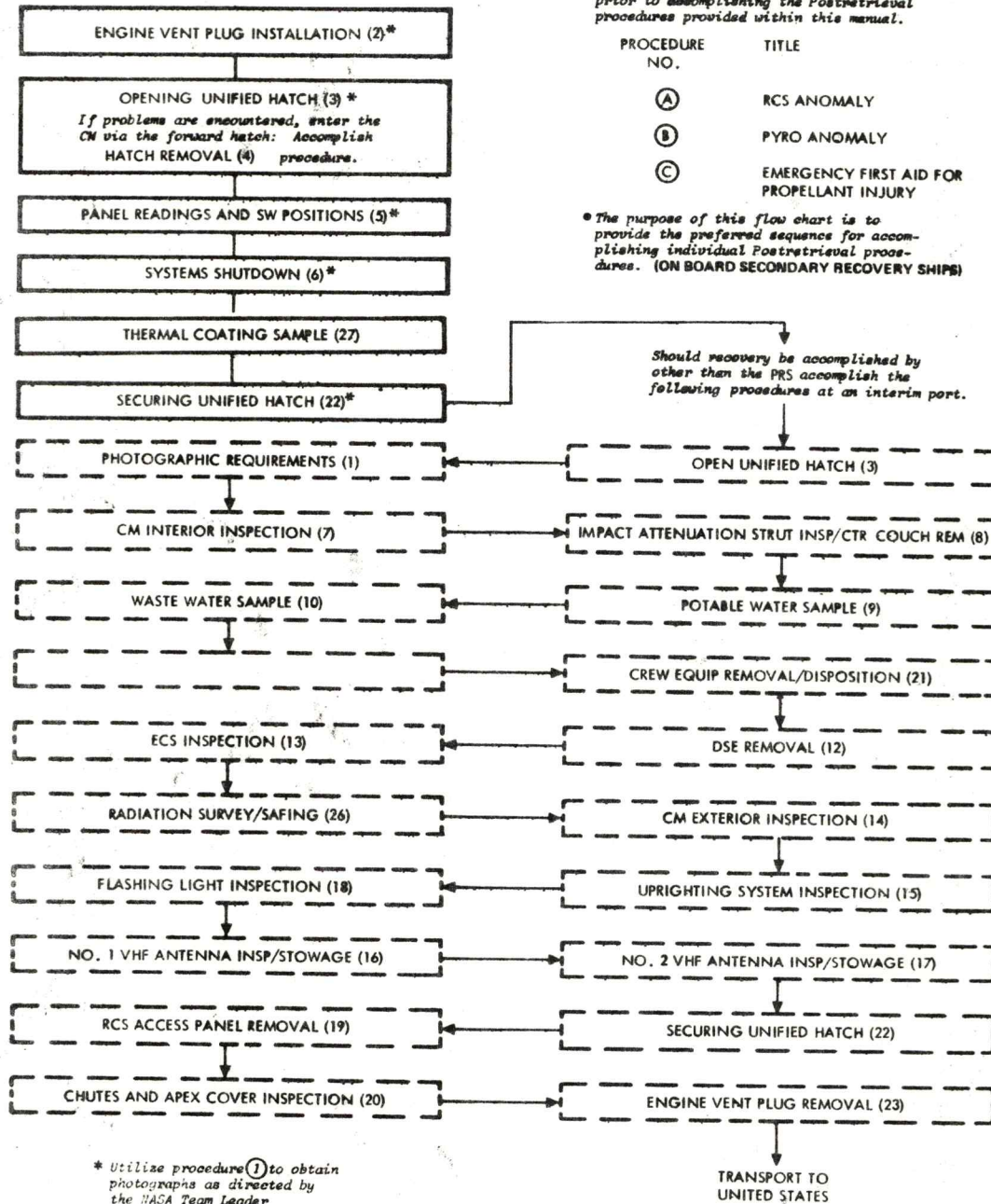
## NOTE

• NO PROCEDURE (CONTAINED IN THIS MANUAL) SHALL TAKE PRECEDENCE OVER CREW EGRESS OR AID.

• Anomaly and First Aid procedures are located in the back of this manual. It is suggested that all Recovery Team members review the individual procedures prior to accomplishing the Postretrieval procedures provided within this manual.

| PROCEDURE NO. | TITLE                                     |
|---------------|---|
| (A)           | RCS ANOMALY                               |
| (B)           | PYRO ANOMALY                              |
| (C)           | EMERGENCY FIRST AID FOR PROPELLANT INJURY |

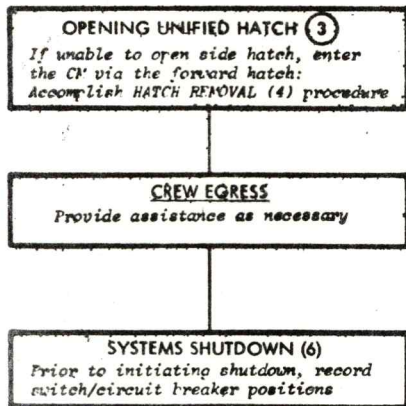
• The purpose of this flow chart is to provide the preferred sequence for accomplishing individual Postretrieval procedures. (ON BOARD SECONDARY RECOVERY SHIPS)



SM-2A-1465J

## Secondary Recovery Ship - Postretrieval Procedures - Flow Chart





**NOTE**

- Pyro anomaly and First Aid procedures for propellant injury are located in the back of this manual. It is suggested that all Recovery Team members review the individual procedures prior to accomplishing the Postretrieval procedures provided within this manual.

PROCEDURE  
NO.

TITLE

(B)

PYRO ANOMALY

(C)

EMERGENCY FIRST AID FOR  
PROPELLANT INJURY

- The purpose of this flow chart is to provide the preferred sequence for accomplishing individual Postretrieval procedures (FOLLOWING A PAD ABORT-WATER OR LAND IMPACT).

**Warning**

HAZARDS WHICH MAY BE ENCOUNTERED FOLLOWING A PAD  
ABORT ARE:

- UNEXPENDED PYROTECHNIC DEVICES
- FLASH FIRES
- RAW PROPELLANTS
- TOXIC FUMES (FROM PROPELLANTS)
- FLYING DEBRIS

**NOTE**

- NO PROCEDURE (CONTAINED IN THIS MANUAL) SHALL TAKE PRECEDENCE OVER CREW EGRESS OR AID.
- Should propellant leaks or vapors be detected, attempt to establish a safe working condition by dousing the contaminated area with large amounts of water.
- Recovery/rescue personnel shall wear appropriate protective clothing.
- All recovery/rescue operations shall be under the direction of the Launch Site Recovery Commander

SM-2A-1664D

Pad Abort (Water or Land Impact) - Postretrieval Procedures - Flow Chart

SM2A-08-SC106

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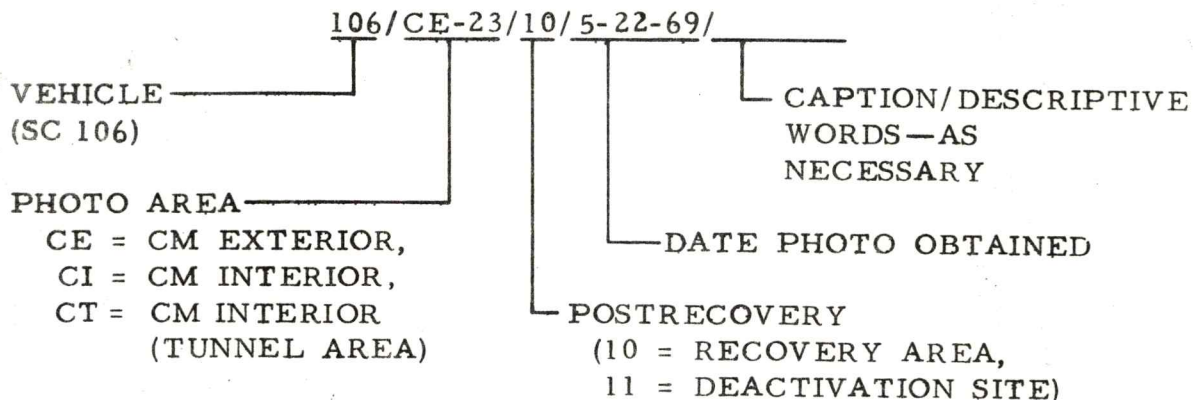


# PHOTOGRAPHIC REQUIREMENTS

Sheet 1 of 14

The purpose of this procedure is to provide the means for completing the photographic cycle (coverage) of a particular spacecraft. Sheets 3 through 5 identify exterior photographic areas. Sheets 6 through 14 identify interior photographic areas. Utilization of the index system to identify all postflight photographs will facilitate photographic comparison of individual vehicles (components, bays, etc.) before and after flight. In addition, the index system will enable recovery personnel to identify (by photo area) all damage, anomalies, etc.

The numbering (index) system utilized to identify individual photographs is defined as follows:



## NOTE

It is realized that several of the photographic areas are difficult to photograph when the crew couches, equipment, etc., are installed. Therefore, if the photographer finds it necessary to omit a photograph, or encompass several photo areas within the same photograph, the deviation should be so noted in the remarks column provided on sheets 3 through 12.

If additional photographs (over and above those identified on sheets 3 through 14) are required, the photographer or recovery engineer shall identify the subject component, damage, etc., with an alpha suffix. For example, photo area CE-23 contains the positive pitch engines, an engine access panel and the sea anchor attach fitting. Accordingly, if the responsible recovery engineer desired a photograph of the sea anchor attach fitting, it would be identified as follows:

106/CE-23A/10/3-22-69/Sea Anchor Attach Fitting

## PHOTOGRAPHIC REQUIREMENTS

Sheet 2 of 14

SAFETY

1. If a drogue or pilot parachute has failed to deploy, exercise extreme caution when photographing the upper deck (ablative hatch, tunnel, forward bulkhead, etc.).
2. If one or both of the VHF antennas, or the flashing light has failed to deploy, use caution when working on the upper deck.
3. Observe standard safety precautions when working within the CM. Avoid actuating any switches, controls, etc. Actuation of certain controls could cause injury to personnel outside the CM.
4. Observe standard safety precautions when working around the RCS engines and pyrotechnic devices. Procedures (A) and (B) illustrate the various RCS engines and pyrotechnic devices. Procedure (C), EMERGENCY FIRST AID FOR PROPELLANT INJURY, provides recommended first-aid treatment for personnel contaminated with RCS propellants.

INSTRUCTIONS

## NOTE

The PHOTO AREAs and corresponding PHOTO IDENT NO. (provided on sheets 3 through 14) encompass all the items/areas called out within procedures (2) through (27). If additional photographs of individual components or test setup are desired, the recovery engineer shall identify the area or test setup with a related number and include the number/caption on sheets 3 through 14 as applicable. For example, if photographs of the WASTE WATER setup are desired, they should be keyed to the basic "CI" number; for instance, the WATER CONTROL PANEL (No. 352) located in photo area CI-44 (reference sheet 10). Photo area CI-44 includes panels 351, 352 and the CO<sub>2</sub> and odor absorber assembly; therefore, an individual photograph of panel 352 would be identified as CI-44A. A photograph depicting panel 352, the sample tubing and sample container, would be identified as CI-44C.



EXTERIOR PHOTOGRAPHY  
 START 1945Z MAY 26  
 SM2A-08-SC106  
 FINISH 2054Z MAY 26  
 TOTAL TIME REQUIRED 1 HOUR 9 min

1

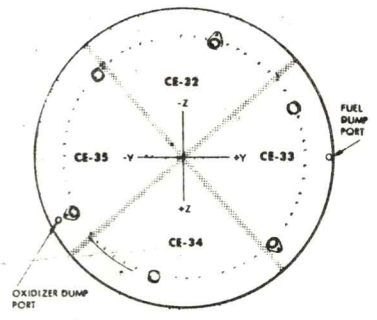
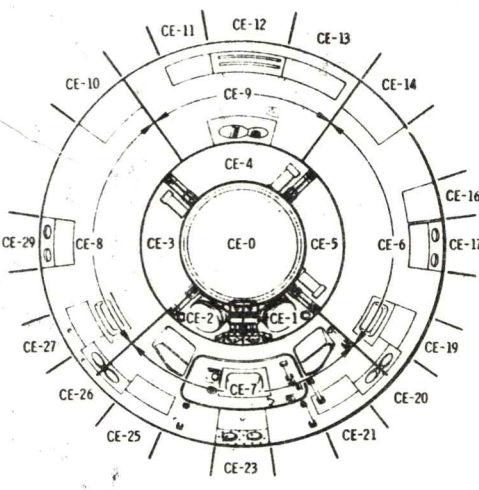
PHOTOGRAPHIC REQUIREMENTS

Sheet 3 of 14

EXTERIOR PHOTOGRAPHIC REQUIREMENTS (PRIOR TO AND INCLUDING CREW EGRESS)

NOTE

Obtain closeups of any damage, irregularities, etc.

| Photo Area  | Ref* | Photo Ident Number/Date   | Remarks/Suggested Caption  |
|---|------|---|--|
| <p>1. Aft heat shield</p>  <p>SM 2A 1777A</p> | ①    | <p>106/CE-32/10/5-26-69<br/>         106/CE-33/10/5-26-69<br/>         106/CE-34/10/5-26-69<br/>         106/CE-35/10/5-26-69<br/>         106/CE-36/10/5-26-69</p> | Head on view of aft heat shield highlighting any streaking on the ablator.                               |
| <p>2. Engine vent plug installation</p>      | ②    | <p>106/CE-2A-10/5-26-69<br/>         106/CE-23A/10/5-26-69</p>  | <p>Negative pitch engines*<br/>         Positive pitch engines</p> <p>*Prior to inserting vent plugs</p> |

\*Related procedure

371

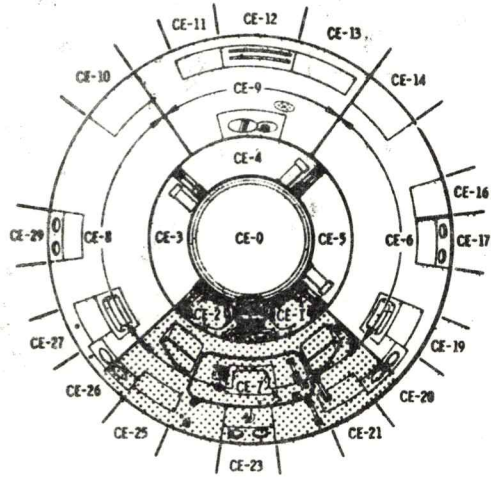
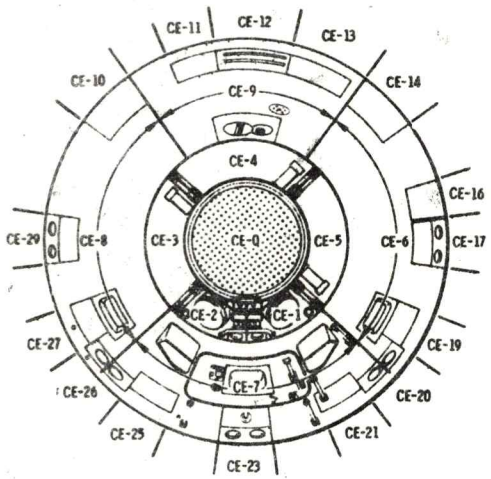
## PHOTOGRAPHIC REQUIREMENTS

Sheet 4 of 14

## EXTERIOR PHOTOGRAPHIC REQUIREMENTS (PRIOR TO AND INCLUDING CREW EGRESS)

## NOTE

Obtain closeups of any damage, irregularities, etc.

| Photo Area   | Ref* | Photo Ident Number/Date             | Remarks/Suggested Caption   |
|--|------|-------------------------------------|---|
| 3. Opening unified hatch<br> | ③    | 106/CE-7B/10/ <u>5-26-69</u>        | Overall hatch, including a portion of the CM. (Before and after opening.) |
| 4. Forward hatch<br>        | ④    | 106/CE-0/10/ <u>5-26-69</u>         | Fwd hatch (exterior)  |
| 5. Crew egress<br>*Related procedure   | ③    | As directed by the NASA Team Leader |   |



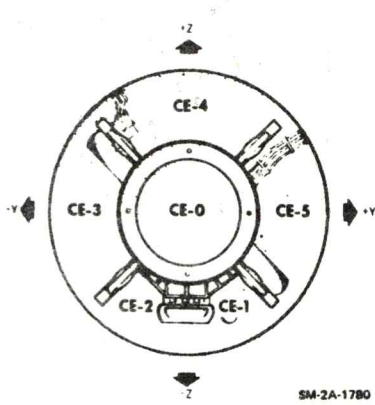
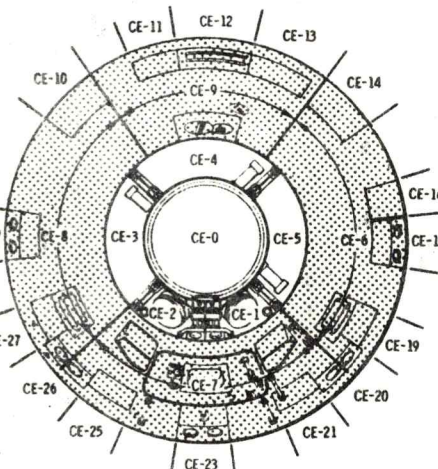
## PHOTOGRAPHIC REQUIREMENTS

Sheet 5 of 14

## EXTERIOR PHOTOGRAPHIC REQUIREMENTS (FOLLOWING CREW EGRESS)

## NOTE

Obtain closeups of any damage, irregularities, etc.

| Photo Area   | Ref*  | Photo Ident Number/Date   | Remarks/Suggested Caption  |
|--|---|---|--|
| <p>1. Forward compartment</p>  <p>SM-2A-1780</p> | <p>⑭</p> <p>⑮</p> <p>⑯</p> <p>⑰</p> <p>⑱</p> <p>⑳</p> | <p>106/CE-0/10/ <u>5-26-69</u></p> <p>106/CE-1/10/ <u>5-26-69</u></p> <p>106/CE-2/10/ <u>5-26-69</u></p> <p>106/CE-3/10/ <u>5-26-69</u></p> <p>106/CE-4/10/ <u>5-26-69</u></p> <p>106/CE-5/10/ <u>5-26-69</u></p>   |  |
| <p>2. Crew compartment heat shield</p>          | <p>⑭</p> <p>⑳</p>                                     | <p>106/CE-8/10/ <u>5-26-69</u></p> <p>106/CE-5/10/ <u>5-26-69</u></p> <p>106/CE-6/10/ <u>5-26-69</u></p> <p>106/CE-9/10/ <u>5-26-69</u></p> <p>106/CE-7C/10/ <u>5-26-69</u></p> <p>106/CE-7D/10/ <u>5-26-69</u></p> <p>106/CE-7E/10/ <u>5-26-69</u></p> <p>106/CE-7F/10/ <u>5-26-69</u></p> <p>106/CE-6A/10/ <u>5-26-69</u></p> <p>106/CE-8A/10/ <u>5-26-69</u></p> | <p>Closeup of hatch window.</p> <p>Closeup of hatch outer surface.</p> <p>LH rend window</p> <p>RH rend window</p> <p>LH side window</p> <p>RH side window</p> |

\*Related procedure

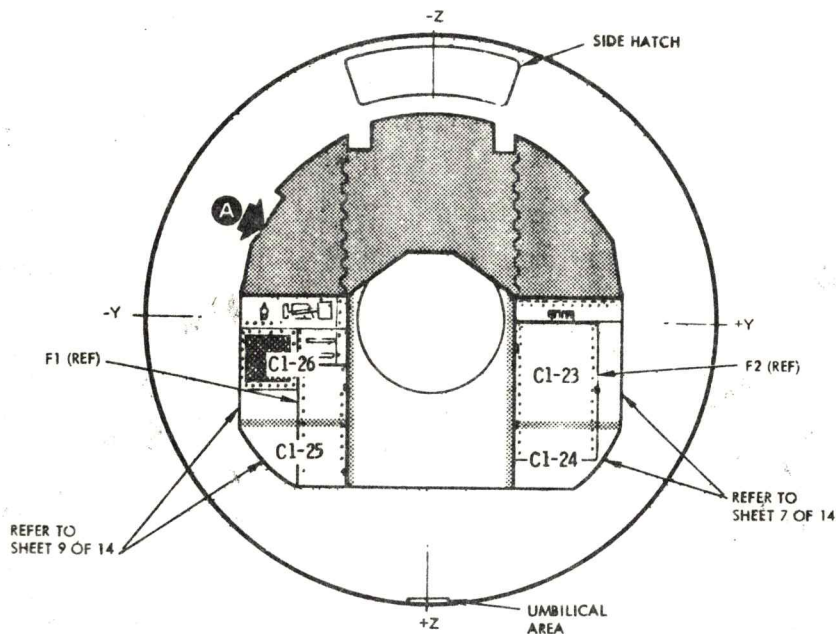
39

PHOTOGRAPHIC REQUIREMENTS

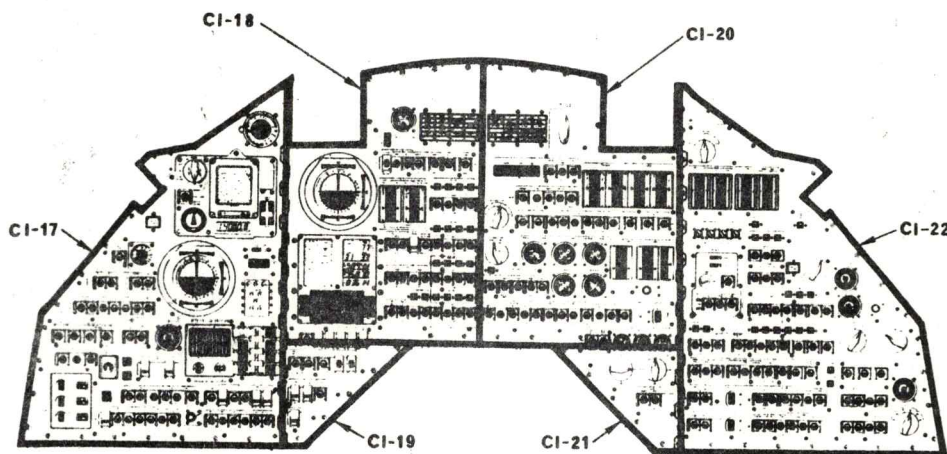
Sheet 6 of 14

INTERIOR PHOTOGRAPHIC REQUIREMENTS

To facilitate identification of individual photographic areas, photo identification numbers, CI-1, -2, etc., have been superimposed on CM interior drawings located on sheets 6, 7, 8, 9, and 10.



CM FORWARD BULKHEAD  
(VIEW LOOKING UP)



PANEL 1, 2 AND 3  
VIEW A

CM Forward Bulkhead/MDC

SM-2A-2045



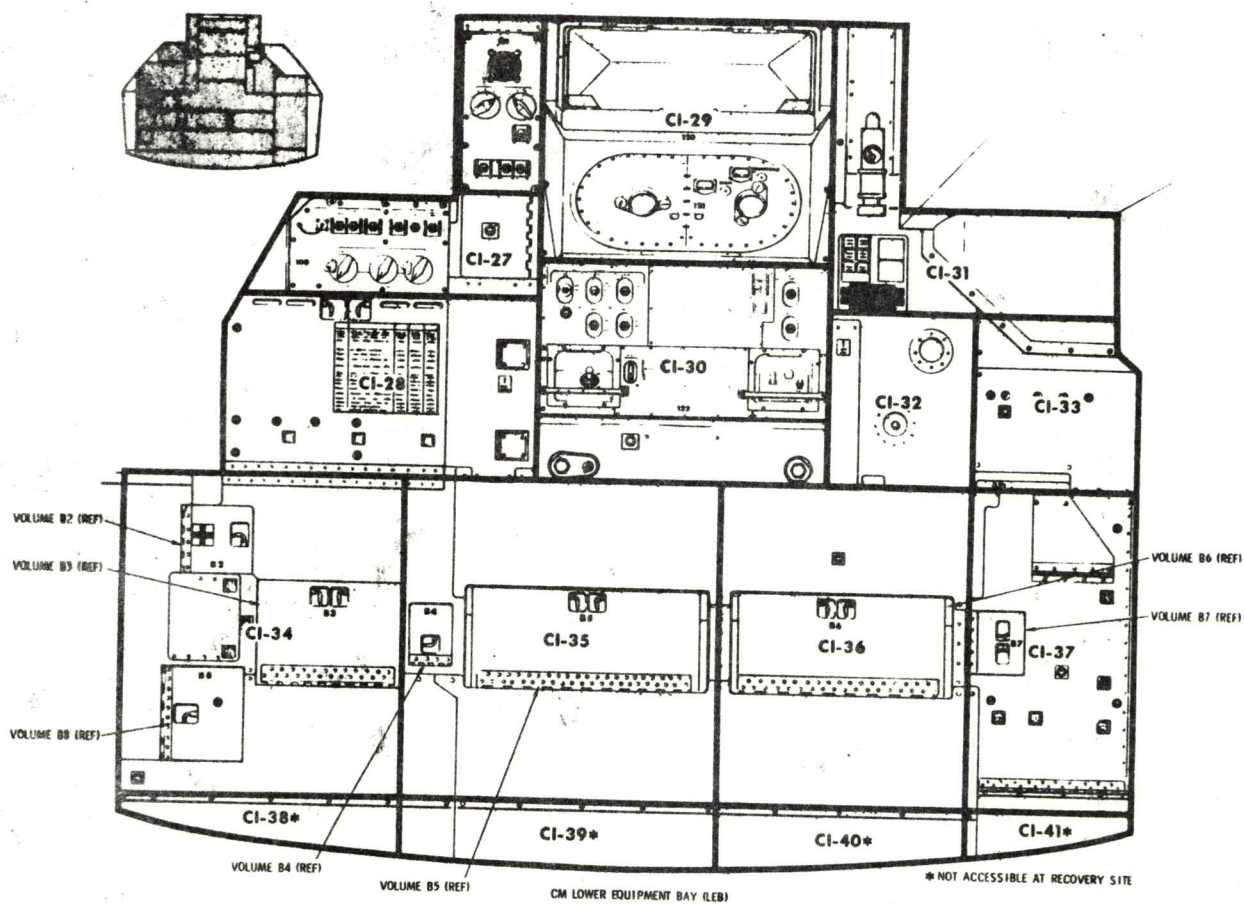
## Sheet 7 of 14



41

PHOTOGRAPHIC REQUIREMENTS

Sheet 8 of 14



SM-2A-2000 A

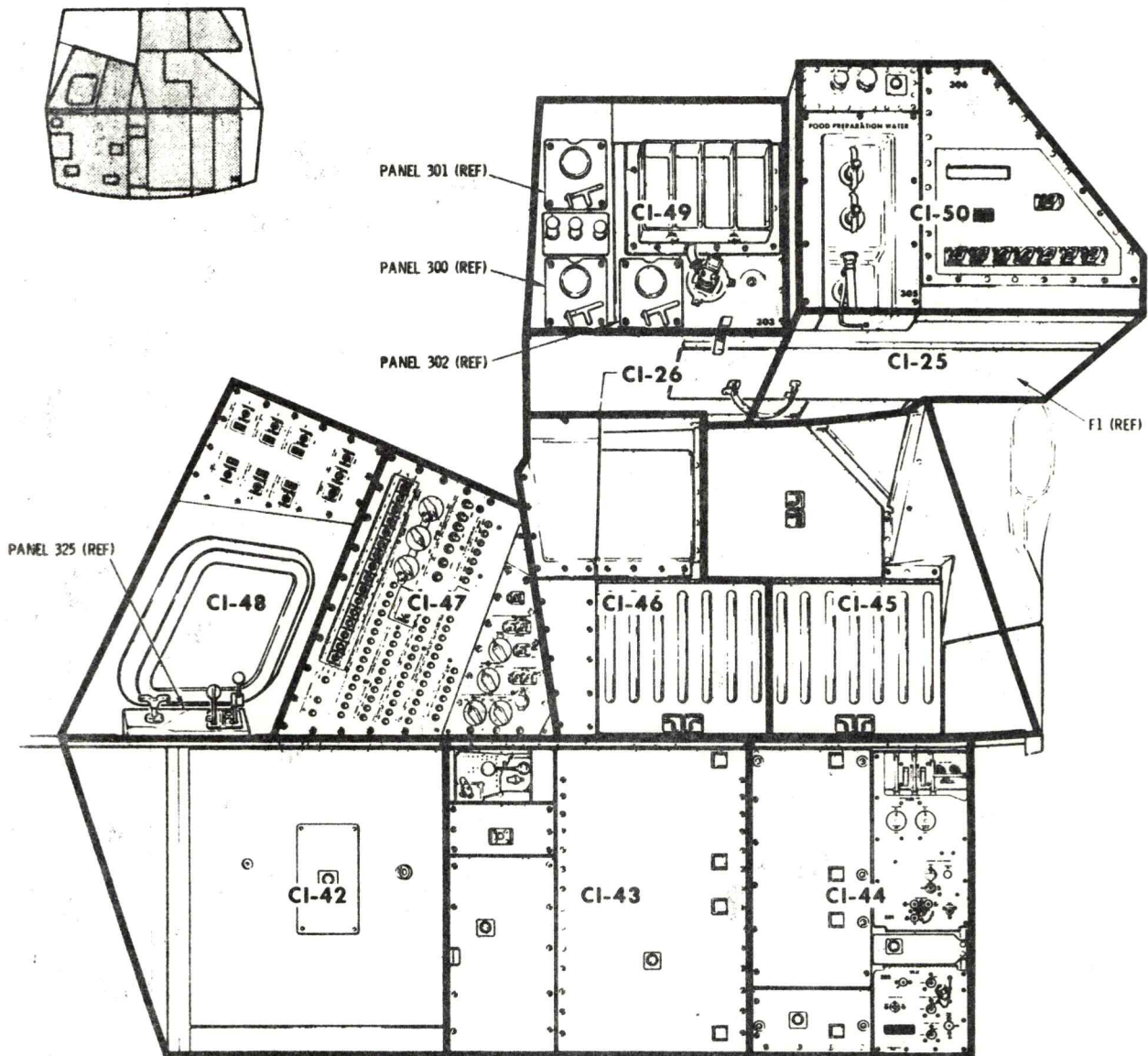
CM LOWER EQUIPMENT BAY (LEB)

42



## PHOTOGRAPHIC REQUIREMENTS

Sheet 9 of 14



SM-2A-2010

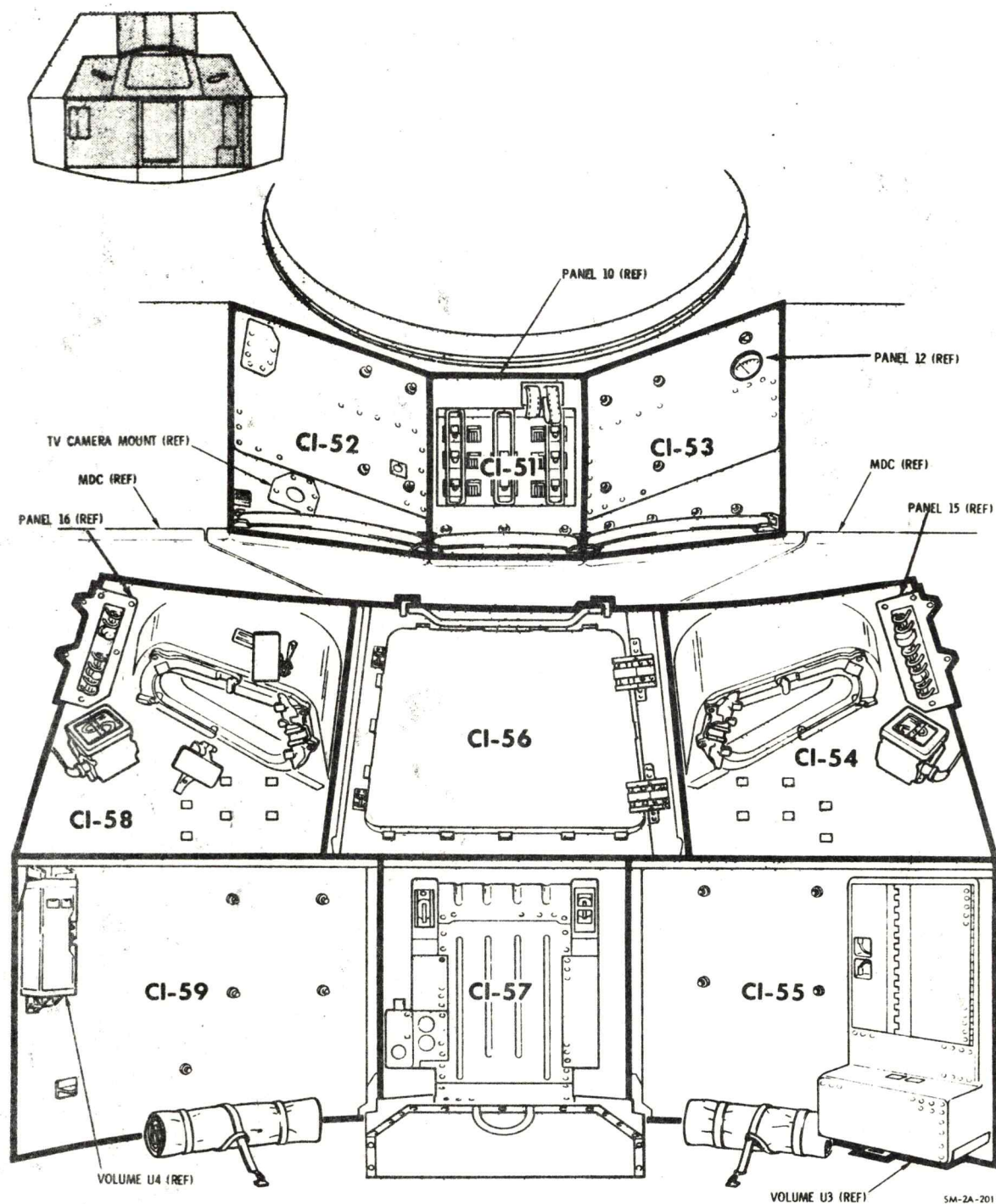
CM LEFT-HAND EQUIPMENT BAY (LHEB)

1

SM2A-08-SC106

PHOTOGRAPHIC REQUIREMENTS

Sheet 10 of 14



CM UPPER EQUIPMENT BAY (UEB)

44



INTERIOR PHOTOGRAPHY START AT 1950Z MAY 26  
AND COMPLETED AT 0028Z MAY 28. WAS CONDUCTED IN  
6 TIME SEGMENTS. SM2A-08-SC106

TOTAL TIME REQUIRED 2 HOURS 44 MIN

1

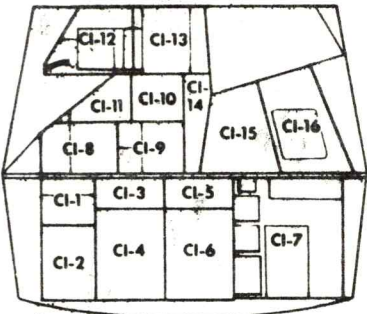
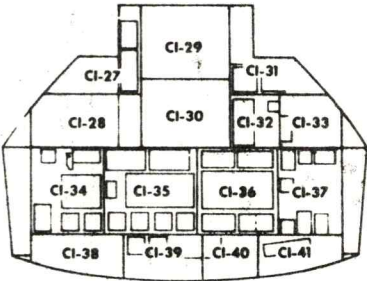
PHOTOGRAPHIC REQUIREMENTS

Sheet 11 of 14

INTERIOR PHOTOGRAPHIC REQUIREMENTS

NOTE

Obtain closeups of any damage, irregularities, etc.

| Photo Area   | Ref*                 | Photo Ident Number/Date   | Remarks/ Suggested Caption  |
|--|----------------------|---|---|
| <p>1. Right-hand equipment bay (RHEB)</p>  <p>SM-2A-1783</p> | <p>⑤<br/>⑥<br/>⑦</p> | <p>106/CI-1/10/ <u>5-26-69</u><br/>106/CI-2/10/ <u>5-26-69</u><br/>106/CI-3/10/ <u>5-26-69</u><br/>106/CI-4/10/ <u>5-26-69</u><br/>106/CI-5/10/ <u>5-26-69</u><br/>106/CI-6/10/ <u>5-26-69</u><br/>106/CI-7/10/ <u>5-26-69</u><br/>106/CI-8/10/ <u>5-26-69</u><br/>106/CI-9/10/ <u>5-26-69</u><br/>106/CI-10/10/ <u>5-26-69</u><br/>106/CI-11/10/ <u>5-26-69</u><br/>106/CI-12/10/ <u>5-27-69</u><br/>106/CI-13/10/ <u>5-27-69</u><br/>106/CI-14/10/ <u>5-26-69</u><br/>106/CI-15/10/ <u>5-26-69</u><br/>106/CI-16/10/ <u>5-26-69</u></p> | <p>2A ≡ WIRE BUNDLE COVERS REMOVED (5-27-69)<br/>4A ≡ PANEL REMOVED<br/>5A ≡ POST POWER DOWN<br/>6A ≡ LOWER HALF OF PANEL<br/>7 ≡ TOP HALF, 7A LOWER HALF</p> |
| <p>2. Lower equipment bay (LEB)</p>  <p>SM-2A-1778</p>      | <p>⑤<br/>⑦<br/>⑪</p> | <p>106/CI-27/10/ <u>5-27-69</u><br/>106/CI-28/10/ <u>5-27-69</u><br/>106/CI-29/10/ <u>5-27-69</u><br/>106/CI-30/10/ <u>5-27-69</u><br/>106/CI-31/10/ <u>5-27-69</u><br/>106/CI-32/10/ <u>5-27-69</u><br/>106/CI-33/10/ <u>5-27-69</u><br/>106/CI-34/10/ <u>5-27-69</u><br/>106/CI-35/10/ <u>5-26-69</u><br/>106/CI-36/10/ <u>5-26-69</u><br/>106/CI-37/10/ <u>5-27-69</u><br/>106/CI-38/10/ <u>5-27-69</u><br/>106/CI-39/10/ <u>5-27-69</u><br/>106/CI-40/10/ <u>5-27-69</u><br/>106/CI-41/10/ <u>5-27-69</u></p>                         | <p>A ≡ LEB EQUIP REMOVED NOT ACCESSIBLE</p>   |

\*Related procedure

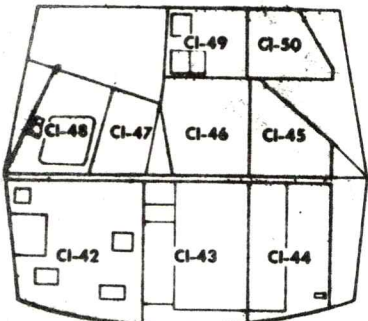
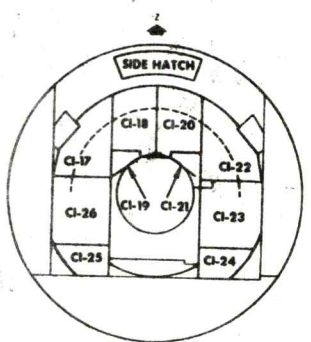
## PHOTOGRAPHIC REQUIREMENTS

Sheet 12 of 14

## INTERIOR PHOTOGRAPHIC REQUIREMENTS

## NOTE

Obtain closeups of any damage, irregularities, etc.

| Photo Area  | Ref*                            | Photo Ident Number/Date  | Remarks/<br>Suggested Caption  |
|---|---------------------------------|--|--|
| 3. Left-hand equipment bay (LHEB)<br><br>SM-2A-1781 | ⑤<br>⑥<br>⑦<br>⑧<br>⑨<br>⑩<br>⑪ | 106/CI-42/10/5-27-69<br>106/CI-43/10/5-27-69<br>106/CI-44/10/5-26-69<br>106/CI-45/10/5-27-69<br>106/CI-46/10/5-27-69<br>106/CI-47/10/5-27-69<br>106/CI-48/10/5-27-69<br>106/CI-49/10/5-27-69<br>106/CI-50/10/5-26-69                                 |  |
| 4. Forward bulkhead<br><br>SM-2A-1779A             | ⑤<br>⑥<br>⑦<br>⑧                | 106/CI-17/10/5-26-69<br>106/CI-18/10/5-26-69<br>106/CI-19/10/5-26-69<br>106-CI-20/10/5-26-69<br>106/CI-21/10/5-26-69<br>106/CI-22/10/5-26-69<br>106/CI-23/10/5-27-69 +<br>106/CI-24/10/5-27-69 +<br>106/CI-25/10/5-27-69 f<br>106/CI-26/10/5-27-69 f | MDC, Panel 1<br>MDC, Panel 2 (LH side)<br>MDC, Panel 2 (LH corner)<br>MDC, Panel 2 (RH side)<br>MDC, Panel 2 (RH corner)<br>MDC, Panel 3 |

\*Related procedure

†See sheet 7 of 14

fSee sheet 9 of 14



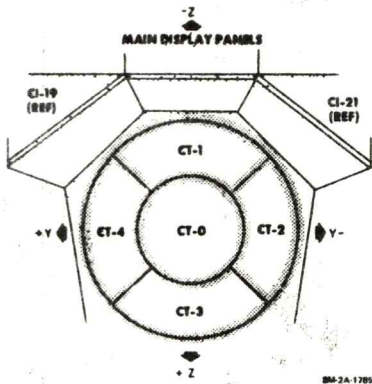
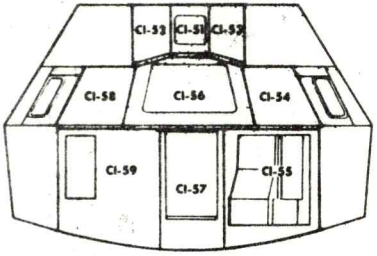
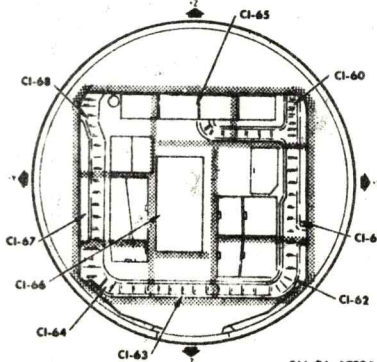
## PHOTOGRAPHIC REQUIREMENTS

Sheet 13 of 14

## INTERIOR PHOTOGRAPHIC REQUIREMENTS

## NOTE

Obtain closeups of any damage, irregularities, etc.

| Photo Area  | Proc. Ref*  | Photo Ident Number/Date  | Remarks/Suggested Caption   |
|---|-------------|--|---|
| 5. Crew transfer tunnel<br>       | ⑦           | 106/CT-0/10/5-27-69<br>106/CT-1/10/5-27-69<br>106/CT-2/10/5-27-69<br>106/CT-3/10/5-27-69<br>106/CT-4/10/5-27-69  | Fwd pressure hatch (interior)<br>Tunnel area<br>Tunnel area<br>Tunnel area<br>Tunnel area   |
| 6. Upper equipment bay (UEB)<br> | ⑤<br>⑦<br>⑭ | 106/CI-51/10/5-27-69<br>106/CI-52/10/5-27-69<br>106/CI-53/10/5-27-69<br>106/CI-54/10/5-27-69<br>106/CI-55/10/5-27-69<br>106/CI-56/10/5-26-69<br>106/CI-57/10/5-27-69<br>106/CI-58/10/5-27-69<br>106/CI-59/10/5-27-69 | PHOTO AT 2020Z, AT 1930Z<br>ON MAY 26 PRESS = 4 PSI<br>VICE 0.4 WHEN PHOTO TAKEN<br>Volume U3<br>Inner surface of hatch<br>Repress sys and hatch bottles<br>16 MM CAMERA REMOVED<br>Volume U4 |
| 7. Aft bulkhead<br>              | ⑤<br>⑦<br>⑫ | 106/CI-60/10/5-27-69<br>106/CI-61/10/5-27-69<br>106/CI-62/10/5-27-69<br>106/CI-63/10/5-27-69<br>106/CI-64/10/5-27-69<br>106/CI-65/10/5-27-69<br>106/CI-66/10/5-27-69<br>106/CI-67/10/5-27-69<br>106/CI-68/10/5-27-69 | NOTE<br>Obtain closeups of any water/condensation observed on the aft bulkhead.<br>NOTE<br>CI-60 POST FECAL REMOVAL<br>CI-61-68 POST EQUIP REMOVAL  |

\*Related procedure

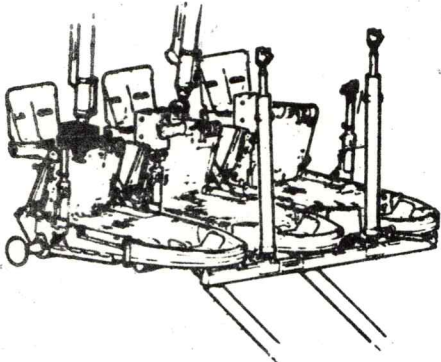
## PHOTOGRAPHIC REQUIREMENTS

Sheet 14 of 14

## INTERIOR PHOTOGRAPHIC REQUIREMENTS

## NOTE

Obtain closeups of any damage, irregularities, etc.

| Photo Area  | Proc.<br>Ref* | Photo Ident<br>Number/Date                      | Remarks/<br>Suggested<br>Caption   |
|---|---------------|---|--|
| 8. Crew couches<br> | ⑦<br>⑧        | NOTE<br>As directed by the<br>NASA Team Leader. | NOTE<br>If any strut has<br>stroked, obtain<br>photos of the<br>individual<br>struts as well<br>as overall<br>photos of the<br>assembly<br>(couch/struts). |
| 9. Crew Equipment<br><br>*Related procedure   | ②①            | As directed by the<br>NASA Team Leader.         |  |

PACKAGING REQUIREMENTS

- Exposed film shall be forwarded to MSC (for processing as directed by the NASA Team Leader).

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



START 1847 Z MAY 26

FINISH 1855 Z MAY 26

SM2A-08-SC106

2

TOTAL TIME REQUIRED 8 MINUTES

## ENGINE VENT PLUG INSTALLATION

Sheet 1 of 4

The purpose of this procedure is to provide instructions for installing the engine vent plugs. Installed vent plugs will afford safe working conditions by diverting transient propellant vapors away from the immediate working area.

### NOTE

- Engine vent plugs shall be installed in negative pitch engines only.
- Lower engines (positive pitch) shall be covered with a Viton blanket.

### SAFETY

1. Wear appropriate protective clothing (face shield, rubber gloves, etc.).
2. Do not attempt engine vent installation if visual vapor leaks are observed.
3. Do not allow unprotected parts of the body to come in contact with the engines or surrounding area.
4. If a drogue parachute has failed to deploy, exercise extreme caution when working in the vicinity of the upper deck.

### PHOTOGRAPHIC REQUIREMENTS

Refer to procedure (1).

### TOOLS AND EQUIPMENT

| Quantity | Nomenclature             |
|----------|--------------------------|
| 1        | Face shield (model 7-11) |
| 2 pr     | Rubber gloves            |
| 2        | Vent plug (PRS)          |
| 2        | Vent plug (SRS)          |
| 20 ft    | Nylon line               |
| 5 sq ft  | Viton blanket (PRS)      |
| 5 sq ft  | Viton blanket (SRS)      |

ENGINE VENT PLUG INSTALLATION

Sheet 2 of 4

INSTRUCTIONS

1. Inspect positive pitch engine nozzles and surrounding area; record condition.
2. Install Viton blanket (apron) over the positive pitch engines.
3. Position access stand as necessary to gain access to the side hatch area and the negative pitch engines.
4. To install vent plugs proceed as follows:
  - a. Back off serrated knob until knob hits handle.
  - b. Push vent plugs, seal first, into the engine nozzle.
  - c. Slide rubber positioner down and into the nozzle.

CAUTION

Avoid striking engine throat with edge of vent plug expander.

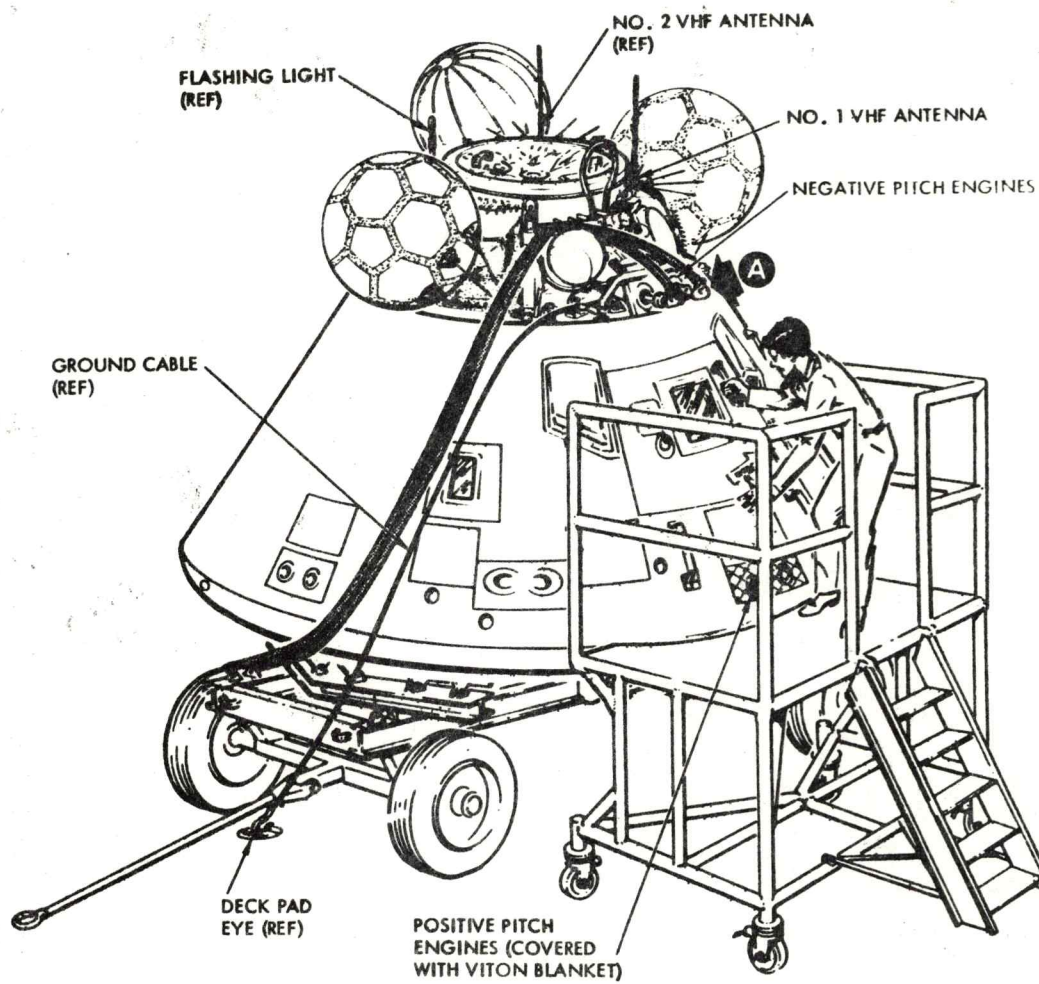
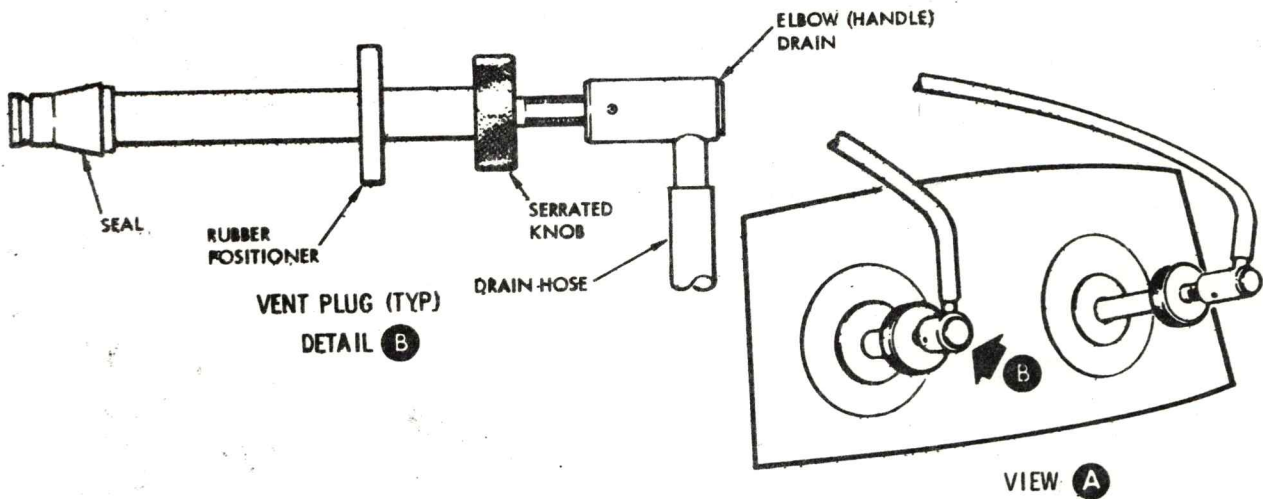
- d. While holding vent plug handle (elbow drain) secure plug by turning the serrated knob clockwise until the expander firmly seats the seal in the engine throat.
- e. Verify proper seating by attempting to pull the plug free.
- f. Guide drain tubing to the far side (plus Z) of the spacecraft and secure in place.

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## ENGINE VENT PLUG INSTALLATION

Sheet 3 of 4



SM-2A-1452F

## ENGINE VENT PLUG INSTALLATION

Sheet 4 of 4

PACKAGING REQUIREMENTS

- L. Vent plugs shall remain installed until all postretrieval procedures are completed. Refer to procedure (23) for removal procedures.

Remarks: TOP OF VITON BLANKET TAPED TO CM  
JUST BELOW HATCH

NEG PITCH ENG THROATS SMOOTH  
WITH NO PITTING OR BLISTERING



HATCH OPENED NORMALLY AT 1848Z MAY 26

## OPENING UNIFIED HATCH

Sheet 1 of 4

This procedure provides instructions for opening the unified hatch.

## NOTE

Should the hatch fail to open, enter the CM through the forward hatch. Refer to procedure (4).

SAFETY

1. Verify vent plugs installed in the negative pitch engine ports. Refer to procedure (2).
2. If a drogue or pilot parachute has failed to deploy, exercise extreme caution when opening the hatch and entering the CM.
3. If the EVA handle appears damaged, and it becomes necessary to pull on the handle, wear leather gloves.

PHOTOGRAPHIC REQUIREMENTS

Refer to procedure (1).

## CAUTION

NO PROCEDURE (CONTAINED IN THIS MANUAL)  
SHALL TAKE PRECEDENCE OVER CREW EGRESS OR  
AID.

TOOLS AND EQUIPMENT

| Quantity | Nomenclature                | Part No.        |
|----------|-----------------------------|-----------------|
| 1        | NASA hatch tool             | SEZ34100078-101 |
| 1        | Safety pin                  | AN416-1         |
| 1 pr     | Leather gloves              |                 |
| 1        | Block of wood (cut to size) |                 |

INSTRUCTIONS

## OPENING UNIFIED HATCH

## CAUTION

Follow opening procedures as prescribed,  
do not deviate.

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## OPENING UNIFIED HATCH

Sheet 2 of 4

INSTRUCTIONS

1. Inspect hatch and surrounding area for general condition.
2. Insert NASA tool into hatch drive penetration (engage latching mechanism).
3. Turn tool in a clockwise direction (until it stops).

## CAUTION

If counterbalance is pressurized, the hatch will swing open; stand clear of hatch opening path.

4. Turn tool in a counterclockwise direction (until it stops).

## NOTE

Additional force may be required to fully retract latches, after tool hits hard stop.

5. Pull/push hatch to the full open position. (Verify that counterbalance has secured hatch in full open position.)

## NOTE

The hatch weighs approximately 250 pounds. If the counterbalance is inoperative, two men will be required to open the hatch.

6. Insert a wooden block between overcenter lock and counterbalance arm.
7. Crew egress (as applicable).
8. Install safety pin (AN416-1) in the handle ratchet control. (Refer to sheet 4.)

## CAUTION

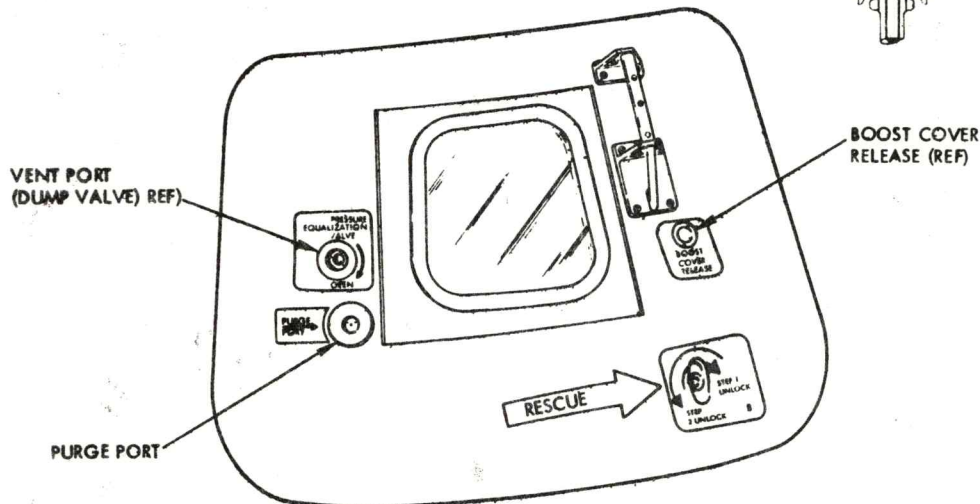
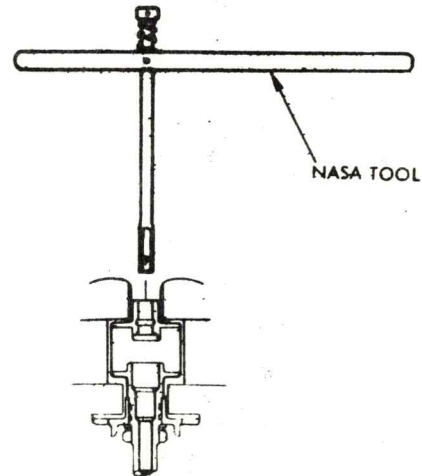
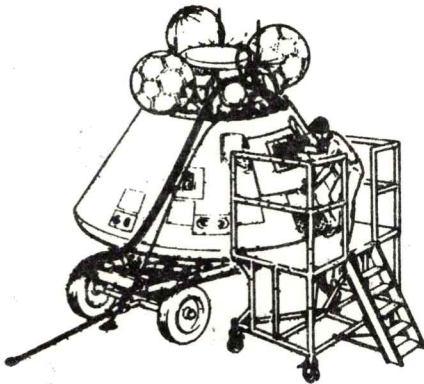
Do not move or reposition hatch controls.

9. Record GN<sub>2</sub> pressure WHITE (green/white).



## OPENING UNIFIED HATCH

Sheet 3 of 4



SM-2A-1430F

INSTRUCTIONS

10. Inspect hatch interior and record "as found" position of all hatch controls (do not reposition).

CAUTION

- Never close the hatch with the handle pawl control in the LATCH position; it must be in the NEUTRAL position with safety pin installed.
- Refer to procedure (22) prior to closing the hatch.

PACKAGING REQUIREMENTS

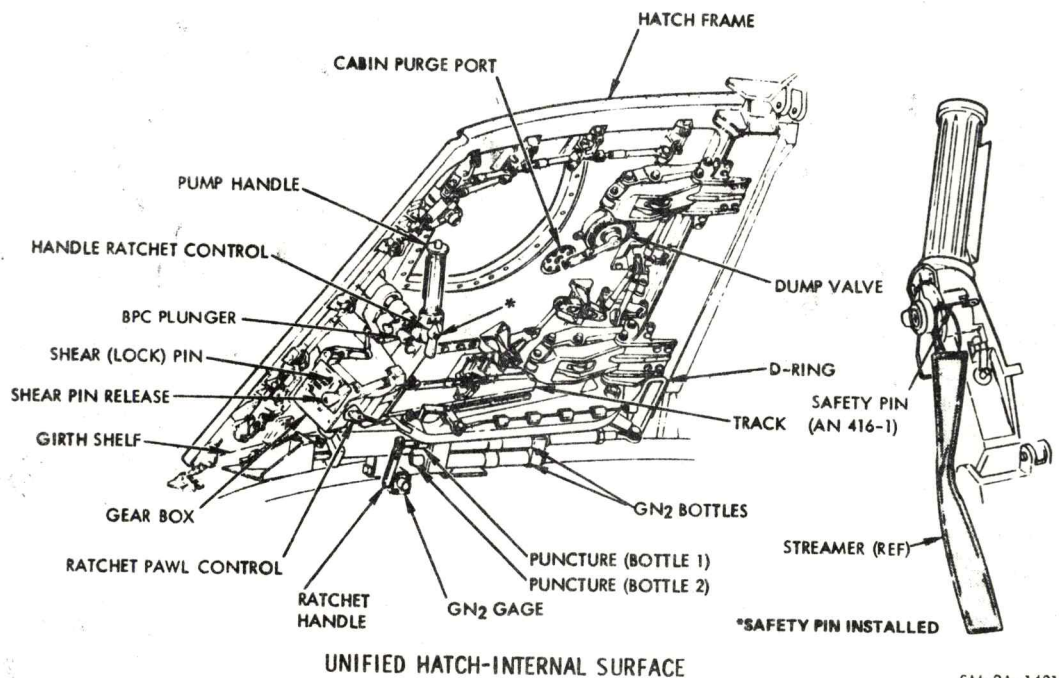
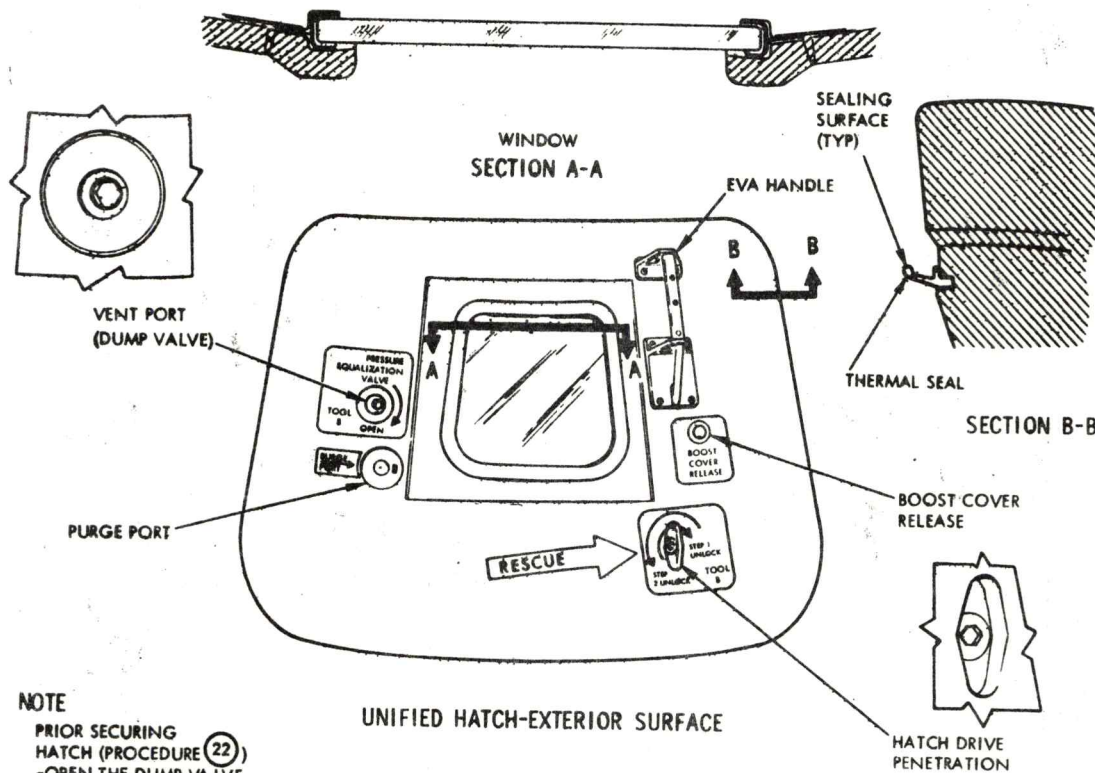
1. Not applicable.

"D" RING IN POSITION  
PUMP HANDLE FOUND IN STOWED POSITION  
HANDLE RATCHET CONTROL FOUND IN "N"

BPC PLUNGER ARROW UP  
SHEAR LOCK PIN RETRACTED  
SHEAR PIN RELEASE CENTER POSITION  
RATCHET PAW CONTROL IN "N"  
RATCHET HANDLE STOWED  
DUMP VALVE CLOSED

## OPENING UNIFIED HATCH

Sheet 4 of 4



SM-2A-1431J



**THIS PROCEDURE NOT PERFORMED****FORWARD HATCH REMOVAL**

Sheet 1 of 4

This procedure provides an alternate method for entering the CM should the normal procedure (3) fail to open the unified hatch.

**SAFETY**

1. If a drogue or pilot parachute has failed to deploy, exercise extreme caution when removing the forward hatch and entering the tunnel.
2. If one or both of the VHF antennas, or the flashing light has failed to deploy, use caution when working on the upper deck.
3. The forward hatch weighs approximately 85 pounds; use caution when handling.

**CAUTION**

Do not allow hatch to fall into the CM.

**TOOLS AND EQUIPMENT**

| Quantity | Nomenclature                 |
|----------|------------------------------|
| 1        | NASA hatch tool              |
| 1        | Line (20' or greater length) |

**PHOTOGRAPHIC REQUIREMENTS**

Refer to procedure (1) .

## FORWARD HATCH REMOVAL

Sheet 2 of 4

INSTRUCTIONS

1. Insert NASA hatch tool (7/16-inch hex) into the hatch unlocking mechanism.
2. Secure line to hatch tool and then pass the line over a pulley, beam, etc., located above the hatch. (If no overhead pivot point is available, secure the line in a manner to prevent the hatch from falling.)
3. Verify line knots and fastenings are secure.
4. Remove all slack from the line and apply tension.
5. Turn the hatch tool counterclockwise (approximately 167 degrees).

## CAUTION

The forward hatch weighs approximately 85 pounds,  
do not drop.

## NOTE

If possible, inform the crew that the hatch is  
about to be lowered.

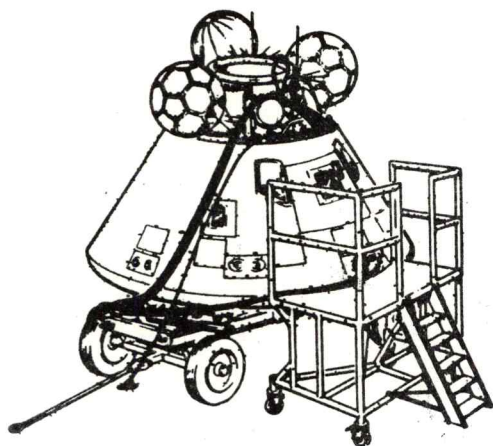
6. Lower hatch into CM. Stow on a padded surface to prevent damage.

Remarks: \_\_\_\_\_  
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## FORWARD HATCH REMOVAL

Sheet 3 of 4

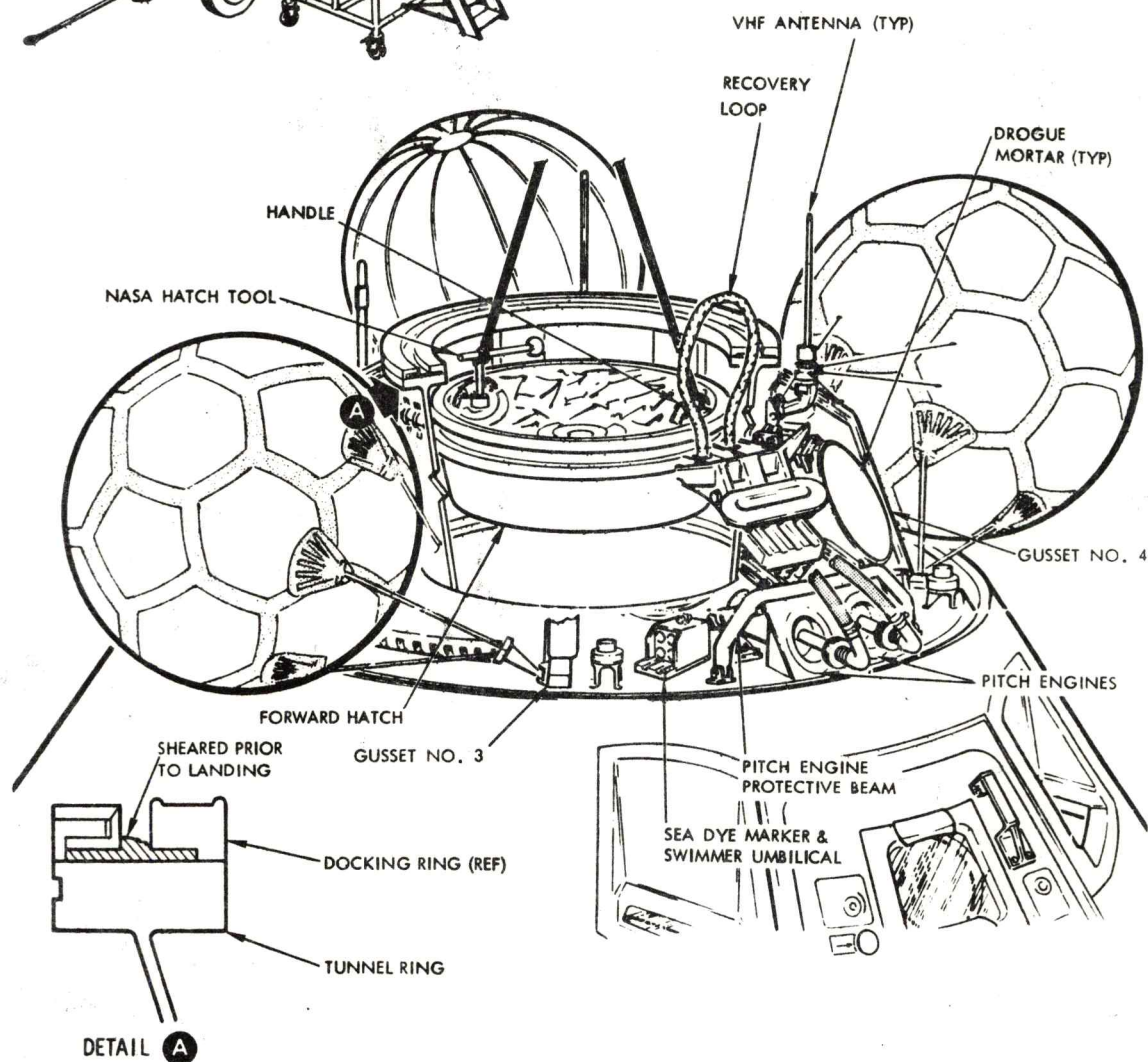


## NOTE

NASA hatch tool may be utilized as a handle (by recovery personnel) to lower the hatch into the CM.

*Caution*

- DO NOT drop hatch.
- If possible, inform crew that the hatch is about to be lowered into CM.



SM-2A-1831A

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FORWARD HATCH REMOVAL

Sheet 4 of 4

PACKAGING REQUIREMENTS

Not applicable.

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
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TIMES OF OBSERVATIONS ARE NOTED ON THE

SM2A-08-SC106

PAGE NUMBER STARTED AND STOPPED

5

PANEL READINGS AND SWITCH POSITIONS

Sheet 1 of 70

All control and display [indicators, control handles, pushbuttons, switches, and circuit breakers (C/B)] positions shall be recorded as soon as possible after retrieval and prior to systems shutdown.

SAFETY

1. Observe standard safety precautions when working in the CM.
2. Do not reposition any switch, C/B, or control to gather additional information on a spacecraft system. Repositioning of a switch, C/B, or control could cause injury to personnel outside the CM, or cause damage to an on-board system. In addition, the repositioning of switches other than those specified (within this document) may jeopardize postflight testing at the contractor's facility.

PHOTOGRAPHIC REQUIREMENTS

1. Closeups of control and display panels depicting the "as recovered" position of all controls and displays. (Refer to procedure (1).)

TOOLS AND EQUIPMENT

Not applicable.

INSTRUCTIONS

1. Mark figures S-3 through S-43 so that each figure represents the "as recovered" position of the controls and displays on the corresponding spacecraft panel. Figures S-1 and S-2 illustrate the proper method for recording the position of these controls and displays.
2. Use a red pencil or pen for marking all recordings.
3. Sketch or circle, as applicable, all switches and indicator positions on the panel drawings to ensure positive identification of the actual indicator or switch position.
4. Note/record any damage to instrument covers (glass), controls, etc.

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

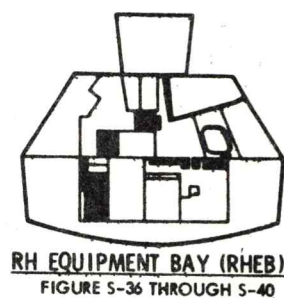
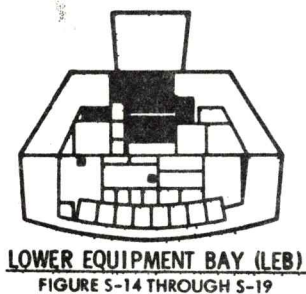
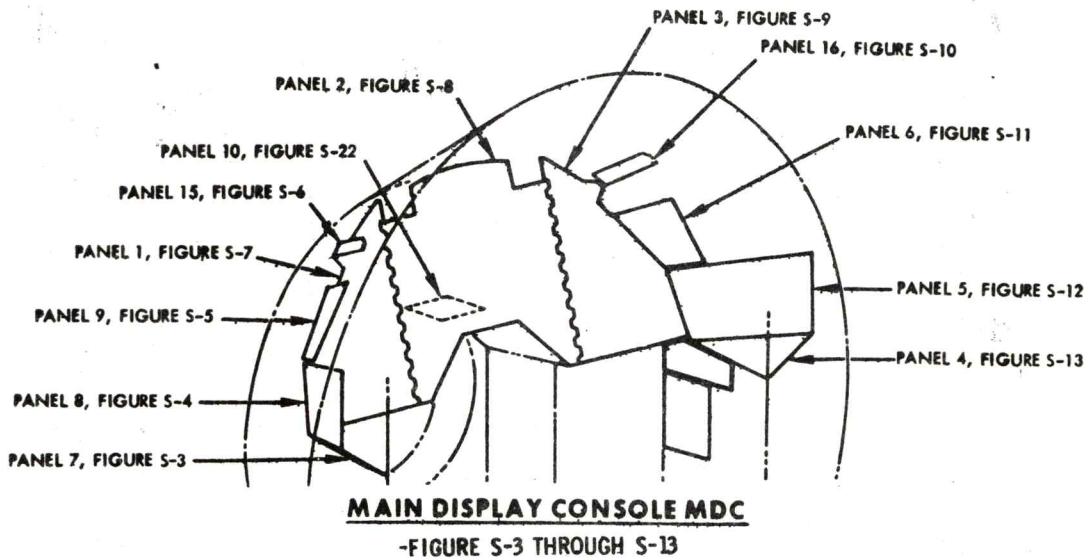
PACKAGING REQUIREMENTS

Not applicable.

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## PANEL READINGS AND SWITCH POSITIONS

Sheet 2 of 70



## NOTE:

- FIGURE S-2 ILLUSTRATES THE METHOD FOR RECORDING CONTROL AND DISPLAY CONDITIONS AND POSITIONS
- FIGURE S-20 DELETED
- FIGURE S-21 AND S-22 ILLUSTRATE THE FORWARD EQUIP BAY (FEB)
- FIGURE S-41 AND S-42 CENTRAL CREW COMP

SM-2A-1889A

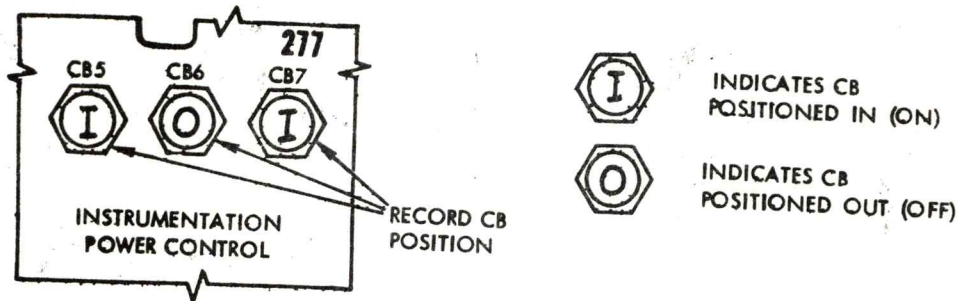
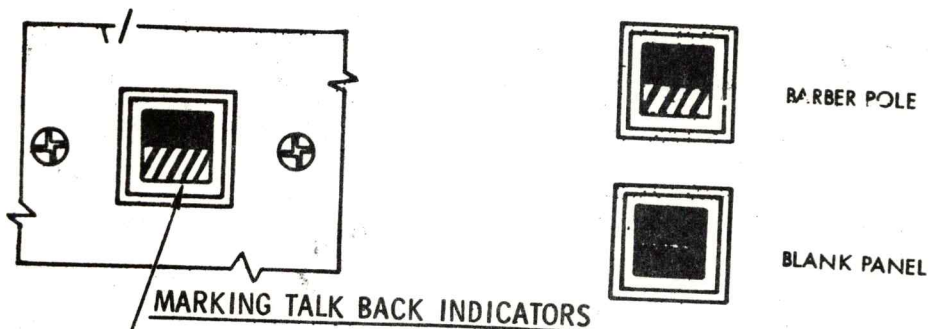
Figure S-1. Postretrieval Check Data Sheet Index

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## PANEL READINGS AND SWITCH POSITIONS

Sheet 3 of 70

MARKING CIRCUIT BREAKER POSITIONSMARKING TALK BACK INDICATORS

RECORD ACTUAL DISPLAY

## NOTE

1. THIS ILLUSTRATION, TOGETHER WITH SHEET 2 AND 3 ILLUSTRATE THE METHODS FOR RECORDING INDICATOR, SWITCH, AND CONTROL POSITIONS.
2. USE RED PENCIL OR PEN FOR ALL RECORDINGS.
3. SKETCH INDICATOR HANDS AND SWITCHES AS NECESSARY TO ASSURE POSITIVE IDENTIFICATION OF ACTUAL INDICATION.

**Warning**

CONTROLS AND SWITCHES SHALL NOT BE REPOSITIONED TO GATHER ADDITIONAL INFORMATION.

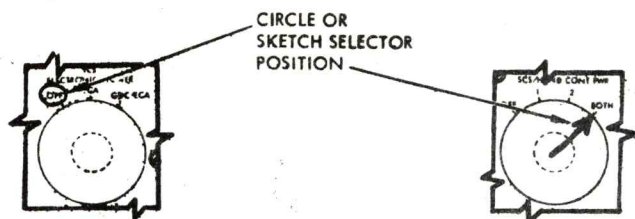
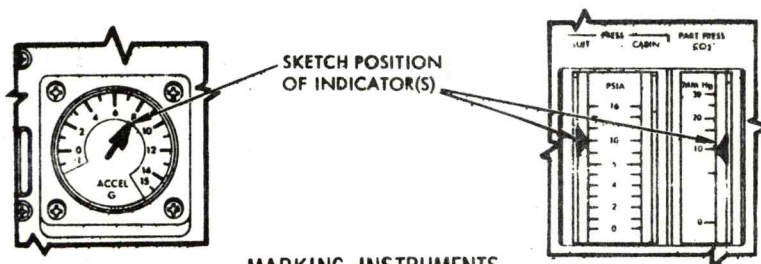
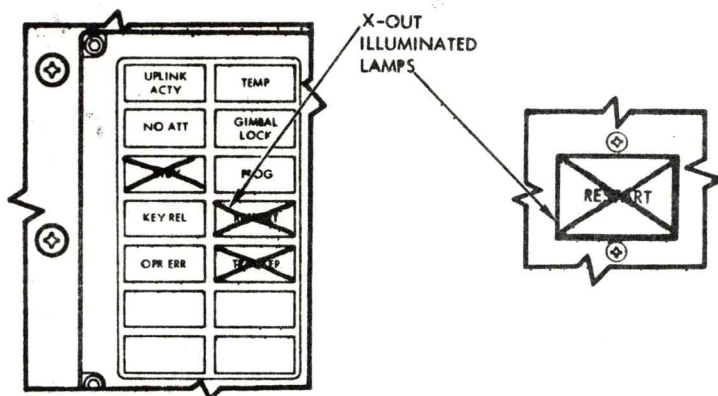
SM-2A-1890A

Figure S-2. Methods for Recording Control and Display Indicators  
(Sheet 1 of 3)

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## PANEL READINGS AND SWITCH POSITIONS

Sheet 4 of 70

MARKING ROTARY SWITCHESMARKING INSTRUMENTSMARKING ILLUMINATED LIGHTS**NOTE**

USE RED PENCIL OR PEN  
TO RECORD INDICATOR, SWITCH  
CONTROL POSITIONS.

**Warning**

CONTROLS AND SWITCHES SHALL NOT  
BE REPOSITIONED TO GATHER ADDITIONAL  
INFORMATION.

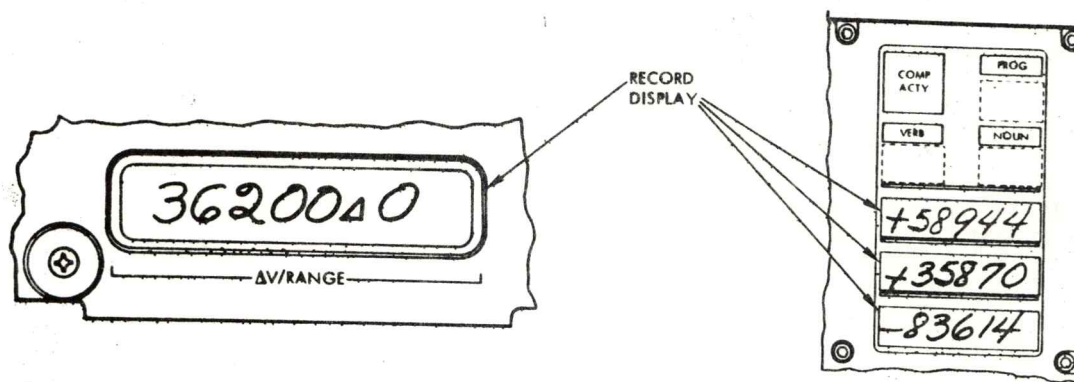
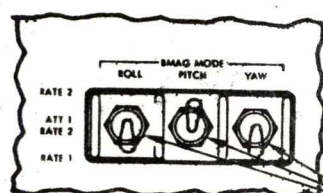
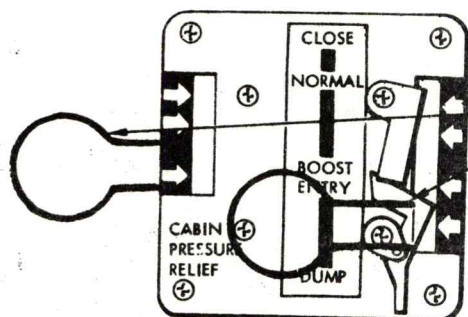
SM-2A-1891

Figure S-2. Methods for Recording Control and Display Indicators  
(Sheet 2 of 3)



## PANEL READINGS AND SWITCH POSITIONS

Sheet 5 of 70

MARKING INSTRUMENT WINDOWSSKETCH POSITION  
OF TOGGLEINDICATES UP  
POSITIONINDICATES CENTER  
POSITIONINDICATES DOWN  
POSITIONMARKING TOGGLE SWITCH POSITIONSSKETCH OR CIRCLE  
POSITION

## NOTE

USE RED PENCIL OR PEN TO RECORD ALL  
INDICATOR, SWITCH, AND CONTROL POSITIONS**Warning**CONTROLS AND SWITCHES SHALL NOT BE  
REPOSITIONED TO GATHER ADDITIONAL  
INFORMATION.MARKING CONTROL HAND LEVER POSITIONS

SM-2A-1892B

Figure S-2. Methods for Recording Control and Display Indicators  
(Sheet 3 of 3)

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SM2A-08-SC106

PANEL READINGS AND SWITCH POSITIONS

Sheet 6 of 70

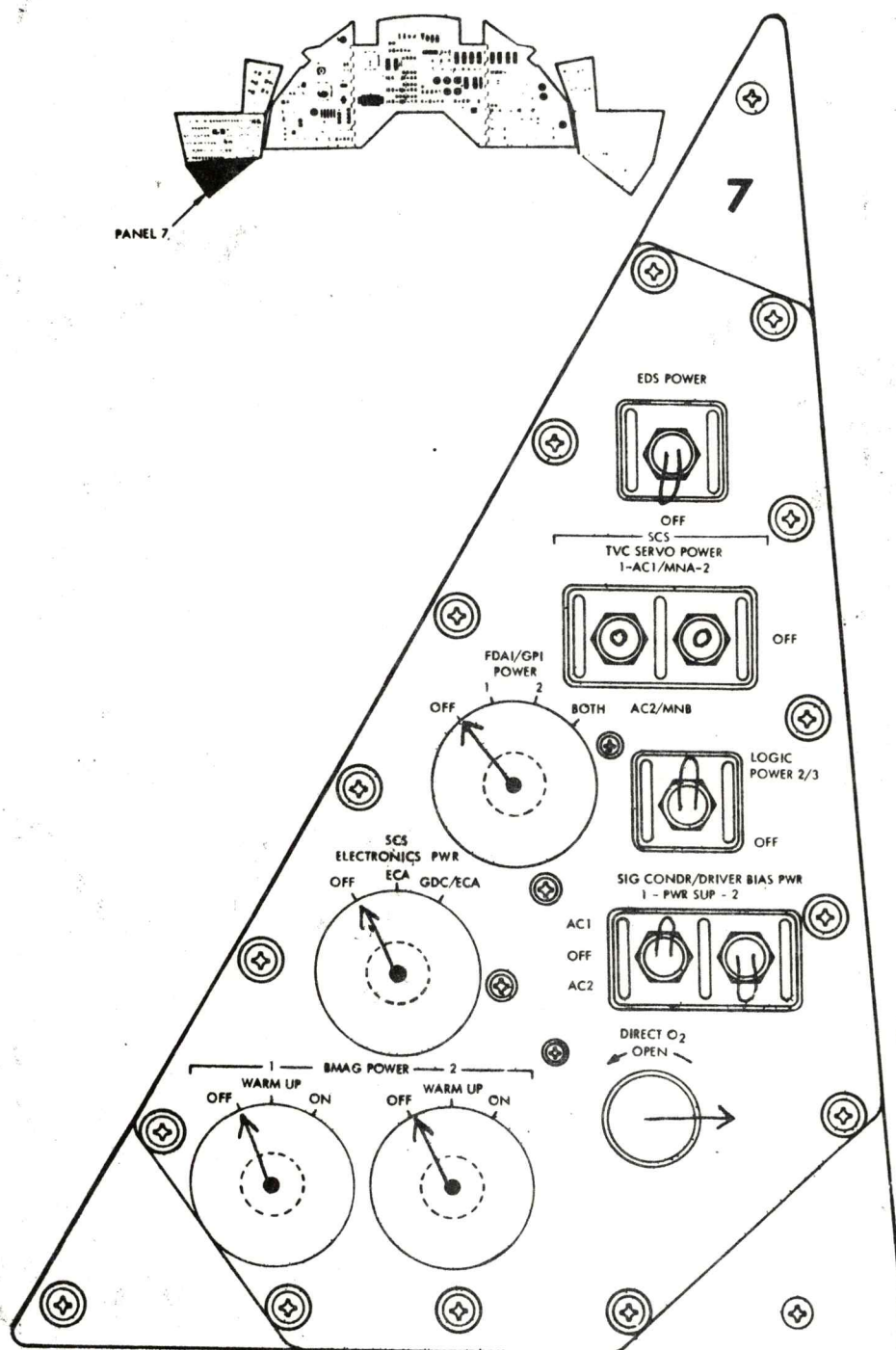


Figure S-3. MDC Check Data Sheet, Panel 7

SM-2A-1851B



## PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1871A

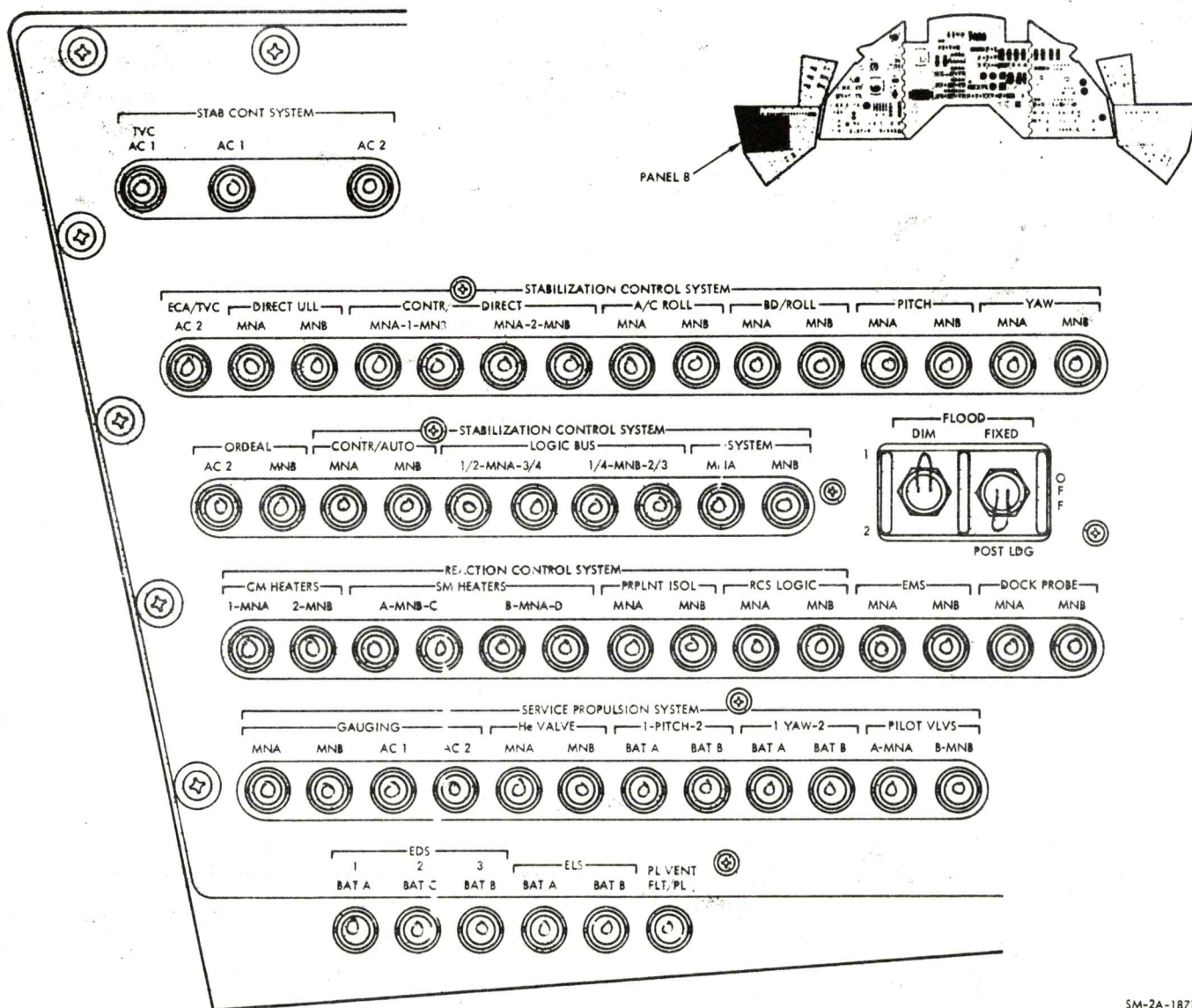


Figure S-4. MDC Check Data Sheet, Panel 8 (Sheet 1 of 2)

PANEL READINGS AND SWITCH POSITIONS

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SM-2A-19078

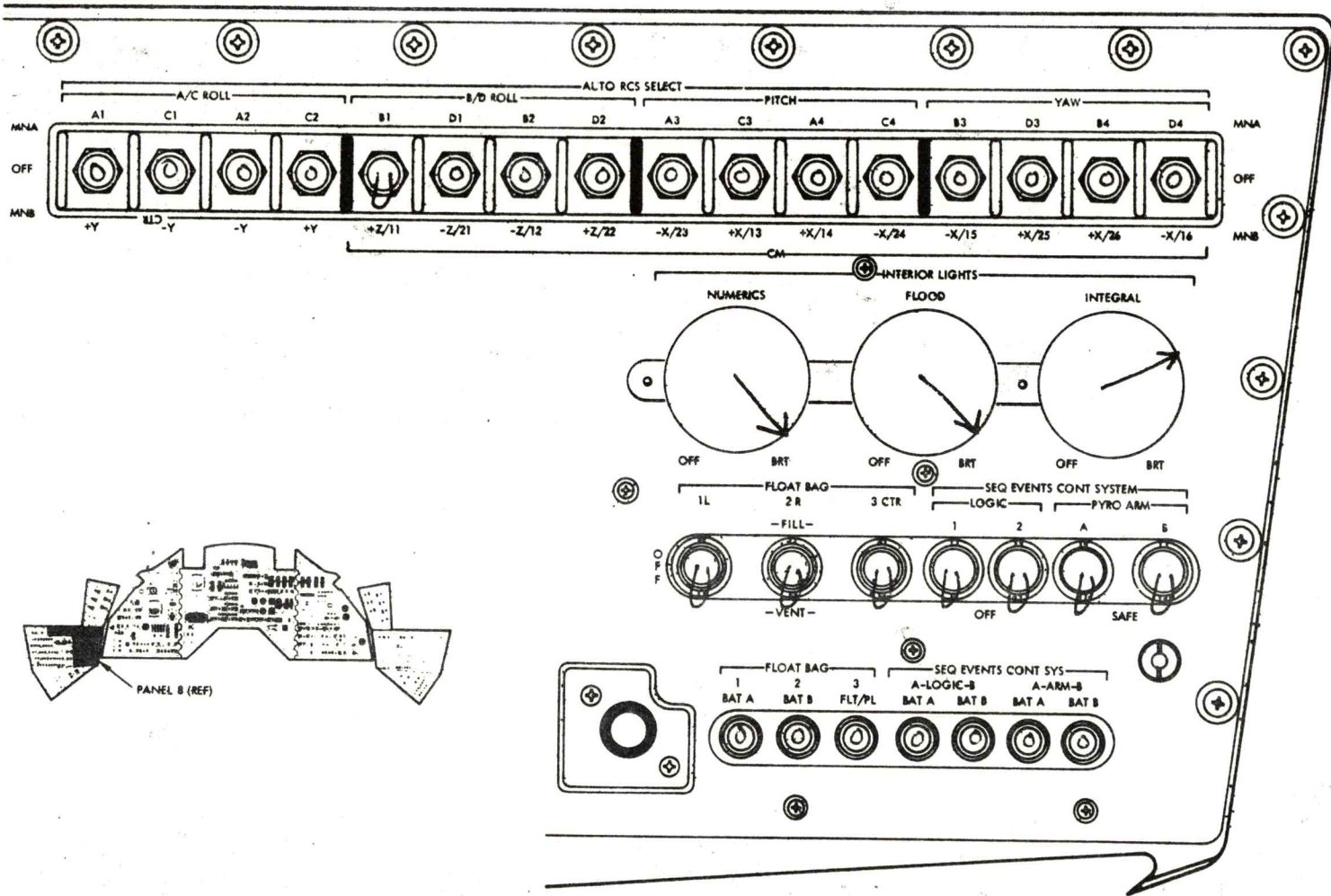


Figure S-4. MDC Check Data Sheet, Panel 8 (Sheet 2 of 2)

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## PANEL READINGS AND SWITCH POSITIONS

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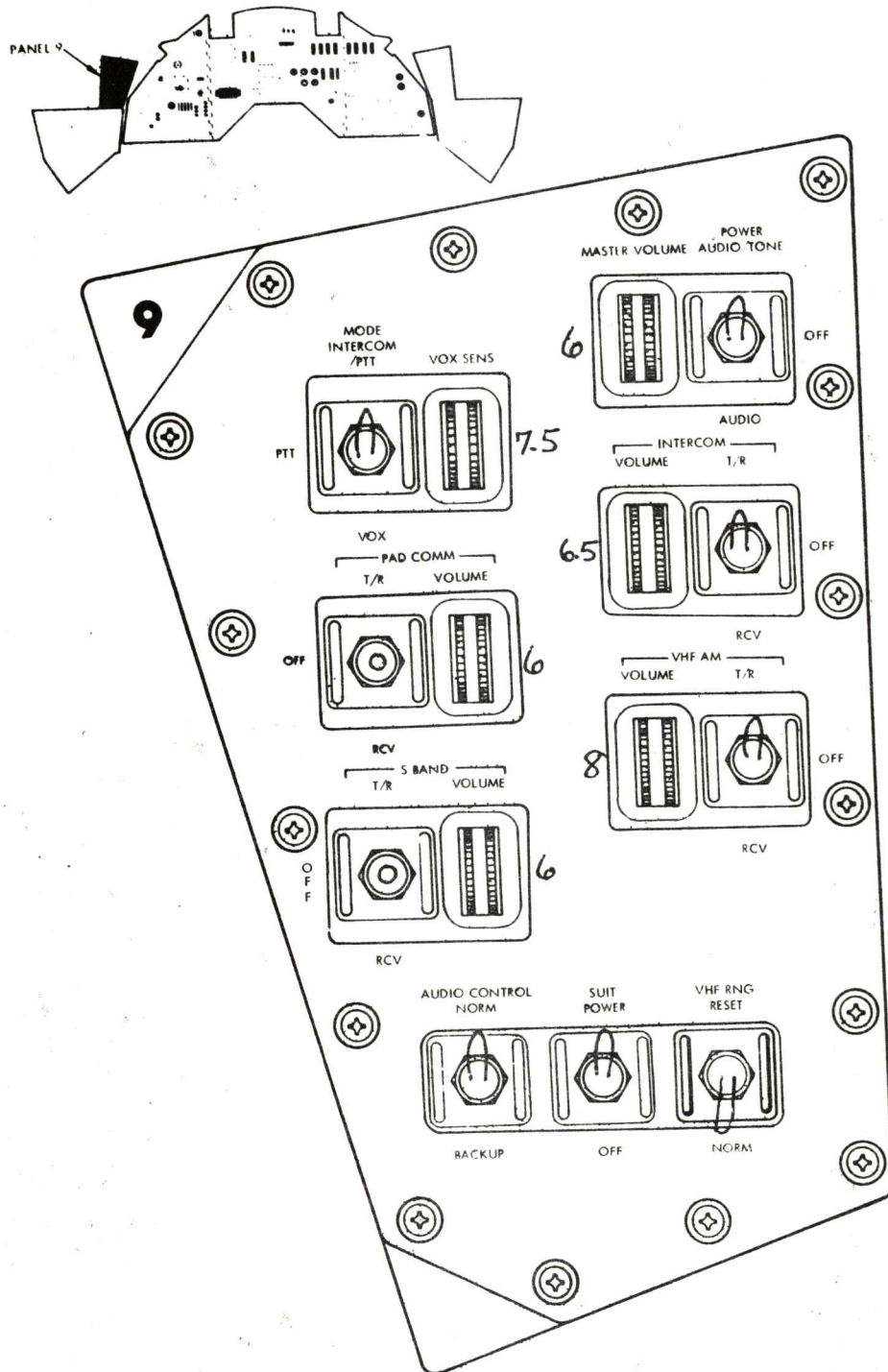


Figure S-5. MDC Check Data Sheet, Panel 9

SM-2A-18498

## PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1844A

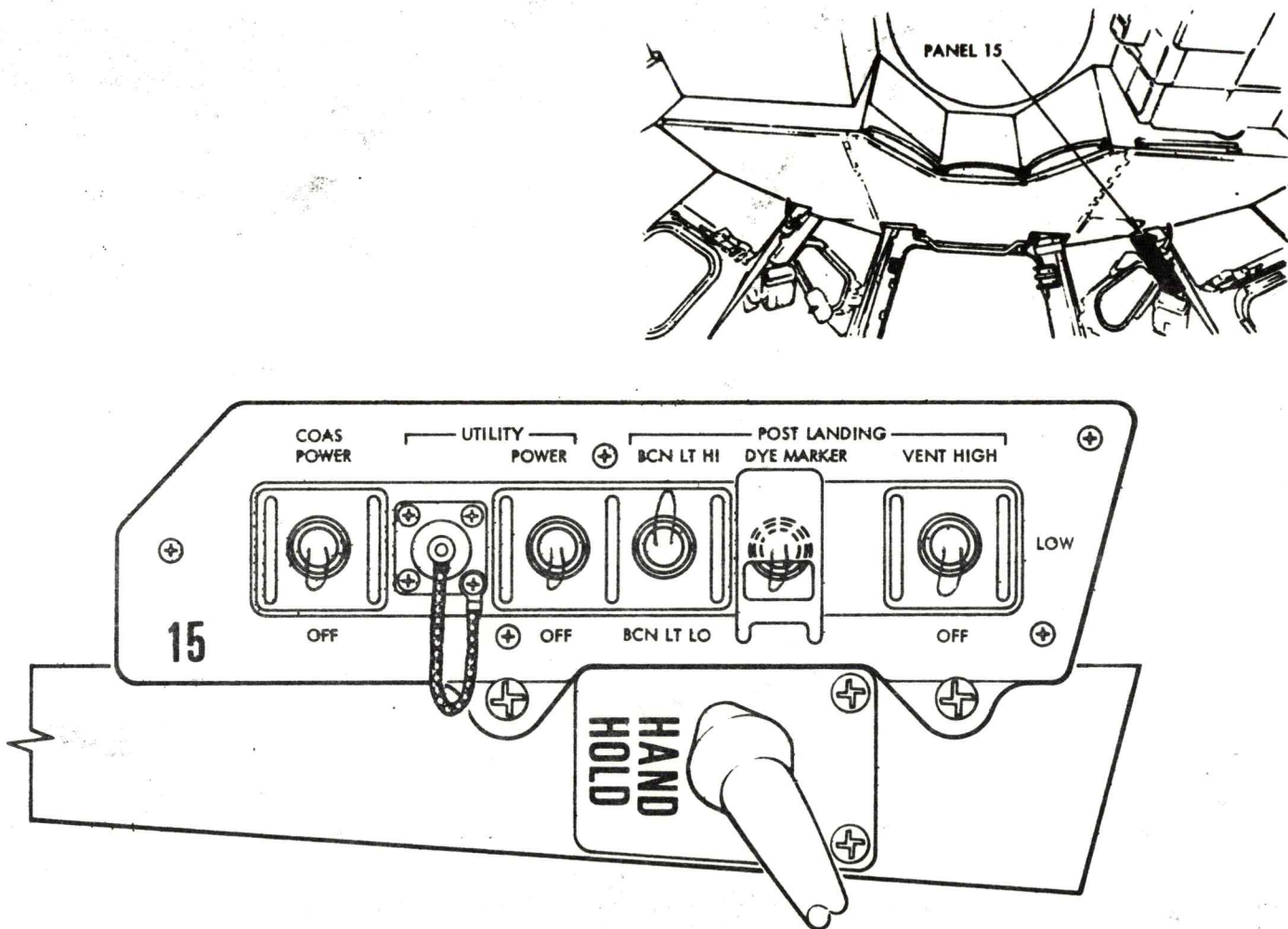
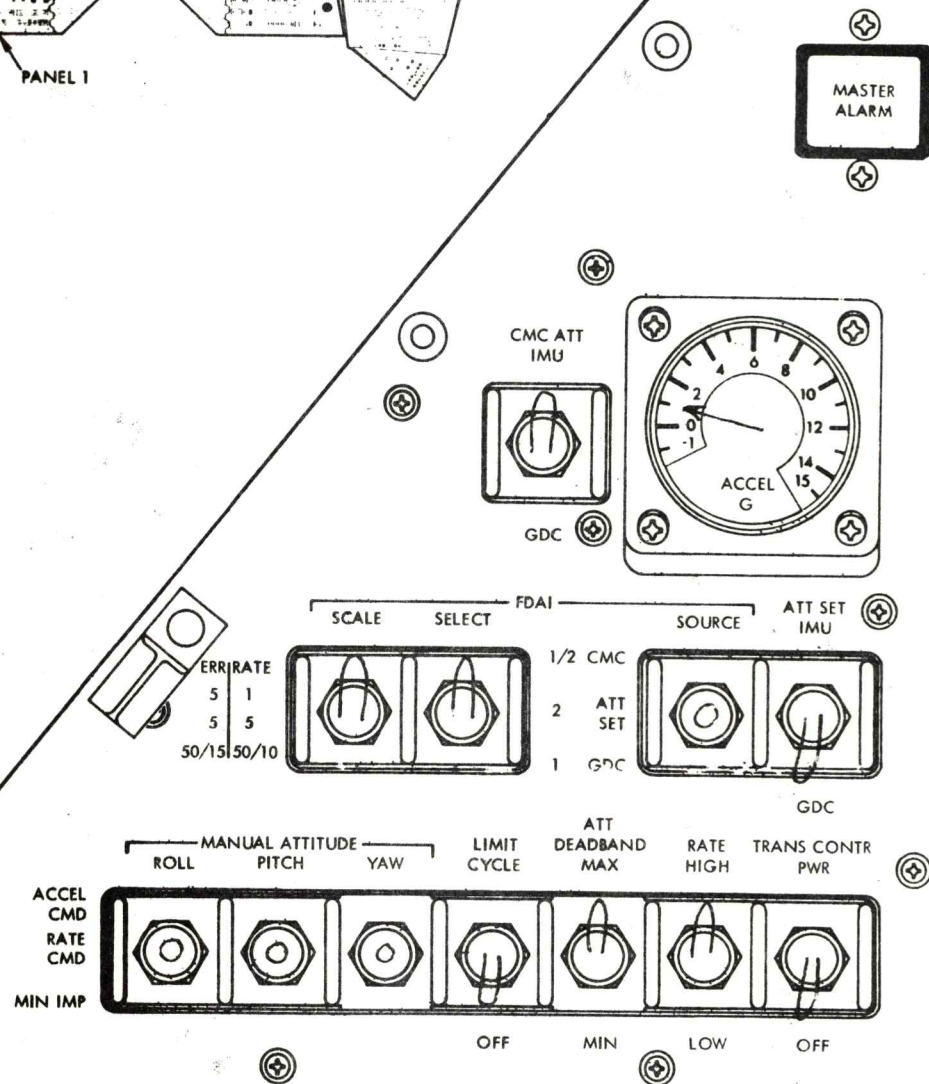
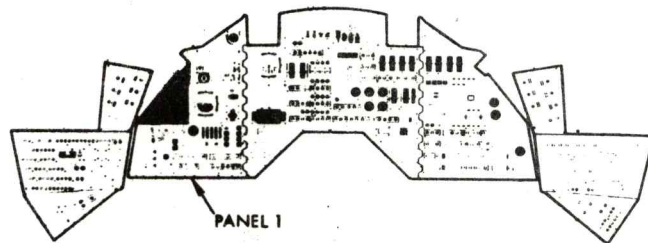


Figure S-6. MDC Check Data Sheet, Panel 15



## PANEL READINGS AND SWITCH POSITIONS

Sheet 11 of 70

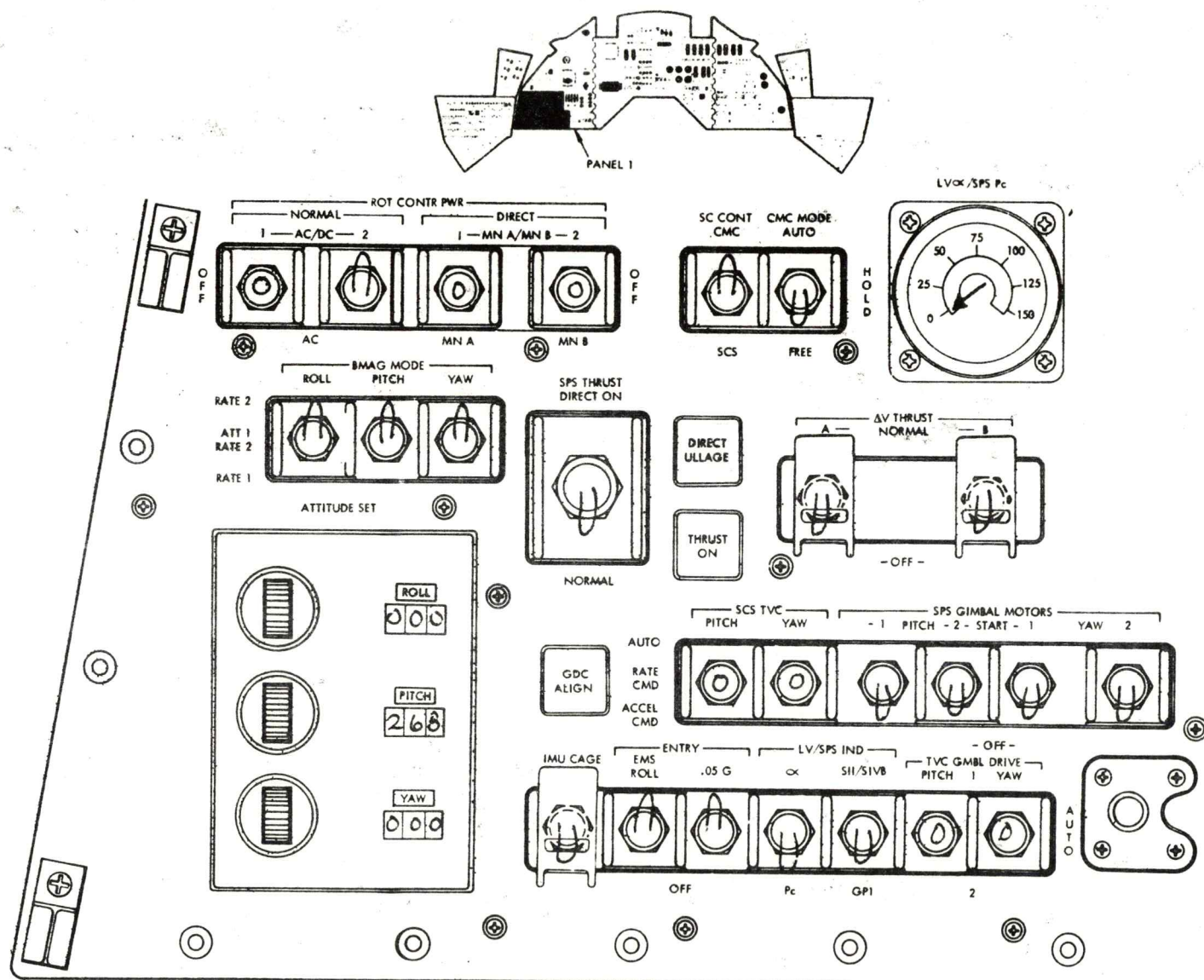


SM-2A-1872A

Figure S-7. MDC Check Data Sheet, Panel 1 (Sheet 1 of 5)

## PANEL READINGS AND SWITCH POSITIONS

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SM-2A-18738

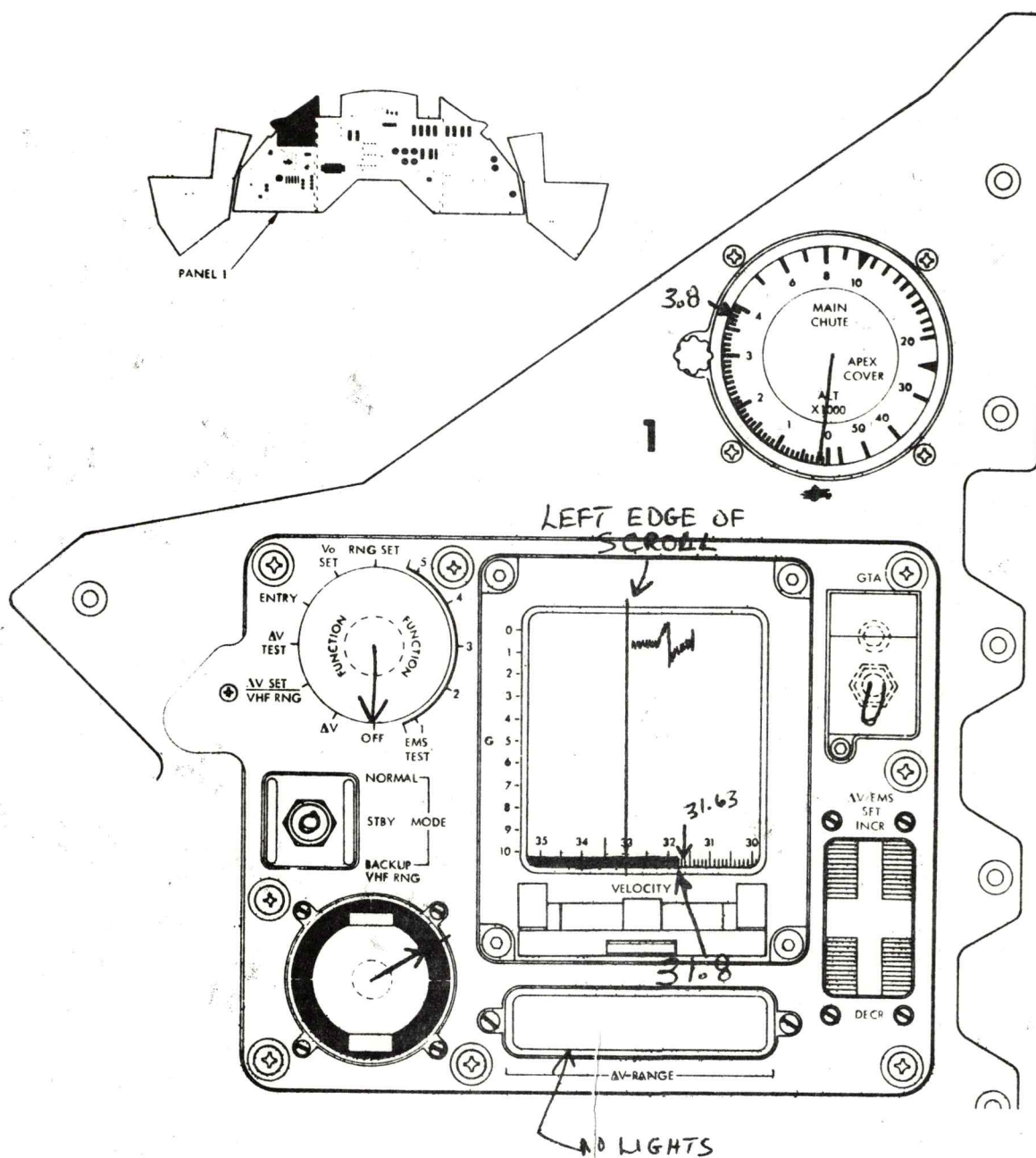
Figure S-7. MDC Check Data Sheet, Panel 1 (Sheet 2 of 5)

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## PANEL READINGS AND SWITCH POSITIONS

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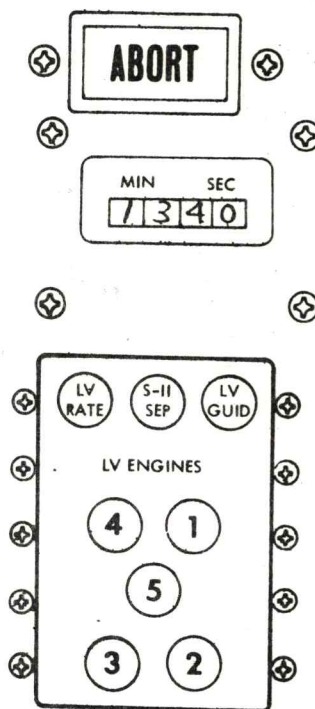
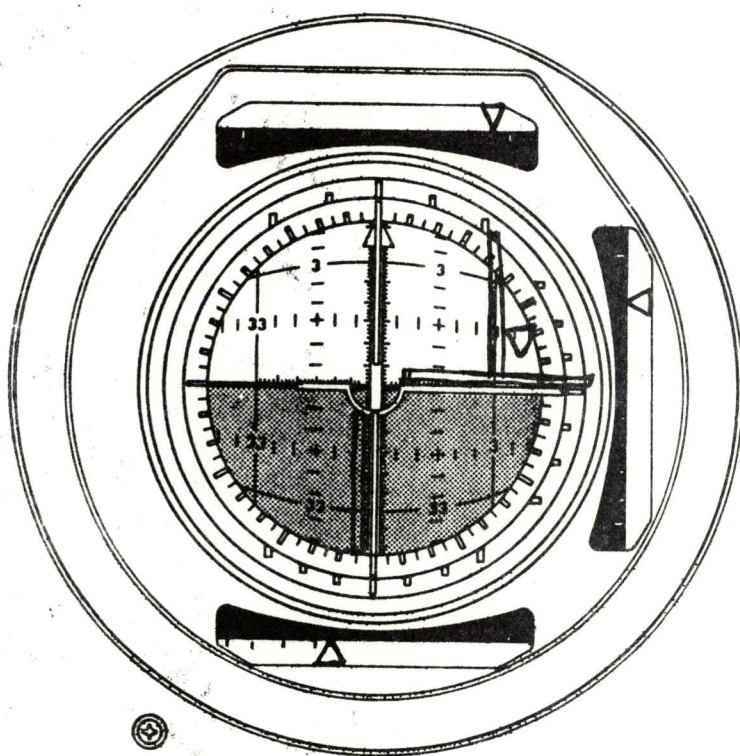
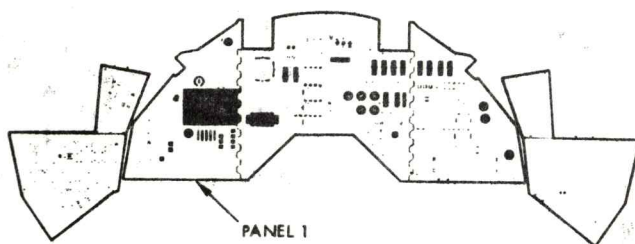
SM-2A-1874A

Figure S-7. MDC Check Data Sheet, Panel 1 (Sheet 3 of 5)

NOTE: CLOSE UP PHOTO TAKEN  
OF THIS ON PRINCETON

## PANEL READINGS AND SWITCH POSITIONS

Sheet 14 of 70



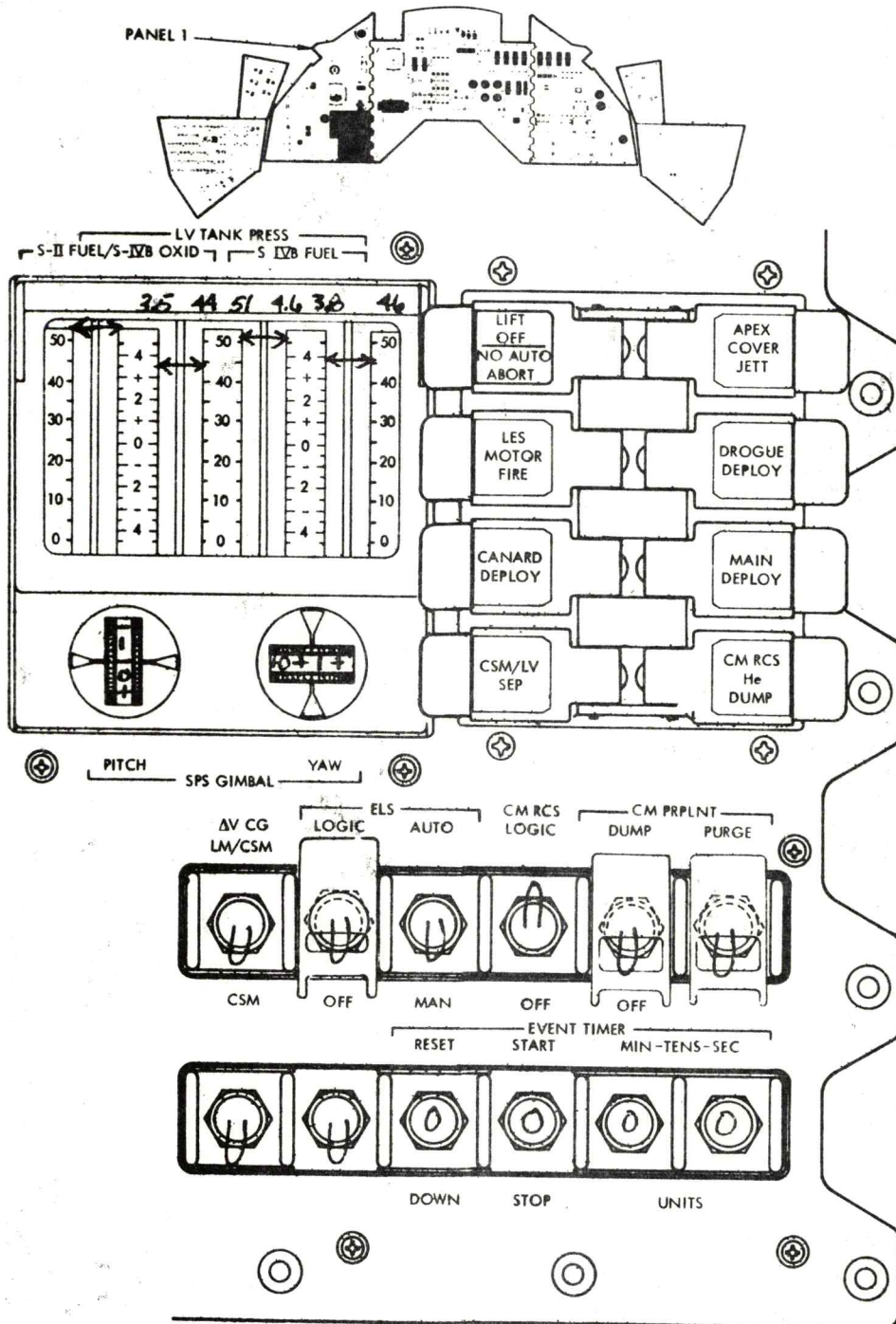
SM-2A-1875

Figure S-7. MDC Check Data Sheet, Panel 1 (Sheet 4 of 5)



## PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1-2/2R

Figure S-7. MDC Check Data Sheet, Panel 1 (Sheet 5 of 5)

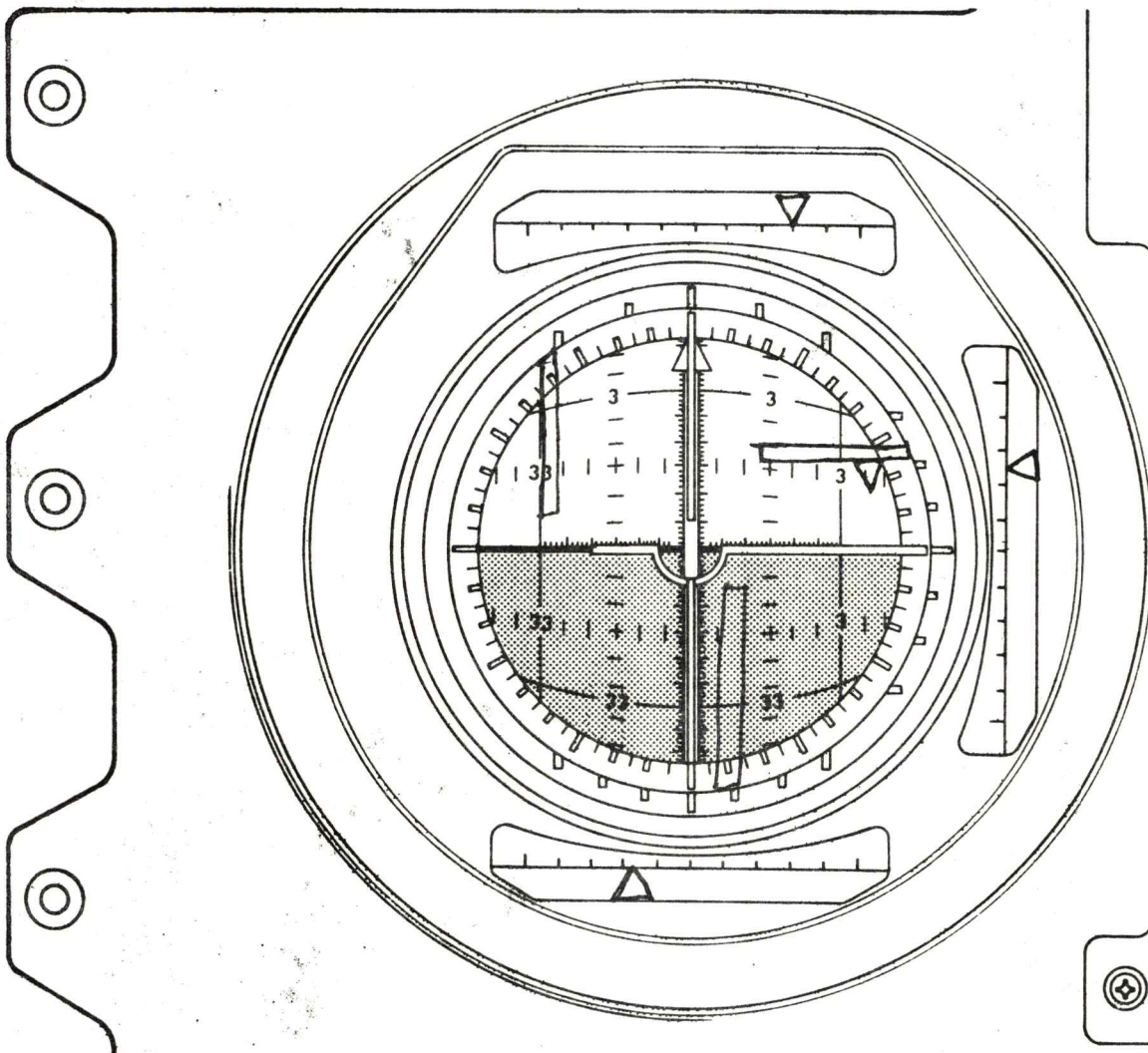
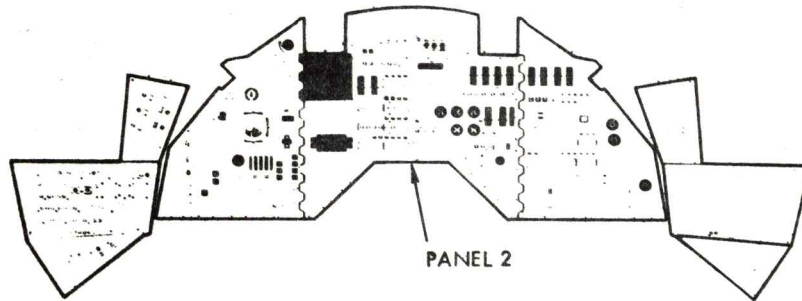
FINISH 0130Z MAY 28

SM2A-08-SC106

5

PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1877

Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 1 of 12)



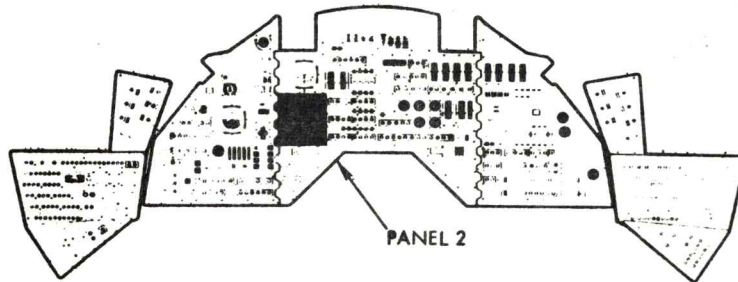
START 0130 MAY 28

SM2A-08-SC106

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PANEL READINGS AND SWITCH POSITIONS

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NO LIGHTS

|             |   |             |   |           |         |      |  |
|-------------|---|-------------|---|-----------|---------|------|--|
| UPLINK ACTY |   | TEMP        |   | COMP ACTY |         | PROG |  |
| NO ATT      |   | GIMBAL LOCK |   |           |         |      |  |
| STBY        |   | PROG        |   | VERB      |         | NOUN |  |
| KEY REL     |   | RESTART     |   |           |         |      |  |
| OPR ERR     |   | TRACKER     |   |           |         |      |  |
|             |   |             |   |           |         |      |  |
|             |   |             |   |           |         |      |  |
|             |   |             |   |           |         |      |  |
| VERB        | + | 7           | 8 | 9         | CLR     | ENTR |  |
|             | - | 4           | 5 | 6         | PRO     |      |  |
| NOUN        | 0 | 1           | 2 | 3         | KEY REL | RSET |  |

SM-2A-1878 B

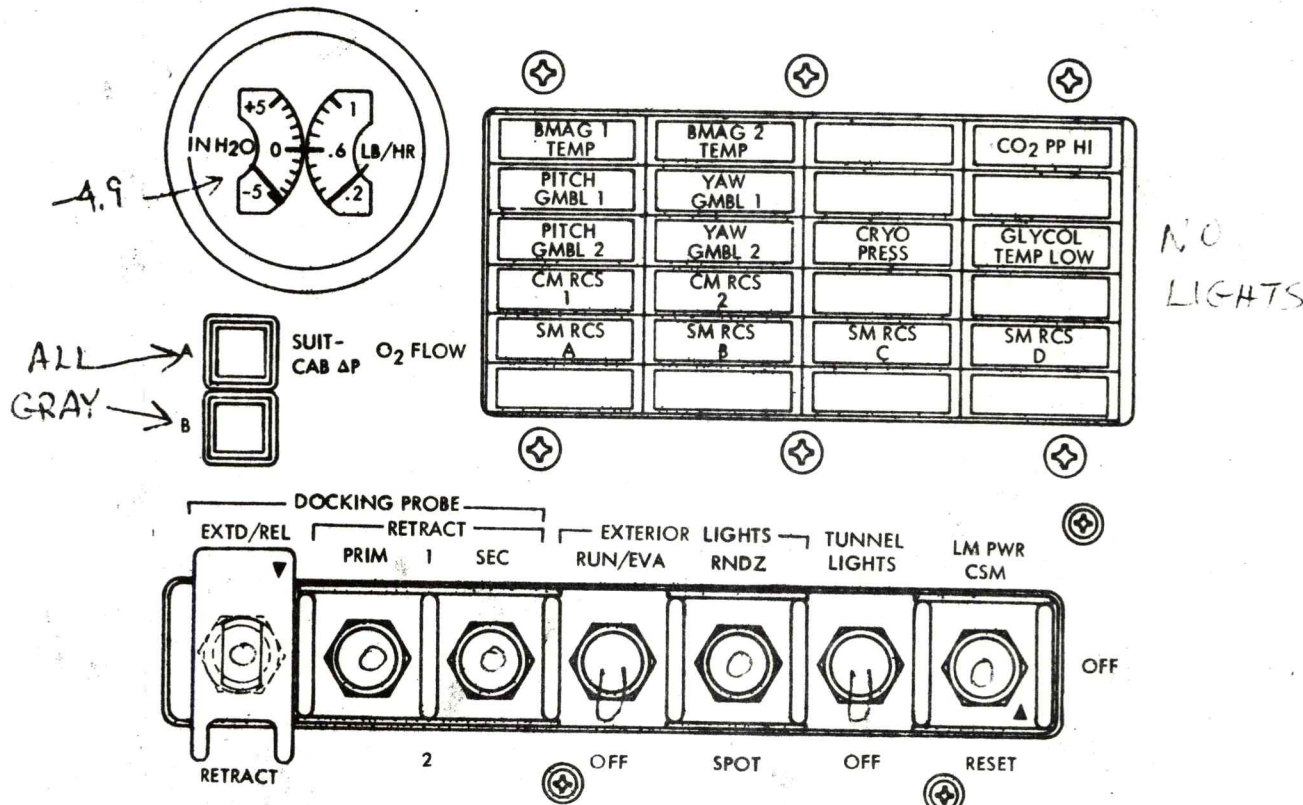
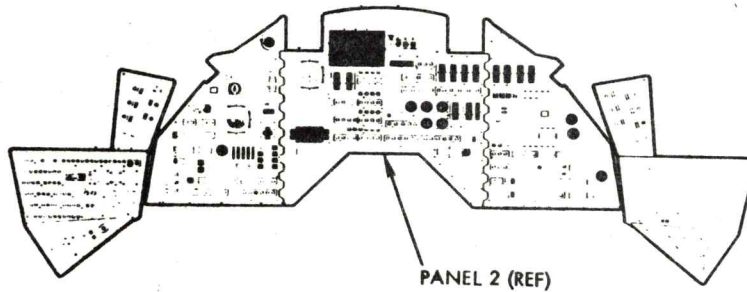
Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 2 of 12)





## PANEL READINGS AND SWITCH POSITIONS

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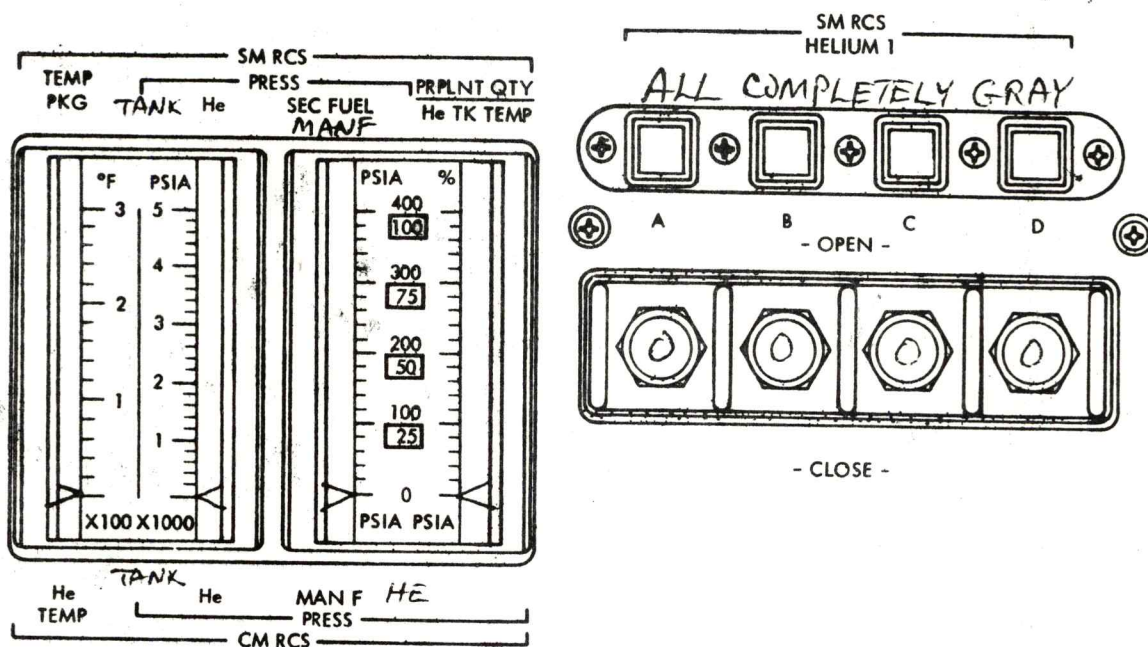
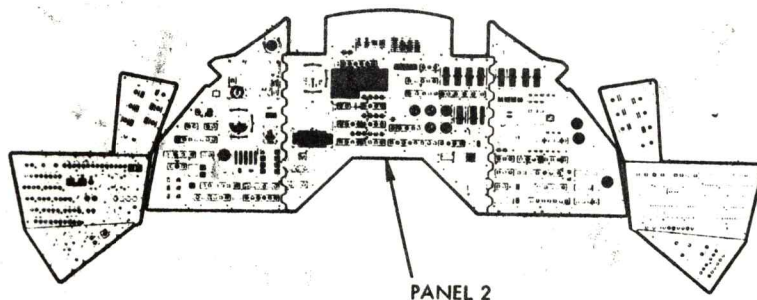


SM-2A-1880D

Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 4 of 12)

## PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1881C

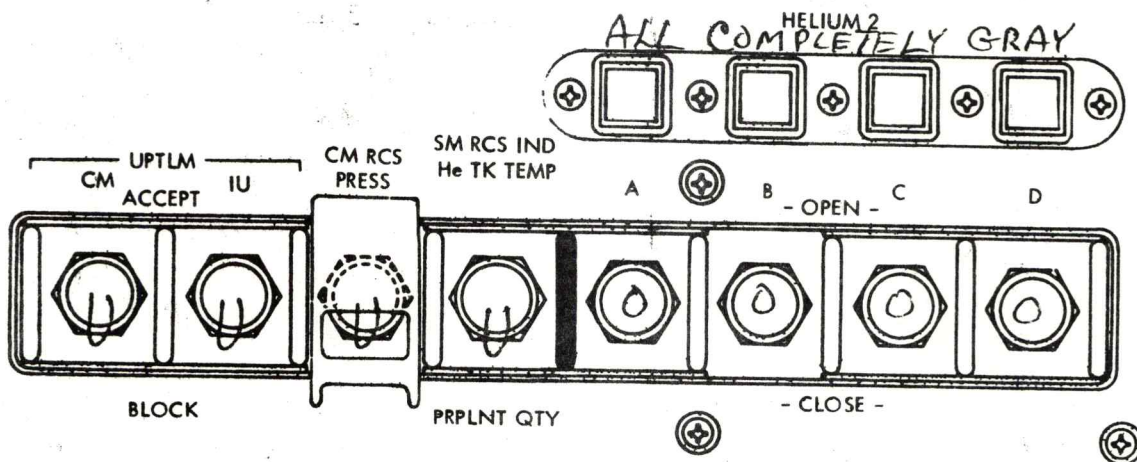
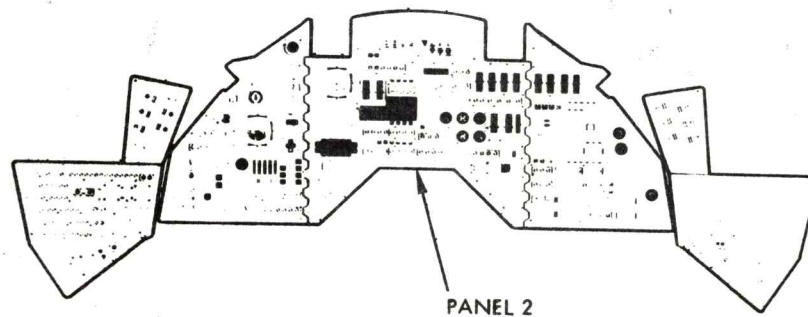
Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 5 of 12)

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## PANEL READINGS AND SWITCH POSITIONS

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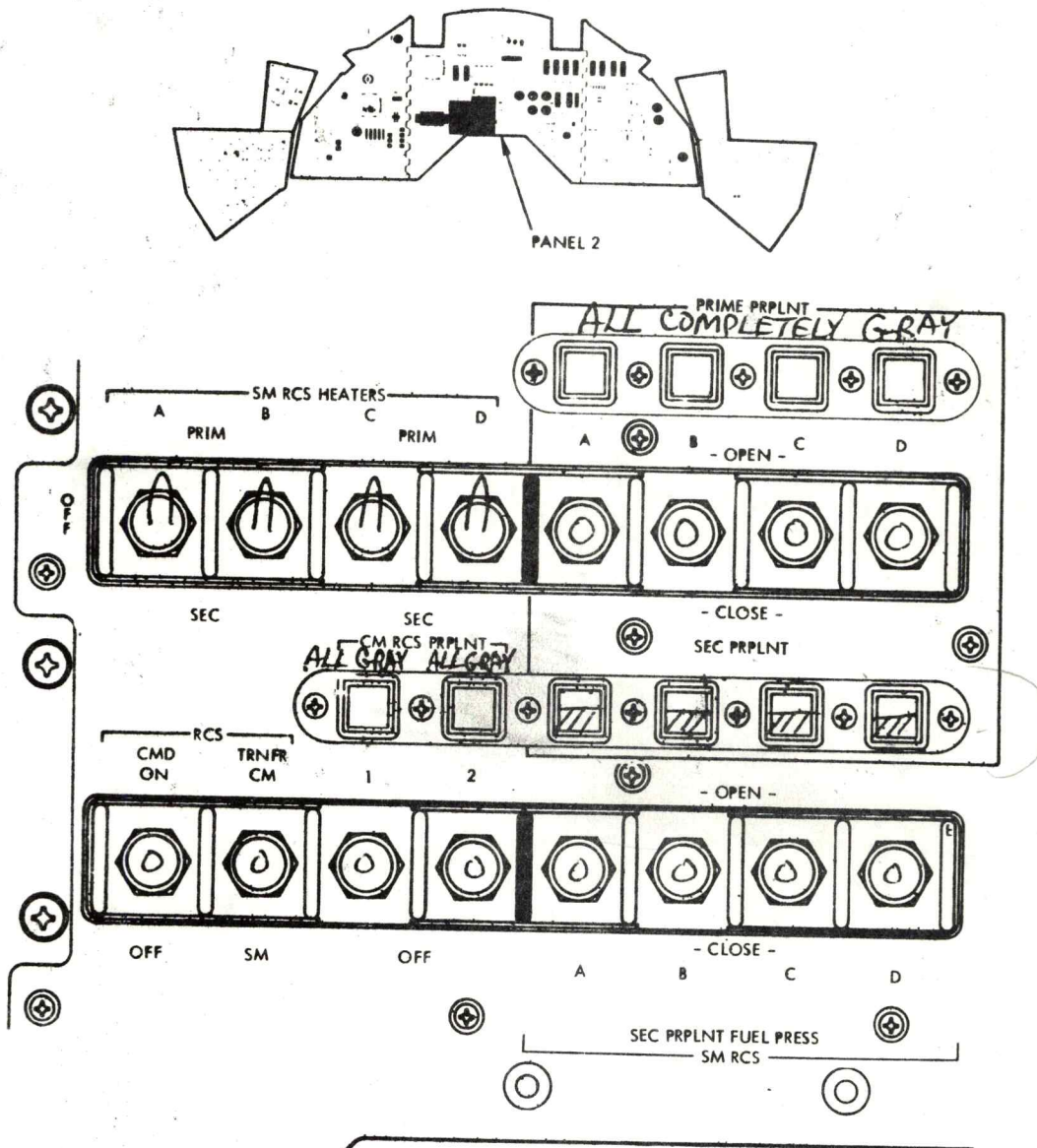
SM-2A-1882C

Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 6 of 12)

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PANEL READINGS AND SWITCH POSITIONS

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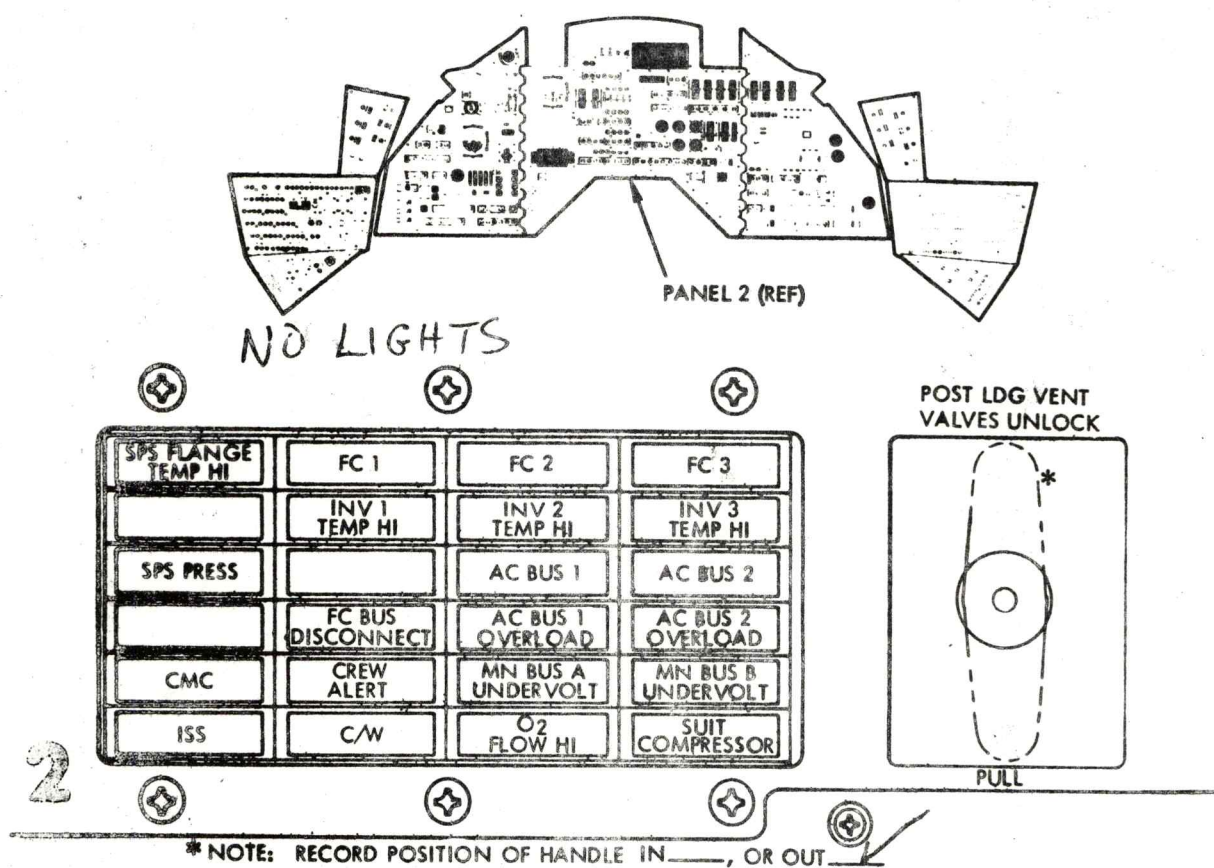
SM-2A-1083C

Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 7 of 12)



## PANEL READINGS AND SWITCH POSITIONS

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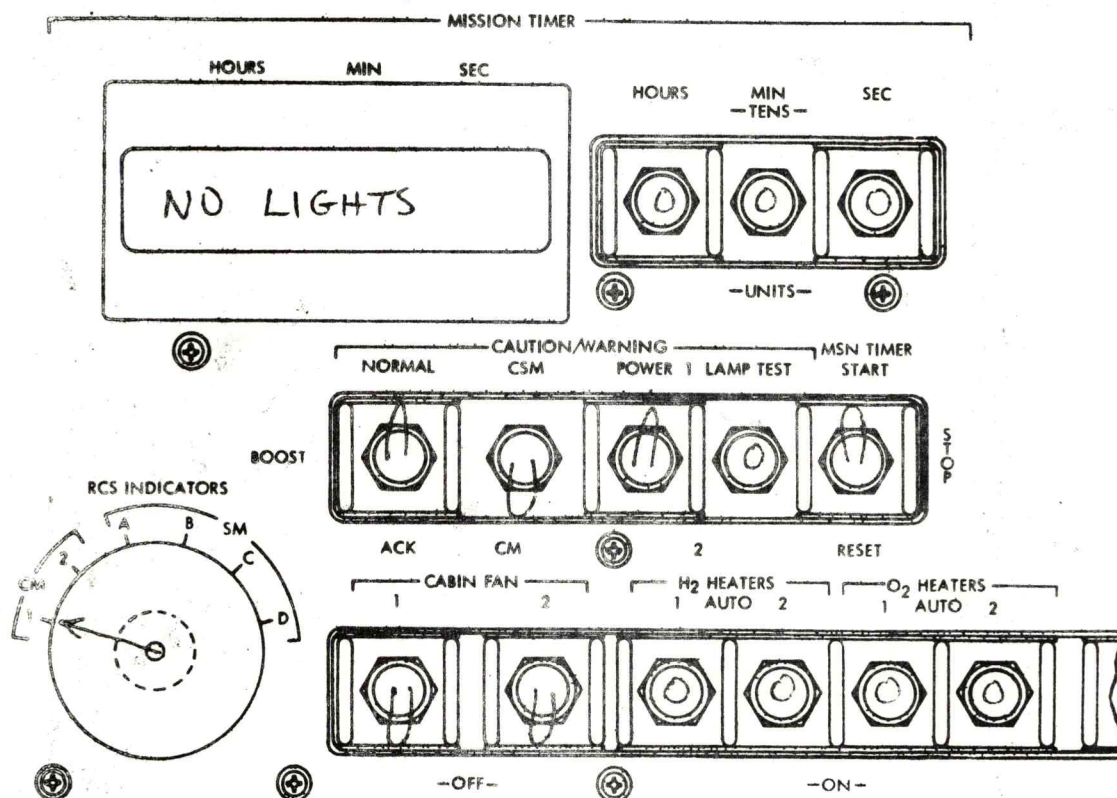
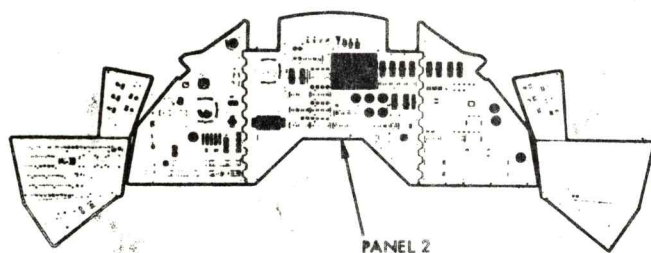


SM-2A-1884D

Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 8 of 12)

## PANEL READINGS AND SWITCH POSITIONS

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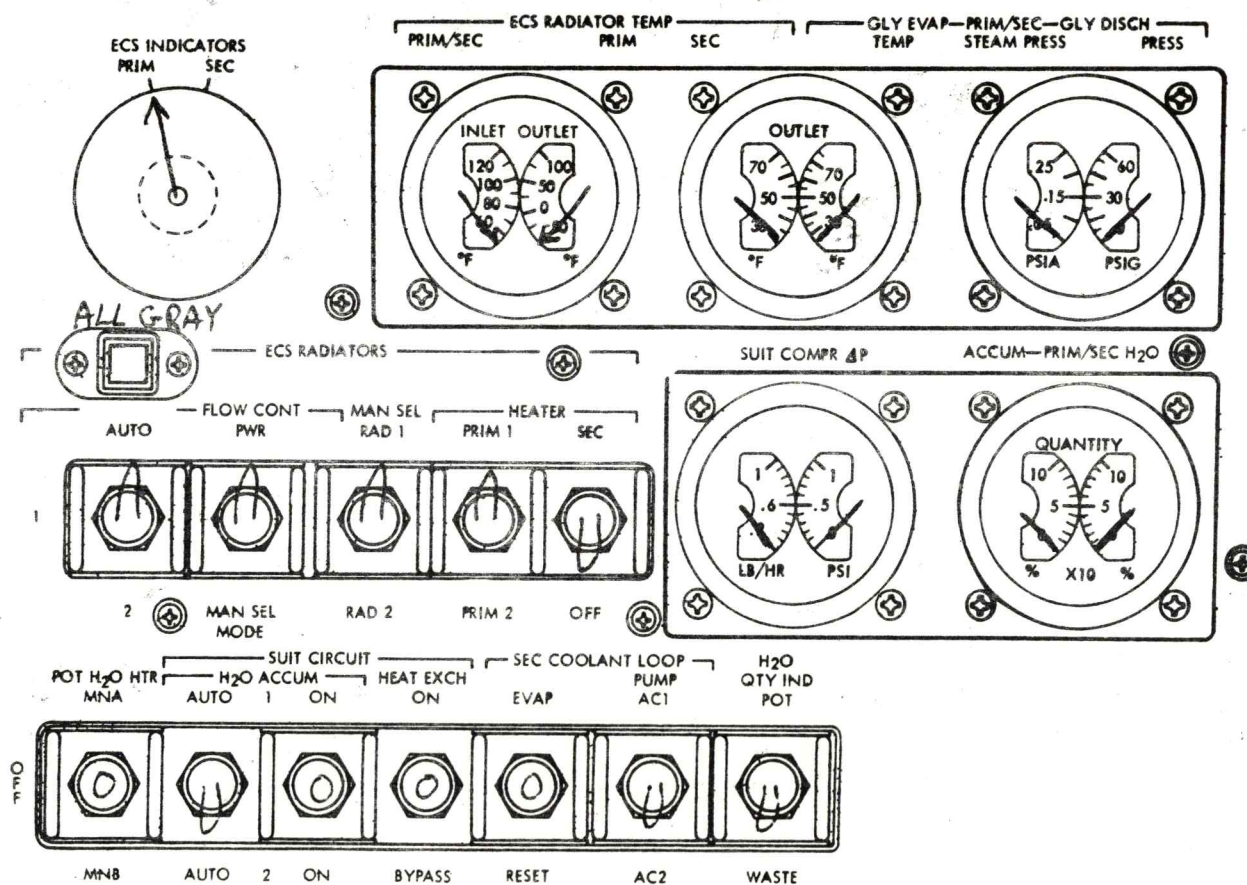
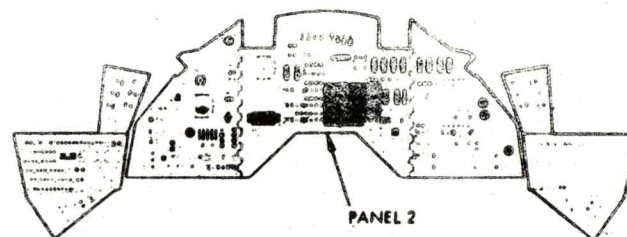
SM-2A-1885

Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 9 of 12)



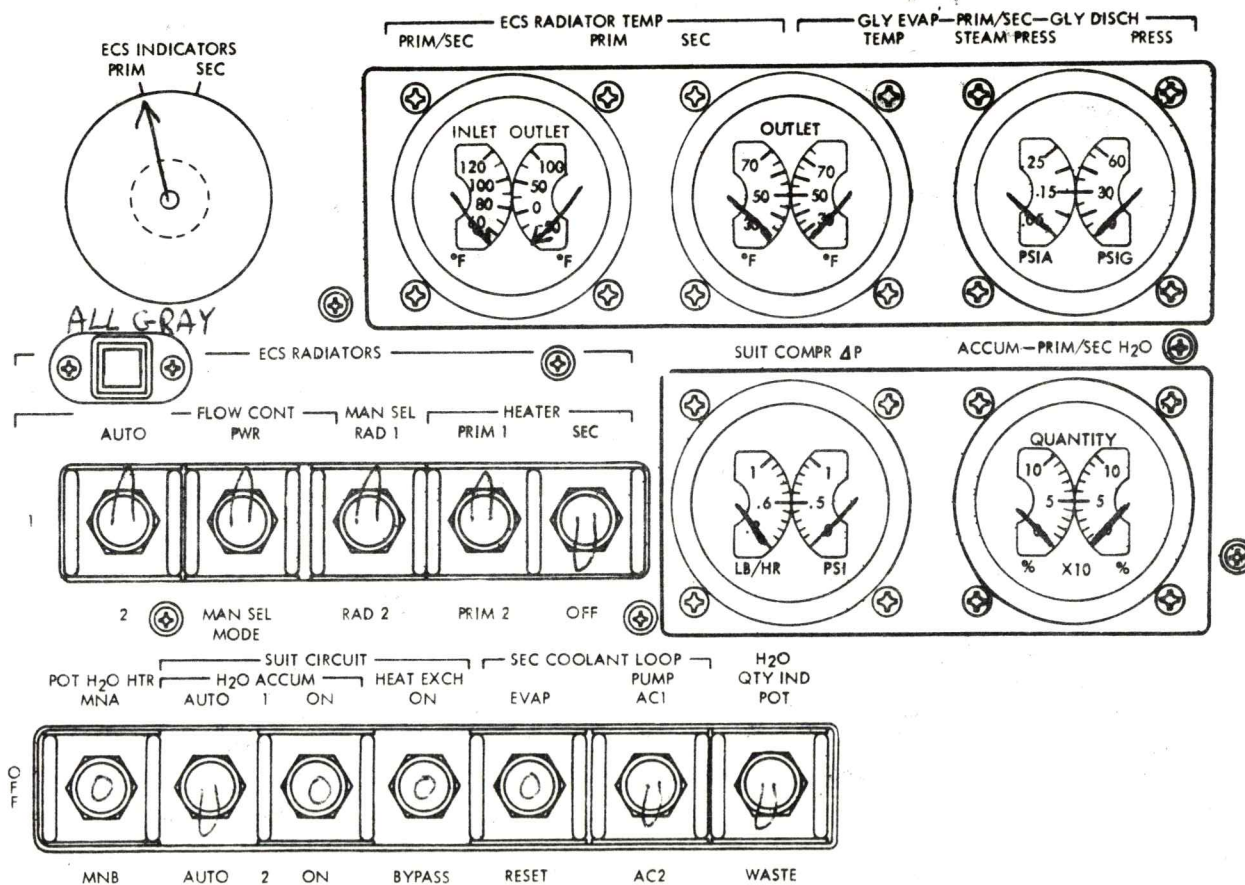
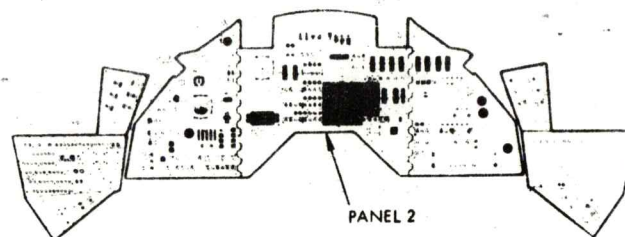
# PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1886A

Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 10 of 12)



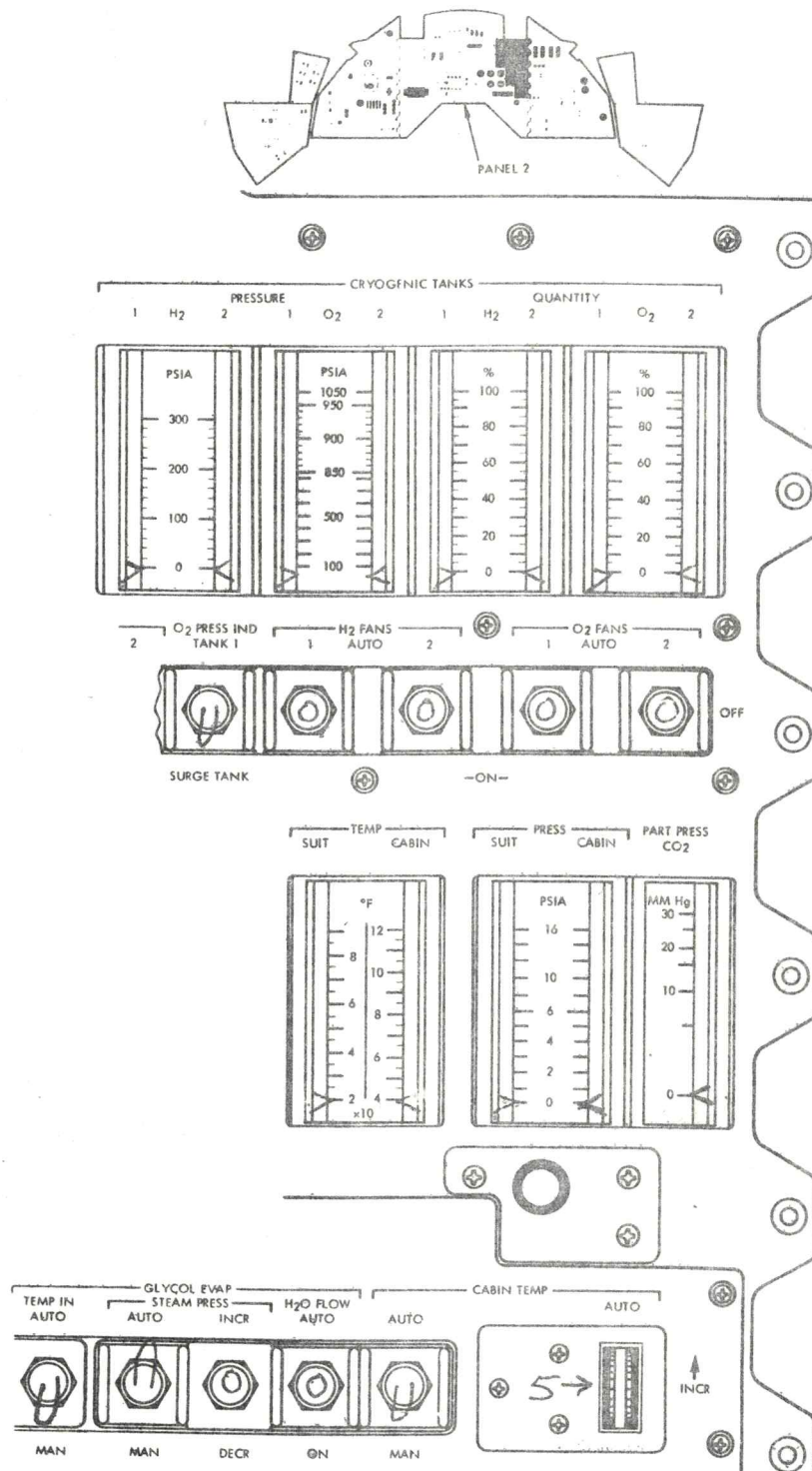
SM-2A-1886A

Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 10 of 12)



## PANEL READINGS AND SWITCH POSITIONS

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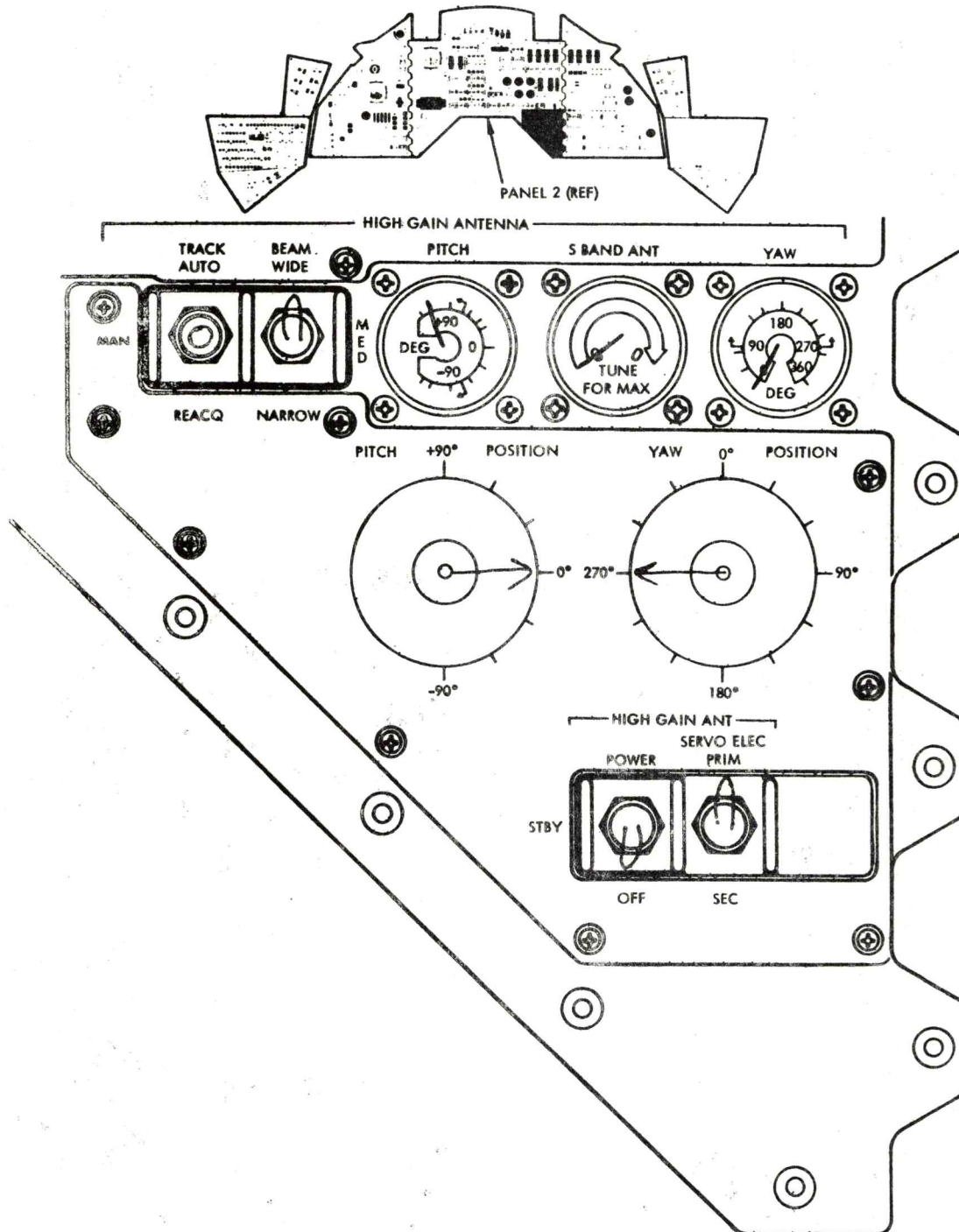
SM-2A-1887

Figure S-8. MDC Check Data Sheet, Panel 2. (Sheet 11 of 12)

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## PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1888C

Figure S-8. MDC Check Data Sheet, Panel 2 (Sheet 12 of 12)

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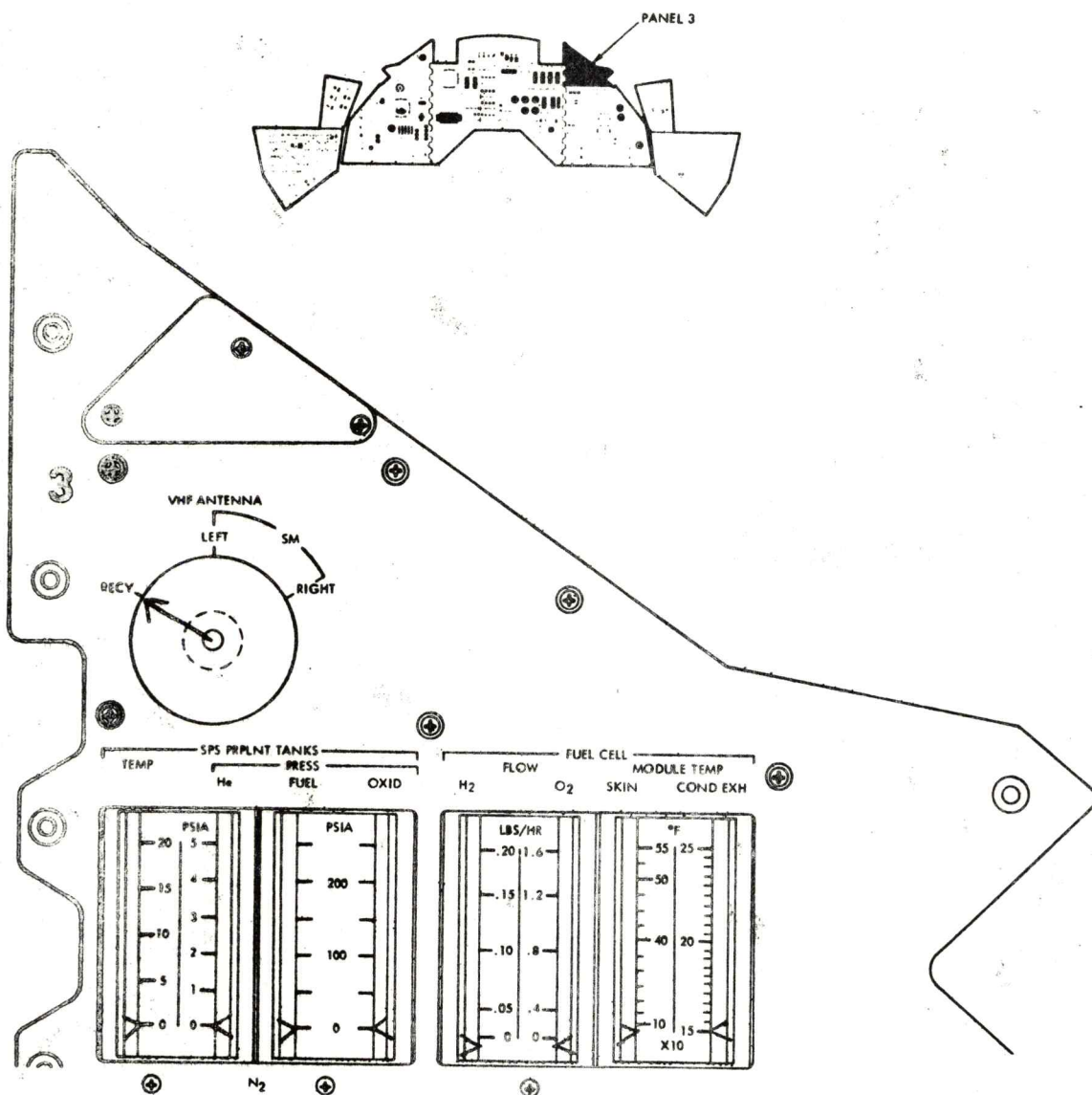


FINISH 0215Z MAY 28

SM2A-08-SC106

PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1863

Figure S-9. MDC Check Data Sheet, Panel 3 (Sheet 1 of 7)

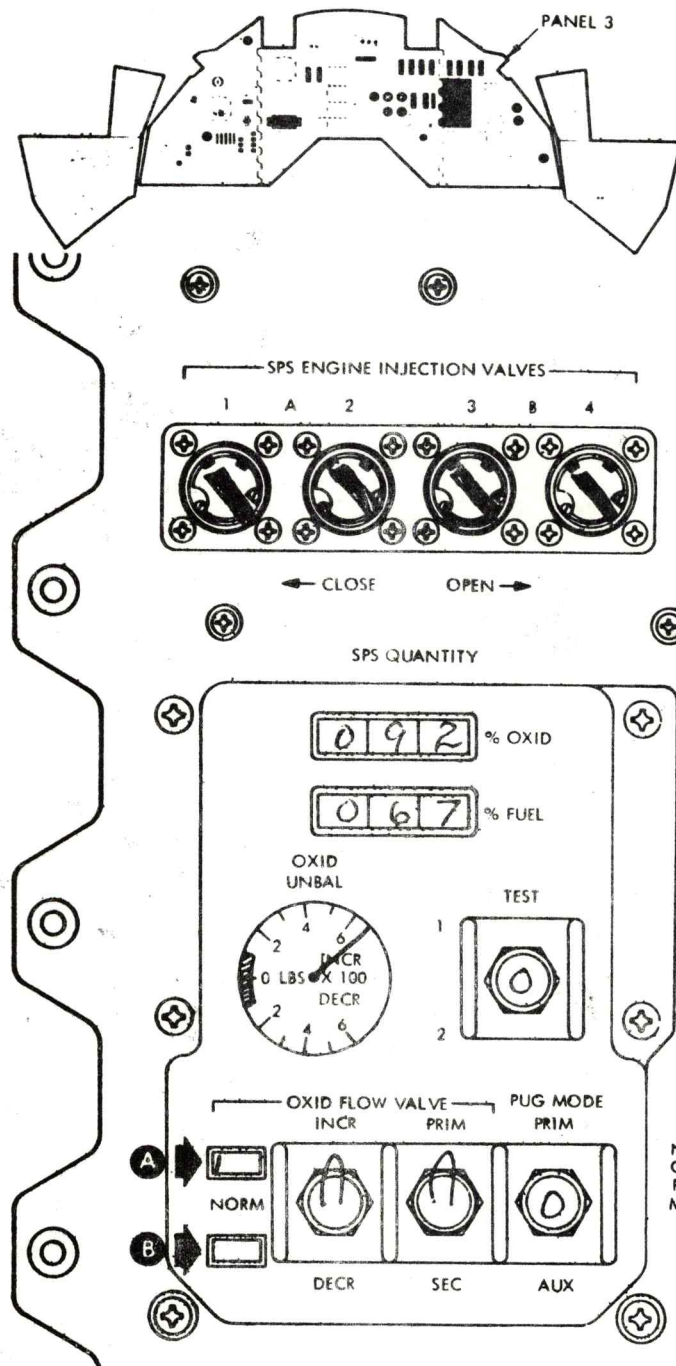
START 0215Z MAY 28

SM2A-08-SC106

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PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1864

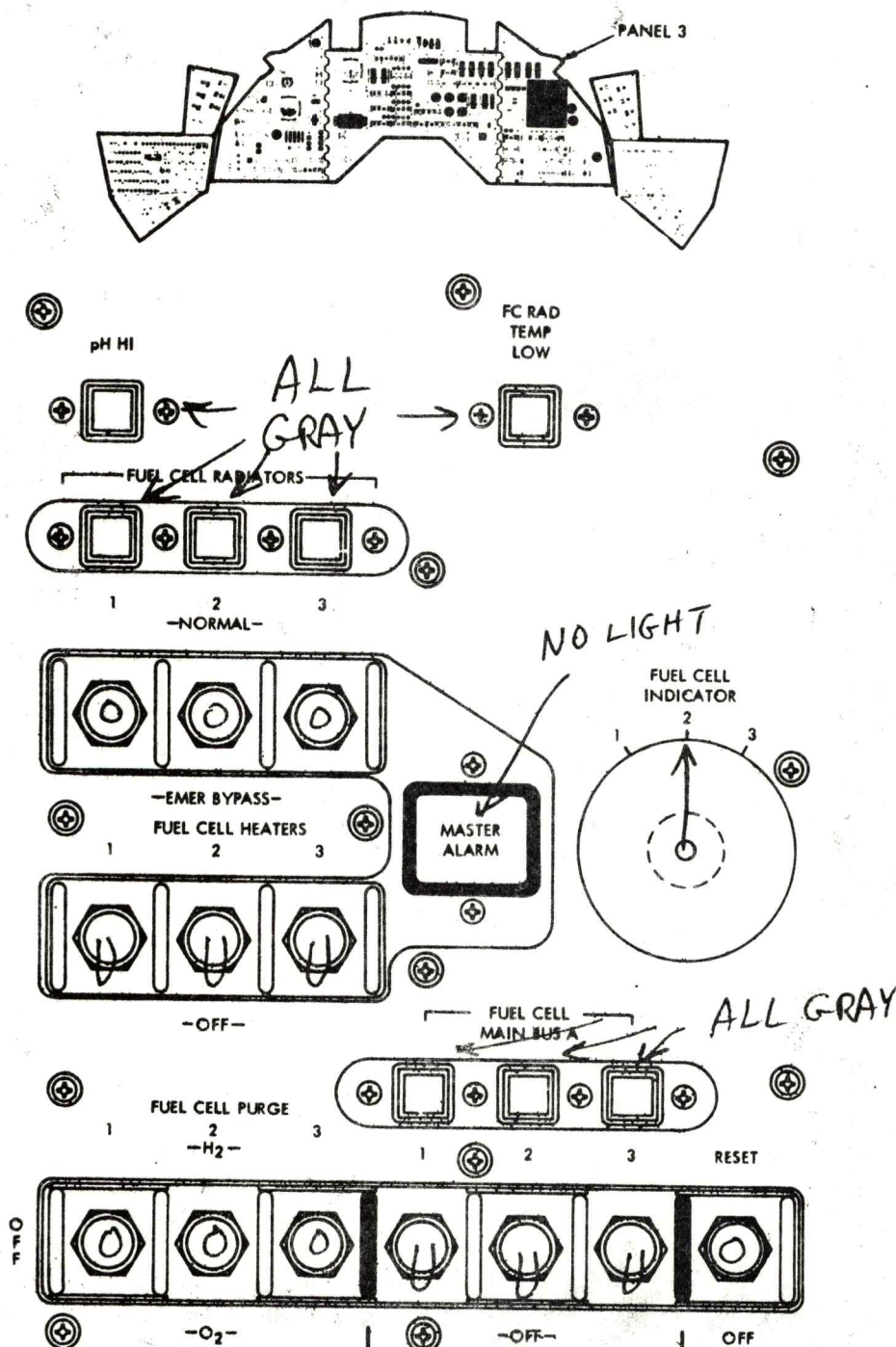
Figure S-9. MDC Check Data Sheet, Panel 3 (Sheet 2 of 7)

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## PANEL READINGS AND SWITCH POSITIONS

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SM-2A-T865A

Figure S-9. MDC Check Data Sheet, Panel (Sheet 3 of 7)

PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1866

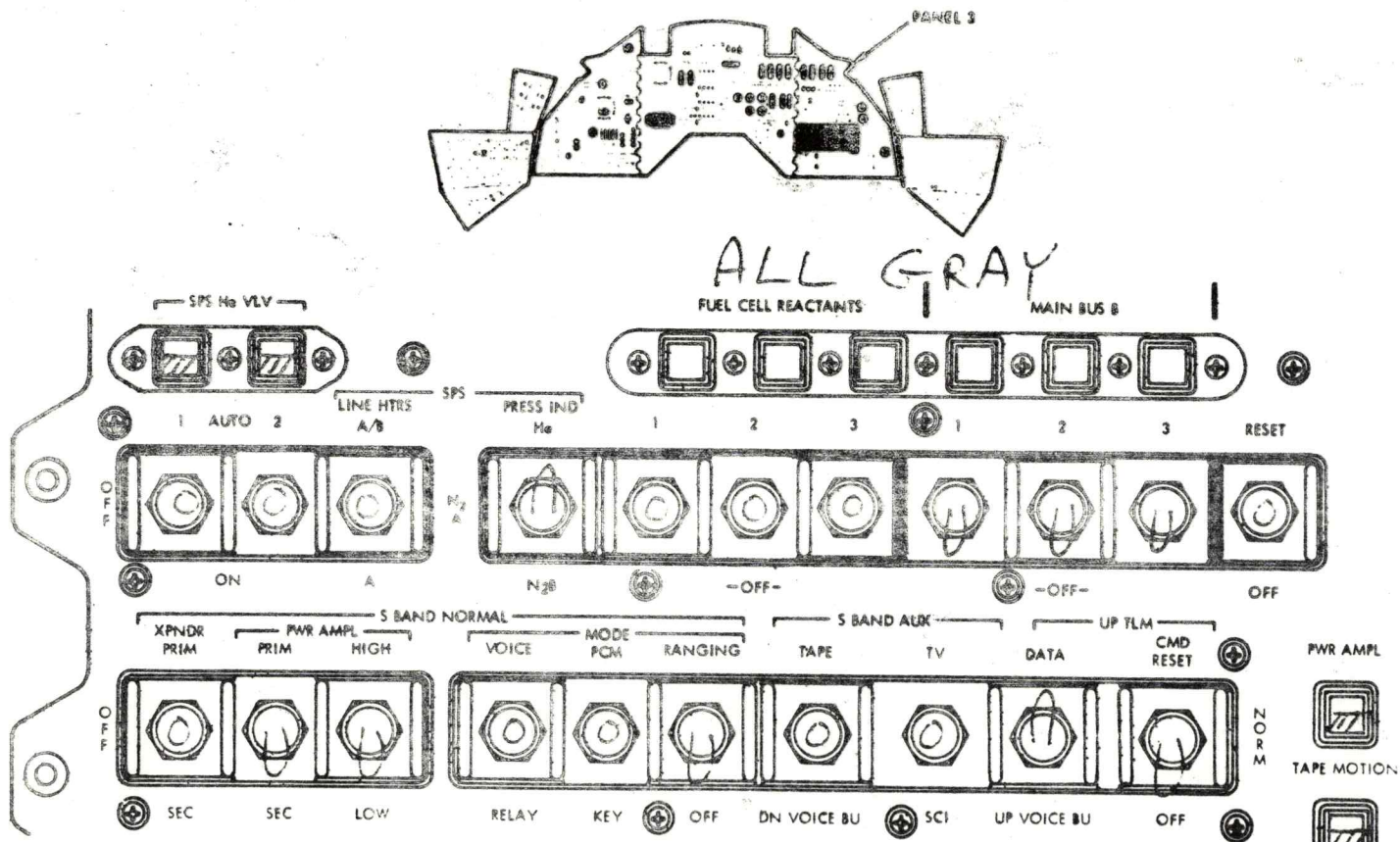


Figure S-9. MDC Check Data Sheet, Panel 3 (Sheet 4 of 7)



## PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1867B

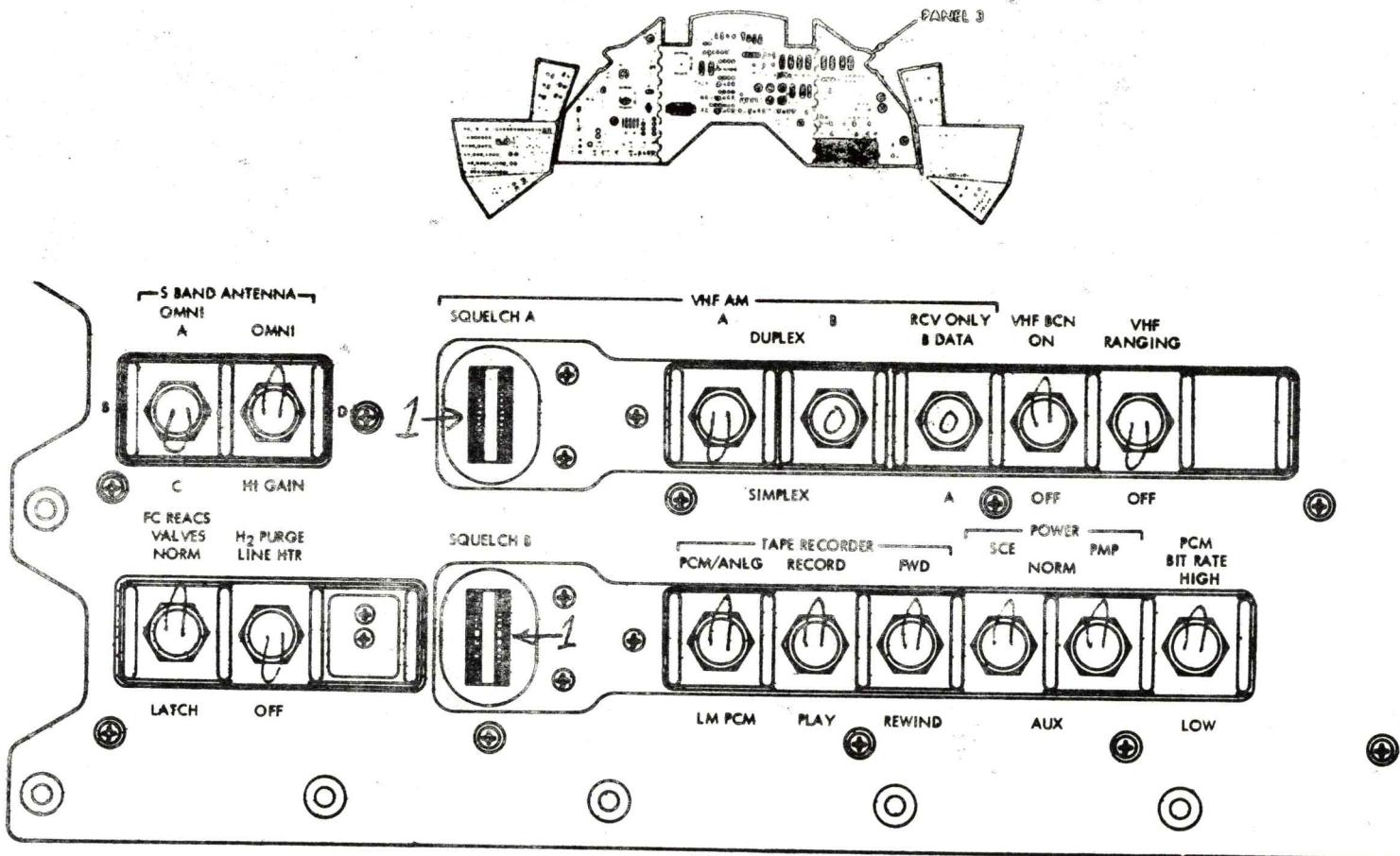
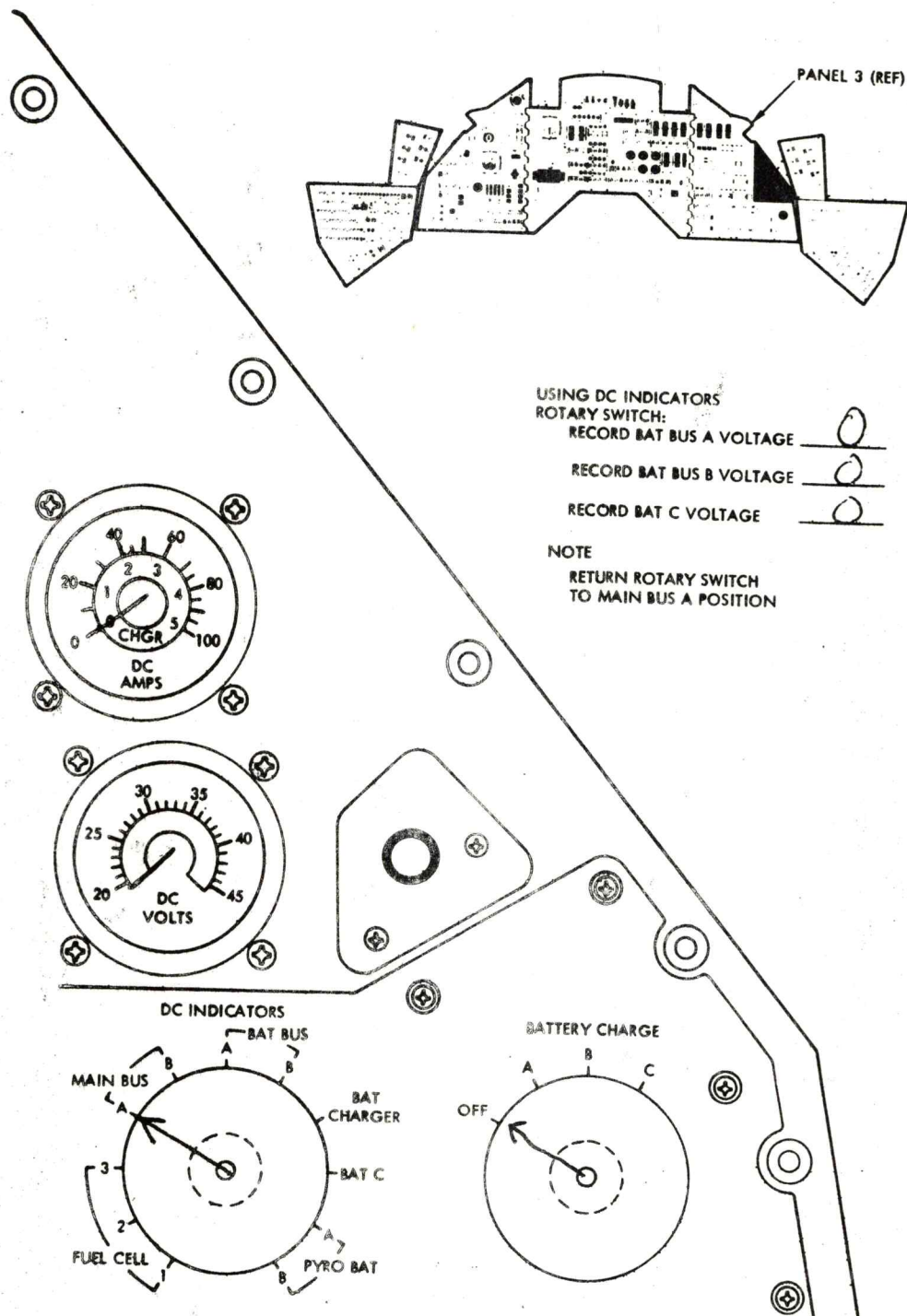


Figure S-9. MDC Check Data Sheet, Panel 3 (Sheet 5 of 7)

## PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1868C

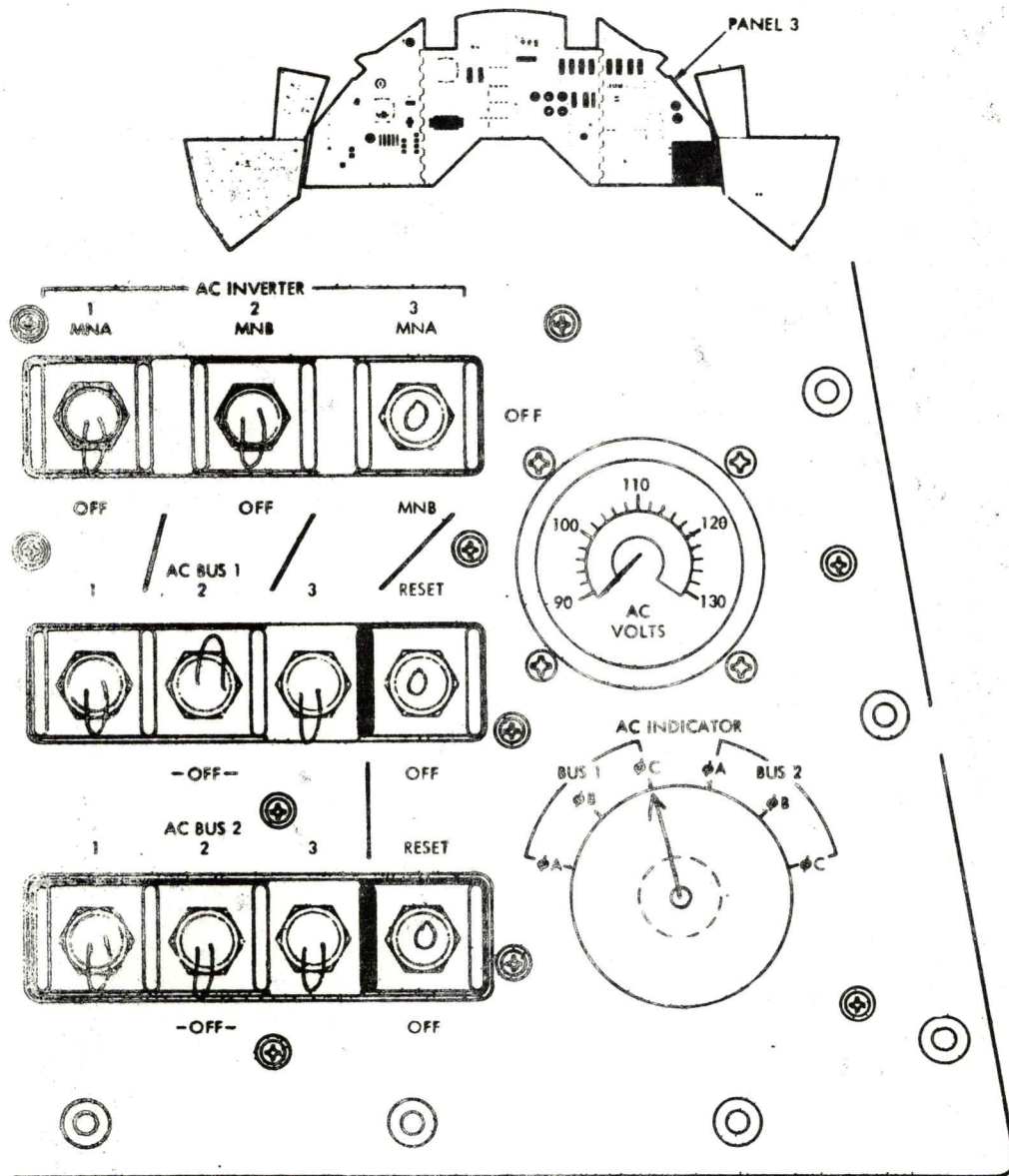
Figure S-9. MDC Check Data Sheet, Panel 3 (Sheet 6 of 7)

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PANEL READINGS AND SWITCH POSITIONS

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Figure S-9. MDC Check Data Sheet, Panel 3 (Sheet 7 of 7)

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PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1893B

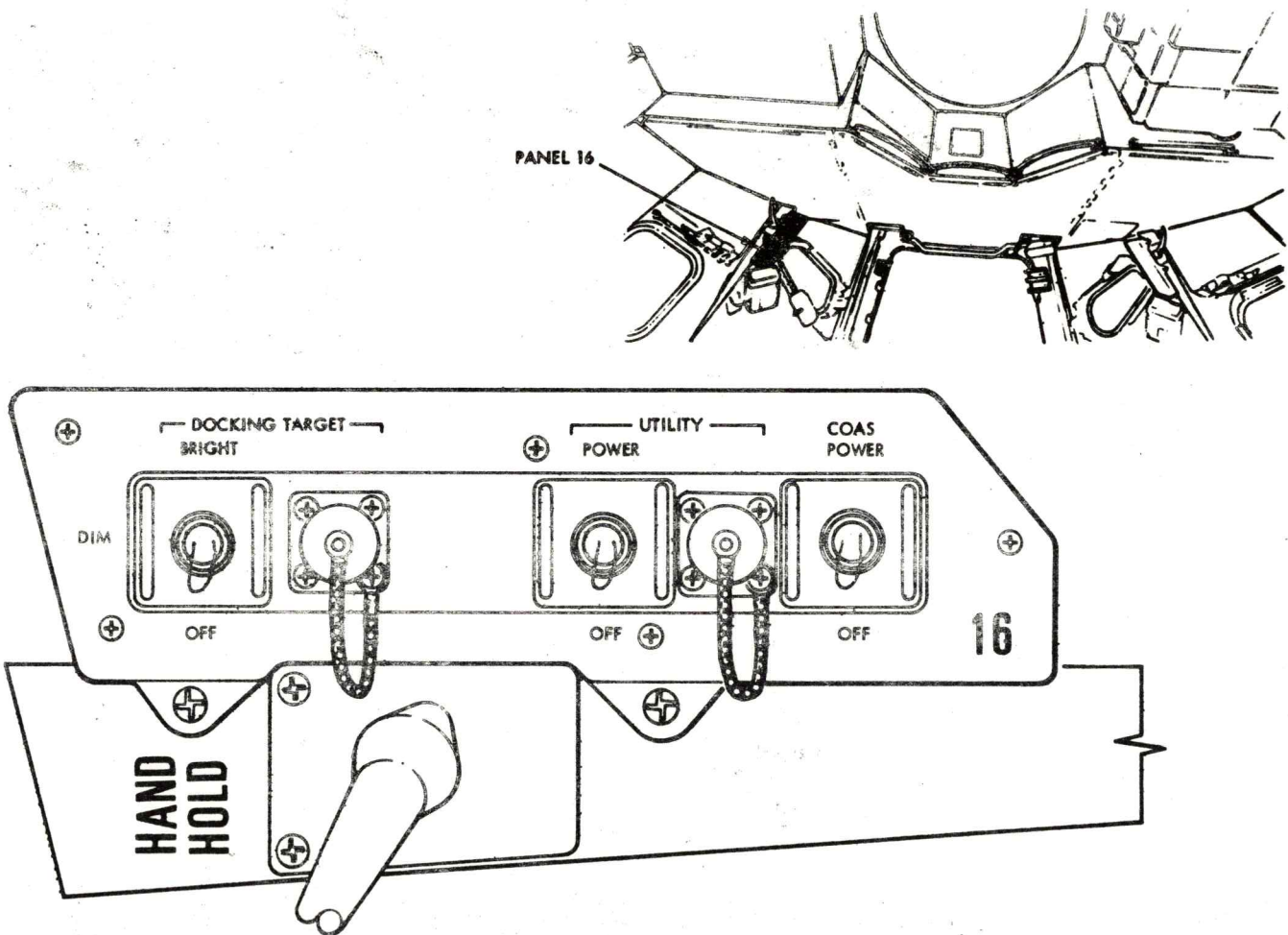


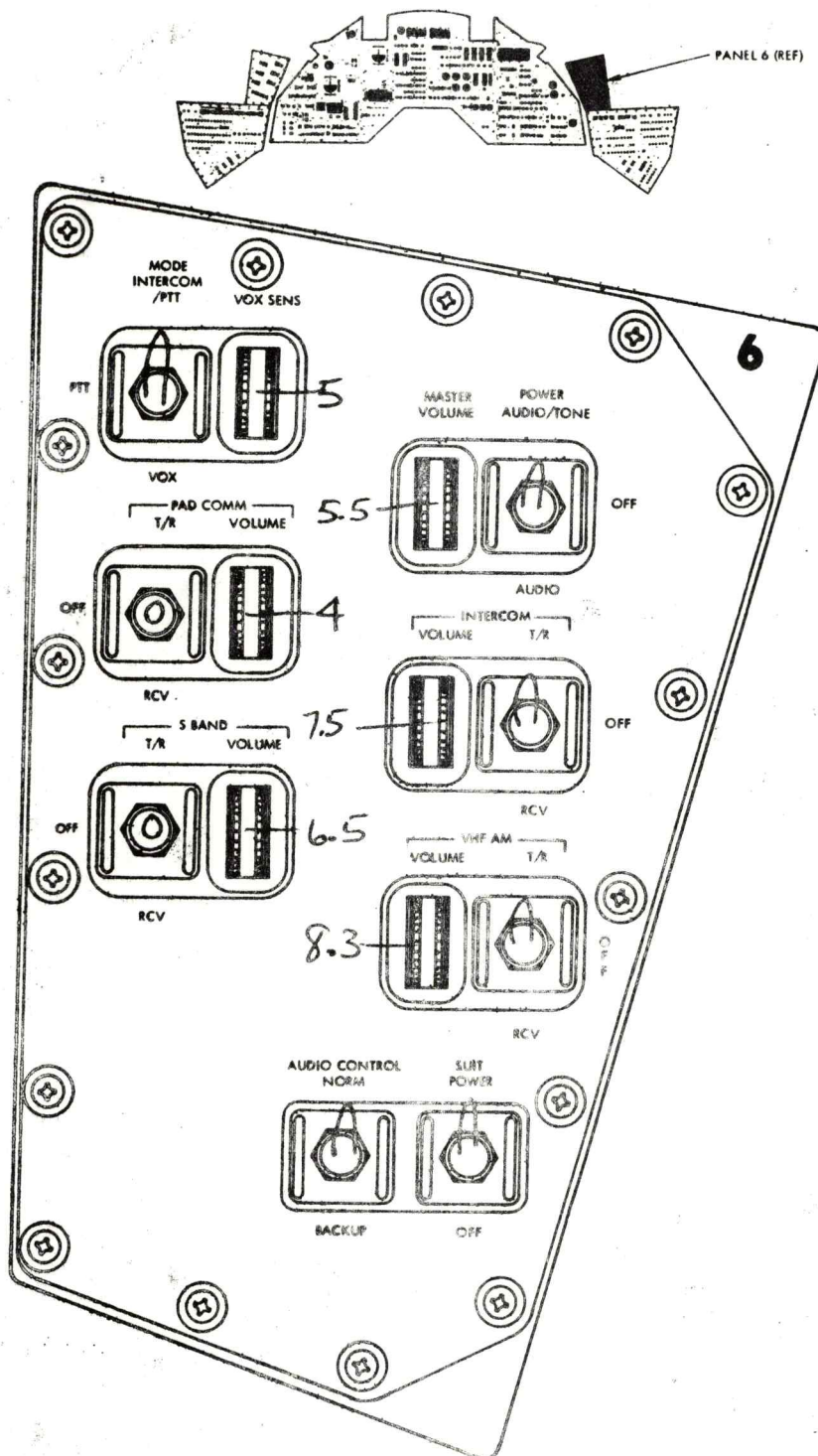
Figure S-10. MDC Check Data Sheet, Panel 16

96)



## PANEL READINGS AND SWITCH POSITIONS

Sheet 36 of 70

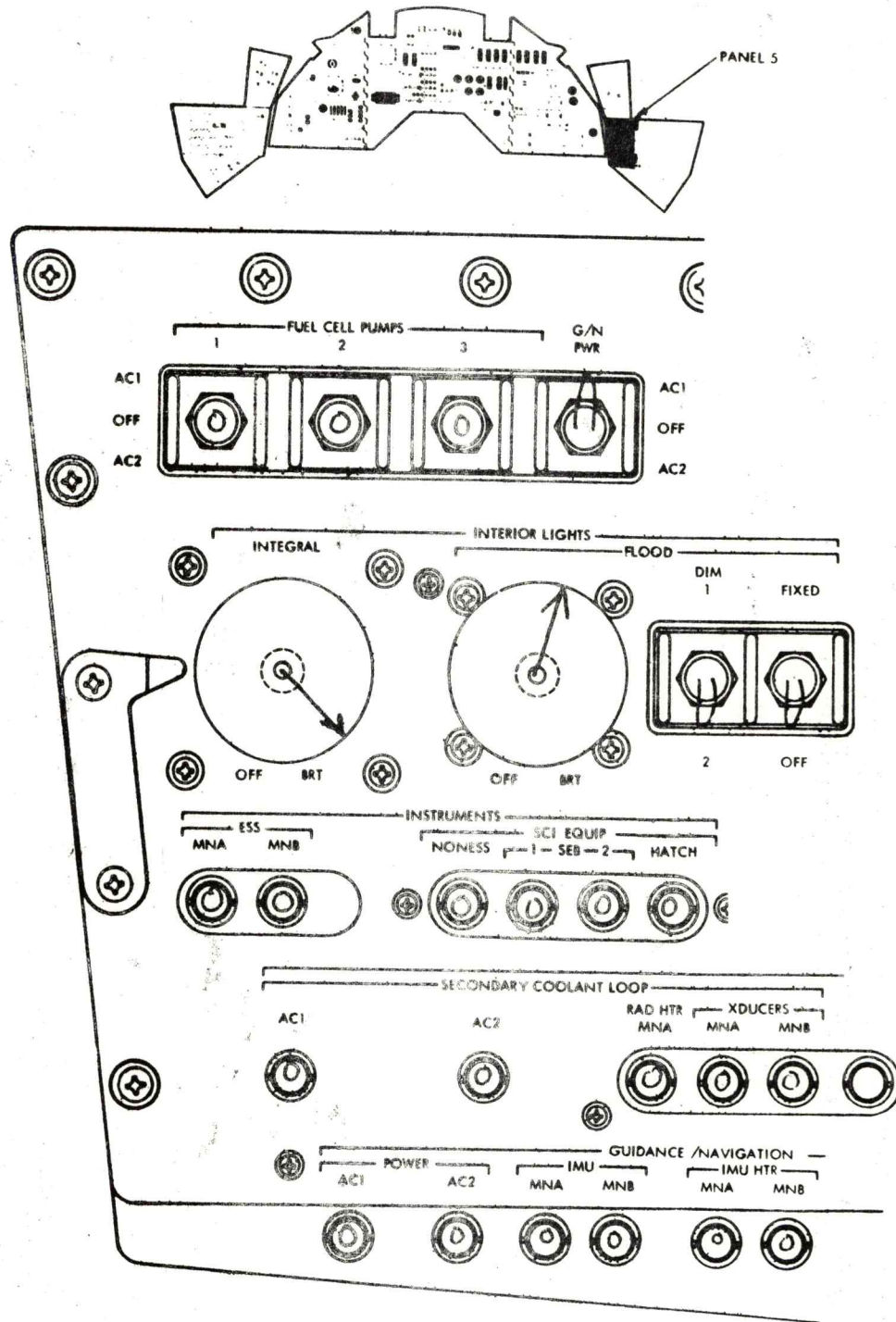


SM-2A-1848B

Figure S-11. MDC Check Data Sheet, Panel 6

## PANEL READINGS AND SWITCH POSITIONS

Sheet 37 of 70



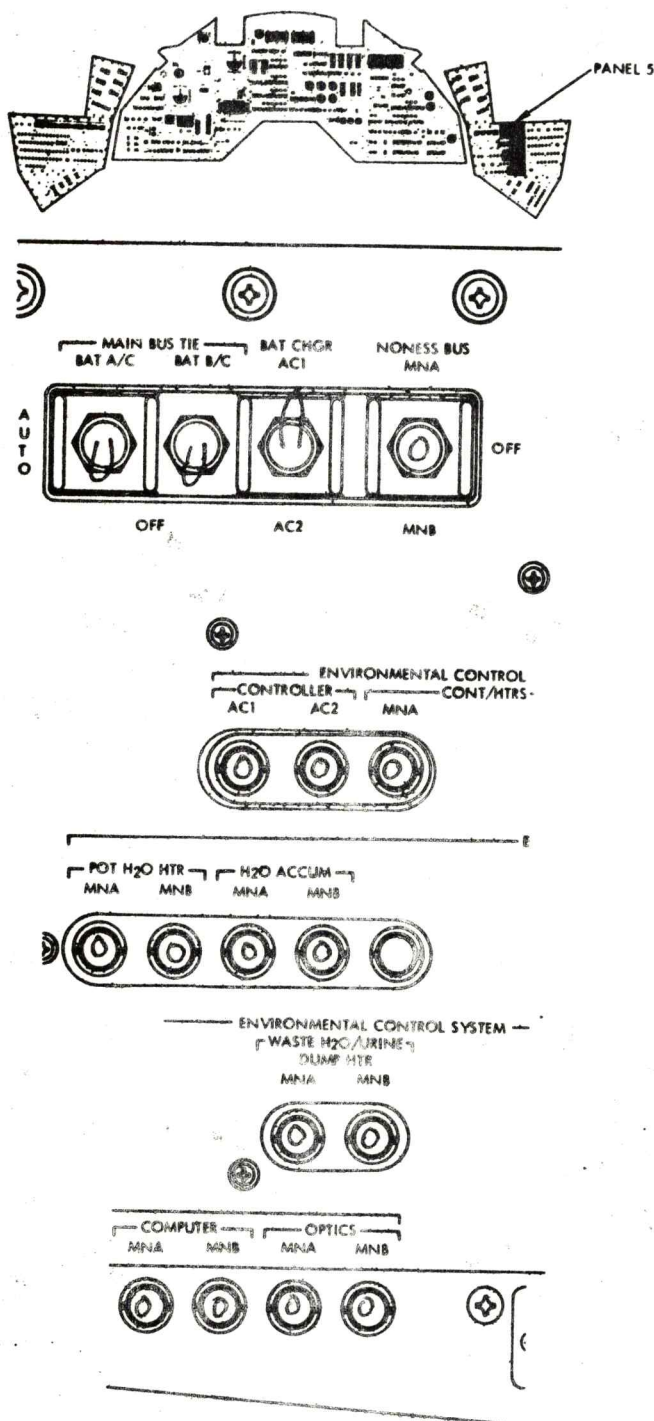
SM-2A-H870A

Figure S-12. MDC Check Data Sheet, Panel 5 (Sheet 1 of 3)



## PANEL READINGS AND SWITCH POSITIONS

Sheet 38 of 70

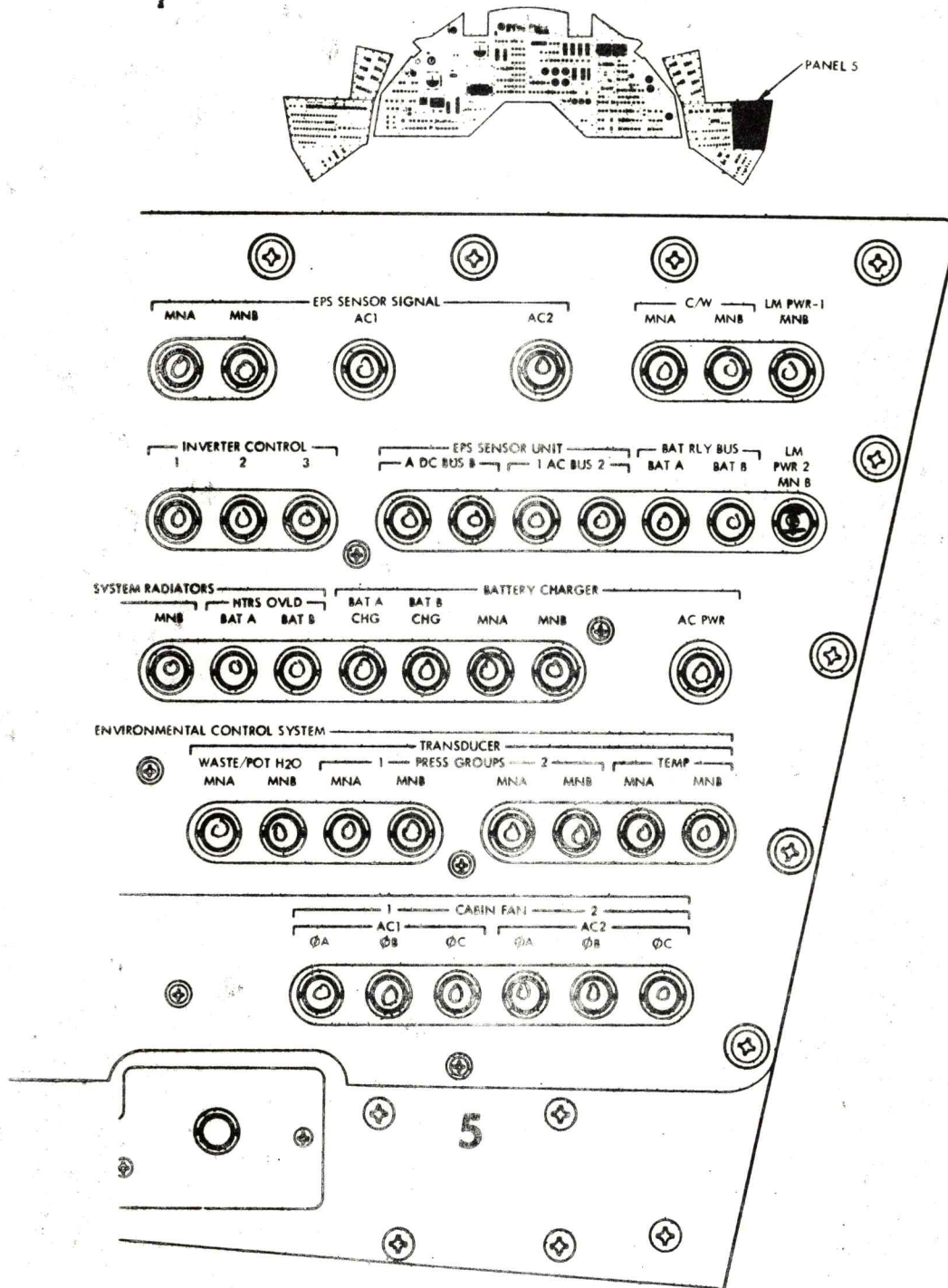


SM-2A-1897A

Figure S-12. MDC Check Data Sheet, Panel 5 (Sheet 2 of 3)

## PANEL READINGS AND SWITCH POSITIONS

Sheet 39 of 70



SM-2A-18988

Figure S-12. MDC Check Data Sheet, Panel 5 (Sheet 3 of 3)

100



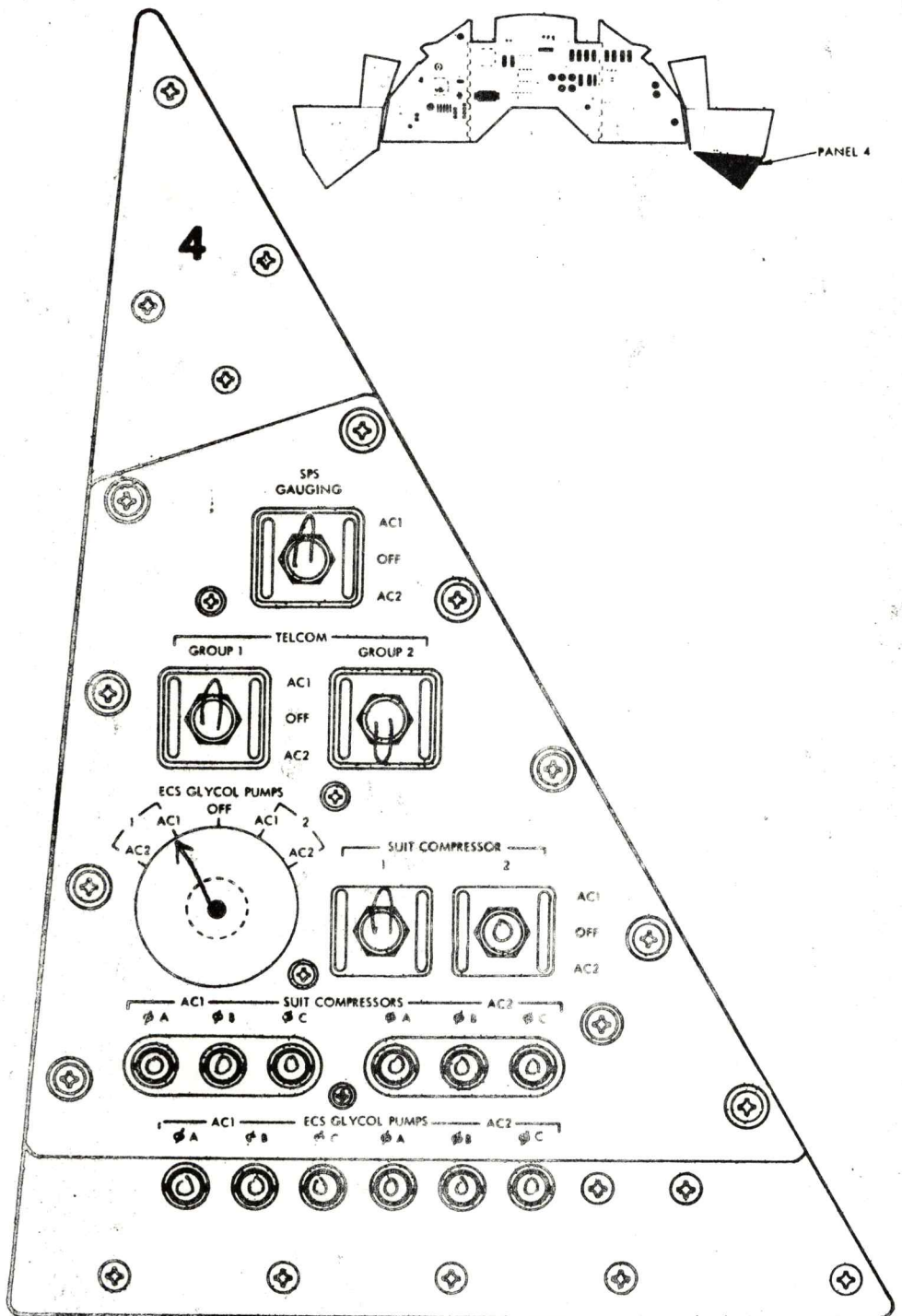
FINISH 0308Z MAY 28

SM2A-08-SC106

5

PANEL READINGS AND SWITCH POSITIONS

Sheet 40 of 70



SM-2A-1846

Figure S-13. MDC Check Data Sheet, Panel 4

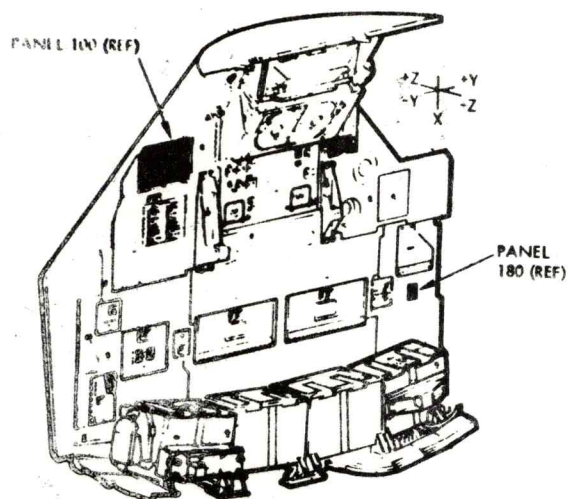
START 0347Z MAY 28

SM2A-08-SC106

5

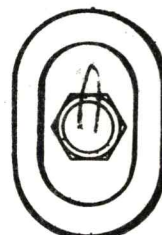
PANEL READINGS AND SWITCH POSITIONS

Sheet 41 of 70



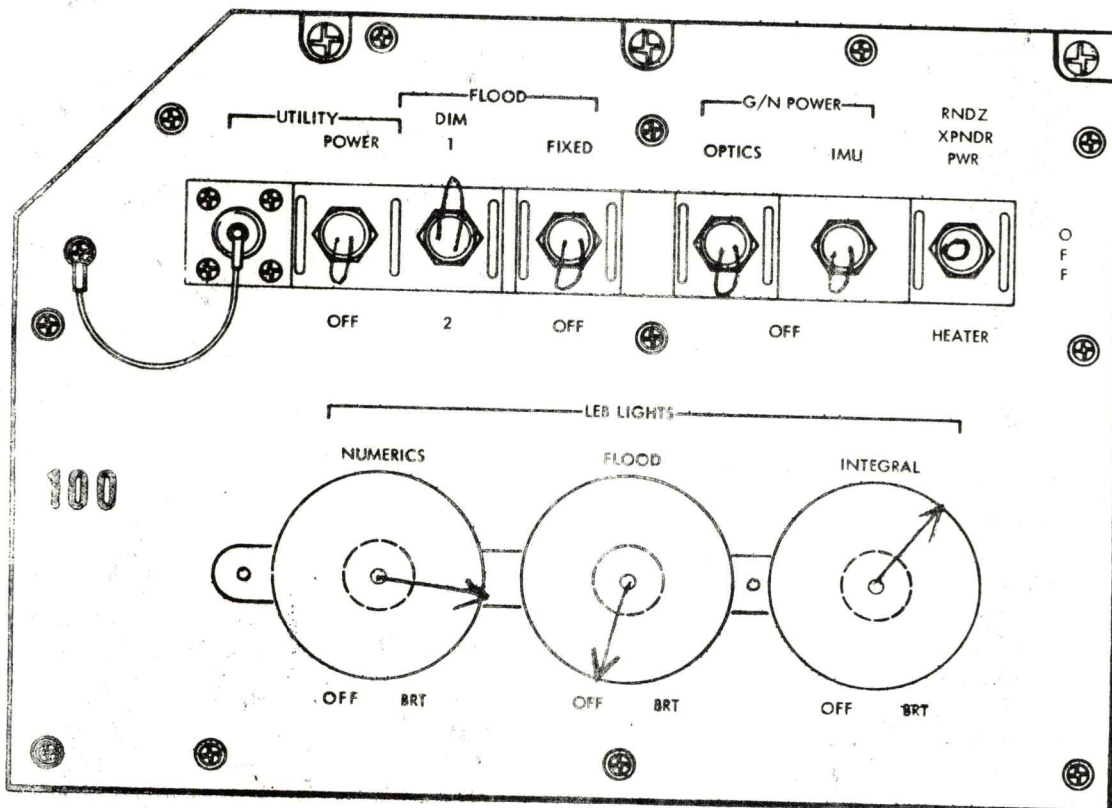
S-BAND SQUELCH

ENABLE



OFF

180



SM-2A-1847B

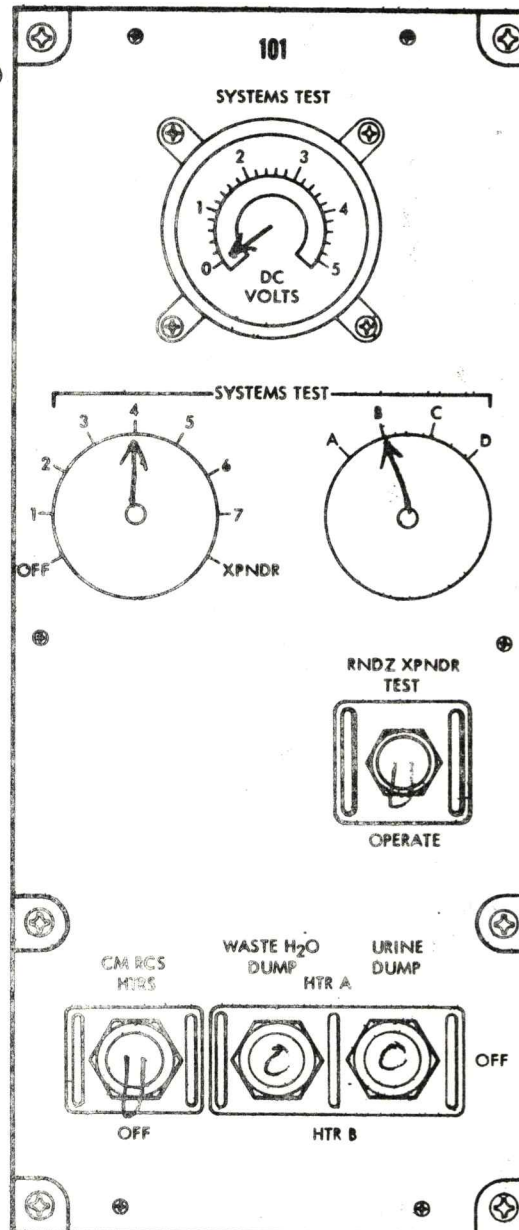
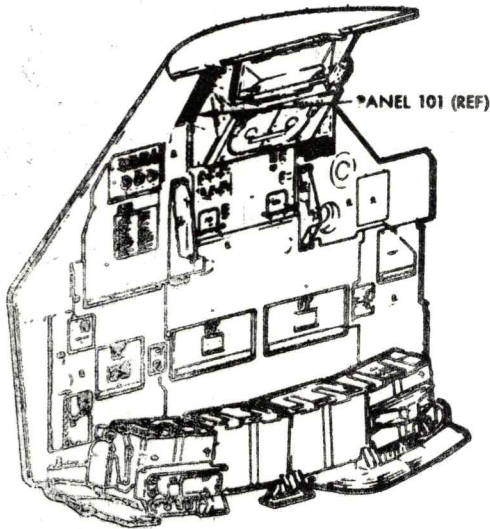
Figure S-14. LEB Check Data Sheet, Panel 100 and 180

102



## PANEL READINGS AND SWITCH POSITIONS

Sheet 42 of 70



SM-2A-18438

Figure S-15. LEB Check Data Sheet, Panel 101

PANEL READINGS AND SWITCH POSITIONS

Sheet 43 of 70

SM-2A-1842A

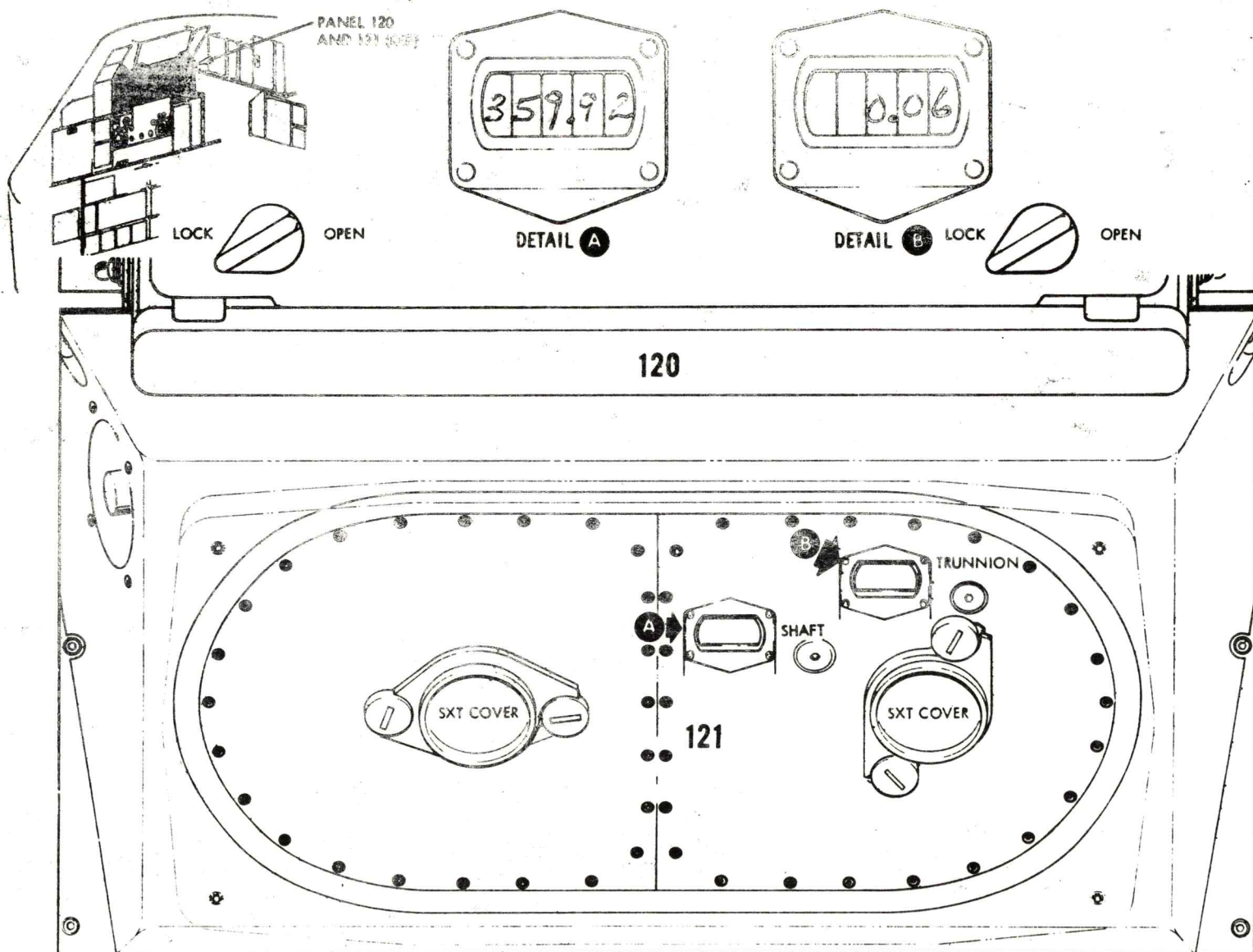


Figure S-16. LEB Check Data Sheet, Panel 120 and 121

104



PANEL READINGS AND SWITCH POSITIONS

Sheet 44 of 70

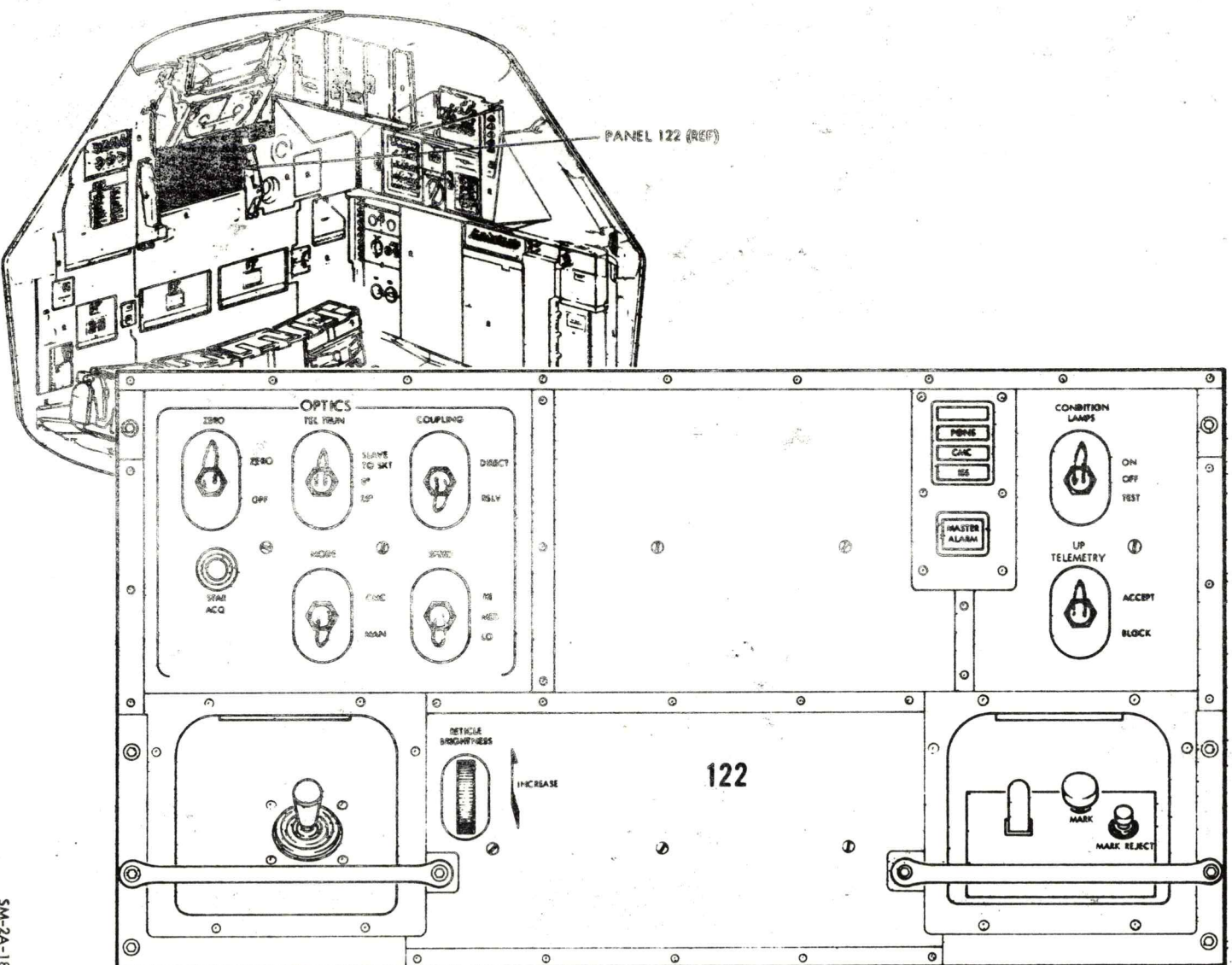


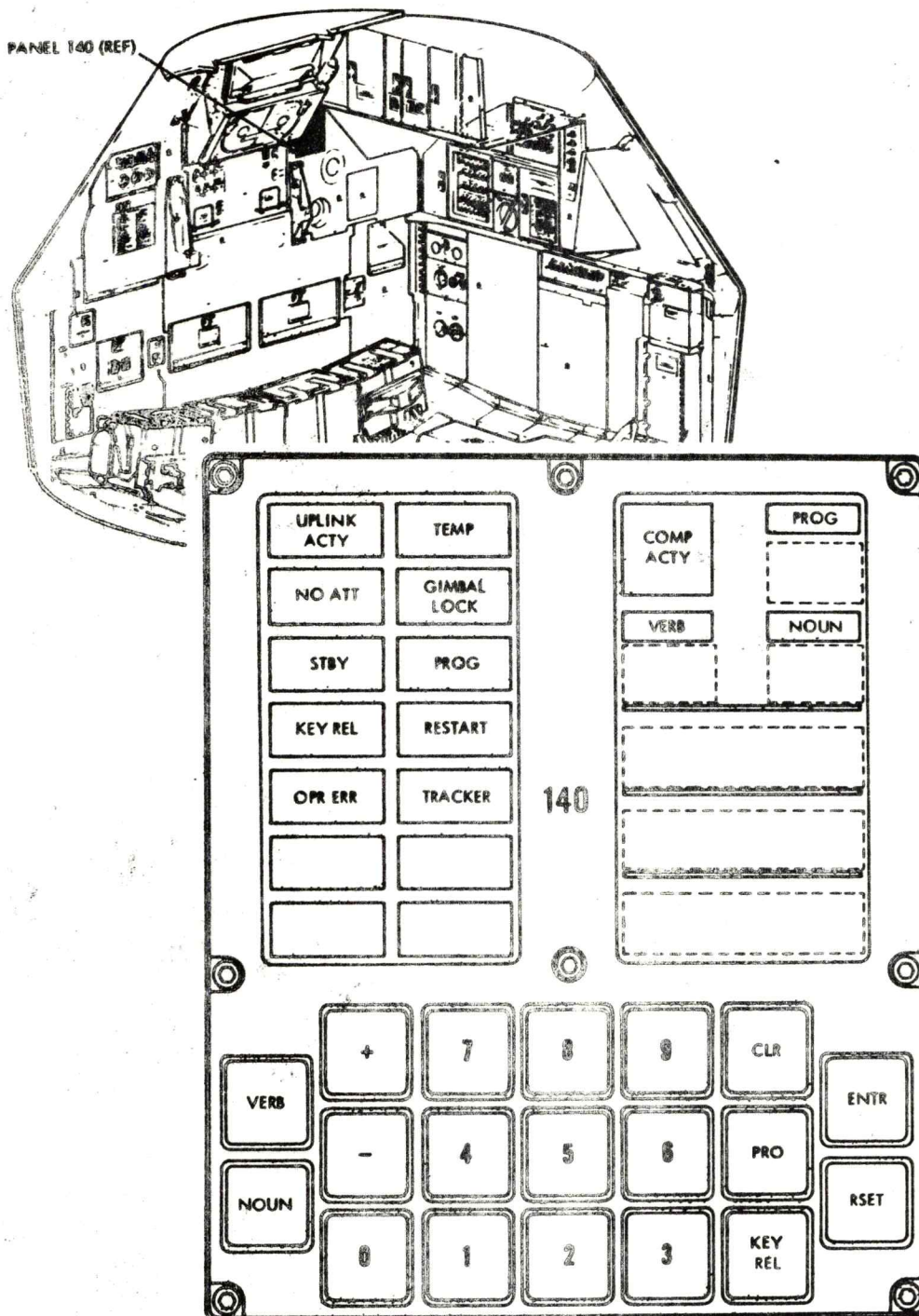
Figure S-17. LEB Check Data Sheet, Panel 122

SM-2A-18418

105

## PANEL READINGS AND SWITCH POSITIONS

Sheet 45 of 70

NE  
LIGHTS

SM-2A-1676E

Figure S-18. LEB Check Data Sheet, Panel 140

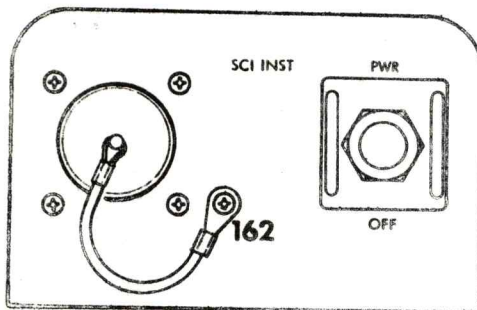
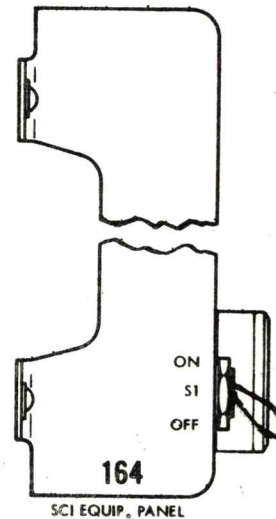
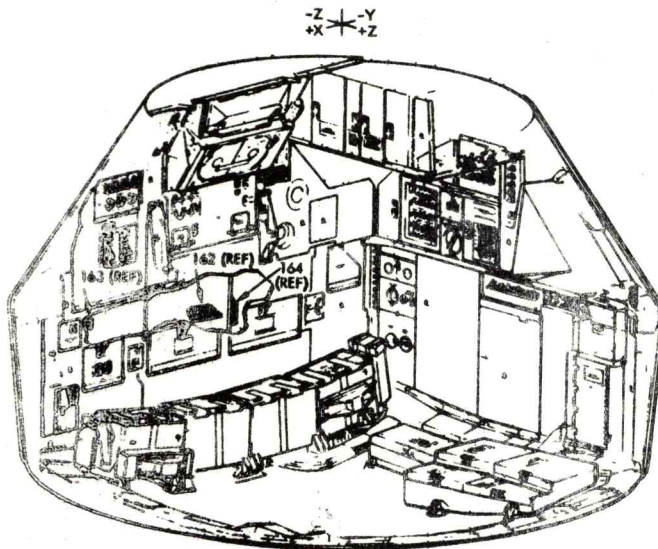


FINISH 0402 Z MAY 28

SM2A-08-SCI06

PANEL READINGS AND SWITCH POSITIONS

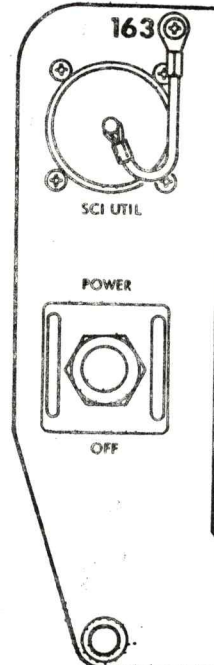
Sheet 46 of 70



COMPT A SCI/EQUIP ELECT DISC  
(UTILITY DISCONNECT PANEL)  
NOT RECORDED

NOTE

- PANELS 162, 163, AND 164 LOCATED BEHIND CLOSEOUT PANELS. POSITIONS SHALL BE RECORDED ONLY IF SO DIRECTED BY THE NASA TEAM LEADER
- PANEL 164 MAY BE CHECKED FOLLOWING REMOVAL OF VOLUME 86 (REFER TO PROCEDURE (12)).



COMPT C SCI/EQUIP ELECT DISC  
(UTILITY DISCONNECT PANEL)

NOT RECORDED

SM-2A-1672D

Figure S-19. LEB Check Data Sheet, Panel 162, 163 and 164

107

PANEL READINGS AND SWITCH POSITIONS

Sheet 47 of 70

Figure S-20. Deleted.

108



START 0400Z MAY 28

SM2A-08-SC106

5

PANEL READINGS AND SWITCH POSITIONS

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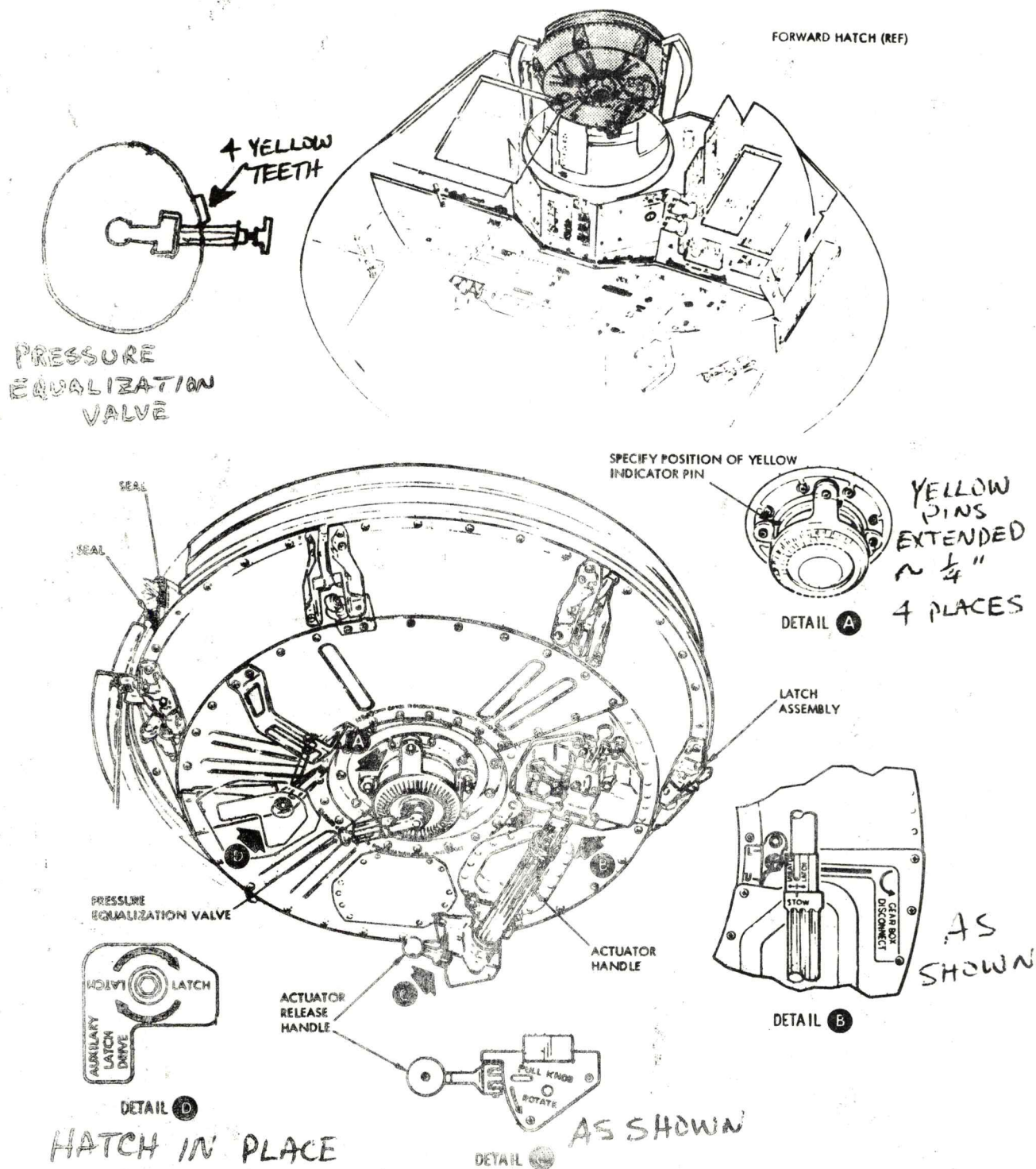
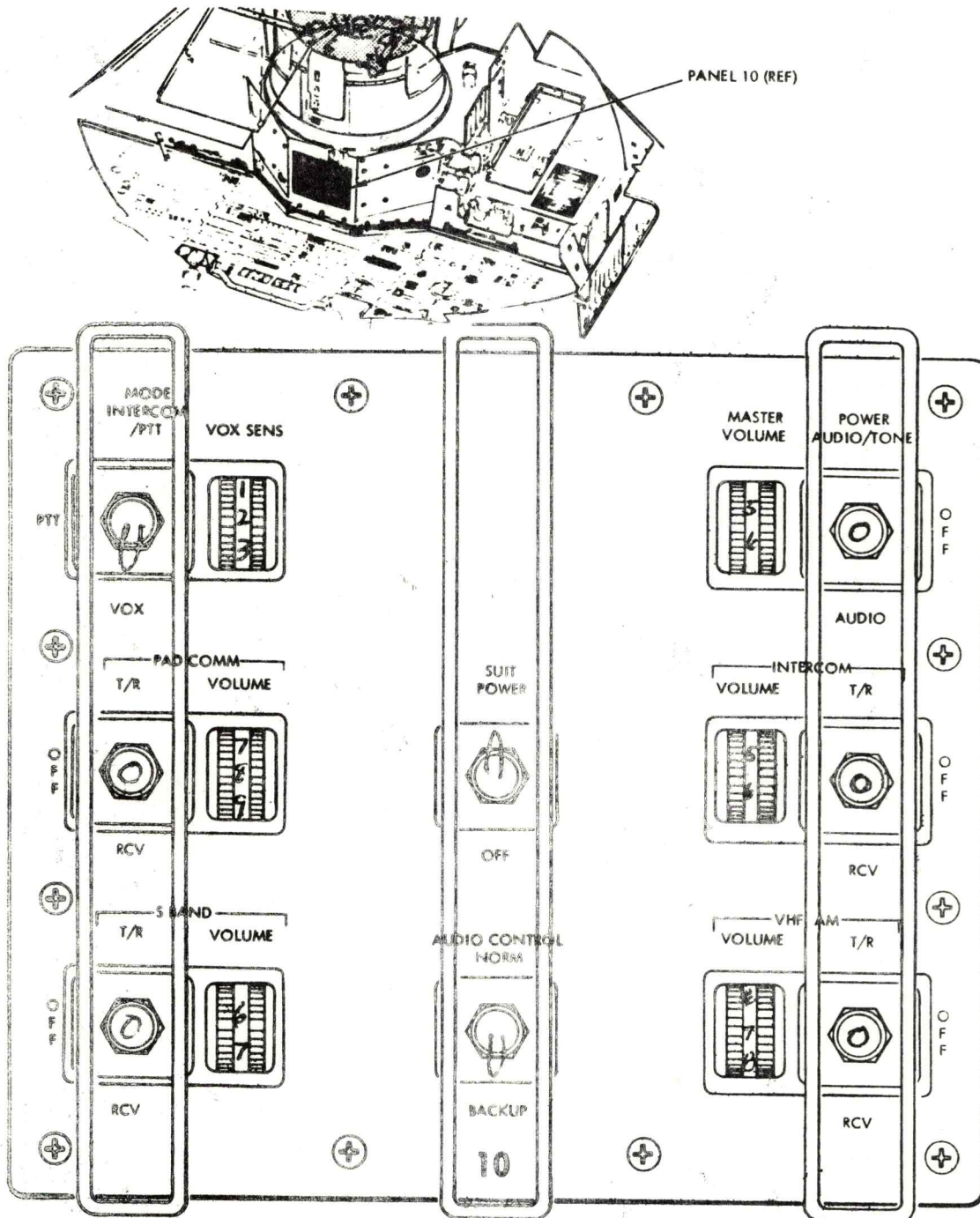


Figure S-21. FEB Check Data Sheet, Forward Hatch

## PANEL READINGS AND SWITCH POSITIONS

Sheet 49 of 70



SM-2A-1840B

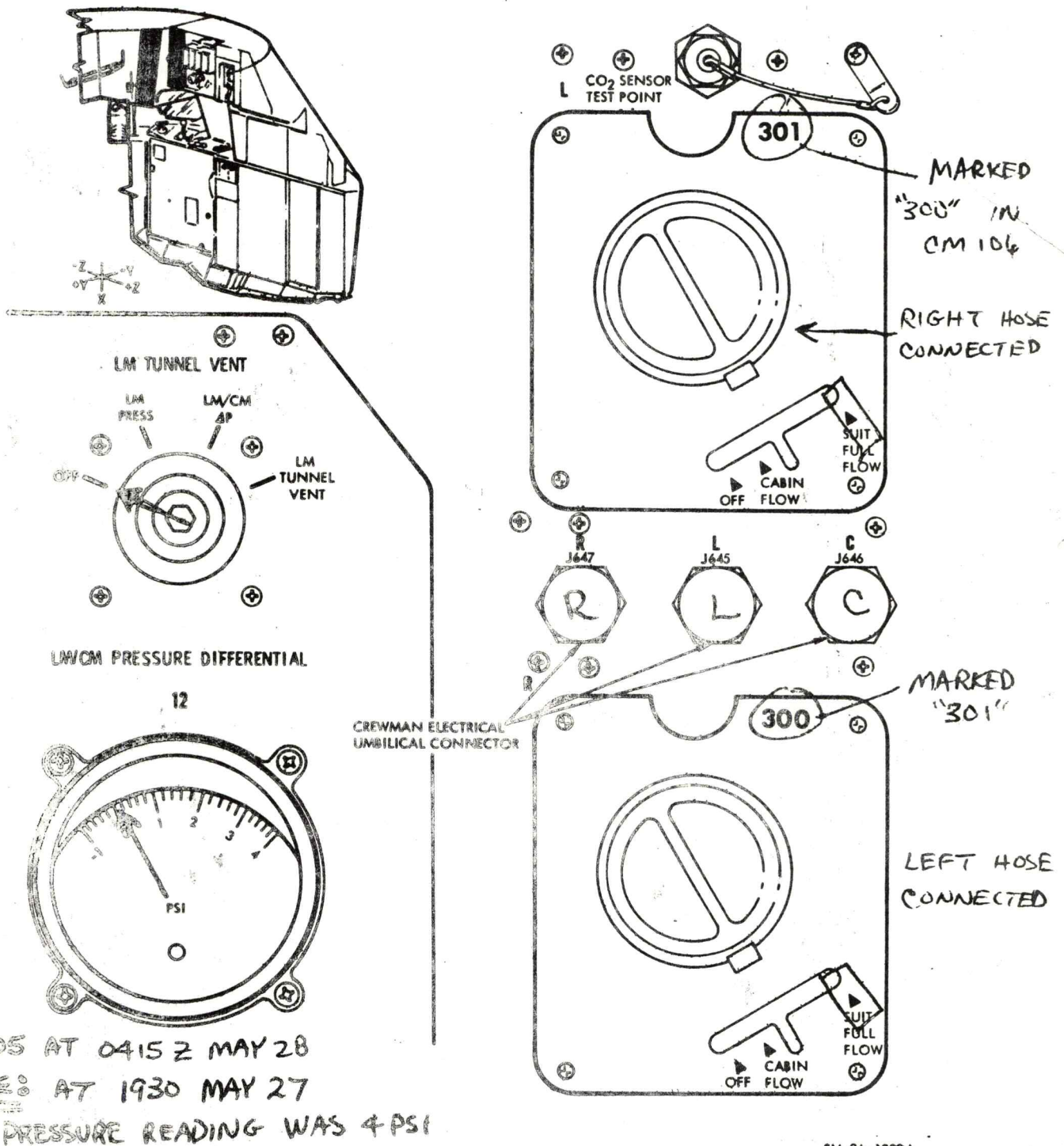
Figure S-22. FEB Check Data Sheet, Panel 10

110



## PANEL READINGS AND SWITCH POSITIONS

Sheet 50 of 70

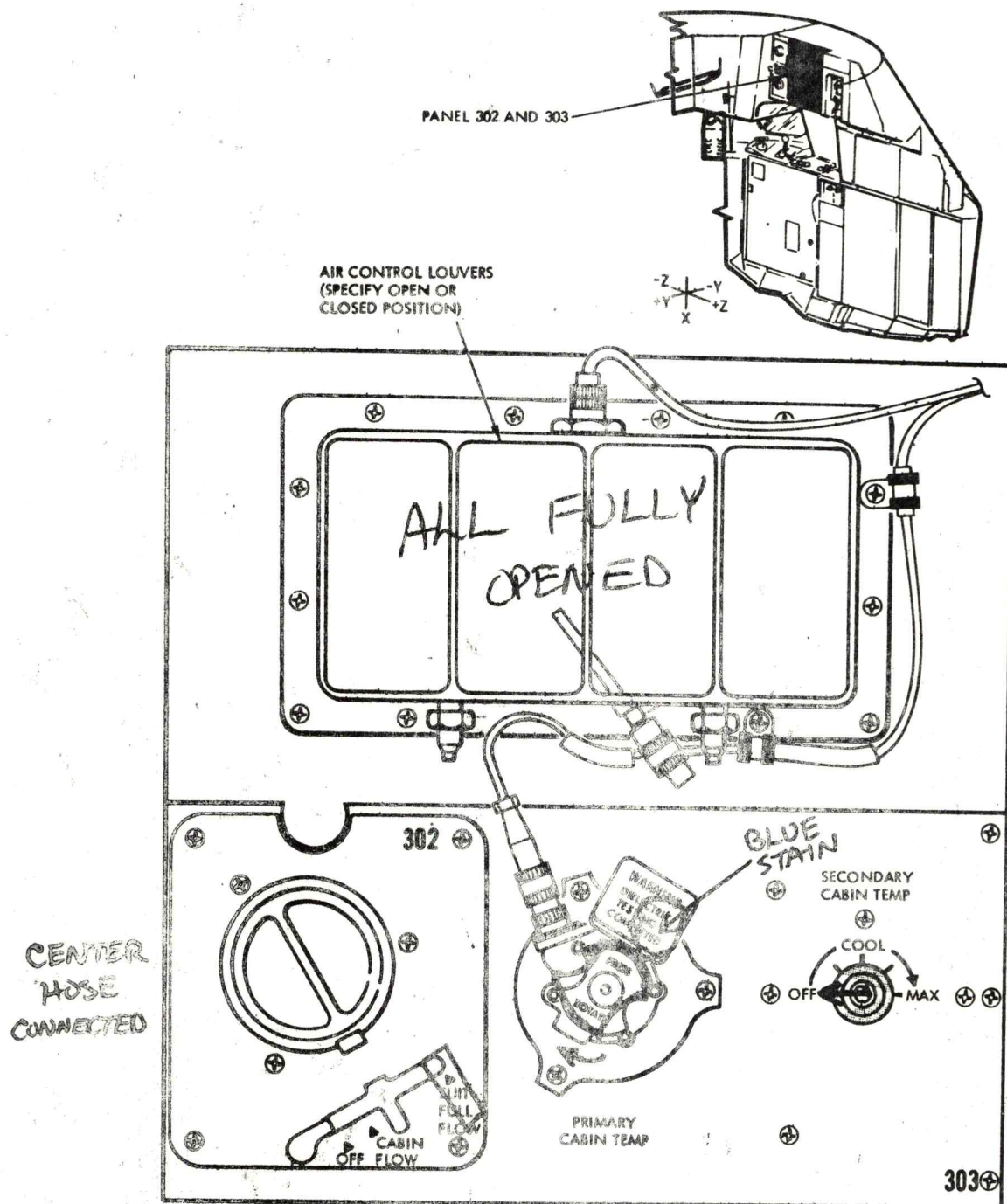


SM-2A-1839A

Figure S-23. LHFEB Check Data Sheet, Panel 300, 301, and 12

## PANEL READINGS AND SWITCH POSITIONS

Sheet 51 of 70



SM-2A-1838 A

Figure S-24. LHFEB Check Data Sheet, Panel 302 and 303



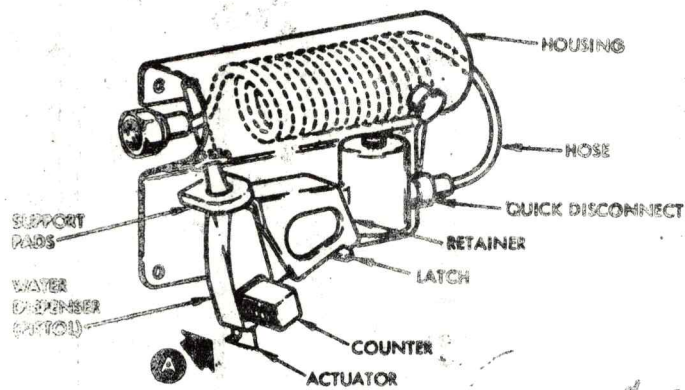
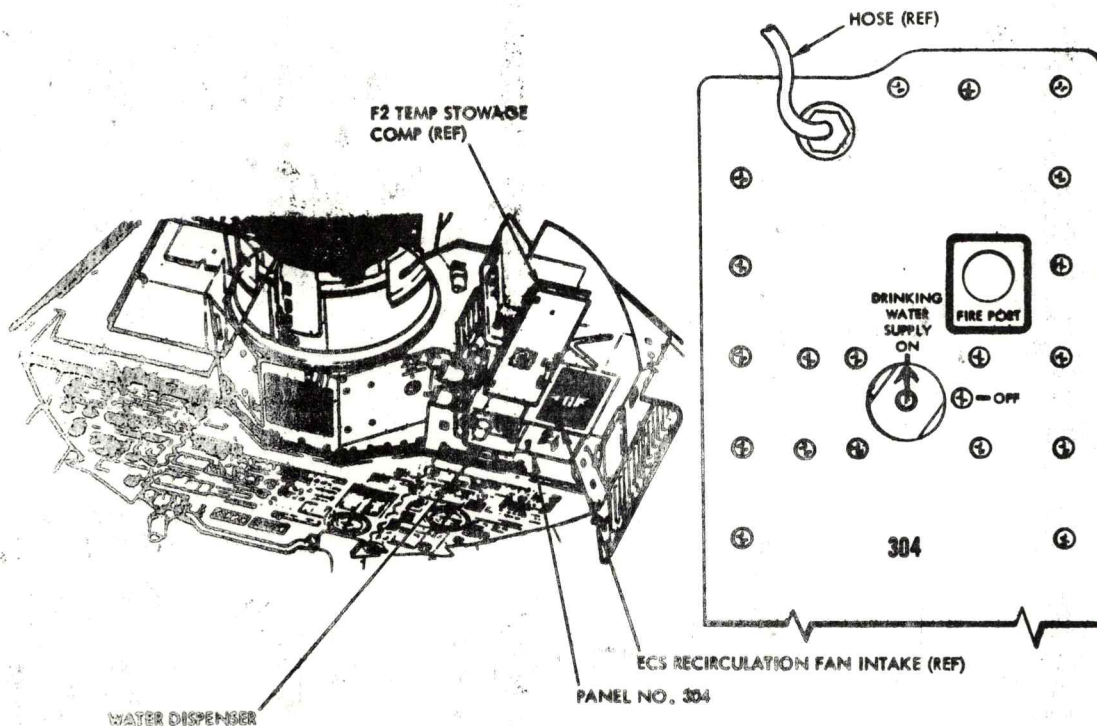
2003Z-2004Z MAY 26

SM2A-08-SC106

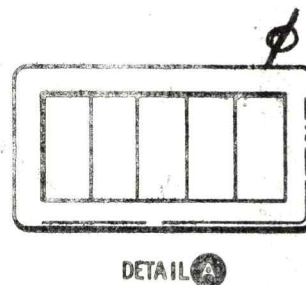
5

PANEL READINGS AND SWITCH POSITIONS

Sheet 52 of 70



WATER DISPENSER (VIEW LOOKING FORWARD)



Ø GUN DID NOT HAVE A COUNTER

SM-2A-1837A

Figure S-25. LHFEB Check Data Sheet, Panel 304, and Water Dispenser Counter

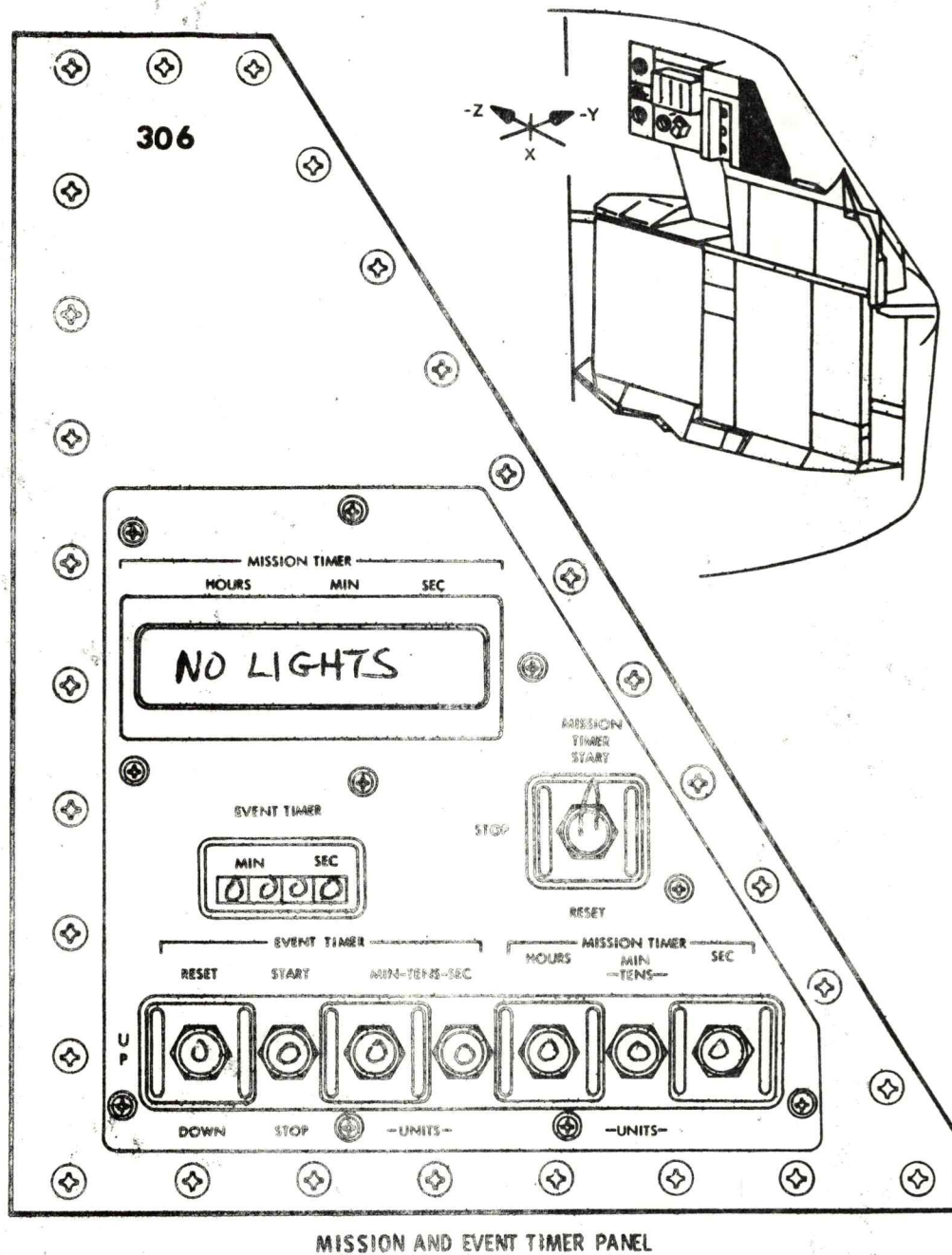
FINISH 0420Z MAY 28

SM2A-08-SC106

5

PANEL READINGS AND SWITCH POSITIONS

Sheet 53 of 70



SM-2A-1853A

Figure S-26. LHFEB Check Data Sheet, Panel 306



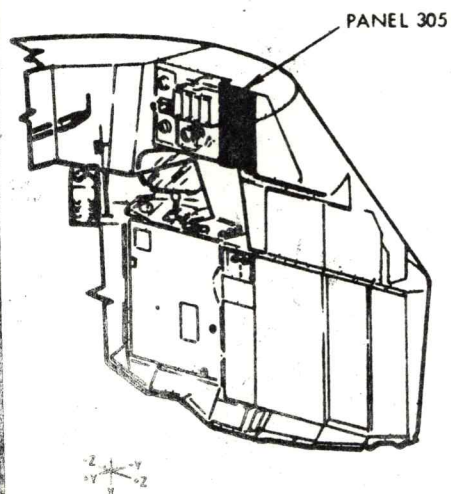
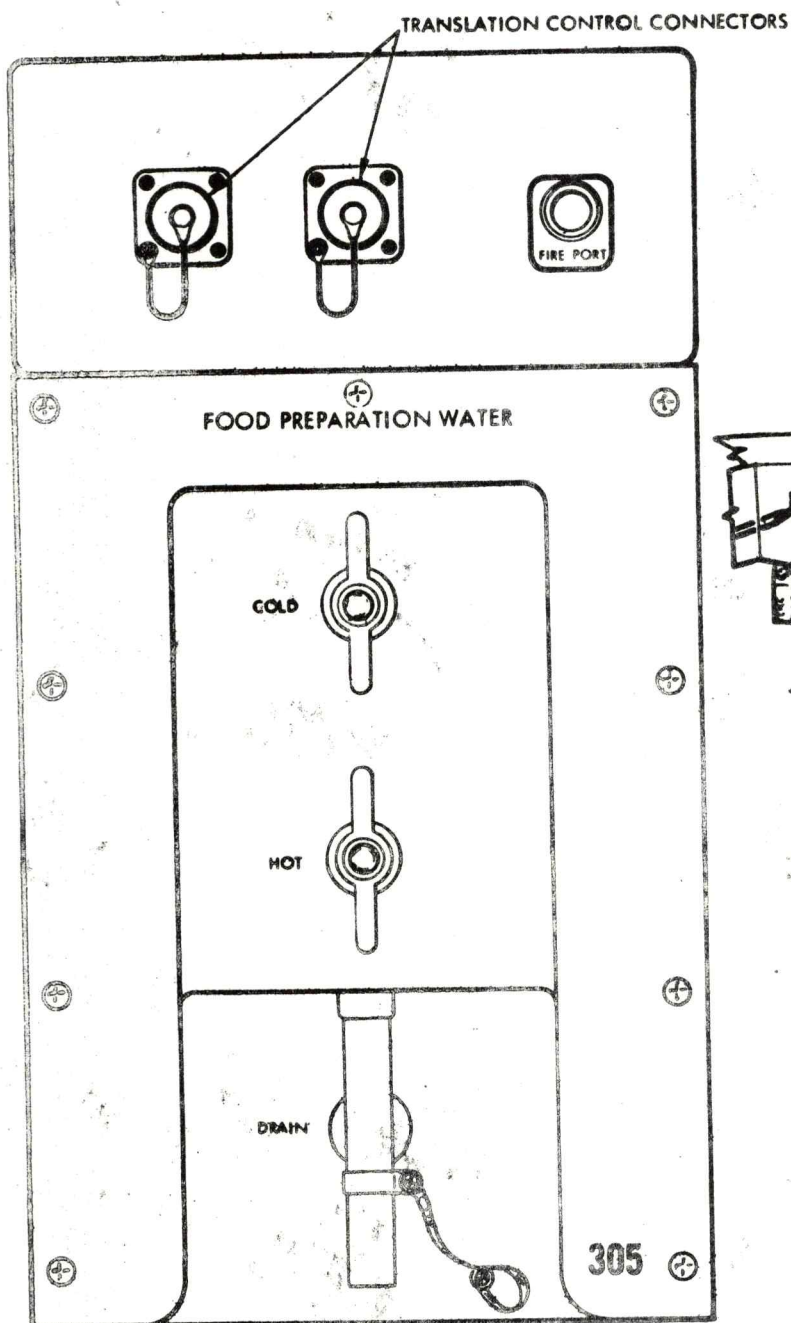
2004-2005 Z MAY 26

SM2A-08-SC106

5

PANEL READINGS AND SWITCH POSITIONS

Sheet 54 of 70



AS SHOWN

SM-2A-1854

Figure S-27. LHFEB Check Data Sheet, Panel 305

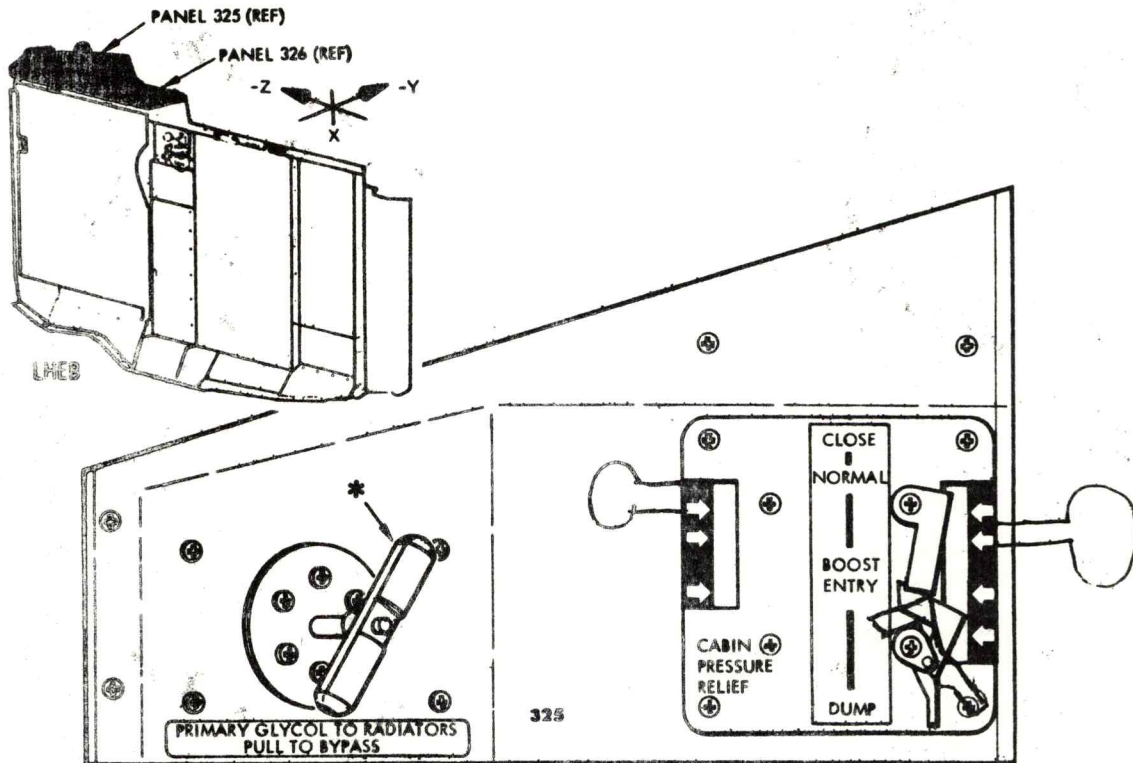
2002-2003 Z MAY 24

SM2A-08-SC106

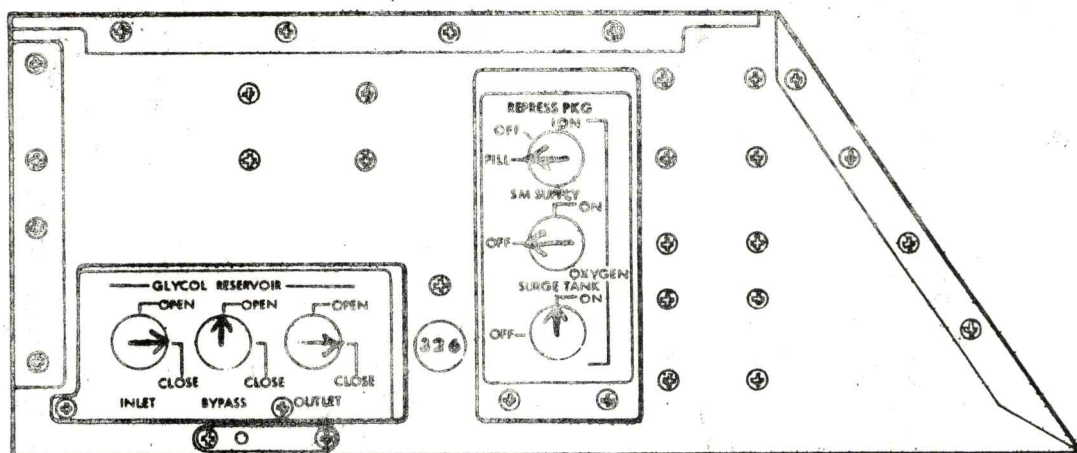
5

PANEL READINGS AND SWITCH POSITIONS

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\* RECORD POSITION OF PRIMARY GLYCOL TO RADIATORS HANDLE: PULLED OUT



SM-2A-1852D

Figure S-28. LHEB Check Data Sheet, Panel 325 and 326

Changed 1 May 1969

116



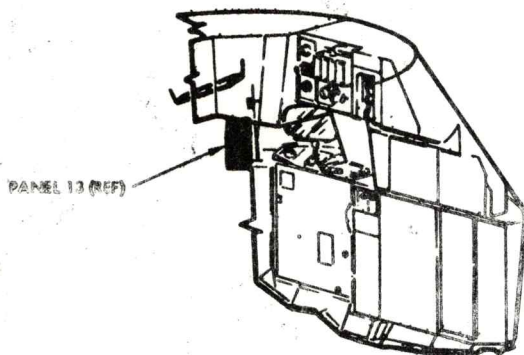
START 0310 Z MAY 28

5

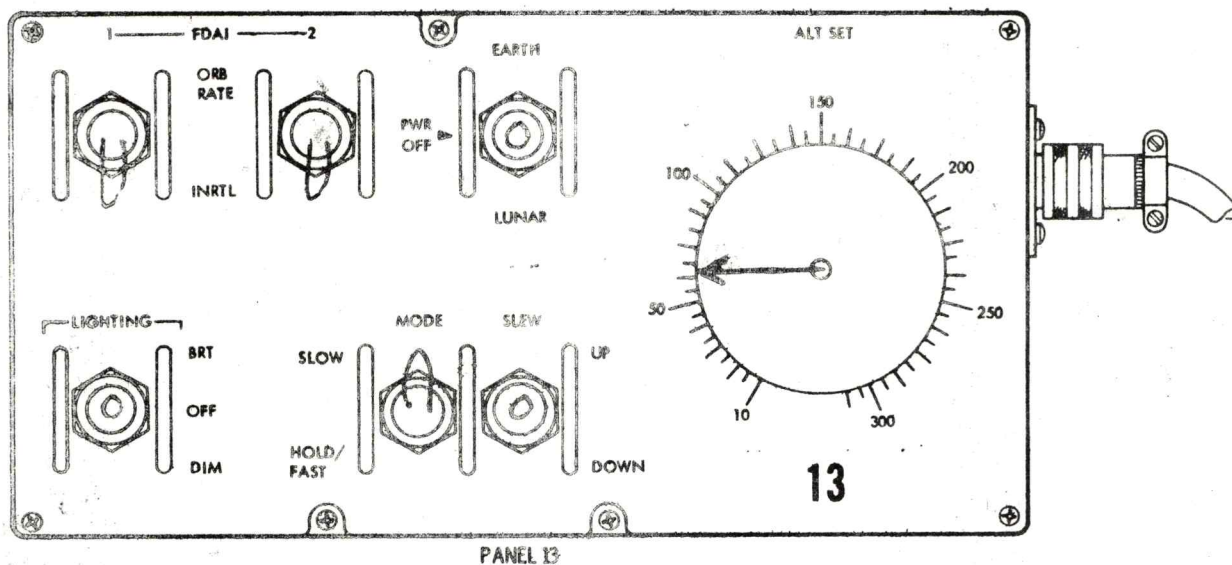
SM2A-08-SC106

PANEL READINGS AND SWITCH POSITIONS

Sheet 56 of 70



NOTE:  
PANEL NO. 13 SHOWN IN  
USE POSITION - STOWED  
IN VOL U3 DURING  
REENTRY AND LANDING

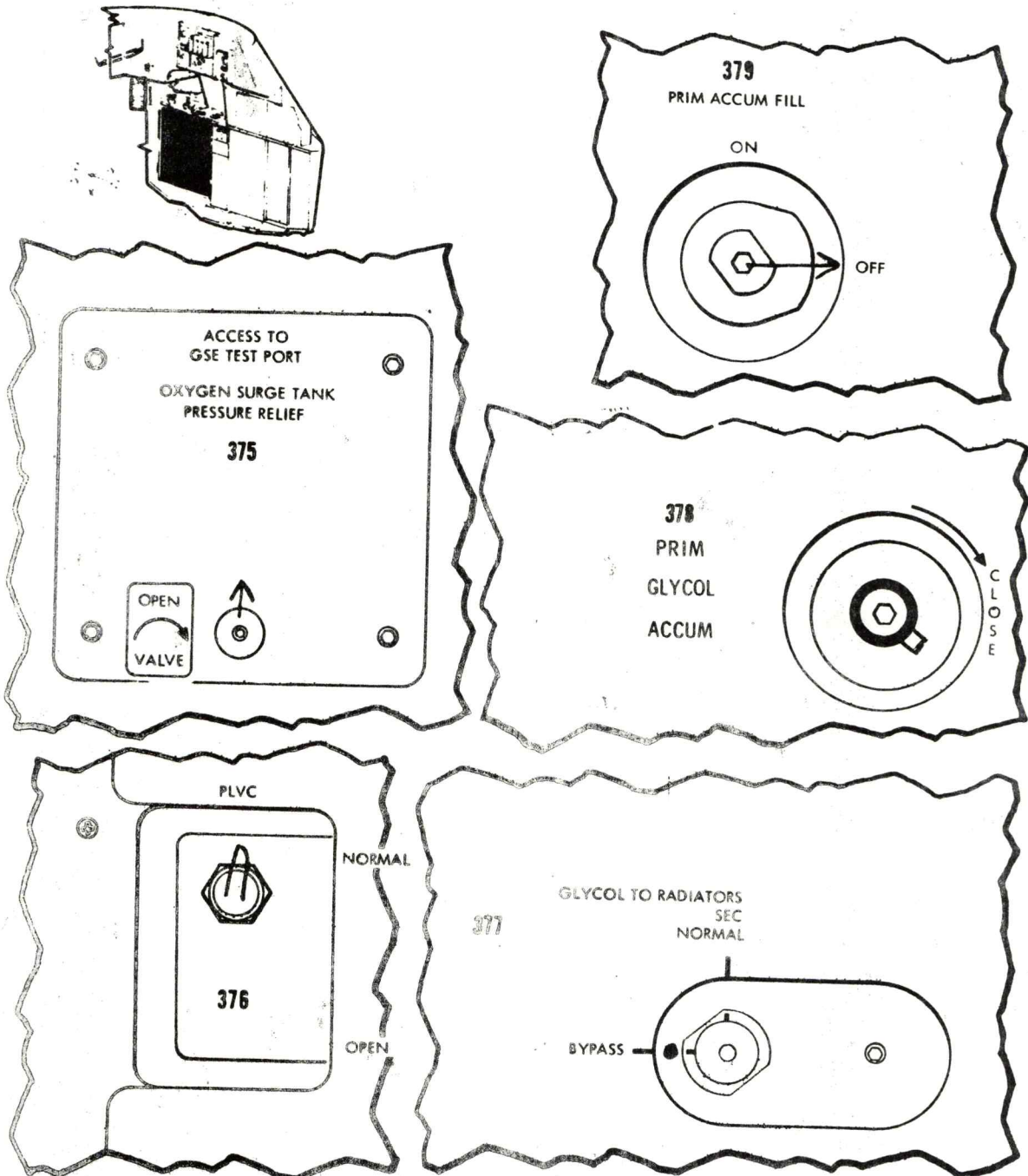


SM-2A-1855C

Figure S-29. LHEB Check Data Sheet, Panel 13

## PANEL READINGS AND SWITCH POSITIONS

Sheet 57 of 70



SM-2A-1856

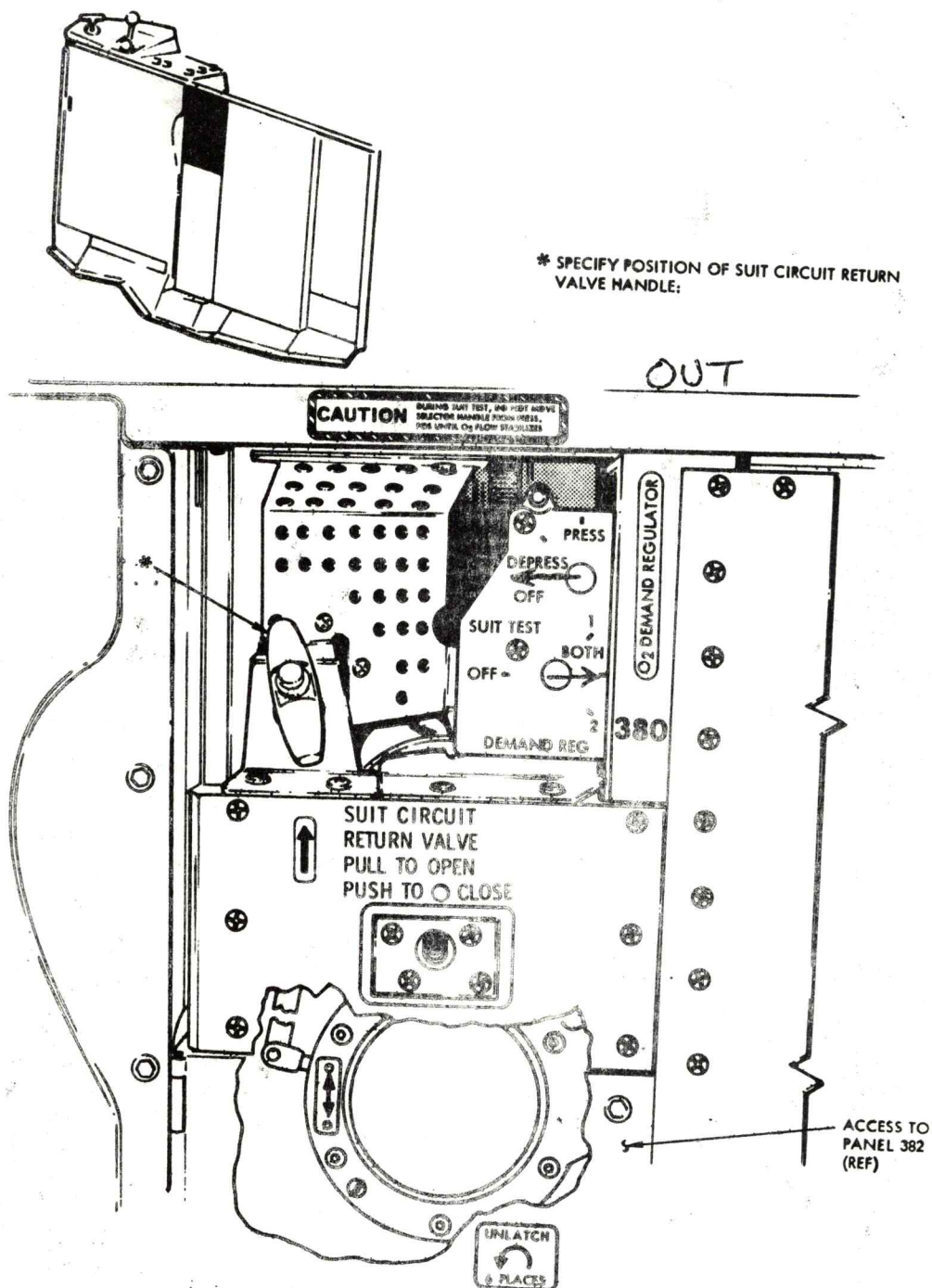
Figure S-30. LHEB Check Data Sheet, Panel 375, 376, 377, 378, and 379

118



## PANEL READINGS AND SWITCH POSITIONS

Sheet 58 of 70

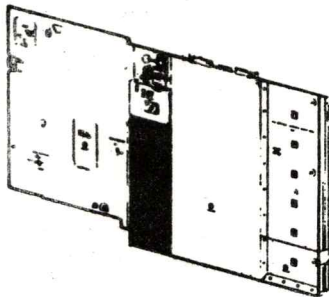


SM-2A-1858B

Figure S-31. LHEB Check Data Sheet, Panel 380

## PANEL READINGS AND SWITCH POSITIONS

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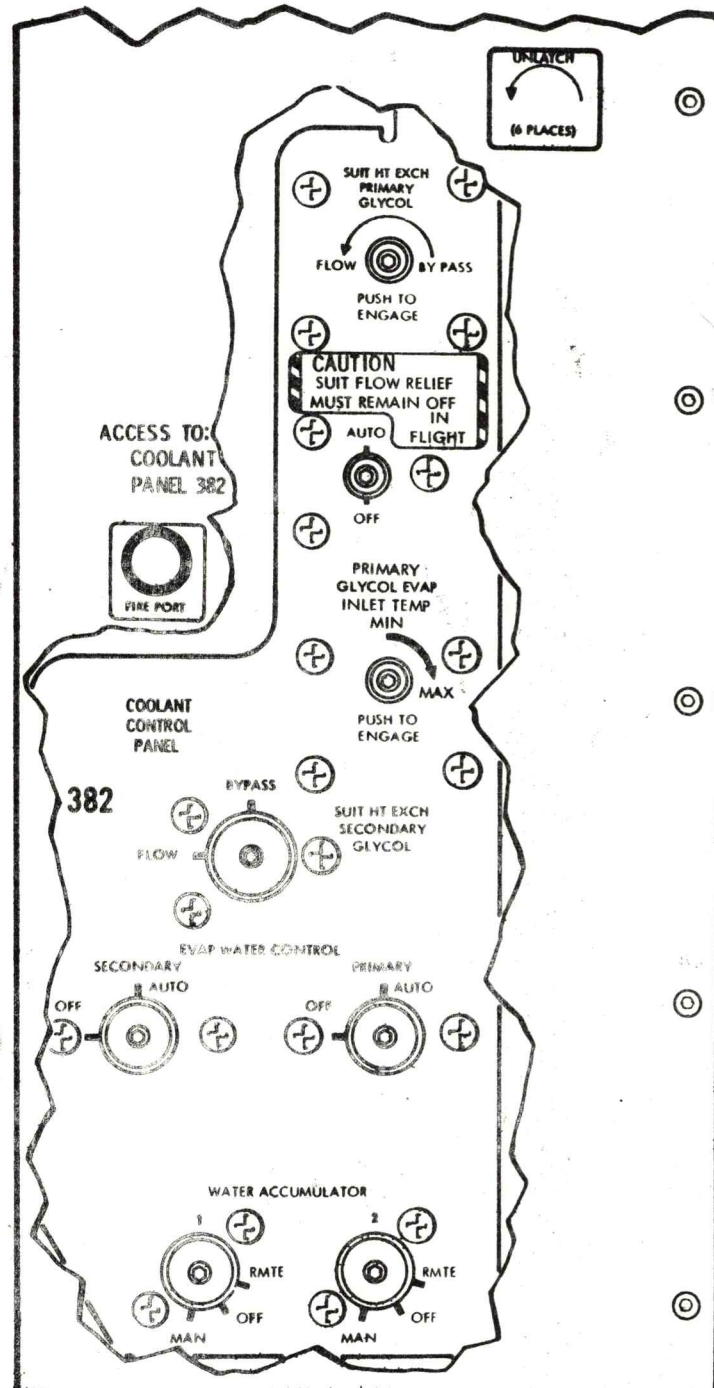


## NOTE

DO NOT UNLOCK Y-Y STRUT TO GAIN ACCESS TO PANEL 382-UNLESS SO DIRECTED BY HOUSTON-RCC

PANEL NO. 382 LOCATED BEHIND A HINGED PANEL; TO OPEN, RELEASE THE SIX 5/32 INCH FASTENERS USING AN ALLEN HEAD ADAPTER OR THE "E" TOOL (ADAPTER HANDLE)

NOT DIRECTED



SM-2A-1835E

Figure S-32. LHEB Check Data Sheet, Panel 382

Changed 1 May 1969

120



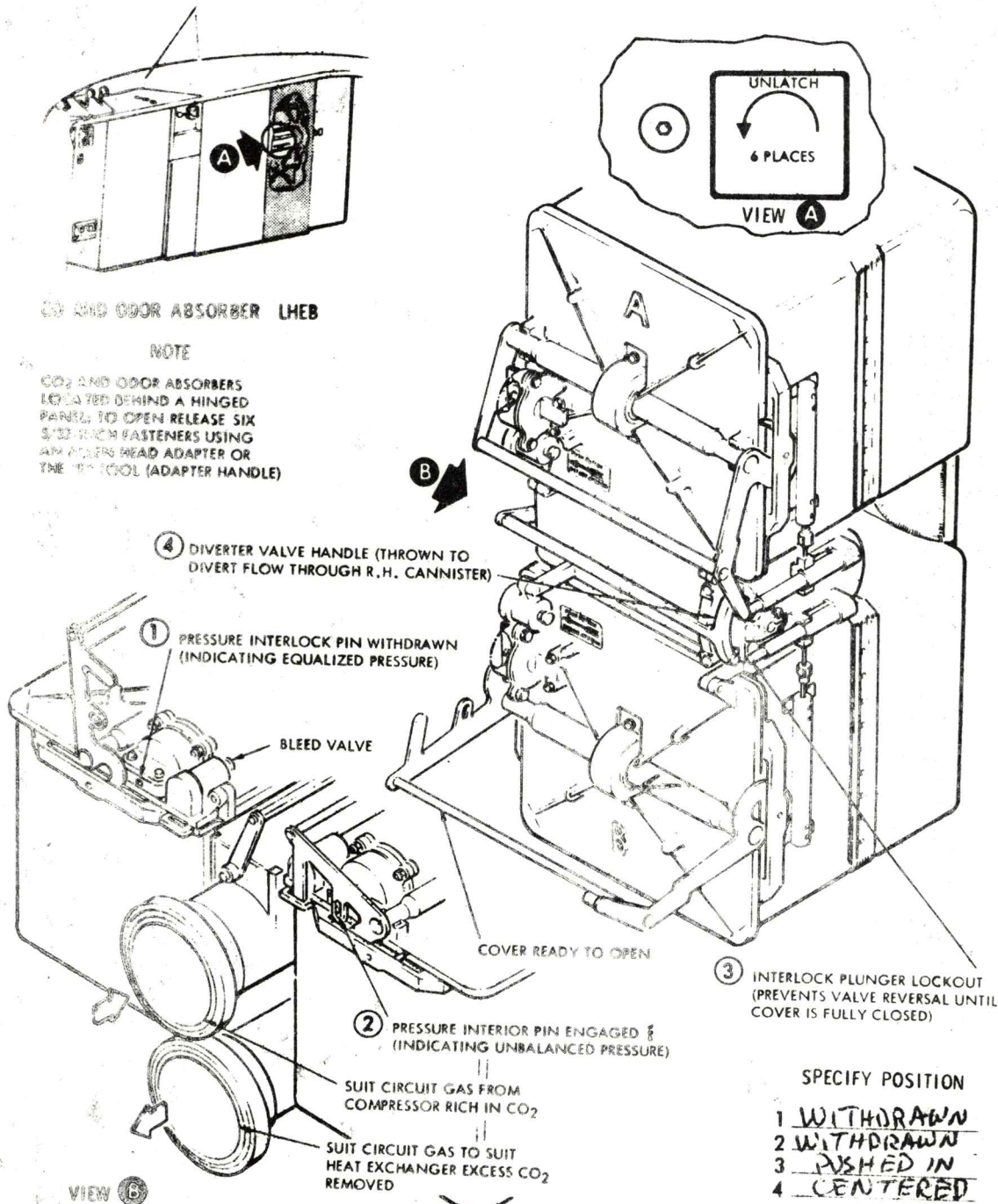
FINISH 0400Z 28 MAY

SM2A-08-SC106

5

PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1836

Figure S-33. LHEB Check Data Sheet, Panel 350

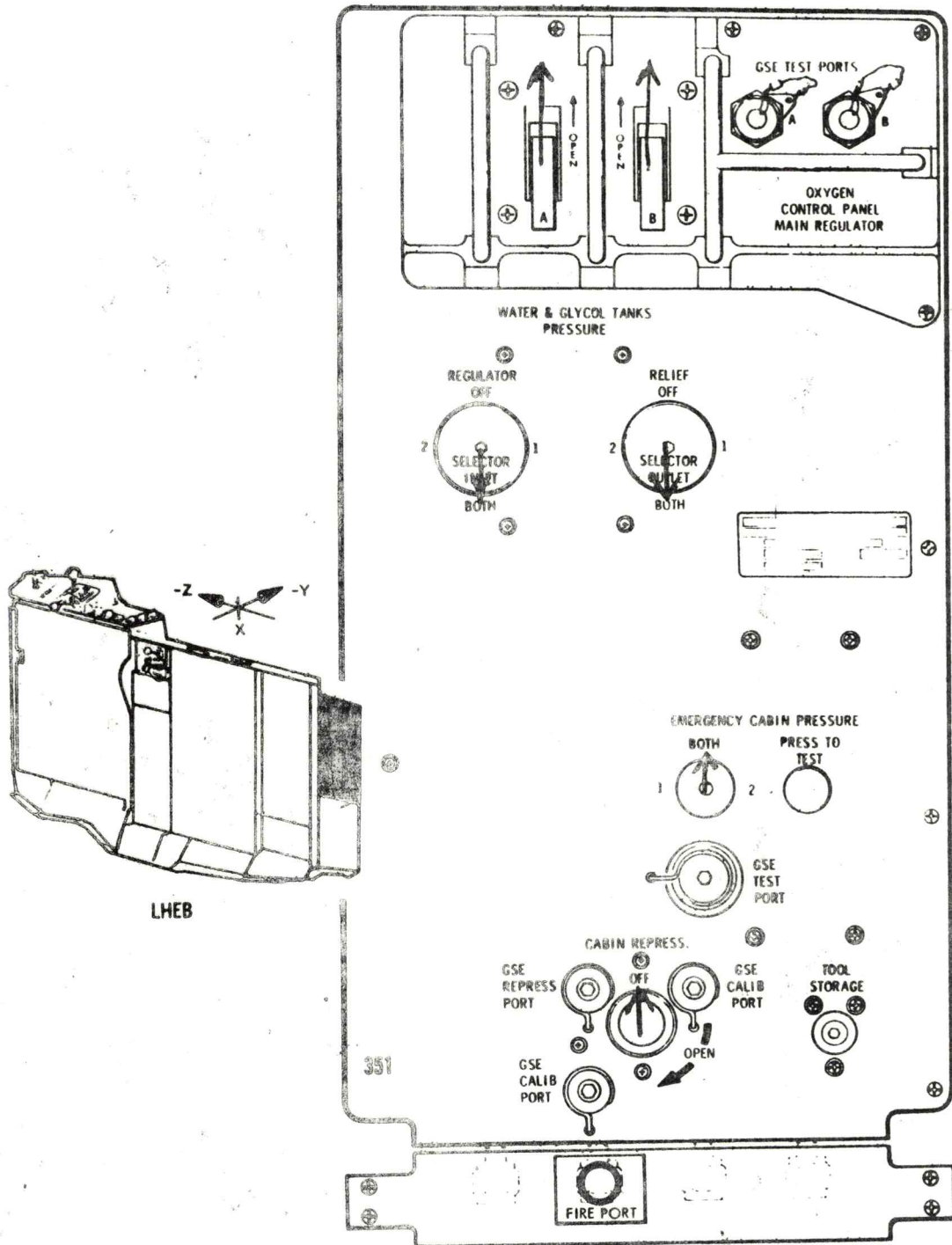
2000Z - 2001Z MAY 26

SM2A-08-SC106

5

PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1833B

Figure S-34. LHEB Check Data Sheet, Panel 351

Changed 1 May 1969

122



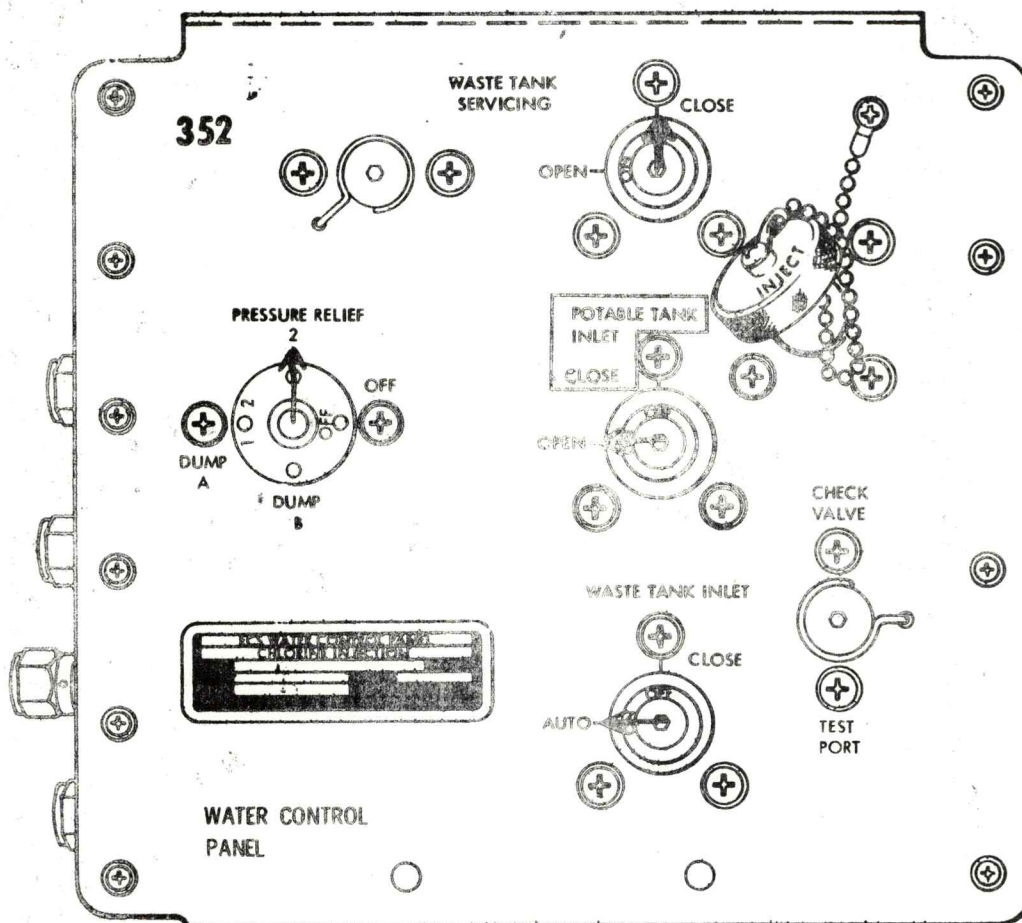
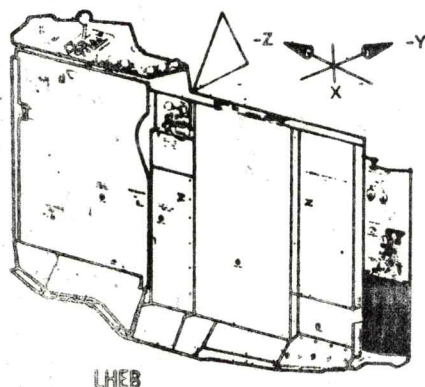
2001Z - 2002Z MAY 26

SM2A-08-SC106

5

PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1834B

Figure S-35. LHEB Check Data Sheet, Panel 352

123

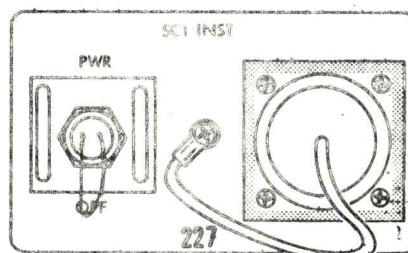
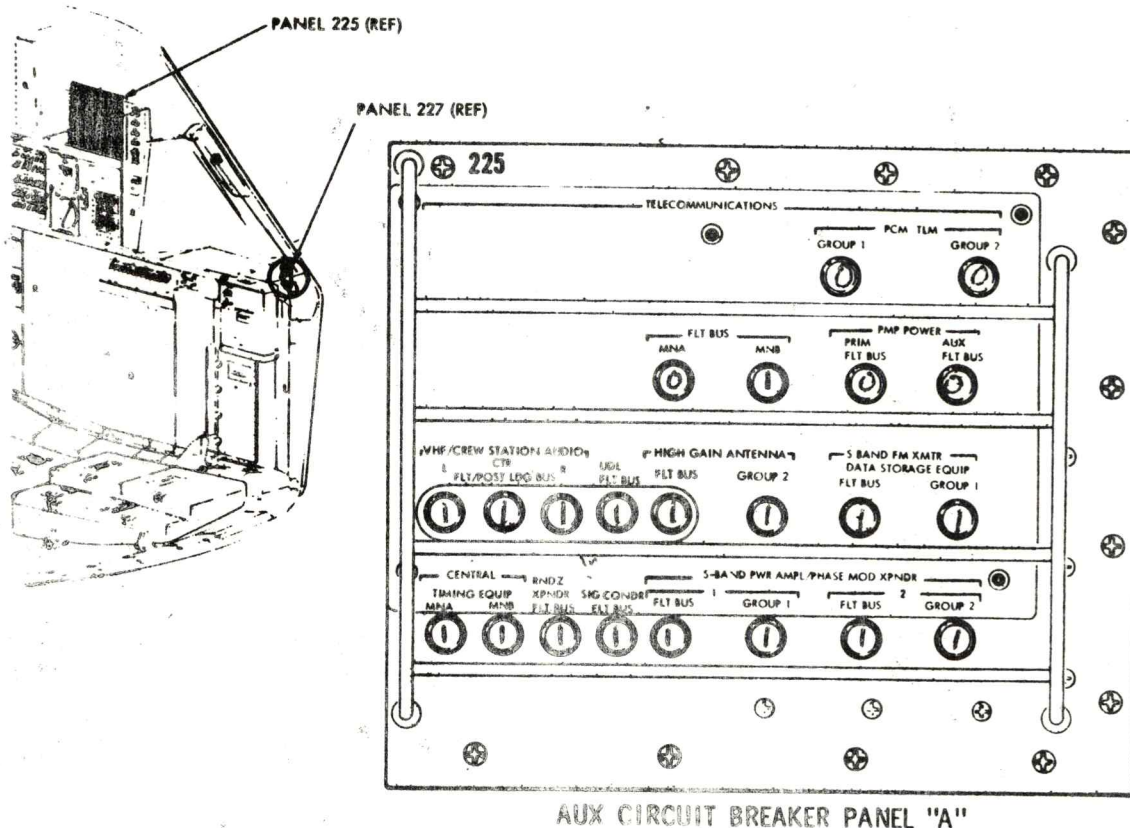
1 HR 1 0405 ± MAY 28

SM2A-08-SC106

5

PANEL READINGS AND SWITCH POSITIONS

Sheet 63 of 70



SCIENTIFIC EQUIP ELECT DISCONNECT

SM-2A-1860D

Figure S-36. RHEB Check Data Sheet, Panel 225 and 227

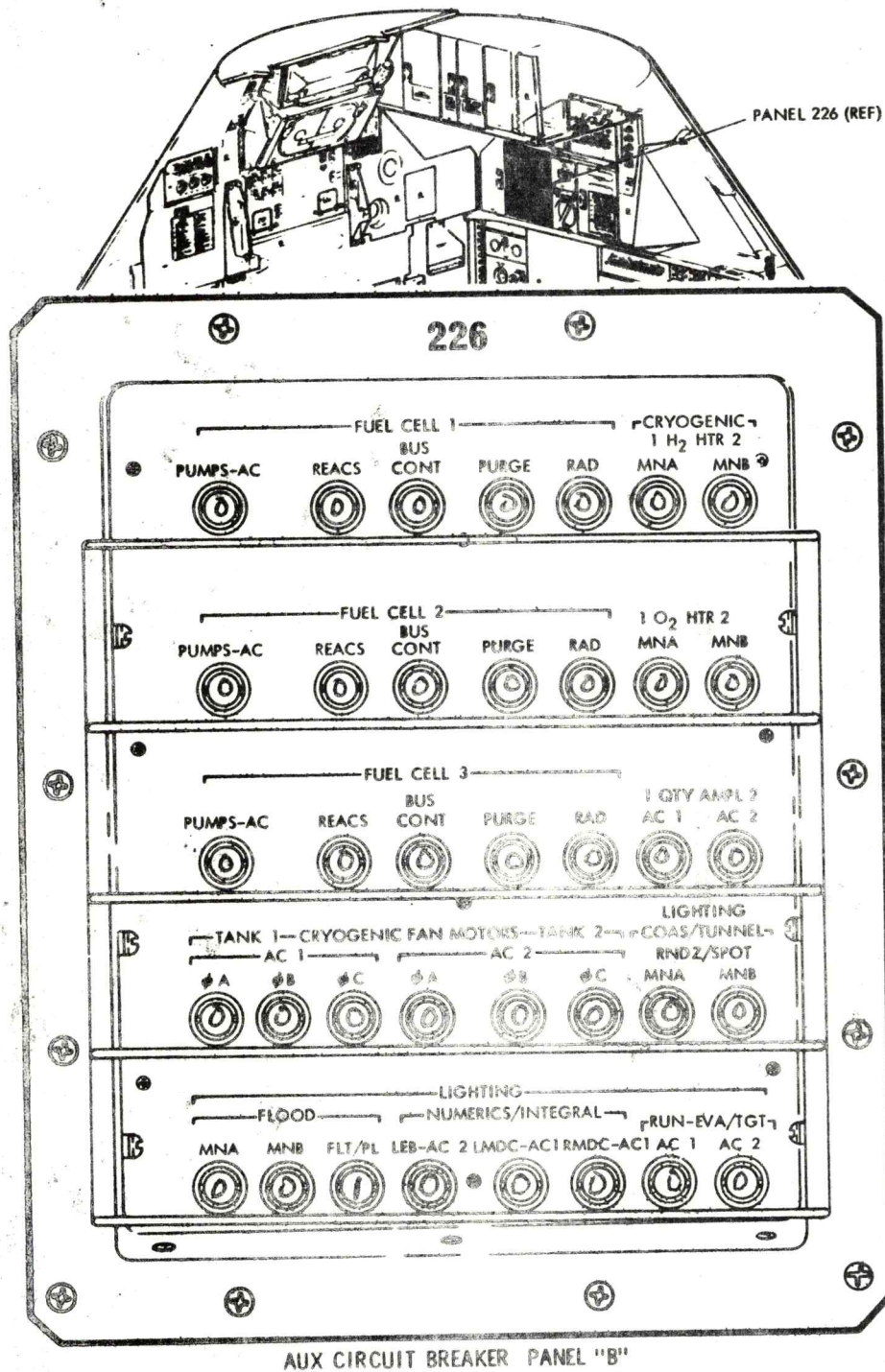
Changed 1 May 1969

124



## PANEL READINGS AND SWITCH POSITIONS

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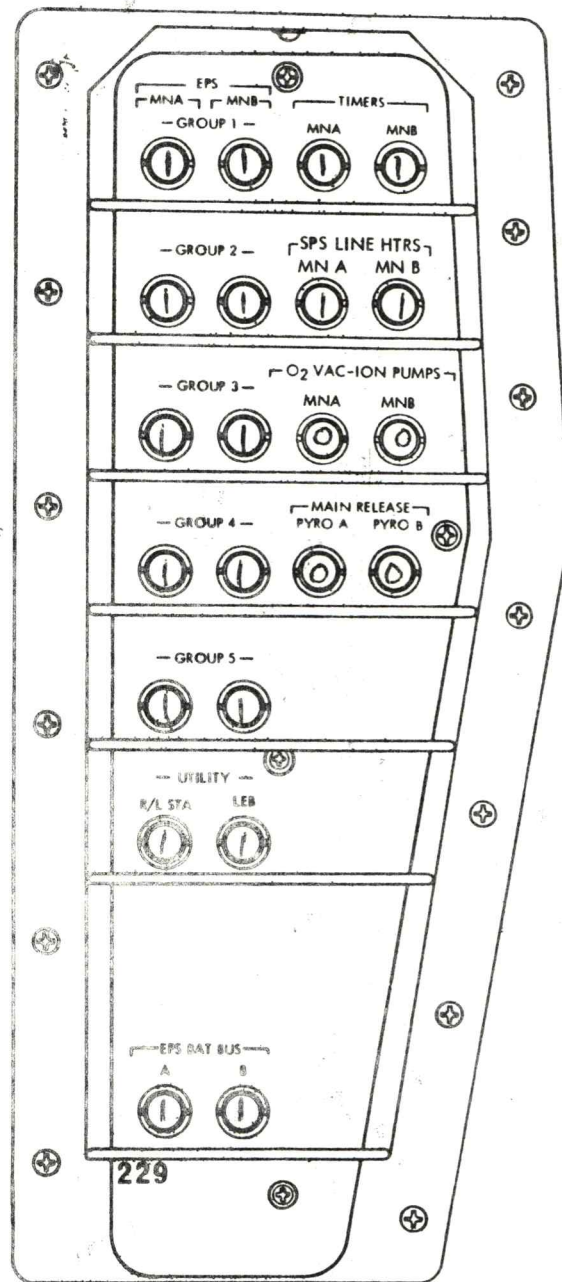
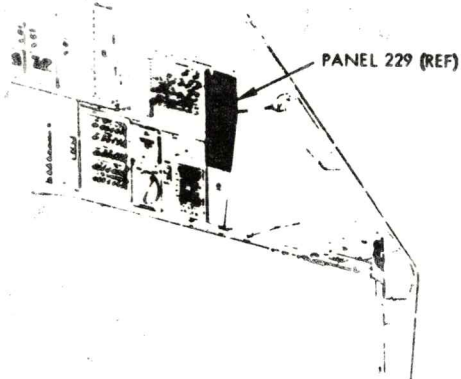
SM-2A-1862B

Figure S-37. RHEB Check Data Sheet, Panel 226

125

## PANEL READINGS AND SWITCH POSITIONS

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EPS PANEL

SM-2A-1857D

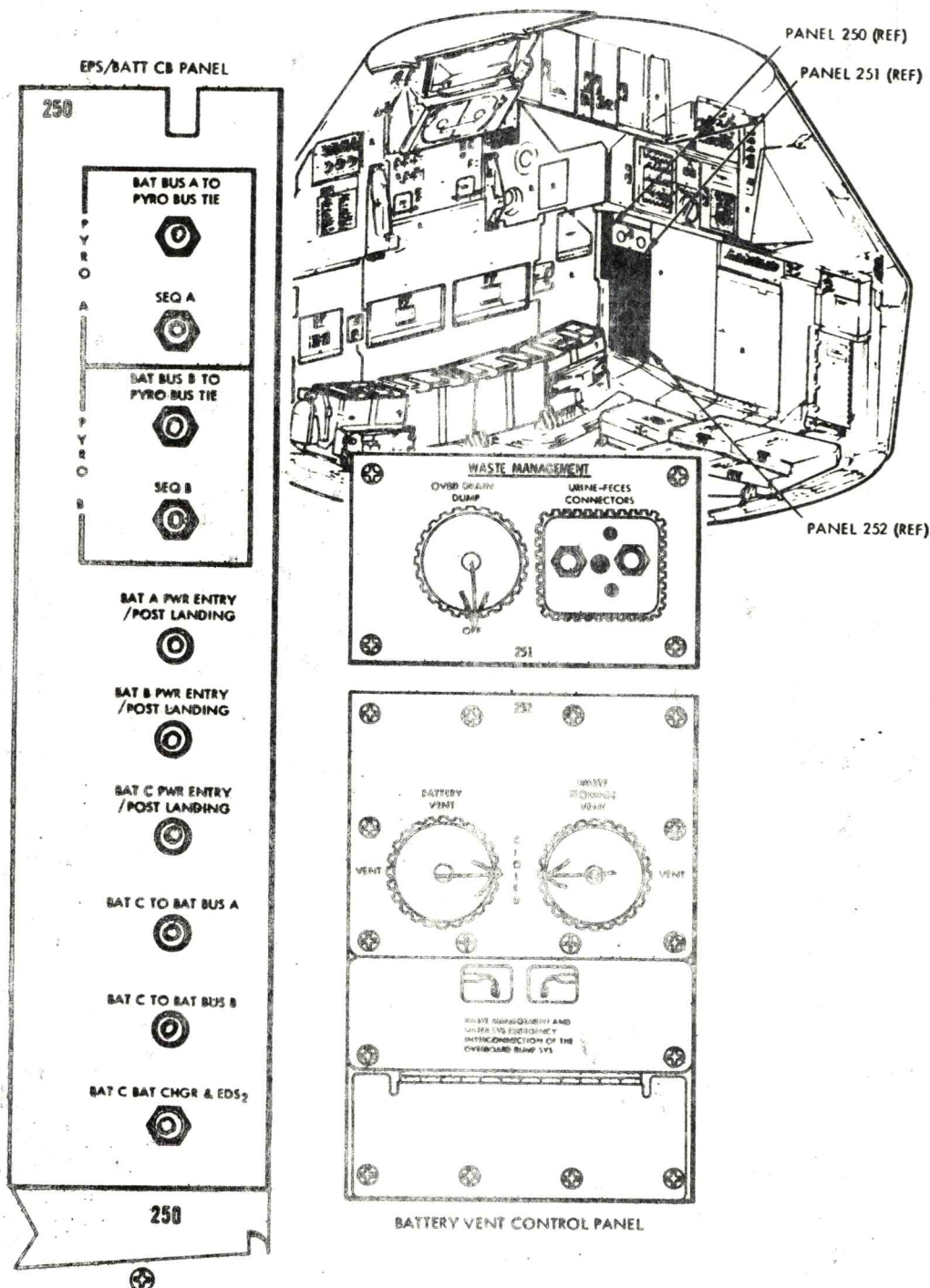
Figure S-38. RHEB Check Data Sheet, Panel 229

126



PANEL READINGS AND SWITCH POSITIONS

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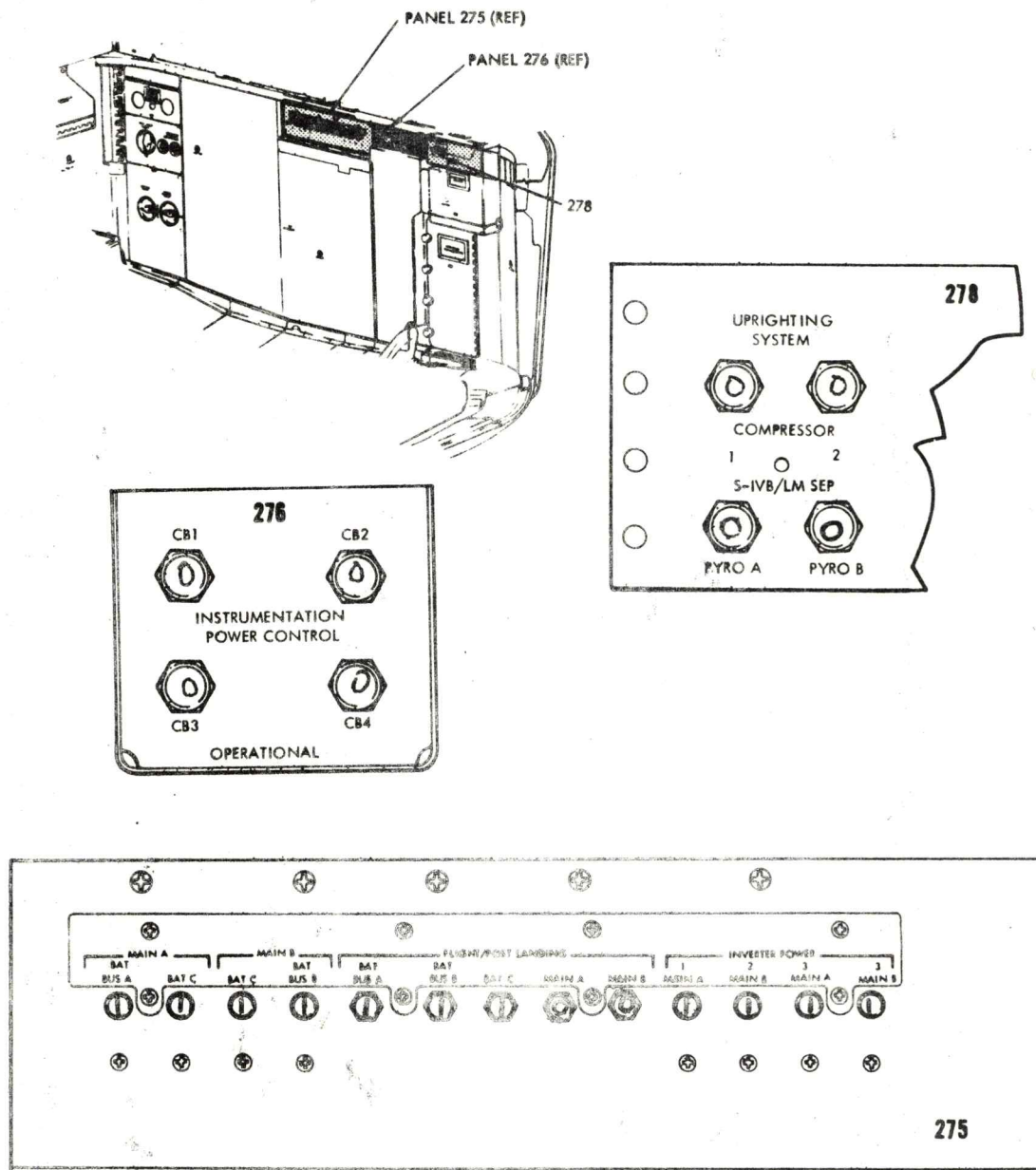


SM-2A-1861C

Figure S-39. RHEB Check Data Sheet, Panel 250, 251, and 252

### PANEL READINGS AND SWITCH POSITIONS

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SM-2A-1845C

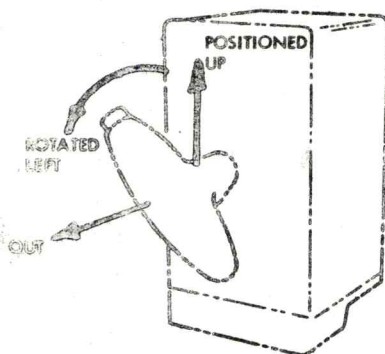
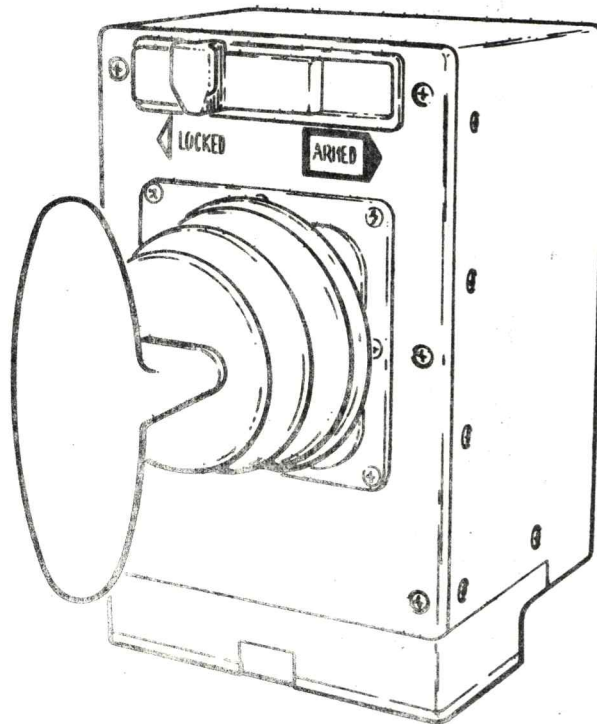
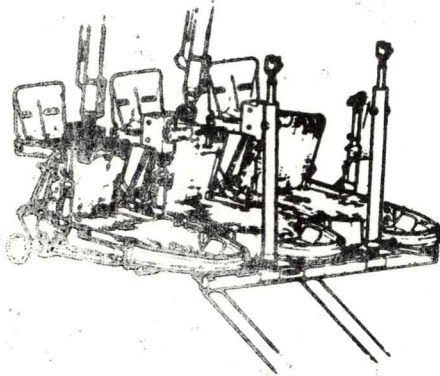
Figure S-40. RHEB Check Data Sheet, Panel 275, 276 and 278

128



## PANEL READINGS AND SWITCH POSITIONS

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## NOTE

IN ADDITION TO SWITCH POSITION,  
INDICATE HANDLE POSITION UTILIZING  
SKETCHED ARROWS. THE TRANSLATION  
CONTROL IS NORMALLY CENTERED,  
SHOULD CONTROL BE OFF-CENTER,  
SO INDICATE)

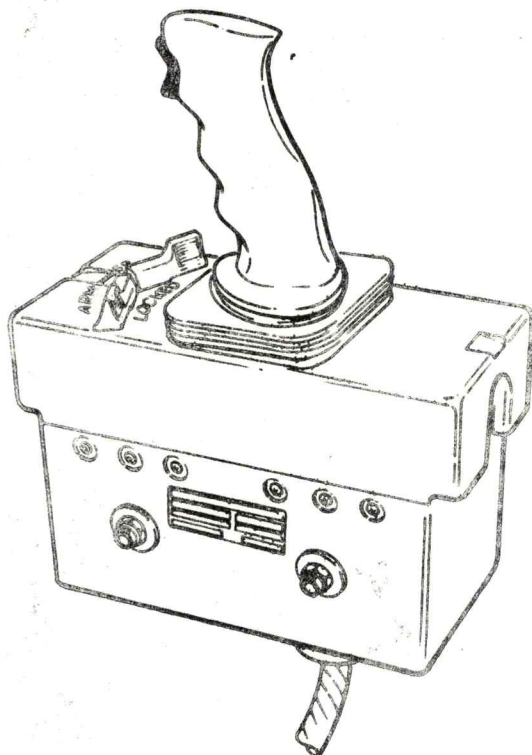
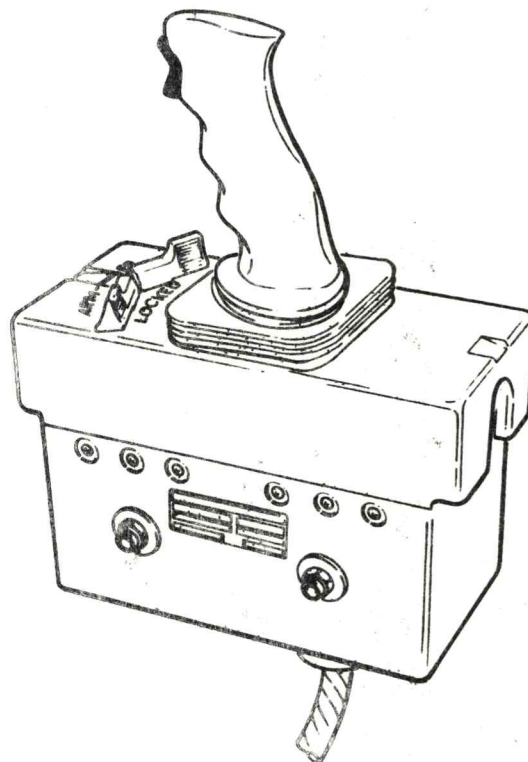
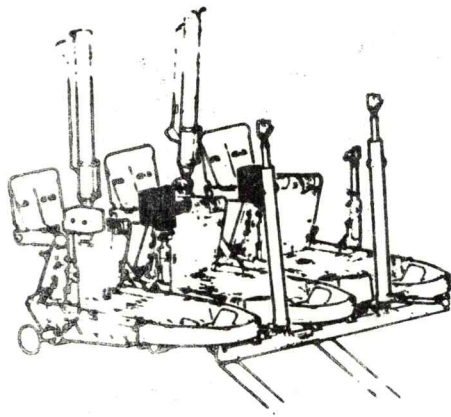
CENTERED  
AND  
LOCKED

SM-2A-1900A

Figure S-41. Central Crew Compartment Check Data Sheet,  
Translation Control

## PANEL READINGS AND SWITCH POSITIONS

Sheet 69 of 70



CENTERED  
AND  
LOCKED

## NOTE

1. ROTATION CONTROLS ARE NORMALLY CENTERED (NEUTRAL), SHOULD CONTROL BE OFF CENTER SO INDICATE.

SM-2A-1901

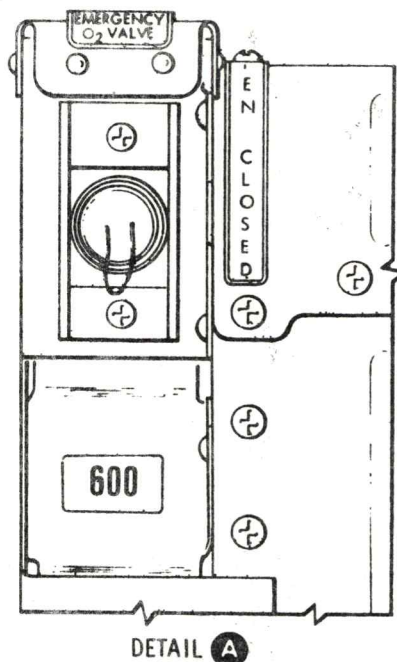
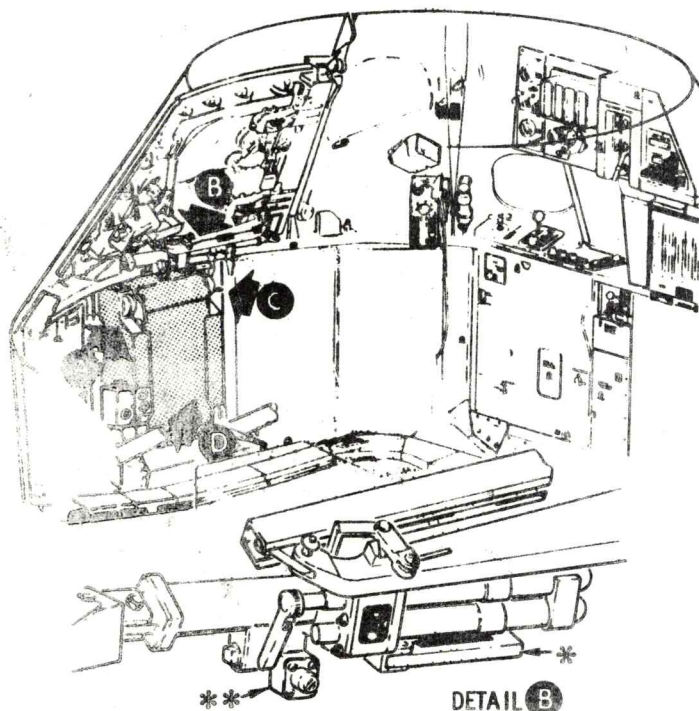
Figure S-42. Central Crew Compartment Check Data Sheet,  
Rotation Controls

130

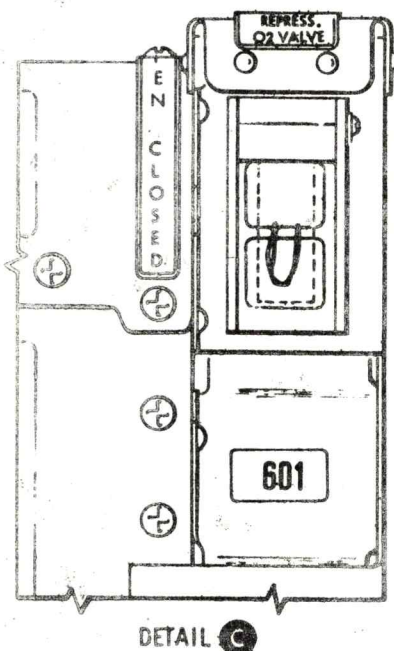


## PANEL READINGS AND SWITCH POSITIONS

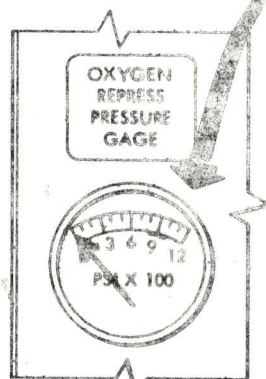
Sheet 70 of 70



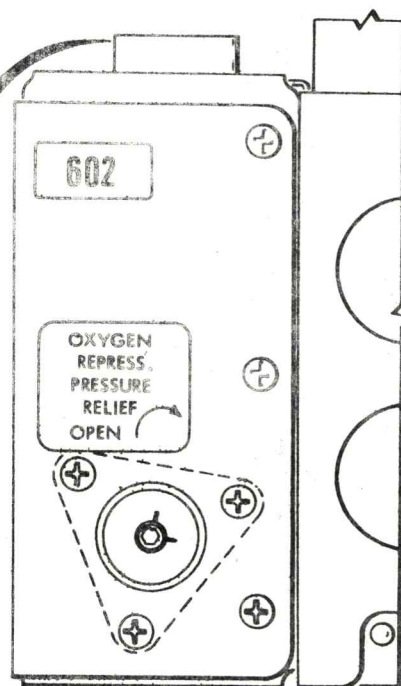
DETAIL A



DETAIL C



NOT READ UNTIL  
2300 MAY 29



DETAIL D

\* SPECIFY POSITION OF  
 \* VENT/PRESS HANDLE PRESS  
 \*\* RECORD GN<sub>2</sub> PRESSURE: GREEN \_\_\_\_\_, WHITE \_\_\_\_\_

SM-2A-1859D

Figure S-43. UEB Check Data Sheet, Panel 600, 601 and 602

> 14K1 1740 Z MAY 26

SEE NOTE PAGE 116

SM2A-08-SC106

6

## SYSTEMS SHUTDOWN

Sheet 1 of 8

This procedure identifies and locates the various switches and circuit breakers that must be repositioned to power down the spacecraft.

### NOTE

- Power down shall be accomplished following completion of procedure (5), Panel Readings and Switch Positions.
- The positioning of switches and circuit breakers other than those specified may jeopardize post-flight testing; accordingly, power down shall be accomplished in the manner prescribed.

### SAFETY

1. Observe standard safety precautions when working within the CM.
2. Actuate only specified switches. Actuation of switch/controls could cause injury to personnel outside the CM.

### PHOTOGRAPHIC REQUIREMENTS

1. Obtain a complete set of photographs depicting each panel prior to pulling any circuit breaker. (See procedure (1) for applicable photo identification numbers.)

### TOOLS AND EQUIPMENT (Not applicable)

### INSTRUCTIONS

PANEL NO. 8

### NOTE

Deleted per NASA TWX FL-521-69-PP5-195,  
dated, 4-3-69.



NOTE

P ≡ CB HAD TO BE PULLED

SM2A-08-SC106

6

SYSTEMS SHUTDOWN

Sheet 2 of 8

INSTRUCTIONS

PANEL NO. 278 (See adjacent illustration.)

1. Verify/pull the following UPRIGHTING SYSTEM circuit breakers:

UPRIGHTING SYSTEM - COMPRESSOR 1  
UPRIGHTING SYSTEM - COMPRESSOR 2

✓  
✓

PANEL NO. 275 (See adjacent illustration.)

1. Verify/pull the following MAIN A and MAIN B circuit breakers:

MAIN A - BAT BUS A  
MAIN A - BAT C  
MAIN B - BAT C  
MAIN B - BAT BUS B

P  
P  
P  
P

2. Verify/pull the following FLIGHT/POST LANDING circuit breakers:

FLIGHT/POST LANDING - BAT BUS A  
FLIGHT/POST LANDING - BAT BUS B  
FLIGHT/POST LANDING - BAT C  
FLIGHT/POST LANDING - MAIN A  
FLIGHT/POST LANDING - MAIN B

P  
P  
P  
✓  
✓

3. Using DC INDICATORS rotary switch, record:

BAT BUS A voltage  
BAT BUS B voltage  
BAT C voltage

0 VOLTS  
"  
"

NOTE

Return rotary switch to the MAIN BUS A position.

PANEL NO. 250 (See adjacent illustration.)

1. Verify/pull the following pyro battery circuit breakers:

BAT BUS B TO PYRO BUS TIE  
SEQ A  
BAT BUS A TO PYRO BUS TIE  
SEQ B

✓  
✓  
✓  
✓

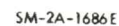
2. Verify/pull the following entry battery circuit breakers:

BAT A PWR ENTRY/POST LANDING  
BAT B PWR ENTRY/POST LANDING  
BAT C PWR ENTRY/POST LANDING  
BAT C BAT CHGR & EDS 2

✓  
✓  
✓  
✓

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## Sheet 3 of 8



**System Shutdown, Panels 278, 275 and 250**

Changed 28 March 1969



## SYSTEMS SHUTDOWN

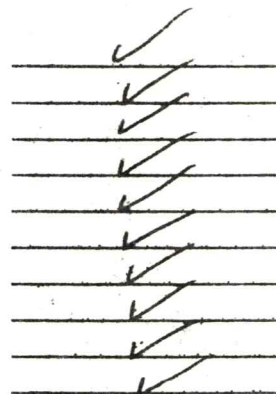
Sheet 4 of 8

INSTRUCTIONS

PANEL NO. 5 (See adjacent illustration.)

1. Verify/pull the following GUIDANCE/NAVIGATION circuit breakers:

POWER - AC 1  
 POWER - AC 2  
 IMU - MNA  
 IMU - MNB  
 IMU HTR - MNA  
 IMU HTR - MNB  
 COMPUTER - MNA  
 COMPUTER - MNB  
 OPTICS - MNA  
 OPTICS - MNB



## NOTE

Refer to RHEB Auxiliary Circuit Breaker Panel "B"  
 (Panel 226) in Procedure 5 (Sheet 64 of 70) for  
 location of CB33 and CB37 required in the following  
 INSTRUCTIONS.

PANEL NO. 226

1. Verify/pull the following LIGHTING-NUMERICS/INTEGRAL  
 circuit breakers:

LEB-AC 2 (CB33)  
 LMDC-AC 1 (CB37)



RADIATION SURVEY METER (See figure 21-22.)

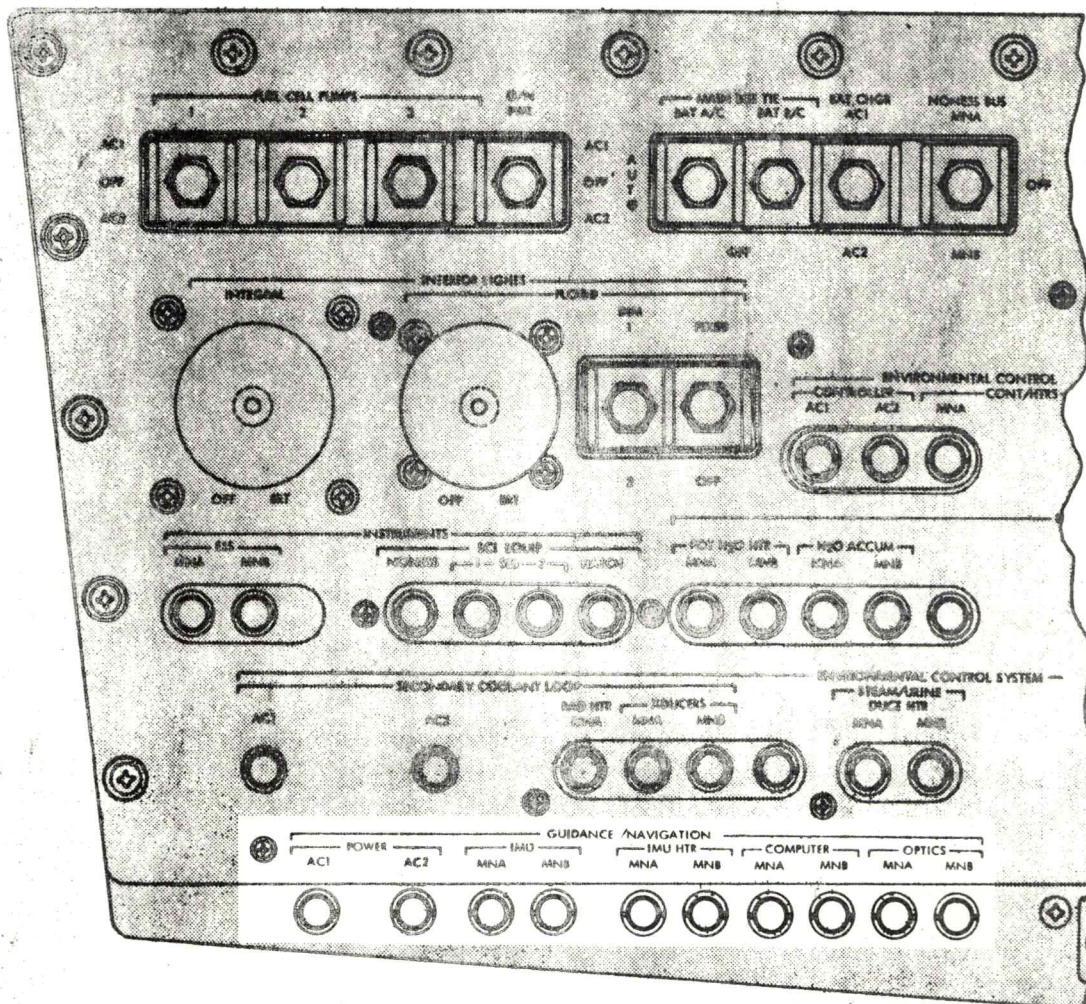
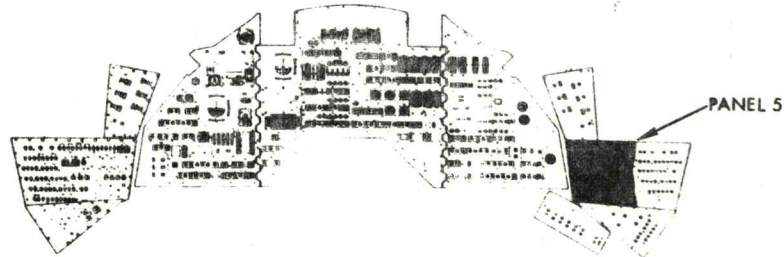
1. Verify survey meter positioned to OFF.

WAS NOT TURNED OFF  
 UNTIL 0015Z MAY 27

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## SYSTEMS SHUTDOWN

Sheet 5 of 8



SM-2A-1687A

System Shutdown, Panel 5

Changed 28 March 1969

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SM2A-08-SC106

SYSTEMS SHUTDOWN

Sheet 6 of 8

INSTRUCTIONS

PANEL NO. 325

NOTE

Deleted per NASA TWX FL-521-69-PP5-195,  
dated, 4-3-69.

SYSTEMS SHUTDOWN

Sheet 7 of 8

INSTRUCTIONS

PANEL NO. 15

NOTE

Deleted per NASA TWX FL-521-69-PP5-195,  
dated 4-3-69.

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FINISH 1945 Z MAY 26

SM2A-08-SC106

6

SYSTEMS SHUTDOWN

Sheet 8 of 8

PACKAGING REQUIREMENTS

Not applicable.

Remarks: DUE TO CRITICAL TIME LINE FOR  
REMOVING CREW EQUIPMENT AND TAKING VARIOUS  
CM SAMPLES TO BE SHIPPED TO HOUSTON WITHIN  
6 HOURS AFTER RECOVERY, SYSTEMS SHUTDOWN  
WAS PERFORMED PRIOR TO RECORDING SWITCH  
POSITIONS AND TAKING PHOTOS, HOWEVER THIS WAS  
ALL TAKEN INTO ACCOUNT WHEN SWITCH POSITIONS  
WERE RECORDED. PHOTO IDENTIS WERE ALSO CAPTIONED

STARTED 2210 MAY 28

SM2A-08-SC106

7

COMMAND MODULE INTERIOR INSPECTION

Sheet 1 of 18

Following system shutdown, or shortly thereafter, recovery personnel shall visually inspect the CM interior for apparent damage/irregularities, etc. Sheets 3, 5, 7, 9, 11, 13, 15 and 17 should be used as a guide for identifying the various components/areas.

NOTE

The inspection shall be confined to visual observations unless otherwise directed by the NASA Team Leader.

SAFETY

1. Observe standard safety precautions when working within the CM.
2. Avoid actuating any switches, controls, etc.; actuation of certain controls could cause injury to personnel outside the CM.

PHOTOGRAPHIC REQUIREMENTS

1. Series of photographs depicting the "as recovered" condition of the spacecraft interior. Refer to procedure (1).

TOOLS AND EQUIPMENT

| Quantity | Nomenclature      |
|----------|-------------------|
|          | Polyethylene bags |

INSTRUCTIONS

NOTE

Refer to sheets 2 through 14.

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## COMMAND MODULE INTERIOR INSPECTION

Sheet 2 of 18

1. Inspect for (and record) any damage or irregularities to components/ areas identified in the adjacent illustration.

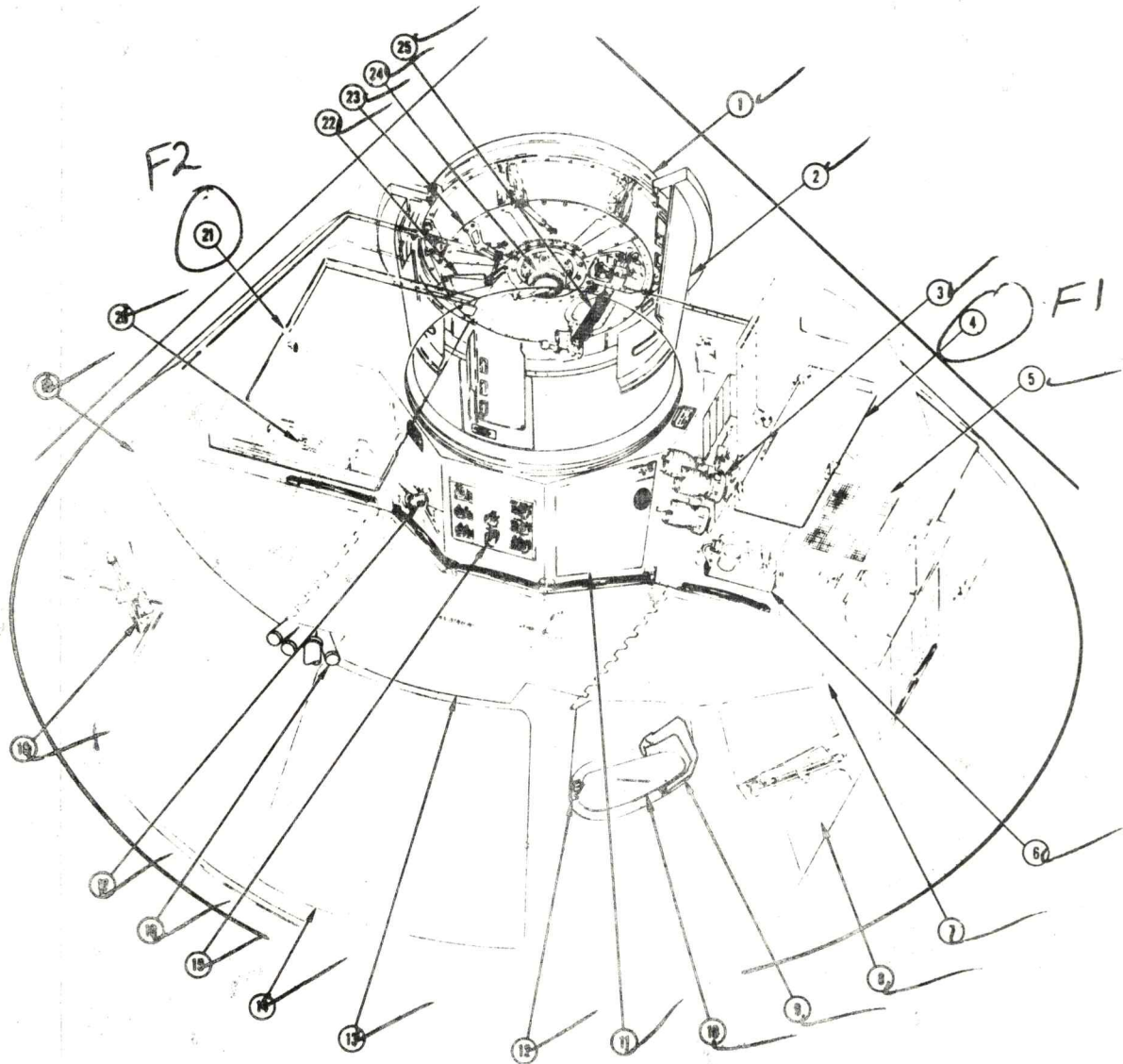
## NOTE

The inspection shall be confined to visual observations unless otherwise directed by the NASA Team Leader.

Remarks: #6 WATER GUN - NO COUNTER  
#22 DOES NOT EXIST.  
#21 HINGE NEAREST RS  $\frac{1}{2}$  PANEL 225 BROKEN  
BLUE STAIN ON FR  
#7 MDC PANEL #1 "LIFT OFF/NO AUTO ABORT" PUSH BUTTON  
APPEARS MELTED SLIGHTLY  
#8 SOME WATER DROPLETS BETWEEN WINDOWS  
#10 SAME AS #8 WITH WATER COLLECTED IN WINDOW BOTTOM  
#11 PAINT ON TUNNEL VENT VALVE BADLY CHIPPED, SOME  
PAINT CHIPPED ON CHECKLISTS  
#12 THUMBCLIP APPEARS LOOSE, ALSO WILL JAM OPEN  
#16 PLV DUCTS PUSHED OUT OF ROUND BY STRUT  
#17 NO DRINK WATER DISPENSER, TV MOUNT INSTEAD  
#20 NO SUCH THING

## COMMAND MODULE INTERIOR INSPECTION

Sheet 3 of 18



## FORWARD PRESSURE HATCH, MDC AND LEFT-HAND FORWARD EQUIPMENT BAY

- |  |                                      |
|--|--------------------------------------|
| 1. FORWARD HATCH                             | 14. UNIFIED HATCH                    |
| 2. TUNNEL                                    | 15. AUDIO CONTROL PANEL (NO. 10)     |
| 3. SUIT HOSE CONNECTOR (PANEL 300, 301, 302) | 16. PLV DUCT                         |
| 4. F2 TEMPORARY STOWAGE COMPARTMENT          | 17. DRINKING WATER DISPENSER         |
| 5. ECS RECIRCULATION FAN INTAKE              | 18. INTERNAL VIEWING MIRROR (TYP)    |
| 6. WATER METERING DEVICE                     | 19. MDC PANEL (NO. 3)                |
| 7. MDC PANEL (NO. 1)                         | 20. TV CAMERA STOWAGE                |
| 8. LEFT-HAND FORWARD VIEWING WINDOW          | 21. F1 TEMPORARY STOWAGE COMPARTMENT |
| 9. CAMERA MOUNT                              | 22. FORWARD PRESSURE HATCH HANDLE    |
| 10. LEFT-HAND RENDEZVOUS WINDOW              | 23. HANDHOLD                         |
| 11. TUNNEL/LM PRESSURIZATION PANEL (NO. 12)  | 24. PRESSURE EQUALIZATION VALVE      |
| 12. COAS MOUNT                               | 25. PUMP HANDLE                      |
| 13. MDC PANEL (NO. 2)                        |                                      |

SM-2A-1830A

Forward Hatch, MDC and Left-Hand Forward Equipment Bay

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SM2A-08-SC106

## COMMAND MODULE INTERIOR INSPECTION

Sheet 4 of 18

2. Inspect for (and record) any damage or irregularities to components/ areas identified in the adjacent illustration.

### NOTE

- The inspection shall be confined to visual observations unless otherwise directed by the NASA Team Leader.
- For specific procedures relative to the ECS, refer to procedure (13) .

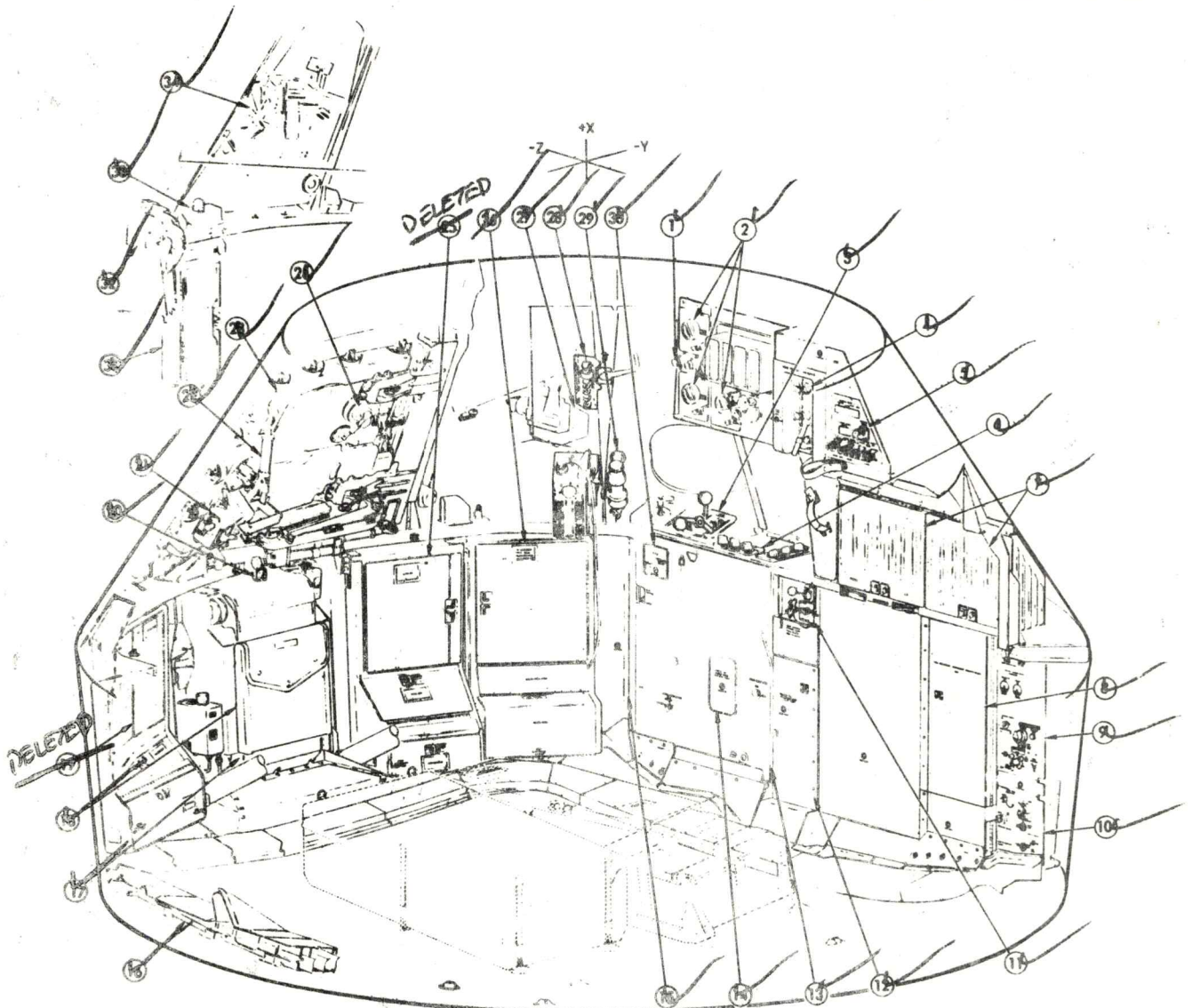
Remarks:

143



## COMMAND MODULE INTERIOR INSPECTION

Sheet 5 of 18



## AFT BULKHEAD, UPPER AND LEFT-HAND EQUIPMENT BAYS (CLOSEOUT PANELS INSTALLED)

- |   |   |
|---|---|
| 1. Communication cable connectors                         | 18. Window shade container                              |
| 2. ECS O <sub>2</sub> hose connectors                     | 19. Deleted   |
| 3. Cabin pressure relief control panel (No. 325)          | 20. GN <sub>2</sub> gauge                               |
| 4. Food preparation water unit                            | 21. Unified hatch gear box                              |
| 5. Timer panel (No. 306)                                  | 22. Unified hatch pump handle                           |
| 6. ECS O <sub>2</sub> and glycol control panel (No. 326)  | 23. Unified hatch                                       |
| 7. L3 stowage compartments                                | 24. Vent Valve  |
| 8. ECS filter access panel (No. 350)                      | 25. Deleted   |
| 9. Oxygen control panel (No. 351)                         | 26. U3 stowage locker                                   |
| 10. Water Control panel (No. 352)                         | 27. Floodlight  |
| 11. O <sub>2</sub> demand regulator valve panel (No. 380) | 28. Panel 15  |
| 12. Coolant control panel (No. 382)                       | 29. Crew optical alignment sight                        |
| 13. W/G accumulator fill control panel (No. 379)          | 30. O <sub>2</sub> surge tank pressure relief           |
| 14. Seawater plug access panel                            | 31. Volume U4   |
| 15. PLUC control panel (No. 376)                          | 32. Scientific/electrical disconnect panel (No. 227)    |
| 16. Electrical cableway (typical)                         | 33. Van Allen Belt Dosimeter                            |
| 17. Emergency O <sub>2</sub> and repressurization system  | 34. Crew optical alignment sight power switch (No. 228) |

SM-2A-1433D

Aft Bulkhead, Upper and Left-Hand Equipment  
Bays - Closeout Panels Installed

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SM2A-08-SC106

COMMAND MODULE INTERIOR INSPECTION

Sheet 6 of 18

3. Inspect for (and record) any damage or irregularities to components/ areas identified in the adjacent illustration.

NOTE

- The inspection shall be confined to visual observations unless otherwise directed by the NASA Team Leader.
- Closeout panels shall not be removed for inspection purposes. Remove panels only per instructions received from the NASA Team Leader.

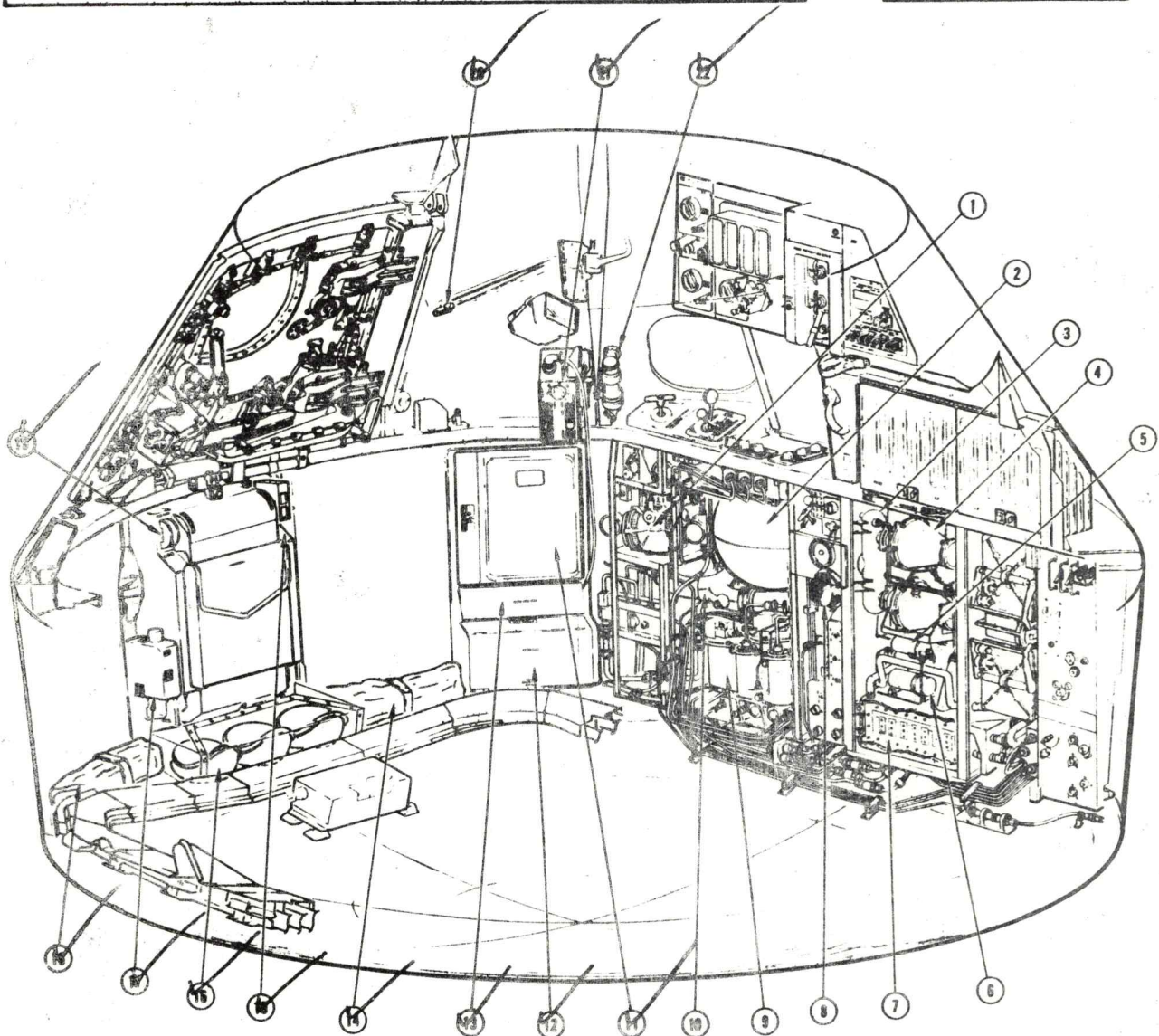
Remarks: ITEMS #1 - #10 NOT INSPECTED

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## COMMAND MODULE INTERIOR INSPECTION

Sheet 7 of 18



## AFT BULKHEAD, UPPER AND LEFT-HAND EQUIPMENT BAYS (CLOSEOUT PANELS REMOVED)

- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| 1. Cabin pressure regulator         | 12. Ordeal box stowage            |
| 2. Surge tank                       | 13. Ordeal cable stowage          |
| 3. Compressor inlet manifold        | 14. Sleeping bag (stowed)         |
| 4. Suit compressor (typ)            | 15. Panel 601                     |
| 5. H <sub>2</sub> O filter          | 16. O <sub>2</sub> masks (stowed) |
| 6. H <sub>2</sub> O accumulator     | 17. Panel 602                     |
| 7. Heat exchanger                   | 18. Sleeping bag (stowed)         |
| 8. Suit circuit return inlet screen | 19. Panel 600                     |
| 9. Water glycol pump assembly       | 20. Mount-Optical alignment sight |
| 10. Steam vent                      | 21. Panel 313                     |
| 11. Volume U3                       | 22. COAS                          |

SM-2A-1618C

Aft Bulkhead, Upper and Left-Hand Equipment  
Bays - Closeout Panels Removed

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SM2A-08-SC106

COMMAND MODULE INTERIOR INSPECTION

Sheet 8 of 18

4. Inspect for (and record) any damage or irregularities to components/ areas identified in the adjacent illustration.

NOTE

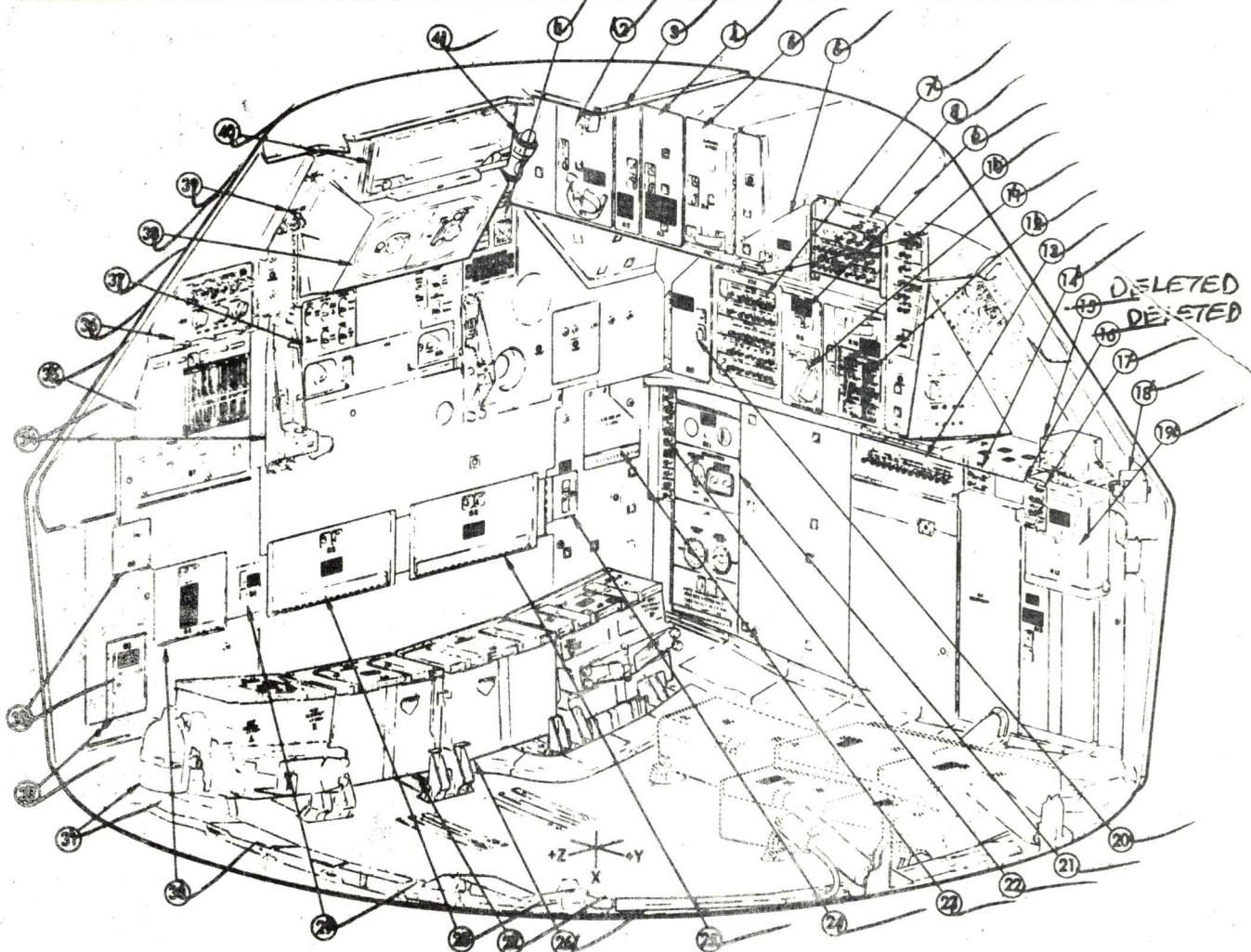
The inspection shall be confined to visual observations unless otherwise directed by the NASA Team Leader.

Remarks: #2-#5 SOME PAINT OFF OF R1-R4

147

## COMMAND MODULE INTERIOR INSPECTION

Sheet 9 of 18



## AFT BULKHEAD, LEFT AND RIGHT-HAND EQUIPMENT BAYS (CLOSEOUT PANELS INSTALLED)

- |  |   |
|--|---|
| 1. LEB display keyboard panel (No. 140)              | 21. Waste management system panels            |
| 2. R1 stowage compartment                            | 22. Battery circuit breaker panel (No. 250)   |
| 3. R2 stowage compartment                            | 23. VHF antenna access (cables)               |
| 4. R3 stowage compartment                            | 24. B7 stowage compartment                    |
| 5. R4 stowage compartment                            | 25. B6 stowage compartment (CO2 absorbers)    |
| 6. R5 stowage compartment                            | 26. A4 stowage compartment                    |
| 7. Aux circuit breaker panel B (No. 226)             | 27. A5 stowage compartment                    |
| 8. Aux circuit breaker panel A (No. 225)             | 28. B5 stowage compartment (CO2 absorbers)    |
| 9. R8 stowage compartment                            | 29. B4 stowage compartment                    |
| 10. Circuit breaker panel (No. 229)                  | 30. B3 stowage compartment (camera equipment) |
| 11. R9 stowage compartment                           | 31. Fire extinguisher                         |
| 12. R10 stowage compartment                          | 32. B8 stowage compartment (camera equipment) |
| 13. Power circuit breaker panel (No. 275)            | 33. B2 stowage compartment (medical kit)      |
| 14. Circuit breaker panel (No. 276)                  | 34. Translation controller mount (use pos)    |
| 15. Cabin analyzer (Deleted)                         | 35. B1 stowage compartment (food)             |
| 16. Circuit breaker panel (No. 277) Deleted          | 36. Lighting control panel (No. 100)          |
| 17. Uprighting system panel (No. 278)                | 37. G&N control panel (No. 122)               |
| 18. Scientific/electrical disconnect panel (No. 227) | 38. Optics panel (No. 121)                    |
| 19. Data file  | 39. Auxiliary test panel (No. 101)            |
| 20. R6 stowage compartment                           | 40. Optics stowage compartment                |
|  | 41. Radiation survey meter                    |

SM-2A-1434G

Aft Bulkhead, L. E. B. and Right-Hand Equipment  
Bay - Closeout Panels Installed

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## COMMAND MODULE INTERIOR INSPECTION

Sheet 10 of 18

5. Inspect for (and record) any damage or irregularities to components/ areas identified in the adjacent illustration.

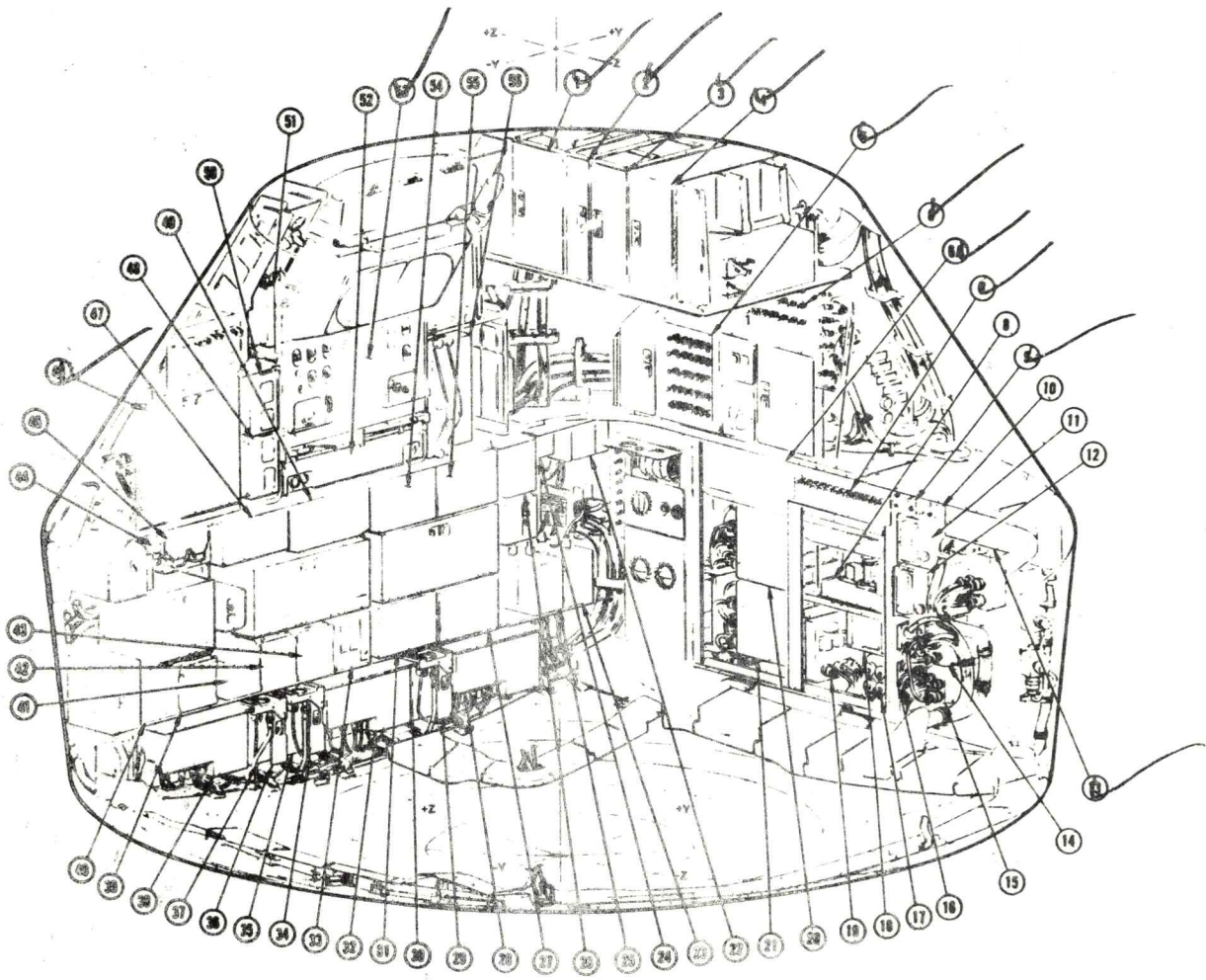
## NOTE

- The inspection shall be confined to visual observations unless otherwise directed by the NASA Team Leader.
- Closeout panels will normally remain installed. Should it become necessary to remove a closeout panel, proceed per instructions received from the NASA Team Leader.

Remarks: ONLY THOSE ITEMS CHECKED  
WERE VISUALLY INSPECTED

## COMMAND MODULE INTERIOR INSPECTION

Sheet 11 of 18



AFT BULKHEAD, L.E.B. AND RIGHT-HAND EQUIPMENT BAY (CLOSEOUT PANELS REMOVED)

|  |                                 |  |
|--|---------------------------------|--|
| 1 R1 STORAGE COMPARTMENT                 | 19 CIRCUIT UTILIZATION BOX      | 38 NO. 3 INVERTER                              |
| 2 R2 STORAGE COMPARTMENT                 | 20 MASTER EVENTS SEQ CONTROLLER | 39 ELECTRONIC CONTROL ASSEMBLY                 |
| 3 R3 STORAGE COMPARTMENT                 | 21 MASTER EVENTS SEQ CONTROLLER | 40 THRUST VECTOR POSIT SERVO AMP               |
| 4 R4 STORAGE COMPARTMENT                 | 22 VHF BEACON                   | 41 GYRO DISPLAY COUPLER                        |
| 5 AUX CIRCUIT BREAKER PANEL B (NO. 226)  | 23 AUDIO CENTER                 | 42 ELECTRONIC DISPLAY ASSEMBLY                 |
| 6 AUX CIRCUIT BREAKER PANEL A (NO. 225)  | 24 TRIPLEXER                    | 43 REACTION JET & ENG ON-OFF CONTROL           |
| 6A WASTE STOWAGE BLADDER                 | 25 PREMOD PROCESSOR             | 44 COMPT C SC/EQUIP ELECT DISCONNECT (NO. 163) |
| 7 PWR CIRCUIT BREAKER PANEL (NO. 275)    | 26 VHF/AM                       | 45 AC POWER CONTROL                            |
| 8 DC POWER CONTROL BOX                   | 27 UP-DATA LINK                 | 46 FOOD COMPARTMENT, B1                        |
| 9 CIRCUIT BREAKER PANEL (NO. 276)        | 28 NO. 1 INVERTER               | 47 COUPLING DATA UNIT                          |
| 10 DELETED                               | 29 CIRCUIT BREAKER              | 48 SCS GYRO ASSEMBLY NO. 2                     |
| 11 LUNAR DOCKING EVENTS CONTROLLER       | 30 BATTERY A                    | 49 CM COMPUTER                                 |
| 12 LUNAR DOCKING EVENTS CONTROLLER       | 31 DATA STOWAGE EQUIPMENT       | 50 SCS GYRO ASSEMBLY NO. 1                     |
| 13 UPRIGHTING SYSTEM PANEL (NO. 278)     | 32 NO. 2 INVERTER               | 51 PULSED INTEGRATING PENDULOUS ACCEL          |
| 14 EARTH LANDING SEQ CONTS (C20A1)       | 33 S-BAND POWER AMP             | 52 POWER SERVO ASSEMBLY                        |
| 15 EARTH LANDING SEQ CONTS (C20A2)       | 34 CIRCUIT BREAKER              | 53 OPTICS PANEL (NO. 122)                      |
| 16 PYRO CONTROL VERIFICATION BOX (C20A4) | 35 BATTERY B                    | 54 UNIFIED S-B                                 |
| 17 GRO SPT EQUIP TEST PLUGS              | 36 CIRCUIT BREAKER              | 55 SIGNAL CONDITIONER                          |
| 18 PHASE CORRECTION BOX                  | 37 BATTERY C                    | 56 PULSE CODE MODULATION TELEMETRY             |

SM-2A-1617A

Aft Bulkhead, L. E. B. and Right-Hand Equipment  
Bay - Closeout Panels Removed

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## COMMAND MODULE INTERIOR INSPECTION

Sheet 12 of 18

6. Inspect for (and record) any damage or irregularities to components/ areas identified in the adjacent illustration.

## NOTE

This inspection shall be confined to visual observations unless otherwise directed by the NASA Team Leader.

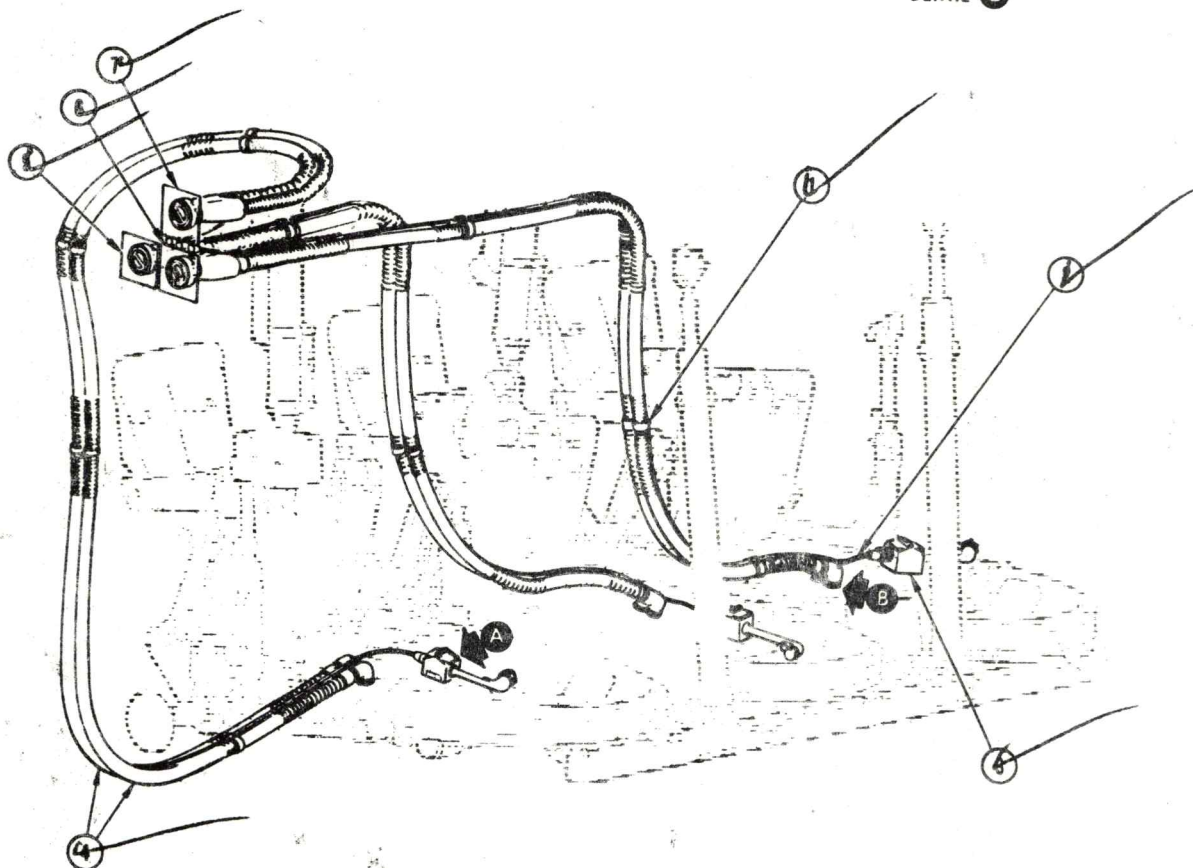
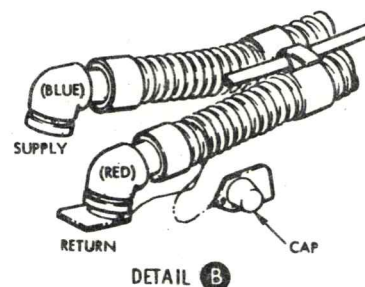
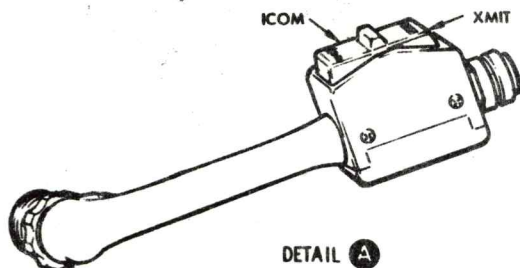
Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Inspect free ends of communication cables/oxygen hoses and stow in individual plastic bags. (Refer to the NASA ASHUR for specific disposal instructions.)

Remarks: RETURN SIDE FILTER (P/N V36-601083)  
SHOWED TRAPPED MATERIAL. CLOSE UP  
PHOTO OF EACH FILTER ~~WAS~~ TAKEN.  
WAS

## COMMAND MODULE INTERIOR INSPECTION

Sheet 13 of 18



## CENTRAL CREW COMPARTMENT CREW COMM CABLES/OXYGEN HOSES

1. Keeper (every 12-inches)
2. Communications Umbilical (typ)
3. Communications control head (typ)
4. Oxygen Umbilical (typ)

5. Panel 302
6. Panel 300
7. Panel 301

SM-2A-1899

Central Crew Compartment - Crew Comm Cables/Oxygen Hoses

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## COMMAND MODULE INTERIOR INSPECTION

Sheet 14 of 18

8. Inspect for (and record) any damage or irregularities to components/ areas identified in the adjacent illustration.
9. Visually inspect the crew couches and attaching hardware (seat/back pans, headrests and armrests, floodlights, controls, securing pins, etc.) for evidence of damage, irregularities, etc.

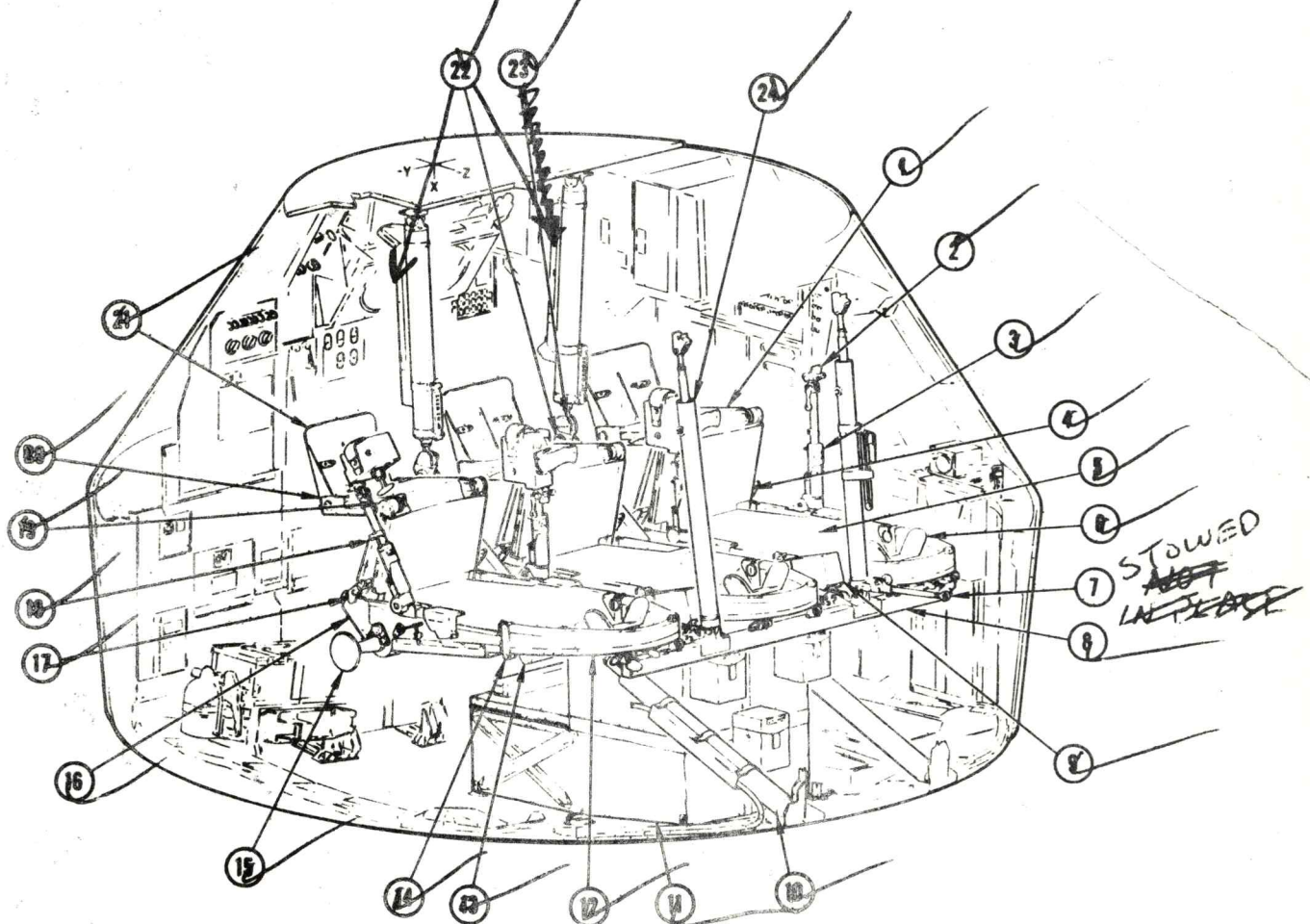
## NOTE

- This inspection shall be confined to visual observations unless otherwise directed by the NASA Team Leader.
- For specific procedures relative to the Crew Couches, refer to procedure (8).

Remarks: #24 RIGHT STRUT LABLE PEELING

## COMMAND MODULE INTERIOR INSPECTION

Sheet 15 of 18



## CENTRAL CREW COMPARTMENT (CREW COUCHES)

- |                                |   |
|--------------------------------|---|
| 1. LEG PAN                     | 13. SHOULDER BEAM                       |
| 2. CONTROL SUPPORT             | 14. SHOULDER PIVOT                      |
| 3. ARMREST                     | 15. Y-Y STRUT                           |
| 4. SEATPAN                     | 16. SEAT PIVOT                          |
| 5. BACKPAN                     | 17. SEAT PIVOT CONTROL                  |
| 6. HEADREST                    | 18. KNEE PIVOT CONTROL                  |
| 7. EVA STABILIZER STRUT        | 19. KNEE JOINTS                         |
| 8. HEAD BEAM                   | 20. HEEL BEAM                           |
| 9. FLOODLIGHT                  | 21. FOOT PAN                            |
| 10. Z-Z ATTENUATOR STRUT (TYP) | 22. LEB FLOODLIGHT                      |
| 11. PGA CONTAINER              | 23. X-X ATTENUATOR STRUT (FOOT) - (TYP) |
| 12. COUCH BODY SUPPORT         | 24. X-X ATTENUATOR STRUT (HEAD) - (TYP) |

SM-2A-1832A

Central Crew Compartment - Crew Couches

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## COMMAND MODULE INTERIOR INSPECTION

Sheet 16 of 18

10. Inspect for (and record) any damage or irregularities to components/ areas identified in the adjacent illustration.

## NOTE

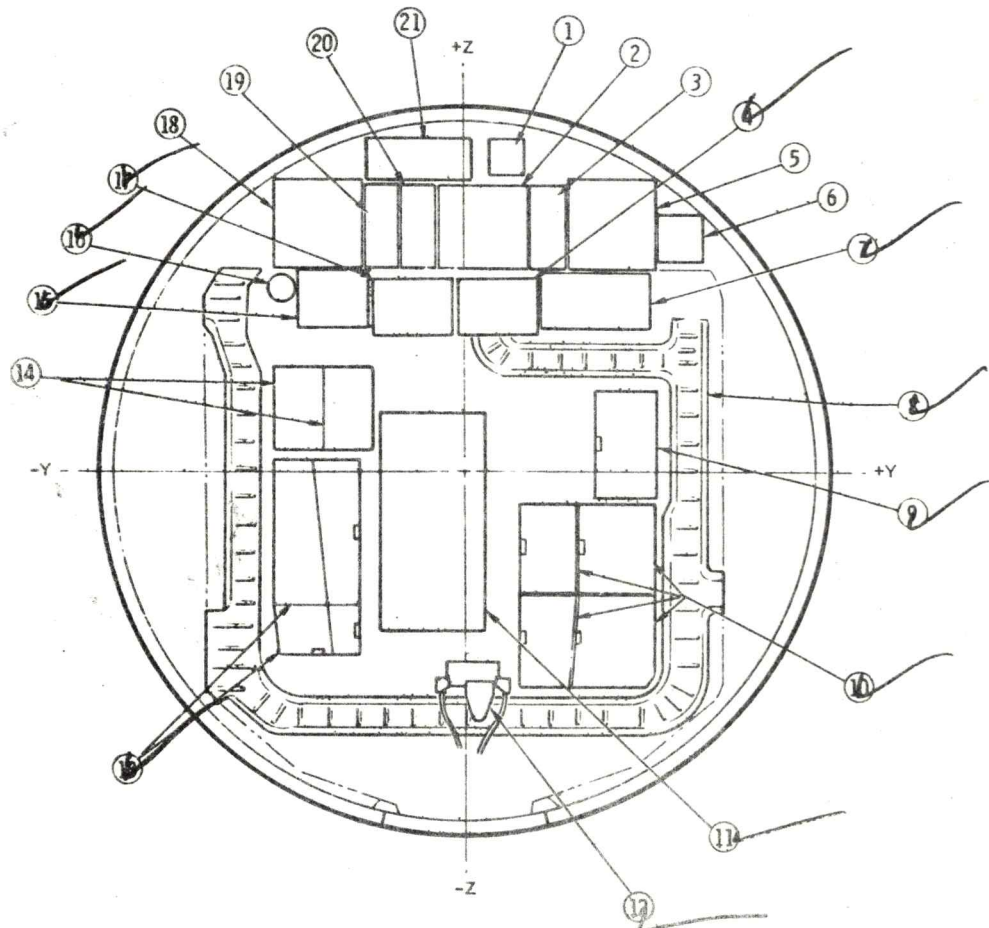
- The inspection shall be confined to visual observations unless otherwise directed by the NASA Team Leader.
- Should water or other fluids be observed, refer to the Environmental Control System (ECS) Inspection procedure, number (13), and enter appropriate remarks as instructed.

Remarks:

ONLY THOSE ITEMS CHECKED  
WERE VISUALLY INSPECTED

## COMMAND MODULE INTERIOR INSPECTION

Sheet 17 of 18



## AFT EQUIPMENT STOWAGE BAY (AESB)

- |                                |                                |
|--------------------------------|--------------------------------|
| 1. Battery charger             | 11. PGA stowage bags           |
| 2. Inverter No. 2              | 12. Control box                |
| 3. Battery A                   | 13. A1 stowage locker          |
| 4. A5 Stowage Locker (Volume)  | 14. Deleted                    |
| 5. Inverter No. 1              | 15. A3 stowage locker (Volume) |
| 6. Pyro batteries              | 16. Fire extinguisher          |
| 7. A6 Stowage locker (Volume)  | 17. A4 Stowage Locker (Volume) |
| 8. Electrical cableway (typ)   | 18. Inverter No. 3             |
| 9. A7 stowage locker (Volume)  | 19. Battery C                  |
| 10. B8 stowage locker (Volume) | 20. Battery B                  |
|                                | 21. Inverter DC control box    |

SM-2A-1436E

Aft Equipment Bay - Stowage Compartments and Cableways

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FINISH 0410 MAY 29

SM2A-08-SC106

COMMAND MODULE INTERIOR INSPECTION

Sheet 18 of 18

PACKAGING REQUIREMENTS

Not applicable.

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_

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START 0206 MAY 27

SM2A-08-SC106

8

IMPACT ATTENUATION STRUT INSP/CTR COUCH REMOVAL

Sheet 1 of 6

This procedure provides instructions for inspecting and obtaining impact attenuation strut measurements, and instructions for removing the center couch.

SAFETY

1. Observe standard safety precautions when working in the CM.
2. Avoid actuating any switches, controls, etc. Actuation of certain controls could cause injury to personnel outside the CM.

PHOTOGRAPHIC REQUIREMENTS

1. Closeups of any damage or irregularities.
2. If any strut has visibly stroked, photograph strut(s) and couch assembly.

TOOLS AND EQUIPMENT

| Quantity | Nomenclature                |
|----------|-----------------------------|
| 1        | Scale (6-inch)              |
| 1        | Shim stock (or feeler gage) |
| 1        | Steel rule (6-ft)           |

INSTRUCTIONS

1. Visually inspect each strut for evidence of stroking, damage, irregularities, etc. IF VISUAL EVIDENCE OF STROKING/DAMAGE IS NOT EVIDENT - DO NOT PERFORM STEP 2.

Remarks: THERE IS NO EVIDENCE OF X-X  
OR Z-Z STROKING. THERE IS A LITTLE  
PLAY IN THE Y-Y STRUTS AND THE  
MEASUREMENTS HAVE BEEN RECORDED

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## IMPACT ATTENUATION STRUT INSP/CTR COUCH REMOVAL

Sheet 2 of 6

2. Obtain strut measurements per the following instructions:

- a. Y-Y Struts. Using shim stock or a feeler gage, measure distance between CM bearing plate and Y-Y attenuation lock bearing pad (at bearing pad center). Assure the opposite side of the Y-Y strut is positioned firmly against its bearing pad (by pushing or pulling couch assembly in the desired direction) when taking this measurement.

Record measurement: 0.05" RH, or 0.05" LH (as applicable).

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## NOTE

Use a steel rule/scale for all measurements.

- b. X-X Struts. Measure distance from the end cap to the locknut along the stroking shaft. (See adjacent illustration.)

Record measurements: \_\_\_\_\_ RH foot, \_\_\_\_\_ LH foot, \_\_\_\_\_  
\_\_\_\_\_ RH head, \_\_\_\_\_ LH head.

Remarks: \_\_\_\_\_  
SEE REMARKS PAGE 135  
\_\_\_\_\_  
\_\_\_\_\_

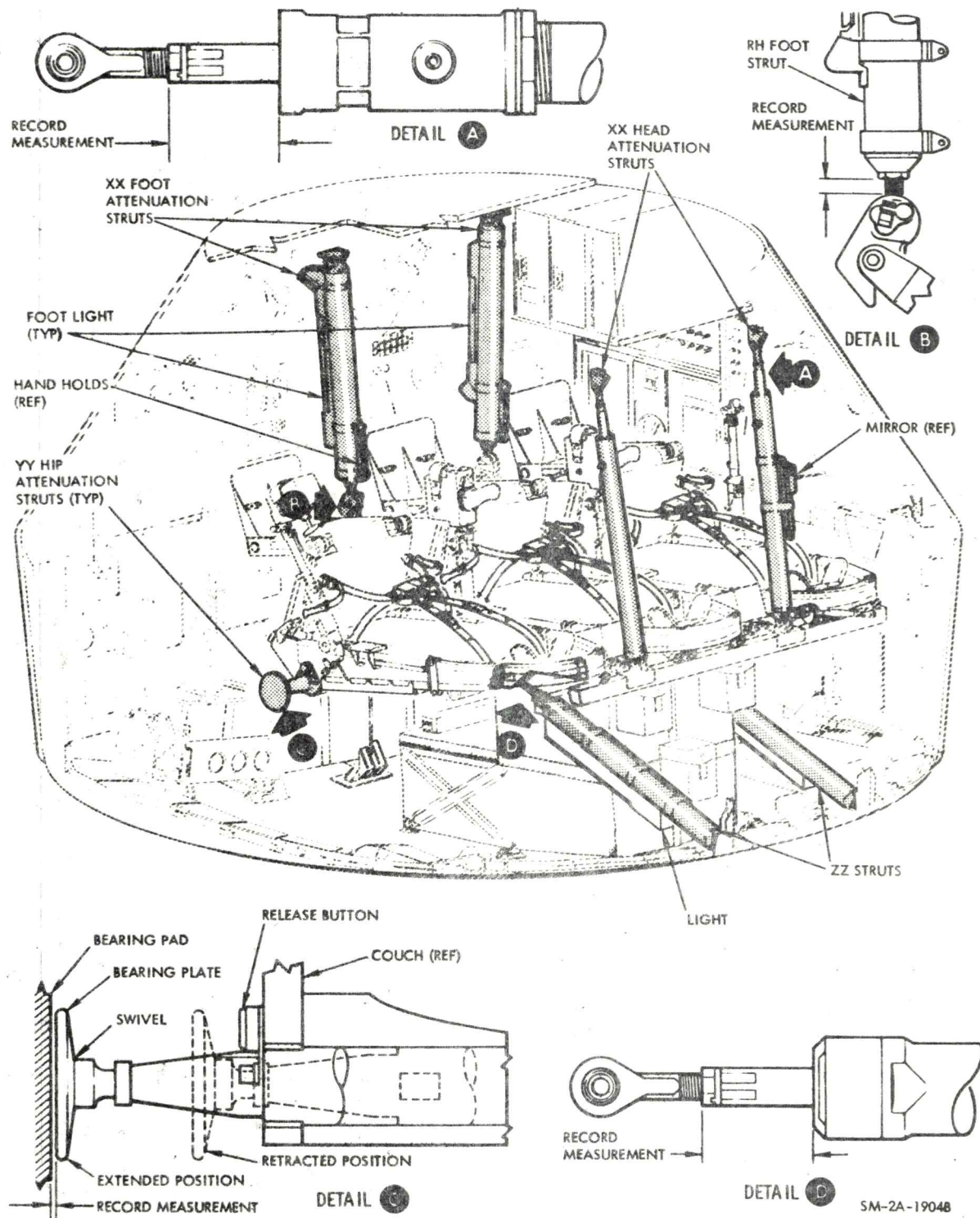
- c. Z-Z Struts. Measure distance from the end cap to the locknut along the stroking shaft. (See adjacent illustration.)

Record measurements: \_\_\_\_\_ RH, \_\_\_\_\_ LH

Remarks: \_\_\_\_\_  
SEE REMARKS PAGE 135  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## IMPACT ATTENUATION STRUT INSP/CTR COUCH REMOVAL

Sheet 3 of 6



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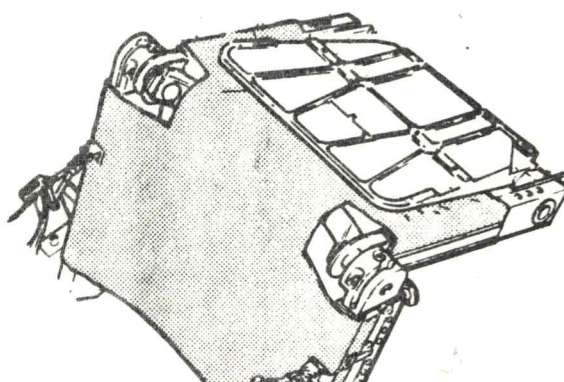
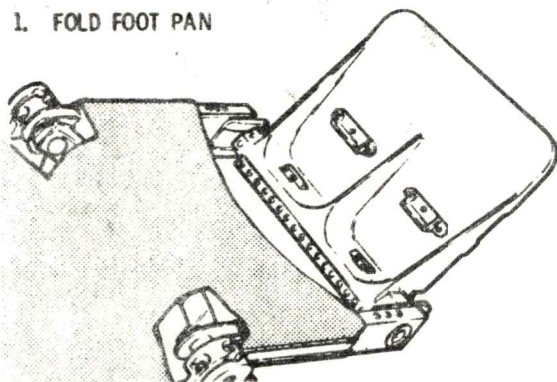
SM2A-08-SC106

IMPACT ATTENUATION STRUT INSP/CTR COUCH REMOVAL

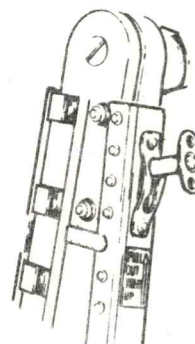
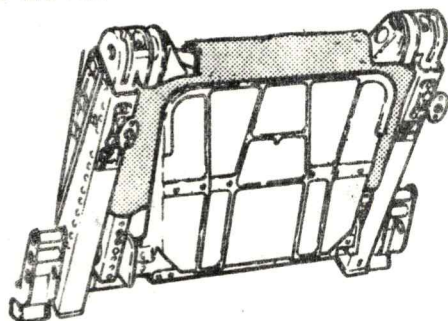
Sheet 4 of 6

FOLDING CENTER COUCH

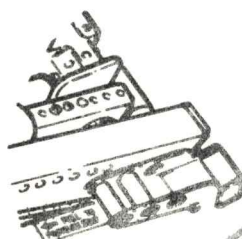
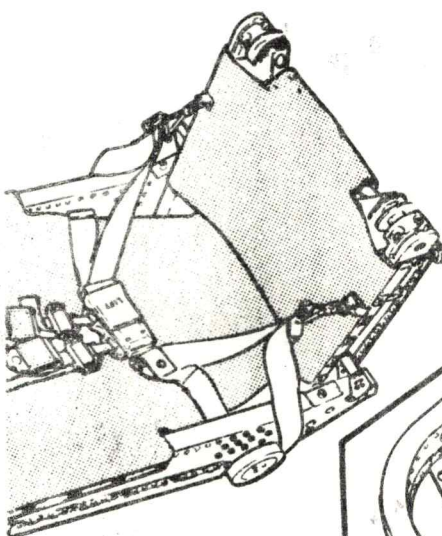
1. FOLD FOOT PAN



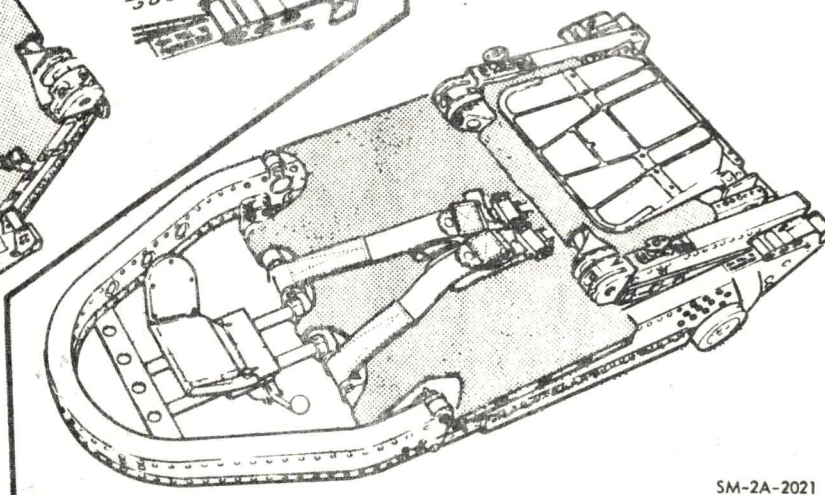
2. FOLD LEG PAN



3. FOLD SEAT PAN



4. CENTER COUCH FOLDED



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FINISH 0225 MAY 27

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IMPACT ATTENUATION STRUT INSP/CTR COUCH REMOVAL

Sheet 5 of 6

CENTER COUCH REMOVAL

1. To facilitate access to the AEB the center couch may be removed as follows:
  - a. Fold foot pan.
  - b. Fold leg pan.
  - c. Fold seat pan.
  - d. Remove the two pip pins to the left/right of head rest. (See sheet 6 of 6.)

NOTE

Prior to attempting to unscrew the clamp knob, pull down to engage the socket-turning mechanism.

- e. Unscrew knob securing the hip beam clamp (typical both sides). (See sheet 6 of 6.)
- f. Position knob and clamp as illustrated, and push the couch straight down (do not drop). (See sheet 6 of 6.)

NOTE

It may be necessary to release the Y-Y struts to allow the center couch to drop free.

- g. Rotate the center couch (as necessary) and pass through the open hatch.

PACKAGING REQUIREMENTS

Not applicable.

Remarks: COUCH REMOVAL WAS NORMAL.  
REQUIRED 5 MIN

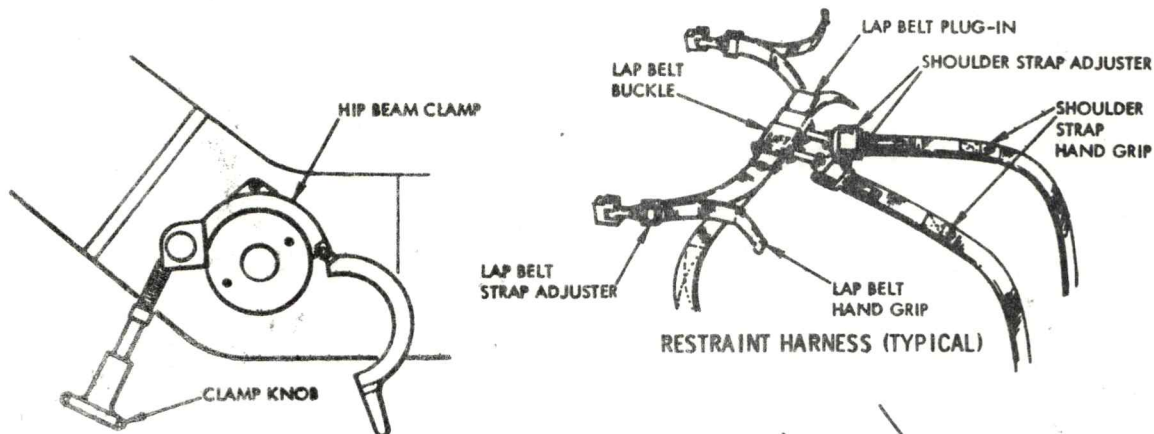
NO PROBLEM REINSTALLING

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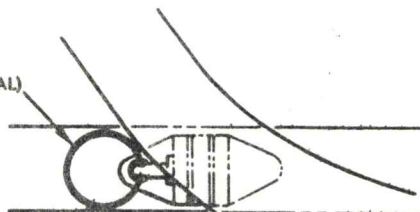
IMPACT ATTENUATION STRUT INSP/CTR COUCH REMOVAL

Sheet 6 of 6

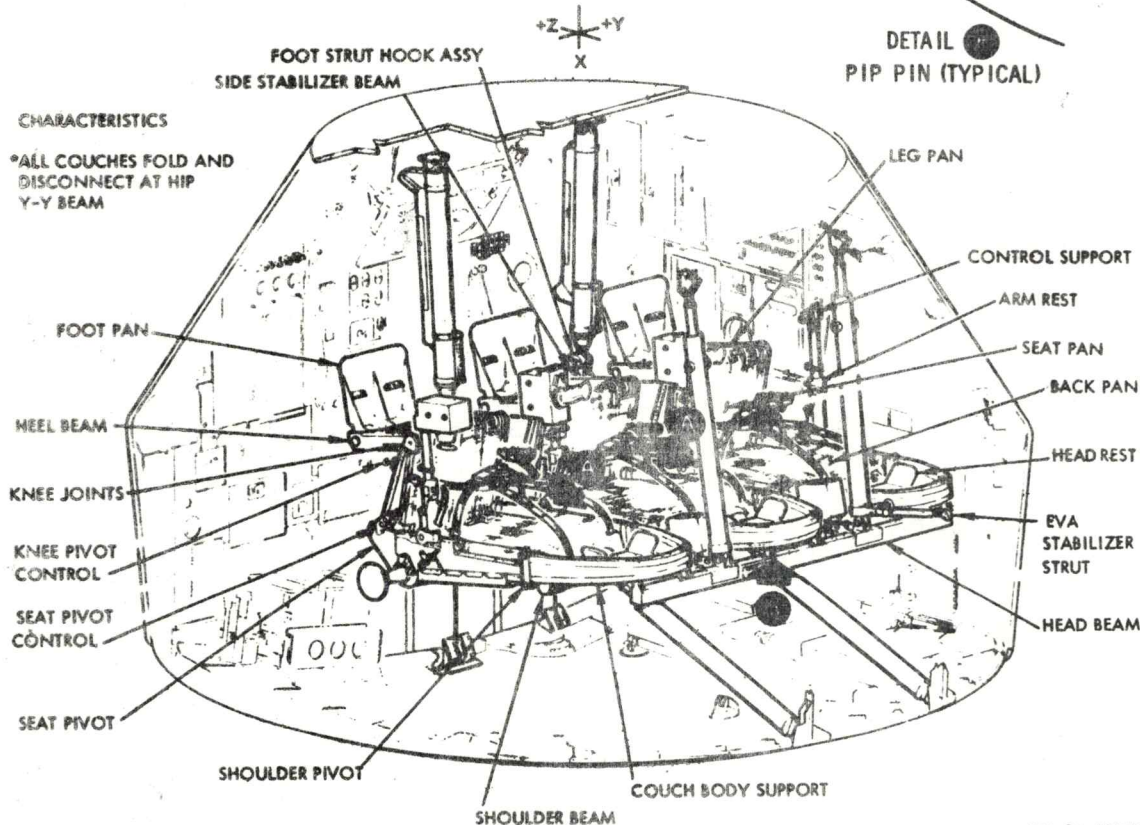


DETAIL A  
HIP BEAM CLAMP ASSY (TYPICAL)

PIP PIN (TYPICAL)



DETAIL B  
PIP PIN (TYPICAL)



SM-2A-1905B

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## POTABLE WATER SAMPLES

Sheet 1 of 24

This procedure provides instructions for obtaining potable water samples from the HOT water port (FOOD PREPARATION WATER panel, No. 305) and the water gun.

## IMPORTANT

It is mandatory that a positive accounting be made of all water taken from the CM. Notify Houston RCC via the PRS coordination circuit regarding the amount of water taken (or lost) from the CM.

## NOTE

Should recovery be accomplished by other than the primary recovery ship, potable water samples will be obtained at the port of entry following off-loading of the CM.

SAFETY

1. Observe standard safety precautions when working in the CM.

PHOTOGRAPHIC REQUIREMENTS

1. Refer to procedure (1).

TOOLS AND EQUIPMENT

| Quantity | Nomenclature                                     |
|----------|--|
| 2        | Open end wrench, 1/2-inch                        |
| 2        | Open end wrench, 9/16-inch                       |
| 2        | Adjustable wrench, 6-inch                        |
| 1        | 2000 ml sample container (chem) and sampling cap |
| 1        | 500 ml sample container (chem) and sampling cap  |
| 2        | 500 ml sample container (micro) and sampling cap |
| 1        | 125 ml sample container (chlorine)               |
| 2        | 10 ml sample container (vacutainer)              |
| 1        | Waste container (30 ml)                          |
| 125 ml   | 70% aqueous ethyl alcohol                        |
| 1        | Screwdriver, blade                               |
| 1        | Screwdriver, torq-set                            |
| 1        | Allen-head adapter, 5/32-inch                    |
| 1        | Socket set, 1/2-inch drive                       |
| 1        | Water sample tool kit                            |

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**POTABLE WATER SAMPLES.**

Sheet 2 of 24

The purpose of this portion of the procedure is to provide a means for pressurizing the water system when sufficient pressure is not available to obtain the required water samples.

**INSTRUCTIONS**

1. Determine if system pressure is available as follows:
  - a. On panel 326, verify/place SURGE TANK and REPRESS PKG valves at ON position.
  - b. On panel 351, verify/place OXYGEN CONTROL PANEL MAIN REGULATOR valves (toggles) A and B at OPEN.
  - c. On panel 351, verify/place WATER & GLYCOL TANKS PRESSURE—REGULATOR and—RELIEF valves at BOTH.
  - d. Allow a minimum of 3 minutes for system pressure buildup, then attempt to take sample water at "FOOD PREPARATION WATER" panel 305. If pressure is available, proceed directly to step 9 and omit step 10.
2. If pressure is not available, place all valves of steps 1a through 1c to OFF or closed position; except, leave WATER & GLYCOL TANKS PRESSURE—RELIEF valve at BOTH position.
3. Using a 5/32-inch Allen-head adapter, loosen the fasteners securing the V36-311011-917 cover.
4. Remove V36-311011-917 cover.
5. Using a 5/32-inch Allen-head adapter, loosen the eight fasteners securing the "CO<sub>2</sub> ABSORBER CARTRIDGE ACCESS PANEL" (V36-333011), then the "ACCESS to E. C. U. ELECTRONICS PACKAGE" (V36-333041) access cover, located below the CO<sub>2</sub> and odor absorber assembly (panel 350).

**WARNING**

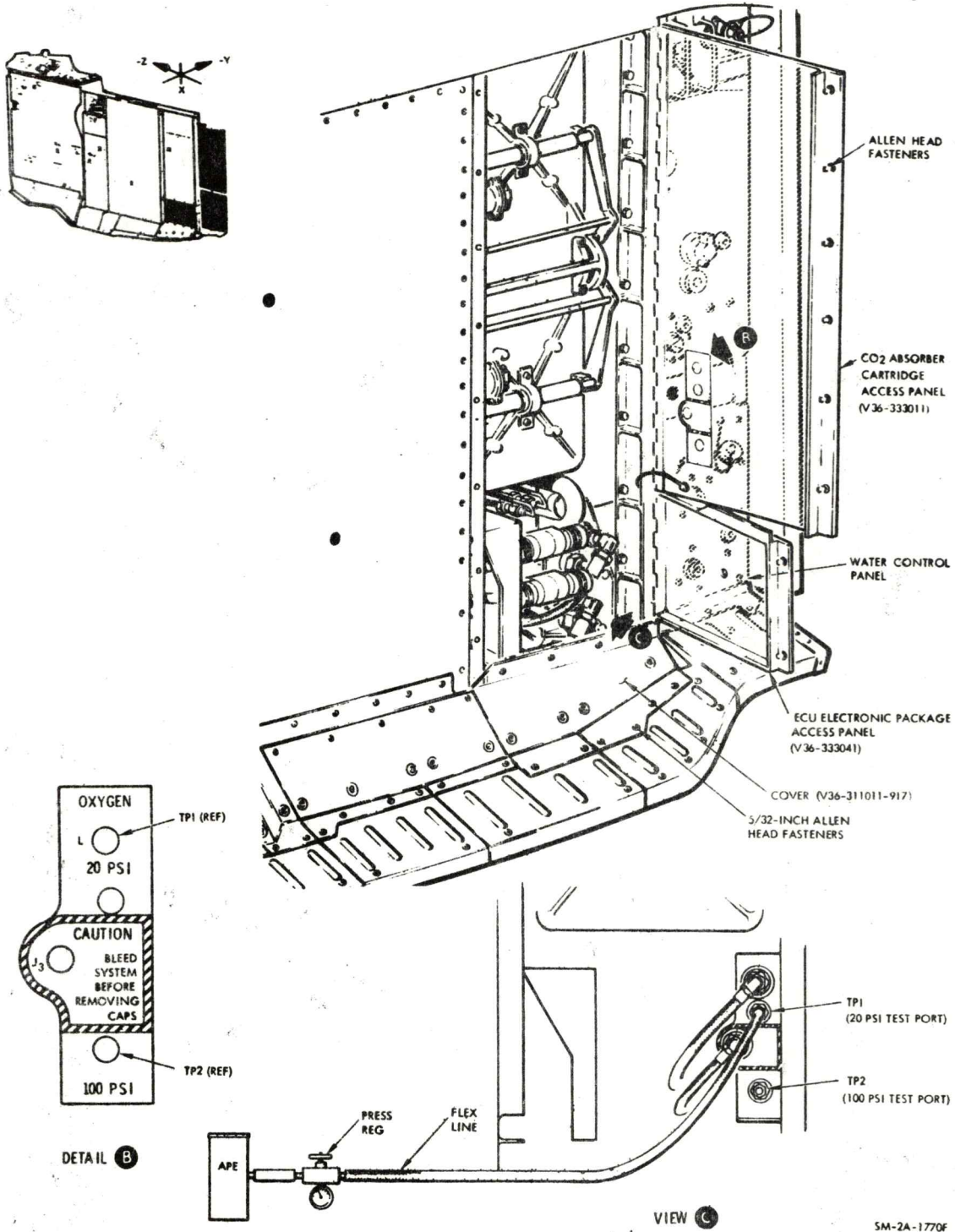
- Verify positive location of TP1 (20 psi) test port by comparing with identification on inside of V36-333011 hinged cover as shown on adjoining illustration.
  - Use caution when removing cap from TP1 since residual pressure may be present in line.
  - Do not disturb TP2 (100 psi) test port.
6. Open access covers and slowly unscrew cap of TP1 (20 psi) test port to bleed any residual pressure while removing cap.
  7. Attach auxiliary pressurizing equipment (APE) hose to TP1. See adjoining illustration.
  8. Open APE regulator, verify pressure gauge reads 20 psi.
  9. Obtain designated potable water samples as instructed in remainder of procedure 9.
  10. After obtaining desired samples, when APE has been used, proceed as follows:
    - a. Close APE regulator.
    - b. Allow regulator to bleed down line pressure, then slowly disconnect APE from TP1.
    - c. Reinstall TP1 cap.
    - d. Close and secure access covers.

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## POTABLE WATER SAMPLES

Sheet 3 of 24



Changed 1 May 1969

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## POTABLE WATER SAMPLES

Sheet 4 of 24

INSTRUCTIONS (for obtaining hot water port samples)

## NOTE

Obtain hot water port samples prior to obtaining water gun samples.

## GENERAL

TIME OF 1. Label sample containers as follows:

## SAMPLING

2100Z MAY26 POTABLE HOT WATER PORT SAMPLE (CHEM) <sup>1000 ml</sup> ~~500 ml~~ (USE 2000 ml CONTAINER)  
 2105Z MAY26 POTABLE HOT WATER PORT SAMPLE (MICRO) 500 ml  
 2105Z MAY26 POTABLE HOT WATER PORT SAMPLE (CHLORINE) 125 ml  
 2117Z MAY26 POTABLE HOT WATER PORT SAMPLE (VACU) 10 ml

In addition, record the following information on each container label:

- Flight mission number.
  - Time and date sample obtained.
  - Name of person obtaining sample.
2. Clean (swab) water outlet probe with aqueous ethyl alcohol solution before taking each sample.

SAMPLES OBTAINED BY MILT HEFLIN, MSC X 3361

## CAUTION

- Do not touch (contaminate) water outlet probe after cleaning.
- Allow all alcohol to evaporate prior to water outlet probe/flex line interface.

<sup>1000</sup>  
~~500~~ ML SAMPLE (CHEM)

- Remove water outlet probe cover (located on panel 305).
- Unwrap AWS <sup>1000</sup>~~500~~ ml - CHEM (not vacutainer port-wrapped separately) and connect AWS flex line to the water probe outlet.
- Verify tygon tubing inserted in outlet of waste container.
- Open valve B (horizontal position).

## IMPORTANT

- As soon as <sup>1000</sup>~~500~~ ML sample is taken and while water is still flowing, take a 125 ML sample for chlorine analysis.
- As soon as possible on board ship, measure chlorine count and record findings in "Remarks" column under 125 ML SAMPLE (CHLORINE).

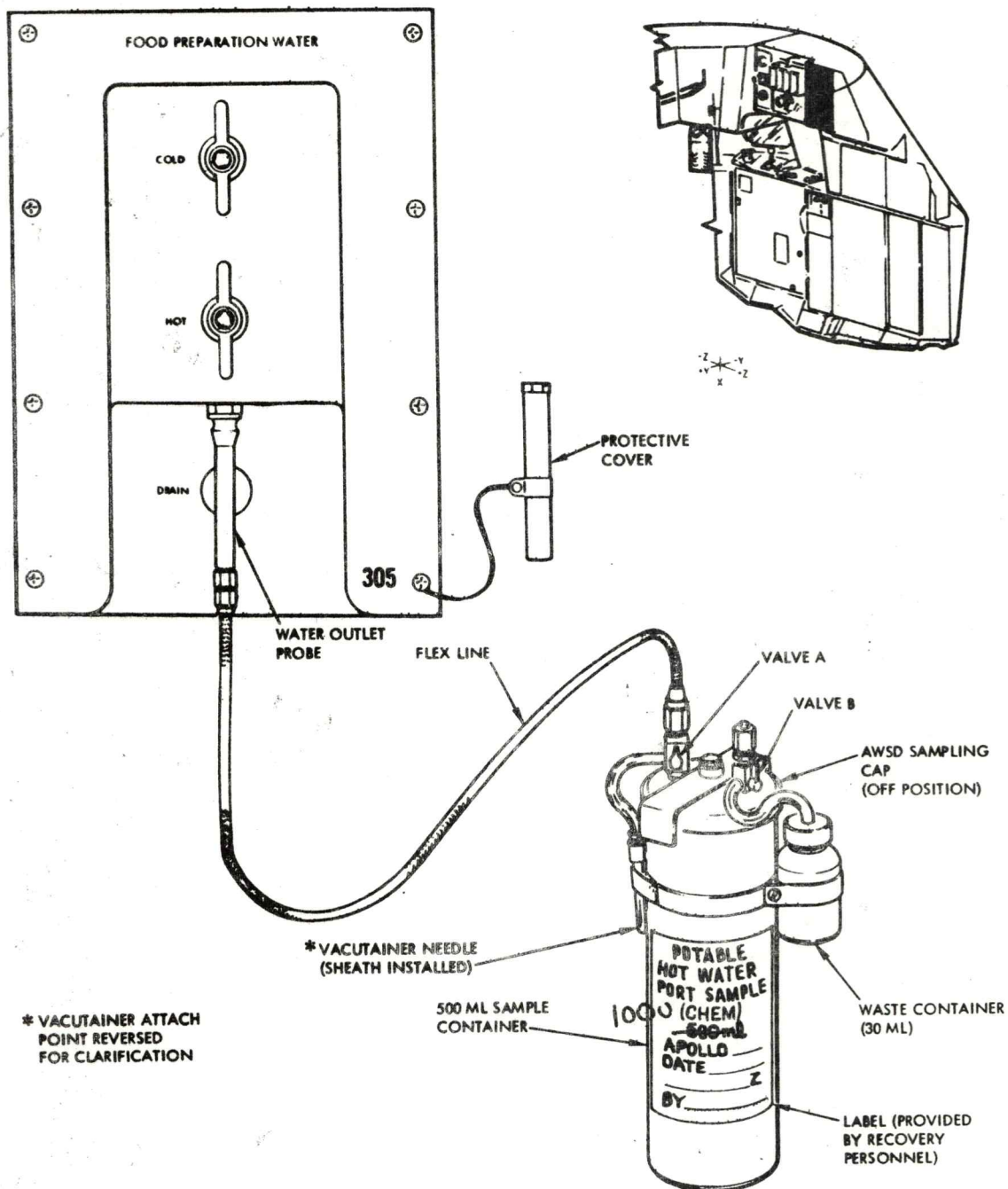
Ø CHANGE PER TWX DTG 22/1921Z  
FM MSC HOUSTON

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## POTABLE WATER SAMPLES

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## POTABLE WATER SAMPLES

Sheet 6 of 24

INSTRUCTIONS (Cont)

5. Position valve A to the sampling position (vertical position).
6. Activate hot water supply (pull plunger); maintain flow until water exits through valve B into tygon tubing. (35 CYCLES)
7. Deactivate hot water supply (release plunger).
8. Close valve A and B (45° position).
9. Disconnect AWSD flex line from hot water port and valve A sample port. Do not contaminate exposed port of valve A or the hot water port.
10. Stow flex line.
11. Remove AN cap from sterile wrap and install AN cap on valve A. Do not contaminate (touch) inside of AN cap.
12. Disconnect tygon tubing from valve B and plastic cap on outlet. Discard tygon tubing.
13. Remove plastic cap from sterile wrap and install plastic cap on valve B outlet. Do not touch inside of cap or exposed fitting on valve B.
14. Place valve A and B in the vertical position.
15. Remove waste container and clamp from sample and stow.
16. Stow sample container within sample rack.

Remarks: SAMPLE TAKEN NORMALLY



POTABLE WATER SAMPLES

Sheet 7 of 24

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## POTABLE WATER SAMPLES

Sheet 8 of 24

INSTRUCTIONS (Cont)

## 125 ML SAMPLE (CHLORINE)

1. Collect 125 ml of water from the hot water port (in a suitable container for chlorine analysis.

Remarks:

SAMPLED 2105Z MAY 26  
BY COLOR COMPARISON METHOD

CHLORINE CONTENT = 0.05 PPM

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Changed 9 April 1969



POTABLE WATER SAMPLES

Sheet 9 of 24

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## POTABLE WATER SAMPLES

Sheet 10 of 24

INSTRUCTIONS (Cont)

## 500 ML SAMPLE (MICRO)

1. Unwrap AWSD, 500 ml MICRO (not vacutainer port-wrapped separately), and connect AWSD flex line to the water outlet probe.
2. Verify tygon tubing inserted in outlet of waste container.
3. Open valve B (horizontal position).
4. Position valve A to the sample position (vertical position).
5. Activate hot water supply (pull plunger); maintain flow until water exits through valve B into tygon tubing.
6. Deactivate hot water supply (release plunger).
7. Close valves A and B (45° position).
8. Remove tygon tubing from valve B and stow.
9. Remove plastic cap from sterile wrap and install cap on valve B outlet. Do not touch inside of cap or exposed port of valve B.
10. Place valve B in vertical position.
11. Remove waste container and clamp from sample container. Stow clamp.
12. Remove cap from waste container and store the cap.

## NOTE

The waste container will be used to collect overflow from the vacutainer needle during the collection of the 10 ml samples.

Remarks: SAMPLE TAKEN NORMALLY

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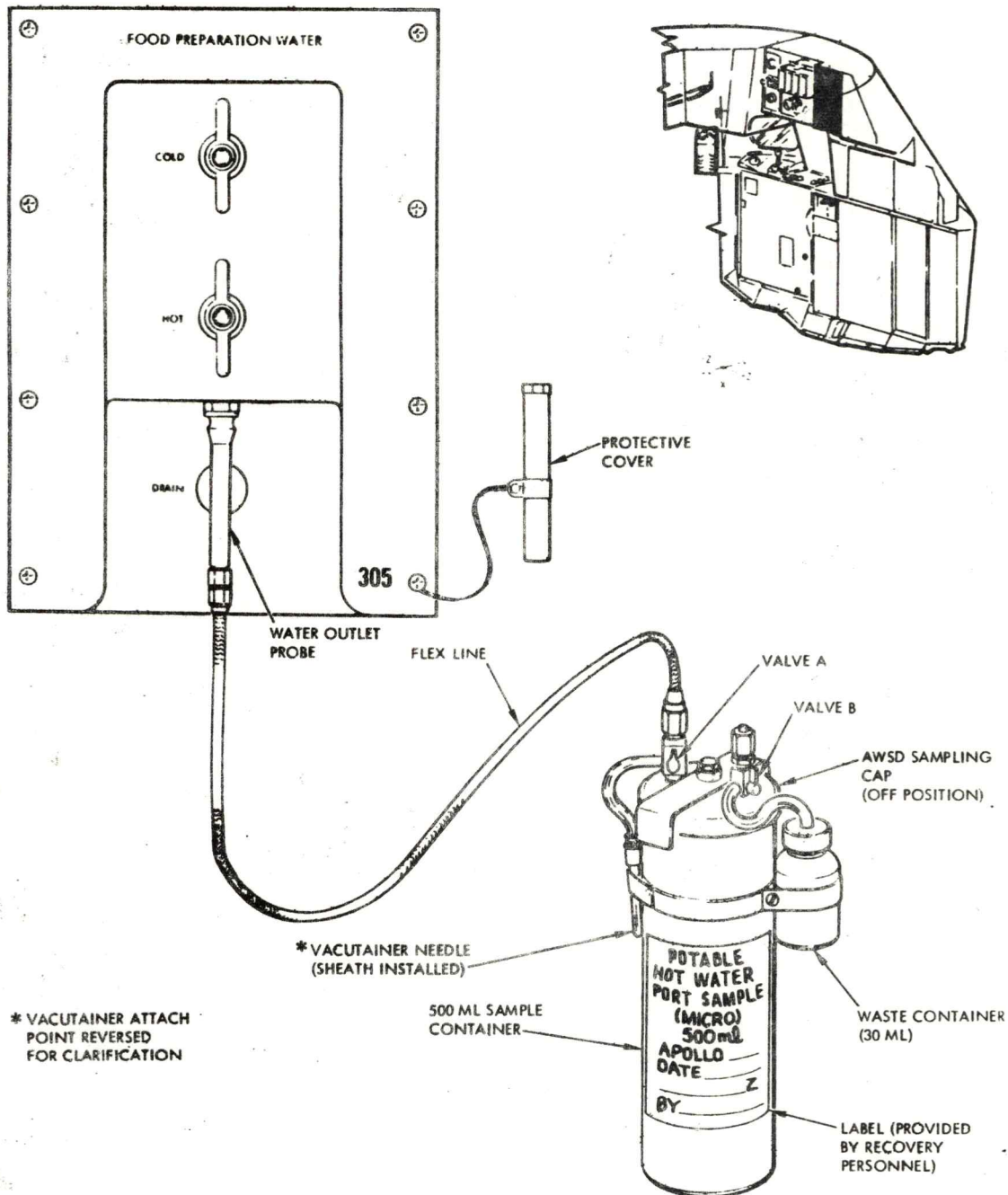
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## POTABLE WATER SAMPLES

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## POTABLE WATER SAMPLES

Sheet 12 of 24

INSTRUCTIONS (Cont)

## 10 ML SAMPLE

## NOTE

- Do not touch (contaminate) rubber top of vacutainer or needle of vacutainer sample port.
- Remove and dump waste container prior to accomplishing this procedure.

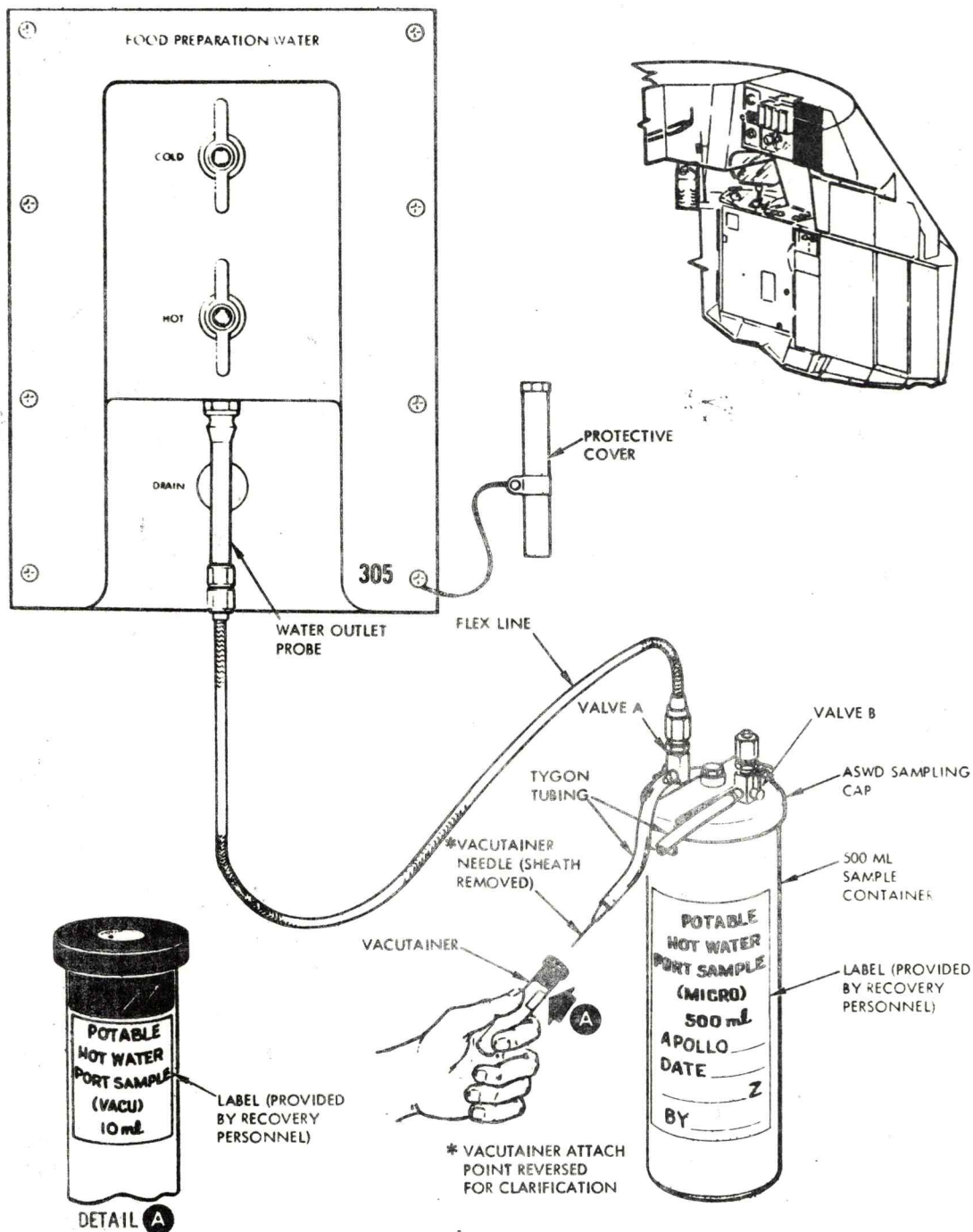
1. Remove vacutainer sample port wrapping.
2. Place valve A to vacutainer sample position (horizontal position).
3. Remove sheath on needle of vacutainer port.
4. Place needle over waste container and activate hot water supply (pull plunger) until water comes out of needle. Then deactivate hot water port valve.
5. Remove top from vacutainer outer container.
6. Plunge vacutainer sample port needle into vacutainer and collect 10 ml water sample. (Activate hot water port valve as necessary.)
7. Remove vacutainer, recap, and store.
8. Replace needle sheath.
9. Disconnect AWSO flex line from water outlet probe and sampling cap. Stow flex line.
10. Remove AN cap from sterile wrap and install AN cap on top of valve A. Do not touch inside of cap or outlet of valve A. Tighten AN cap with an open end wrench.
11. Place valve A to vertical position.
12. Remove and stow sheathed vacutainer needle and tygon tubing.
13. Remove plastic cap from sterile wrap and install plastic cap on valve A outlet (horizontal port). Do not touch inside of cap or exposed port of valve A.
14. Stow sample container with sample rack.
15. Replace water outlet cover.

Remarks: SAMPLE TAKEN NORMALLY



## POTABLE WATER SAMPLES

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## POTABLE WATER SAMPLES

Sheet 14 of 24

## INSTRUCTIONS (for obtaining water gun samples)

## GENERAL

TIME OF  
SAMPLING

1. Label sample containers as follows:

21402 MAY 26 POTABLE WATER GUN SAMPLE (CHEM) <sup>500 ml</sup> ~~2000 ml~~  $\phi$   
 21442 MAY 26 POTABLE WATER GUN SAMPLE (MICRO) 500 ml  
 21412 MAY 26 POTABLE WATER GUN SAMPLE (CHLORINE) 125 ml  
 21462 MAY 26 POTABLE WATER GUN SAMPLE (VACU) 10 ml

219502 MAY 27 In addition, record the following information on each container label:

- Flight mission number.
- Time and date sample obtained.
- Name of person obtaining sample.

SAMPLES OBTAINED BY MILT HEFLIN, MSC X336/  
NOTE

Obtain hot water port samples prior to obtaining  
water gun samples.

<sup>500</sup>  
~~2000~~ ML SAMPLE (CHEM)

NO COUNTER  
ON GUN

- Remove water gun from its stowed position.
- Record quantity shown on counter: \_\_\_\_\_ x 1/2 oz = \_\_\_\_\_
- Clean (swab) free end of water gun with aqueous ethyl alcohol solution.

## CAUTION

- Do not touch (contaminate) free end of water gun after cleaning.
  - Allow all alcohol to evaporate prior to water gun/flex line interface.
- Unwrap Apollo water sampling device (AWSD), <sup>500</sup>~~2000~~ ml container. Connect AWSD flex line to the water gun.

## NOTE

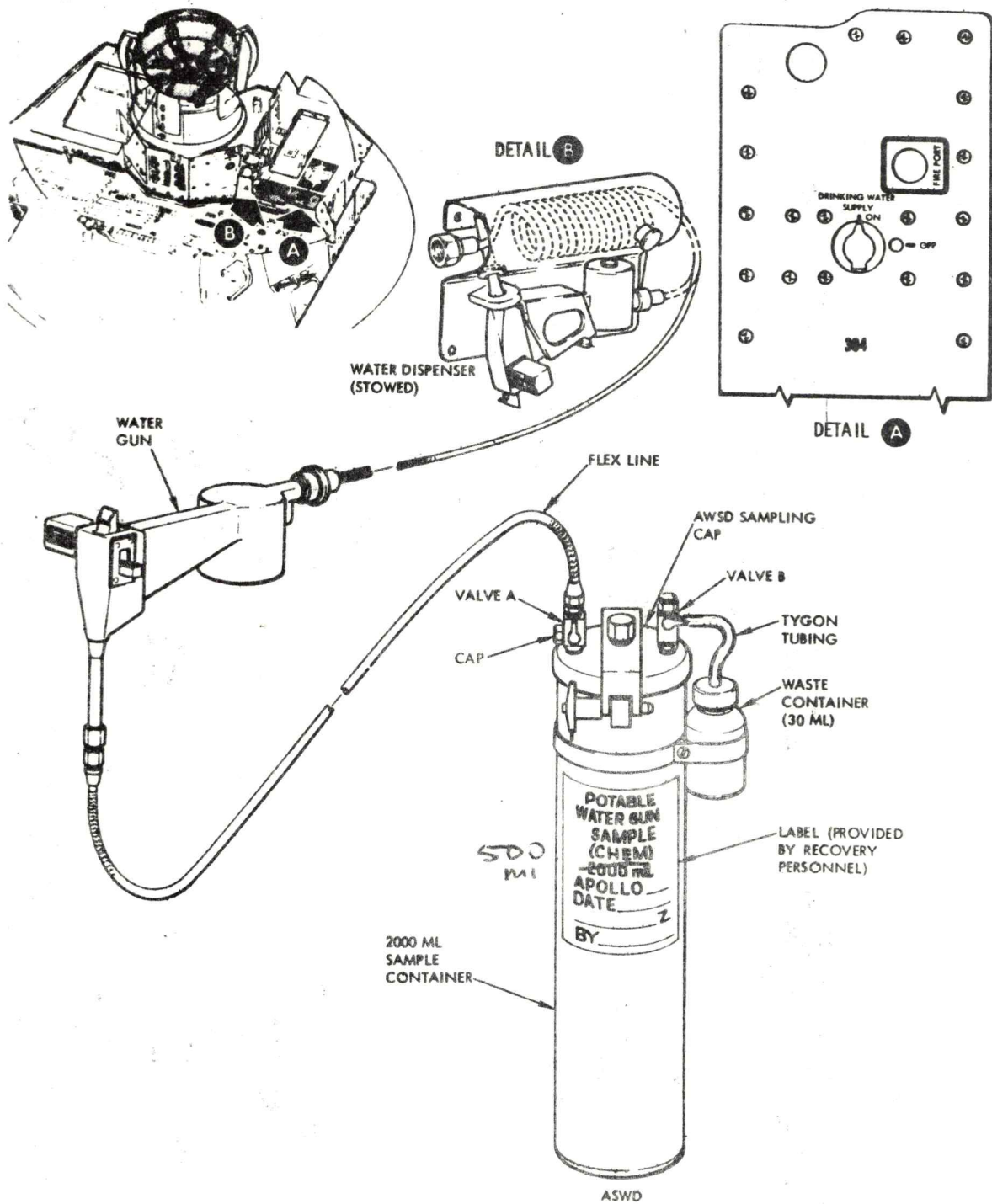
Do not touch (contaminate) inside of free end  
of AWSD flex line fitting.

$\phi$  CHANGE PER TWX DTG 22/1921Z  
FM MSC HOUSTON



## POTABLE WATER SAMPLES

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## POTABLE WATER SAMPLES

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INSTRUCTIONS (Cont)

5. Verify tygon tubing is in waste container.
6. Verify DRINKING WATER SUPPLY valve (panel 304) positioned to the ON position.
7. Open valve B (horizontal position).
8. Position valve A to the sample position (vertical position).
9. Activate water gun, and maintain flow until water exits through valve B into tygon tubing.

## IMPORTANT

- Ensure that 125 ML sample for chlorine analysis is taken from water pistol.
- As soon as possible on board ship, measure chlorine count and record findings in "Remarks" column under 125 ML SAMPLE (CHLORINE).

## NOTE

If CM potable water volume indicates that insufficient water quantity will be available for the remaining samples, this sample volume will be adjusted appropriately to ensure that the remaining samples can be obtained. If the full 2000 ml sample is not initially collected and water remains in the CM system after the remaining samples are collected, the 2000 ml AWSD will be reconnected and sampling continued until 2000 ml are collected, or until no water remains in the CM system.

10. Deactivate water gun.
11. Close valves A and B (45° position).
12. Disconnect AWSD flex line from water gun and valve A sample cap. Do not contaminate exposed port of valve A or the water gun.
13. Stow flex line.
14. Remove AN cap from sterile wrap and install AN cap on valve A. Do not touch inside of cap or outlet of valve A. Tighten AN cap with an open end wrench.
15. Disconnect tygon tubing from valve B and place plastic cap on outlet. (Discard tygon tubing.)

## POTABLE WATER SAMPLES

Sheet 17 of 24

INSTRUCTIONS (Cont)

16. Remove plastic cap from sterile wrap and install cap on valve B outlet.
17. Place valves A and B in the vertical position.
18. Remove waste container and clamp from sample container.
19. Stow sample container within sample rack.

Remarks: SAMPLE TAKEN NORMALLY



## POTABLE WATER SAMPLES

Sheet 18 of 24

## INSTRUCTIONS (Cont)

## 125 ML SAMPLE (CHLORINE)

1. Collect 125 ml of water from the water pistol (in a suitable container) for chlorine analysis.

Remarks: ANALYSIS CONDUCTED AT2141Z MAY 26 - 6.0 PPMSAME WATER (OUT OF SAME CONTAINER)ANALYZED AGAIN AT 1950Z MAY 27 - 3.0 PPMNEW SAMPLE TAKEN FROM CM AT1950Z MAY 27 - 0.5 PPMUSED COLOR COMPARISON METHOD

POTABLE WATER SAMPLES

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## POTABLE WATER SAMPLES

Sheet 20 of 24

INSTRUCTIONS (Cont)

## 500 ML SAMPLE (MICRO)

## NOTE

Do not unwrap vacutainer port.

1. Unwrap AWSD, 500 ml MICRO (not vacutainer port-wrapped separately) and attach free end of flex line to water gun.

## NOTE

Do not contaminate inside of free end of flex line fitting.

2. Verify tygon tubing is in waste container.
3. Open valve B (horizontal position).
4. Position valve A to the sample position (vertical position).
5. Activate water gun; maintain flow until water exits through valve B into tygon tubing.
6. Deactivate water gun.
7. Close valves A and B (45° position).
8. Remove tygon tubing from valve B and stow.
9. Remove plastic cap from sterile wrap and install plastic cap on valve B. Do not touch inside of cap, horizontal port of valve B.
10. Place valve B to vertical position.
11. Remove waste container and clamp. Store clamp.
12. Remove cap from waste container and store the cap.

## NOTE

Waste container will be used to collect overflow from the vacutainer needle during the collection of the 10 ml sample.

Remarks: SAMPLE TAKEN NORMALLY

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

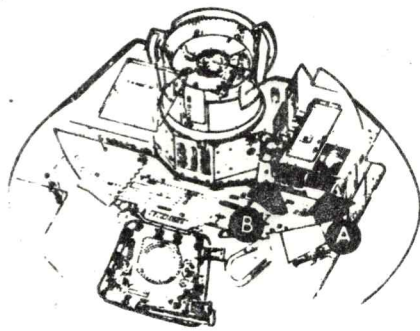
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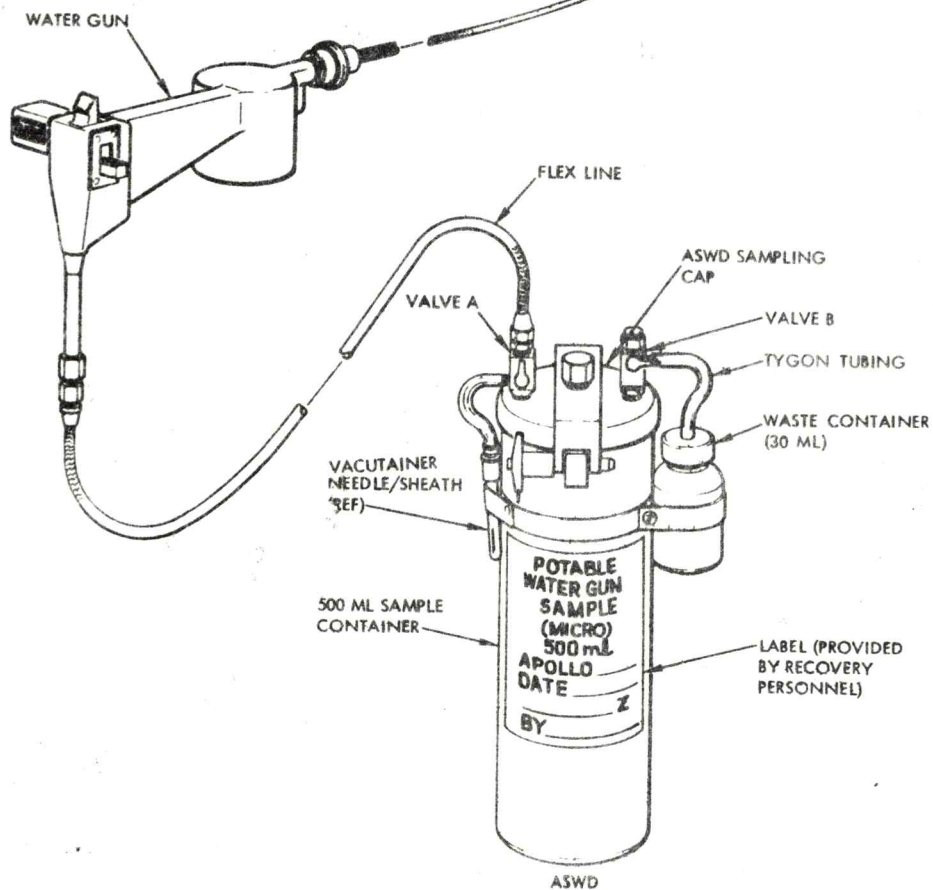
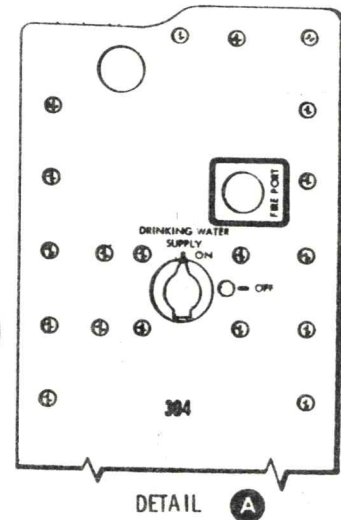
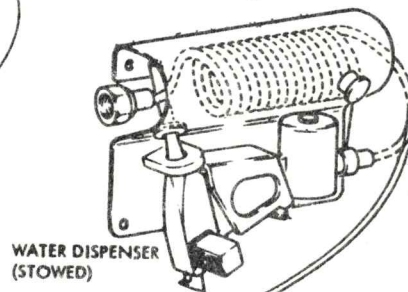


## POTABLE WATER SAMPLES

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DETAIL B



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Changed 9 April 1969

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## POTABLE WATER SAMPLES

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INSTRUCTIONS (Cont)

## 10 ML SAMPLE (VACU)

## NOTE

Do not touch (contaminate) rubber top of vacutainer or needle of vacutainer sample port.

1. Remove vacutainer sample port wrapping.
2. Place valve A to vacutainer sample position (horizontal position).
3. Remove sheath on needle of vacutainer port.
4. Place needle over waste container and activate water gun until water comes out of needle.
5. Remove top from vacutainer outer container.
6. Plunge vacutainer sample port needle into vacutainer and collect 10 ml water sample. (Activate water gun as necessary.)
7. Remove vacutainer; recap, and store.
8. Replace needle sheath.
9. Disconnect AWSO flex line from water gun and sampling cap. Stow flex line.
10. Remove AN cap from sterile wrap and install AN cap on top of valve A. Do not touch inside of cap or exposed port on valve A. Tighten AN cap with an open end wrench.
11. Place valve A to vertical position.
12. Remove and stow sheathed vacutainer needle and tygon tubing.
13. Install plastic cap on valve A outlet horizontal port. Do not touch inside of cap.
14. Stow sample container within sample rack.

NO COUNTER

15. Record quantity shown on counter: \_\_\_\_\_ x 1/2 oz = \_\_\_\_\_

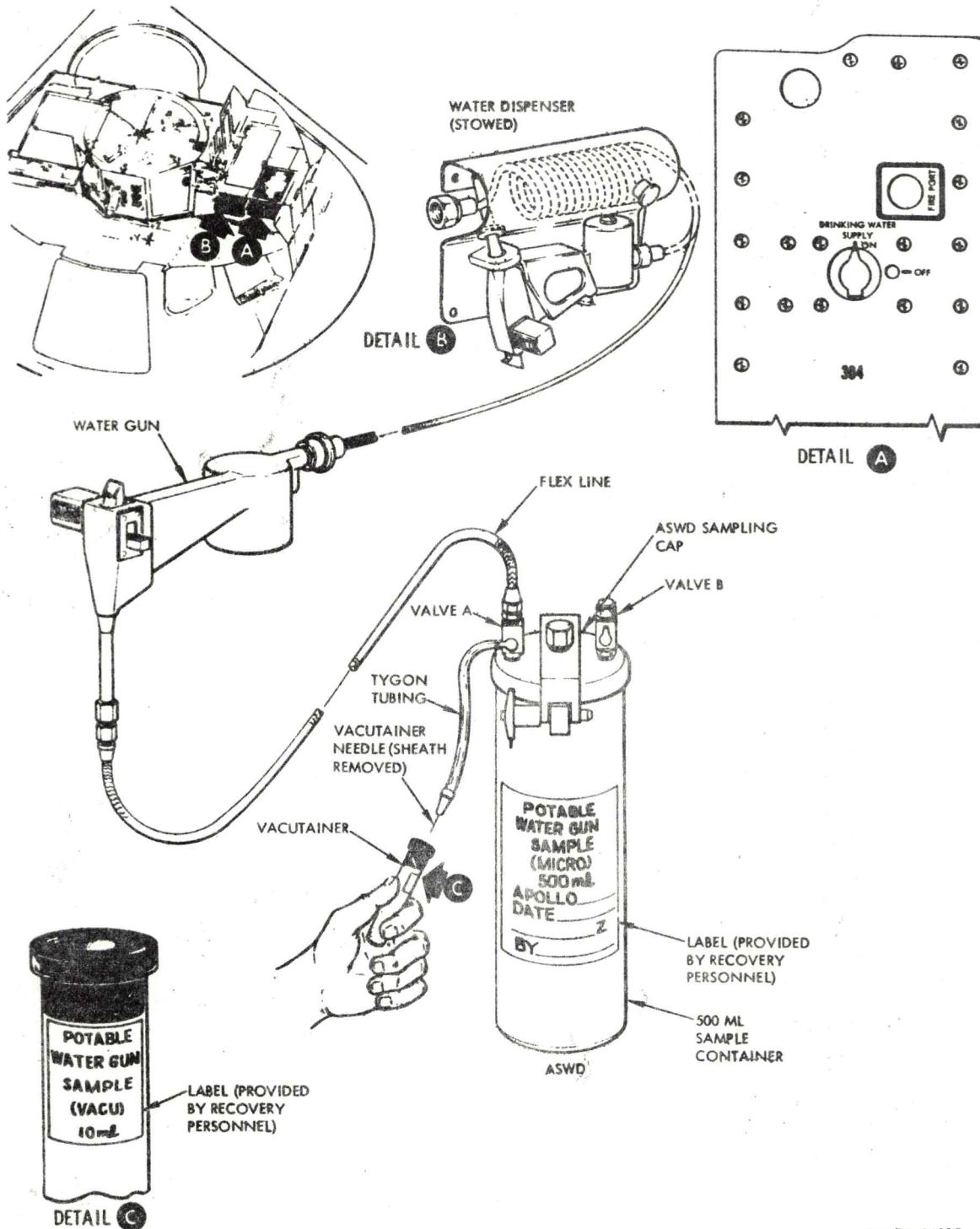
Remarks: \_\_\_\_\_

SAMPLE TAKEN NORMALLY

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## POTABLE WATER SAMPLES

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POTABLE WATER SAMPLES

Sheet 24 of 24

1. Refrigerate sample containers.

Sample containers should be refrigerated to  $5 \pm 1^\circ \text{C}$  ( $41 \pm 2^\circ \text{F}$ ) within 30 minutes after collection, and maintained at that temperature until shipment to MSC.

2. Fill sample racks with water and freeze prior to taking samples.
3. Prior to shipment to MSC, verify nine sample containers stowed in sample racks.
4. Place frozen sample racks into the insulated container. Ship to MSC.
5. Secure ancillary equipment, flex lines, tygon tubing, and empty waste container in the sample kit for return shipment to MSC.

Remarks: \_\_\_\_\_

START 2200Z MAY 26

SM2A-08-SC106

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WASTE WATER SAMPLES

Sheet 1 of 10

This procedure provides instructions for obtaining waste water samples from the Water Control Panel (No. 325) WASTE TANK SERVICING port.

IMPORTANT

It is mandatory that a positive accounting be made of all water taken from the CM. Notify Houston RCC via the PRS coordination circuit regarding the amount of water taken (or lost) from the CM.

NOTE

Should recovery be accomplished by other than the primary recovery ship, waste water samples will be obtained at the port of entry following off-loading of the CM.

SAFETY

1. Observe standard safety precautions when working in the CM.

PHOTOGRAPHIC REQUIREMENTS

1. Refer to procedure (1).

TOOLS AND EQUIPMENT

| Quantity | Nomenclature                                     |
|----------|--|
| 2        | Open end wrench, 1/2-inch                        |
| 2        | Open end wrench, 9/16-inch                       |
| 2        | Adjustable wrench, 6-inch                        |
| 1        | 1000 ml sample container (chem) and sampling cap |
| 1        | 500 ml sample container (micro) and sampling cap |
| 1        | 10 ml sample container (vacutainer)              |
| 1        | Waste container (30 ml)                          |
| 125 ml   | 70% aqueous ethyl alcohol                        |
| 1        | T-handle or allen-head adapter, 5/32-inch        |
| 1        | Screwdriver, blade                               |
| 1        | Screwdriver, torq-set                            |
| 1        | Allen-head adapter, 5/32-inch                    |

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## WASTE WATER SAMPLES

Sheet 2 of 10

The purpose of this portion of the procedure is to provide a means for pressurizing the water system when sufficient pressure is not available to obtain the required water samples.

INSTRUCTIONS

1. Determine if system pressure is available as follows:
  - a. On panel 326, verify/place SURGE TANK and REPRESS PKG valves. <sup>\*</sup> TO ON.
  - b. On panel 351, verify/place OXYGEN CONTROL PANEL REGULATOR valves (toggles) A and B at OPEN.
  - c. On panel 351, verify/place WATER & GLYCOL TANKS PRESSURE—REGULATOR and—RELIEF valves at BOTH.
  - d. Allow a minimum of three minutes for system pressure build-up, then attempt to take sample at "WASTE WATER SERVICING" panel 352. If pressure is available, proceed directly to step 9 and omit step 10.
2. If pressure is not available, place all valves of steps 1a through 1c to OFF or closed position; except, leave WATER & GLYCOL TANKS PRESSURE—RELIEF valve at BOTH position.
3. Using a 5/32-inch Allen-head adapter, loosen the fasteners securing the V36-311011-917 cover.
4. Remove V36-311011-917 cover.
5. Using a 5/32-inch Allen-head adapter, loosen the eight fasteners securing the "CO<sub>2</sub> ABSORBER CARTRIDGE ACCESS PANEL" (V36-333011), then the "ACCESS to E. C. U. ELECTRONICS PACKAGE" (V36-333041) access cover, located below the CO<sub>2</sub> and odor absorber assembly (panel 350).

## WARNING

- Verify positive location of TP1 (20 psi) test port by comparing with identification on inside of V36-333011 hinged cover as shown on adjoining illustration.
  - Use caution when removing cap from TP1 since residual pressure may be present in line.
  - Do not disturb TP2 (100 psi) test port.
6. Open access covers and slowly unscrew cap of TP1 (20 psi) test port to bleed any residual pressure while removing cap.
  7. Attach auxiliary pressurizing equipment (APE) hose to TP1. See adjoining illustration.
  8. Open APE regulator, verify pressure gauge reads 20 psi.
  9. Obtain designated potable water samples as instructed in remainder of procedure 10.
  10. After obtaining desired samples, when APE has been used, proceed as follows:
    - a. Close APE regulator.
    - b. Allow regulator to bleed down line pressure, then slowly disconnect APE from TP1.
    - c. Reinstall TP1 cap.

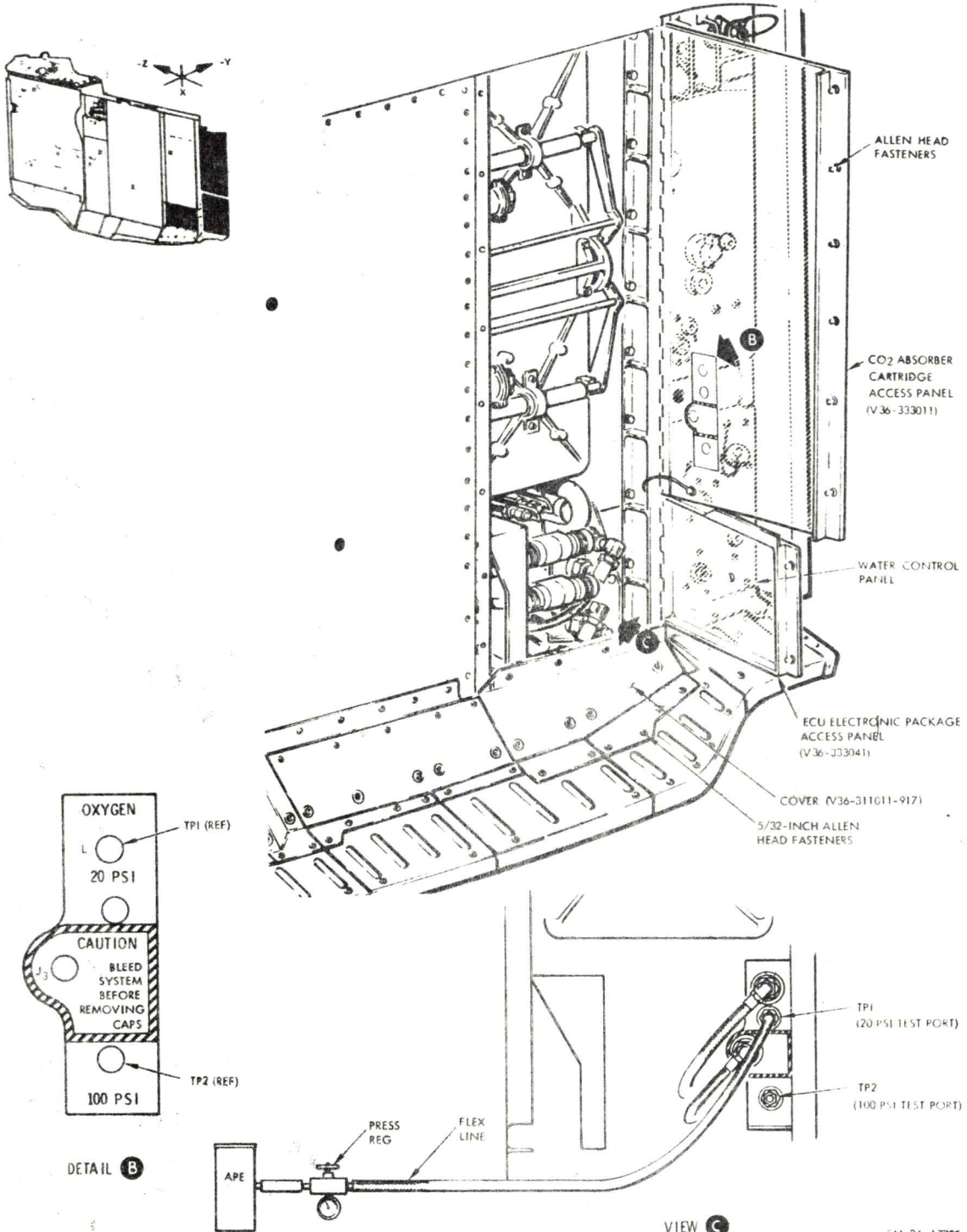
\* CORRECTION RECEIVED 20 MAY 1969  
ON BOARD USS PRINCETON VIA  
TWX DTG 20/1736 FM NASA MSC

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## WASTE WATER SAMPLES

Sheet 3 of 10



## WASTE WATER SAMPLES

Sheet 4 of 10

INSTRUCTIONSGENERALTIME OF  
SAMPLING

1. Label sample containers as follows:

2217Z MAY 26 WASTE WATER TANK SAMPLE (CHEM) 1000 ml  
 2221Z MAY 26 WASTE WATER TANK SAMPLE (MICRO) 500 ml  
 2223Z MAY 26 WASTE WATER TANK SAMPLE (VACU) 10 ml

In addition, record the following information on each container label:

- Flight mission number.
- Time and date sample taken.
- Name of person obtaining sample.

1000 ML SAMPLE (CHEM) *SAMPLES OBTAINED BY MILT HEFLIN, MSC X 3361*

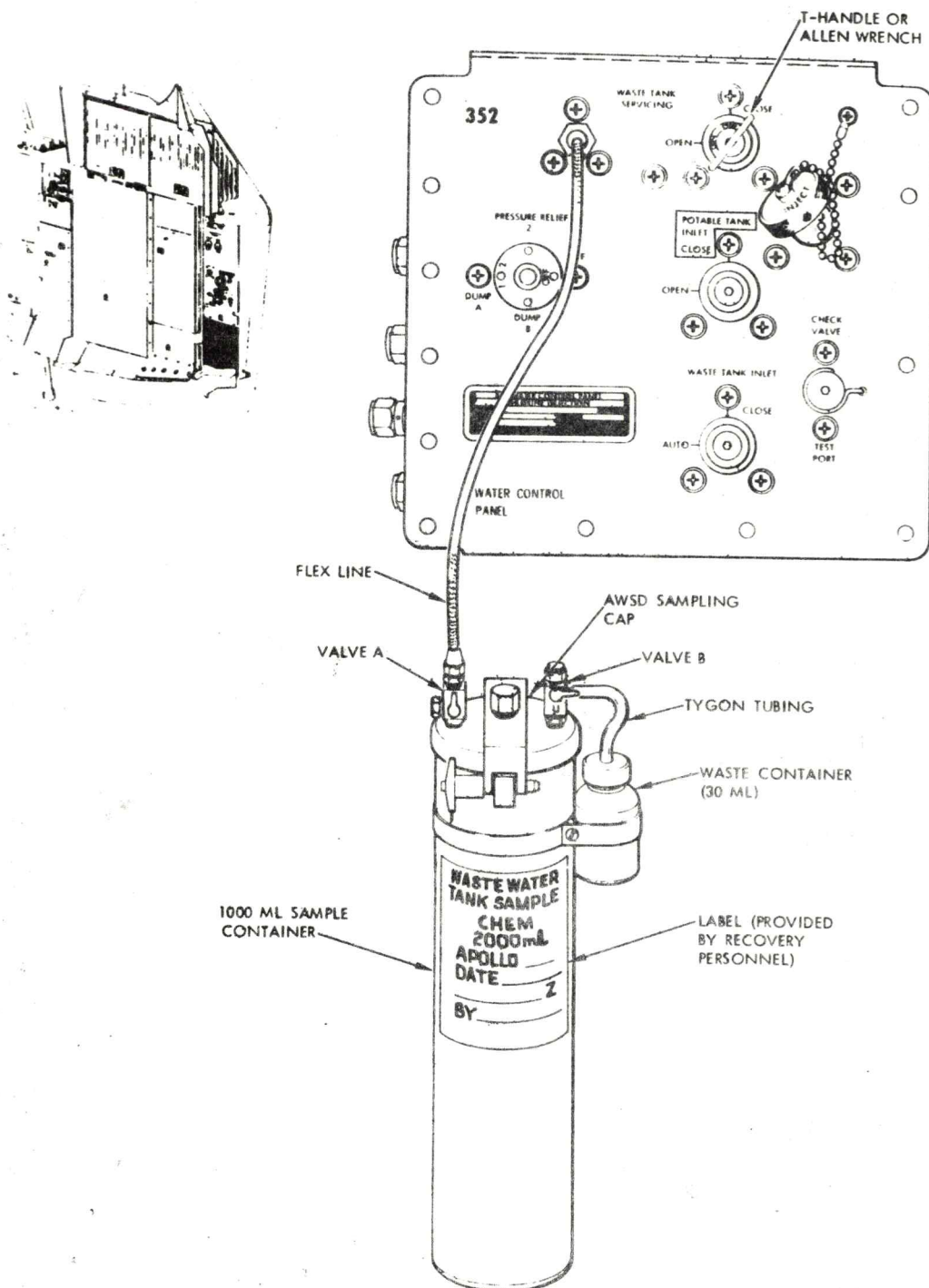
- Remove protective cap from WASTE TANK SERVICING port.
- Clean (swab) servicing port with aqueous ethyl alcohol solution.

## CAUTION

- Do not touch (contaminate) servicing port after cleaning.
  - Allow all alcohol to evaporate prior to servicing port/flex line interface.
  - Do not contaminate inside of flex line fitting.
- Unwrap apollo water sampling device (AWS D), 1000 ml and connect AWS D flex line (using a 1/4-inch union and O - ring) to servicing port.
  - Verify tygon tubing is in waste container.
  - Open valve B (horizontal position).
  - Position valve A to the sample position (vertical position).
  - Position WASTE TANK SERVICING valve to OPEN; maintain flow until water exits through valve B into tygon tubing.
  - Close WASTE TANK SERVICING valve.
  - Close valves A and B (45° position).
  - Disconnect AWS D flex line from sample cap and waste tank servicing port. Do not contaminate exposed port of valve A or waste water servicing port.

## WASTE WATER SAMPLES

Sheet 5 of 10



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## WASTE WATER SAMPLES

Sheet 6 of 10

INSTRUCTIONS (Cont)

11. Remove AN cap from sterile wrap and install AN cap on valve A. Do not touch inside of cap or outlet of valve A. Tighten AN cap with an open end wrench.
12. Disconnect tygon tubing from sample cap.
13. Remove plastic cap from sterile wrap and install on horizontal port of valve B. Do not contaminate inside of plastic cap or exposed valve B port.
14. Place valves A and B to vertical position.
15. Remove waste container and clamp from sample container.
16. Stow sample container within sample rack.

## 500 ML SAMPLE (MICRO)

## NOTE

Do not unwrap vacutainer port.

1. Unwrap AWS 500 ml MICRO (not vacutainer port—wrapped separately) and attach free end of flex line to service port.

## CAUTION

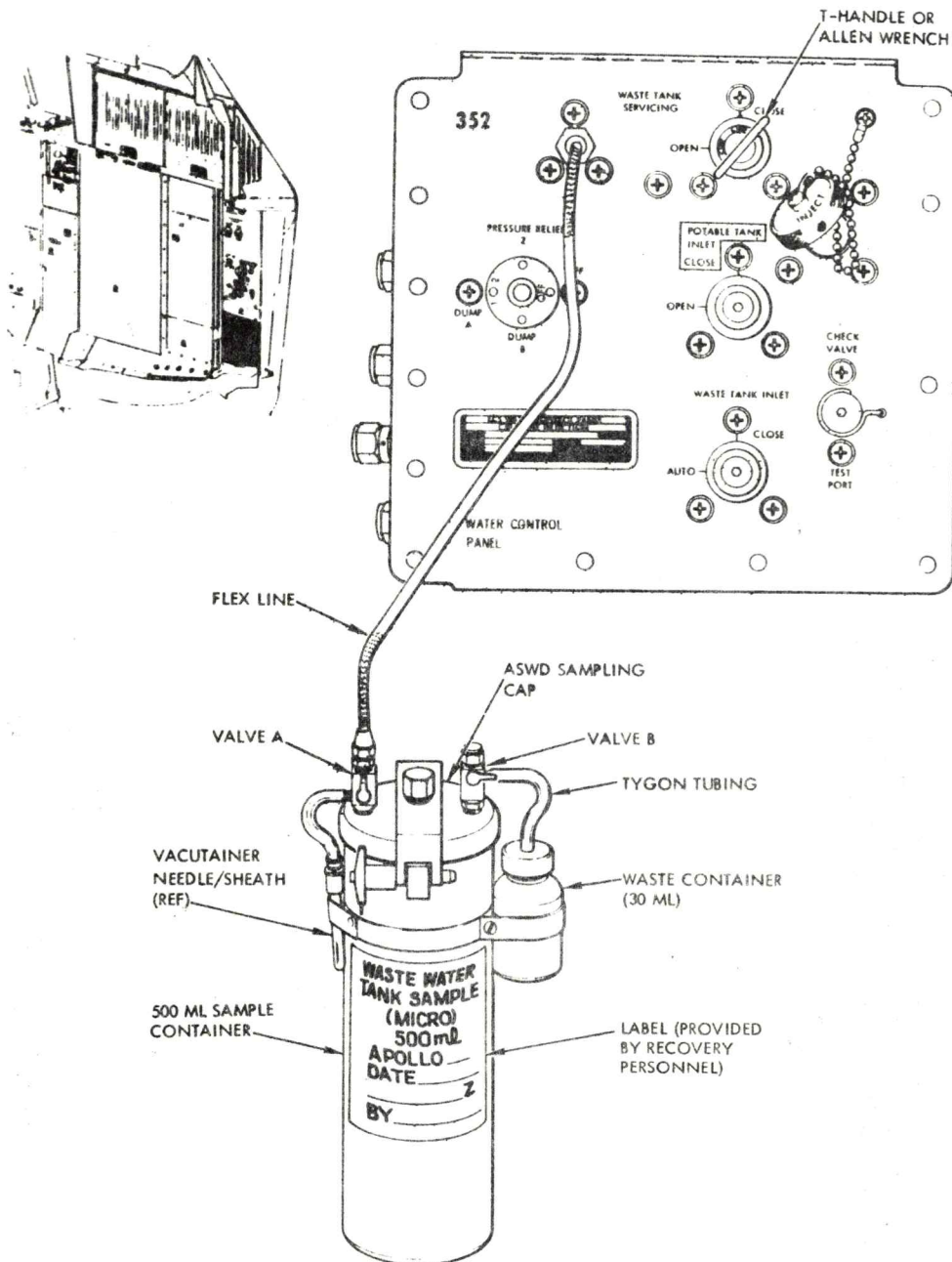
Do not contaminate inside free end of flex line.

2. Verify tygon tubing is in waste container.
3. Open valve B (horizontal position).
4. Position valve A to the sample position (vertical position).
5. Position WASTE TANK SERVICING valve to OPEN; maintain flow until water exits through valve B into tygon tubing.
6. Close WASTE TANK SERVICING valve.
7. Close valves A and B (45° position).
8. Remove tygon tubing from valve B.
9. Remove plastic cap from sterile wrap and place plastic cap on valve B. Do not touch inside of cap or exposed port of valve B.
10. Place valve B in vertical position.
11. Remove waste container and clamp from sample container. (Stow clamp.)

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## WASTE WATER SAMPLES

Sheet 7 of 10



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## WASTE WATER SAMPLES

Sheet 8 of 10

INSTRUCTIONS (Cont)

12. Remove cap from waste container. (Stow clamp.)

## NOTE

Waste container will be used to collect overflow from vacutainer needle during the collection of the 10 ml sample.

## 10 ML SAMPLE (VACU)

## NOTE

Do not touch (contaminate) rubber top of vacutainer or needle of vacutainer sample port.

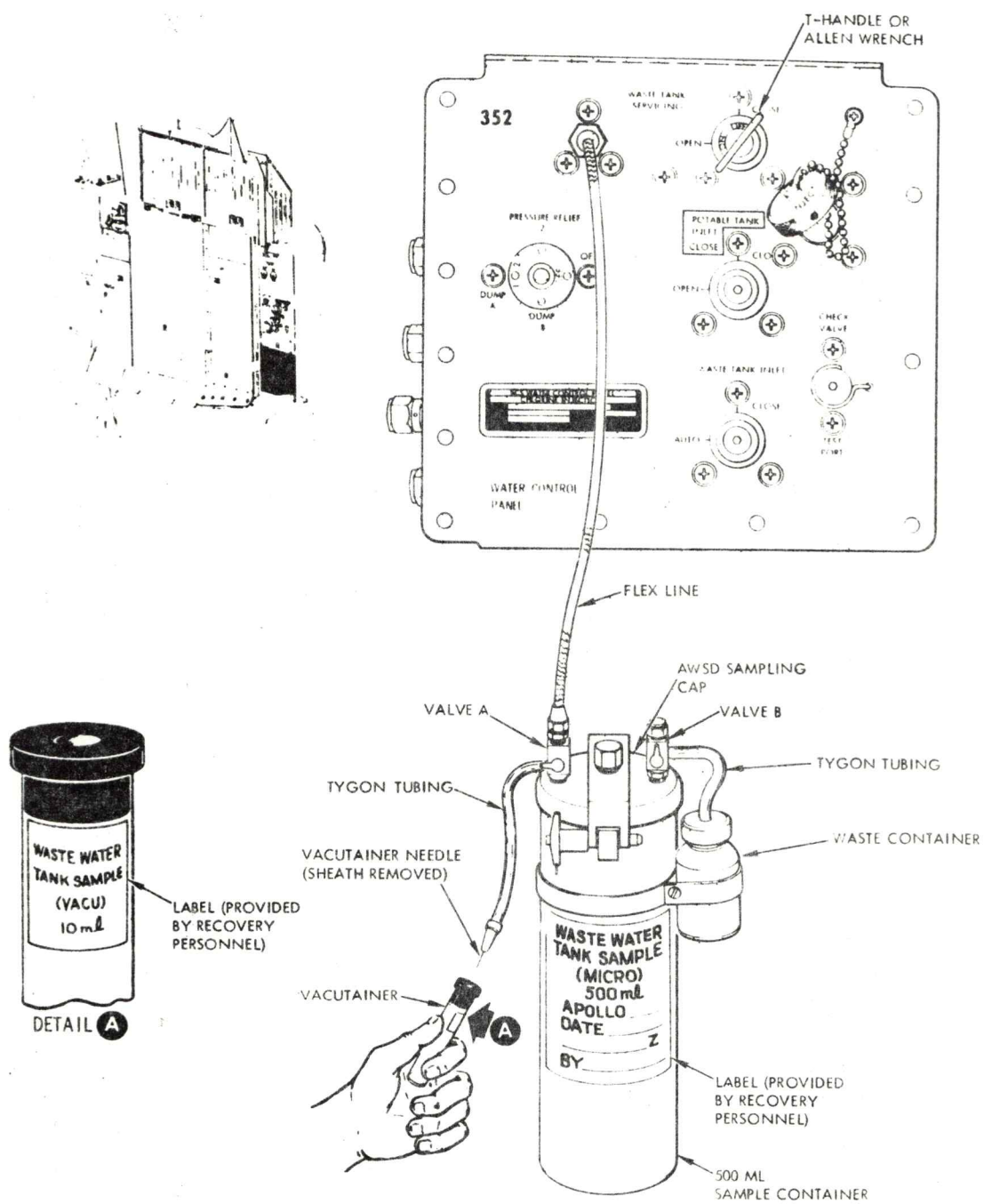
1. Remove vacutainer sample port wrapping.
2. Place valve A to vacutainer sample position (horizontal position).
3. Remove sheath on needle of vacutainer port.
4. Place needle over waste container and operate waste tank servicing valve until water comes out of needle.
5. Remove top from vacutainer outer container.
6. Plunge vacutainer sample port needle into vacutainer and collect 10 ml sample. (Open WASTE TANK SERVICING valve as necessary.)
7. Remove vacutainer, recap, and store.
8. Replace needle sheath.
9. Disconnect AWS D flex line from WASTE TANK SERVICING port and sampling cap. Stow flex line.
10. Remove AN cap from sterile wrap and place AN cap on valve A. Do not touch inside of cap or outlet of valve A. Tighten AN cap with an open end wrench.
11. Place valve A to vertical position.
12. Remove and stow sheathed vacutainer needle and tygon tubing.
13. Remove plastic cap from sterile wrap and place plastic cap on valve A outlet. Do not touch inside of cap or outlet of valve A.
14. Stow sample container within sample rack.

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## WASTE WATER SAMPLES

Sheet 9 of 10



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FINISH 2223Z MAY 26

10

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WASTE WATER SAMPLES

Sheet 10 of 10

PACKAGING REQUIREMENTS

1. Refrigerate sample containers.

NOTE

Sample containers should be refrigerated to  $5 \pm 1^\circ\text{C}$  ( $41 \pm 2^\circ\text{F}$ ) within 30 minutes after collection, and maintained at that temperature until shipment to MSC.

2. Fill sample racks with water and freeze prior to taking sample.
3. Prior to shipment to MSC, verify ~~eight~~ <sup>NINE</sup> sample containers stowed in sample racks.
4. Place frozen sample racks into the insulated container. Ship to MSC.
5. Secure ancillary equipment, flex lines, tygon tubing, and empty waste container in the sample kit for return shipment to MSC.

Remarks: ALL SAMPLES TAKEN NORMALLY

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## RECOVERY AREA SEA WATER SAMPLE

Sheet 1 of 1

A sample of the sea water shall be obtained in the recovery area, using a sterilized container. The sample will be identified and stowed in the CM.

SAMPLE WAS OBTAINED  
AND IS STOWED IN <sup>COMPT</sup>~~VOLUME~~ A-7



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SM2A-08-SC106

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START 2230Z MAY 26

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SM2A-08-SC106

DATA STORAGE EQUIPMENT (DSE) REMOVAL

Sheet 1 of 5

This procedure provides instructions for removing the Data Storage Equipment (DSE) from the CM.

SAFETY

1. Observe standard safety precautions when working in the CM.
2. Avoid actuating any switches, controls, etc.

PHOTOGRAPHIC REQUIREMENTS

Refer to procedure (1).

TOOLS AND EQUIPMENT

| Quantity | Nomenclature                      |
|----------|-----------------------------------|
| 1        | Allen-head adapter, 3/16-inch     |
| 1        | Allen-head adapter, 5/32-inch     |
| 1        | Ratchet set, 1/4-inch drive       |
| 1 ea     | Screwdriver (torq-set), #3 and #4 |

INSTRUCTIONS

1. Remove closeout panel (V36-334103) as follows:

NOTE

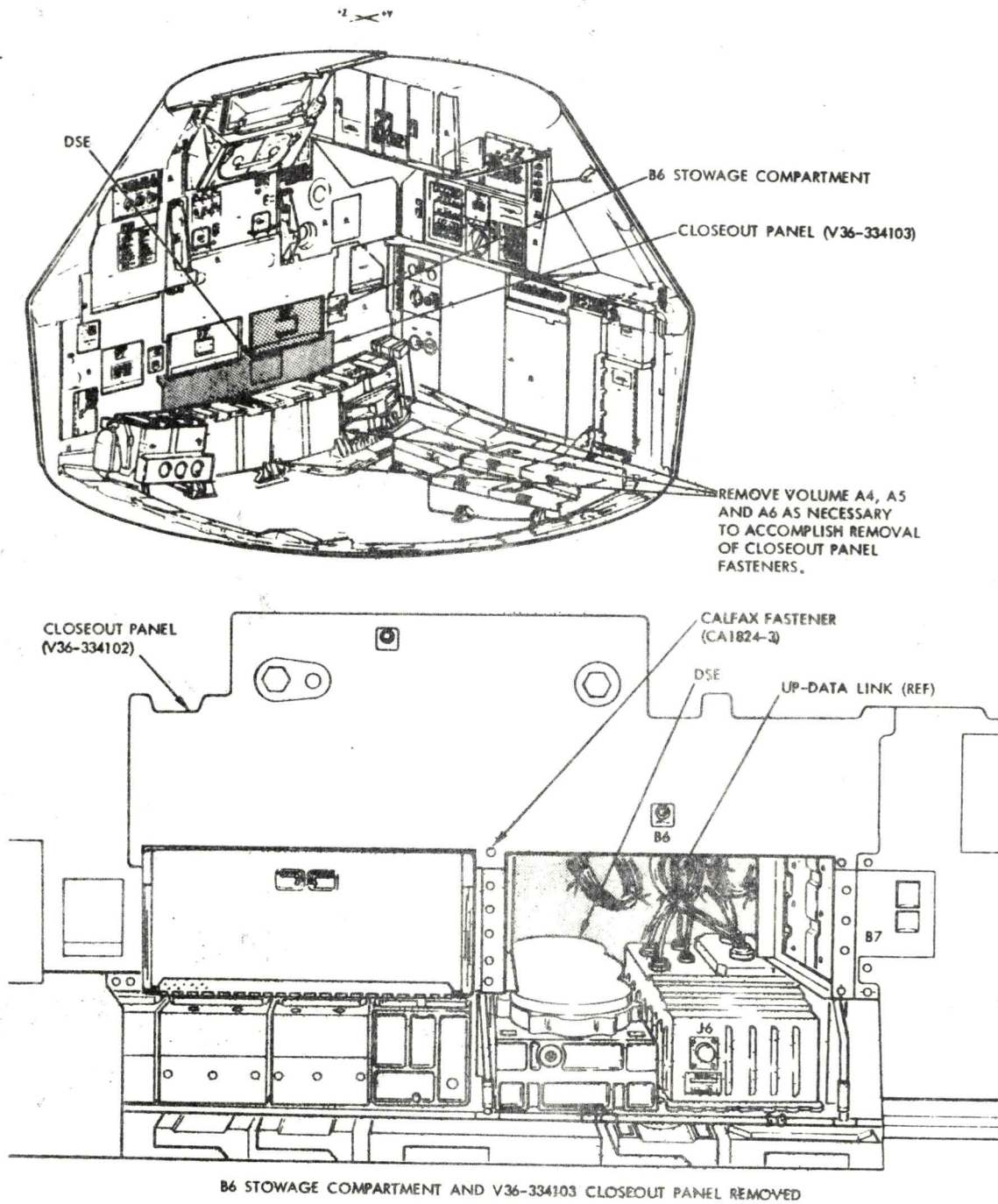
- The panel rests on spacers held by 5 torq-set screws which do not have to be removed.
  - It is not necessary to remove the row of AN screws securing panel halves.
- a. Disengage 10 Calfax fasteners (P/N CA1824) securing closeout panel to LEB structure (4 at top and 6 in second row).
  - b. Pull back on upper portion of panel and lift panel free.
2. Remove and stow closeout panel.
  3. Open B6 stowage compartment cover.
  4. Remove CO<sub>2</sub> absorbers. (Place in plastic bags and set aside.)
  5. Release the two knurled hand screws securing volume B6 to LEB structure.
  6. Slide B6 container (pull out) free from LEB.

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## DATA STORAGE EQUIPMENT (DSE) REMOVAL

Sheet 2 of 5



SM-2A-1704C

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## DATA STORAGE EQUIPMENT (DSE) REMOVAL

Sheet 3 of 5

INSTRUCTIONS (Cont)

7. Remove fitting assembly (V36-334030) as follows:

- a. Using a 5/32-inch allen-head adapter and socket set, disengage one Calfax fastener securing closeout panel V36-334102 to upper end of V36-334030 fitting assembly. (See sheet 2 of 5.)
- b. Using a #3 torq-set screwdriver, remove four NAS1133C3 screws (front).
- c. Using a #4 torq-set screwdriver, remove four NAS1154C12 screws and four shims (MD115-2002-0004) near inner front of bracket.
- d. Using a #4 torq-set screwdriver, remove two NAS1134C12 screws (rear).
- e. Bag hardware and attach to bracket.

8. Remove mounting hardware from J-box (V36-759560) as follows:

## CAUTION

Do not disconnect electrical connectors.

- a. Remove four screws (66449-3-1) and four washers (LD143-0002-2203).
- b. Bag hardware and attach bag to J-box.

## CAUTION

Exercise care to avoid excessively straining J-box cabling.

9. Move J-box (as necessary) to gain access to DSE mounting fasteners.
10. Disconnect the three DSE electrical connectors. Bag and stow free ends to prevent damage.

## NOTE

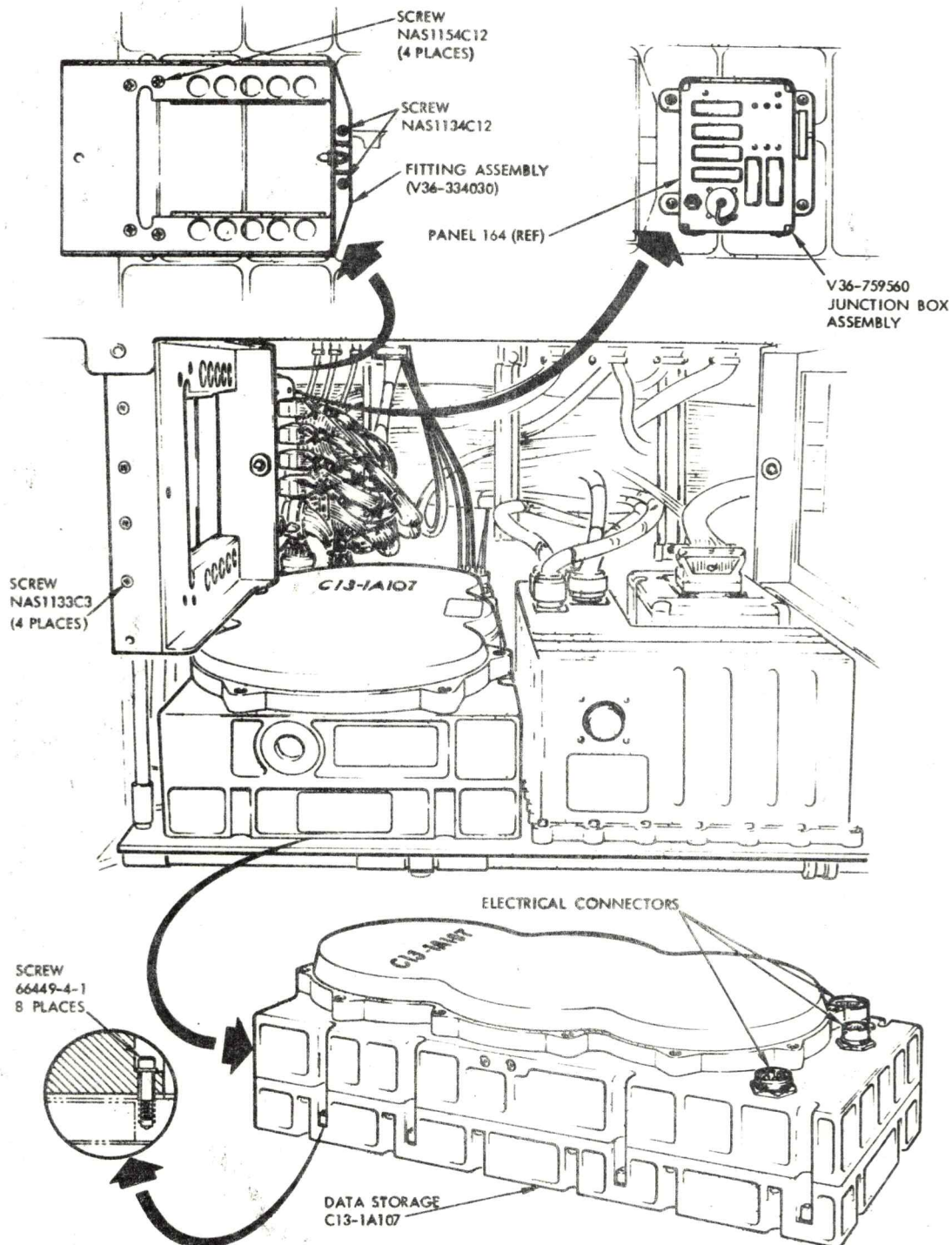
The left-hand connectors on the DSE are twist-off connectors, the right-hand connectors are a snap-off type connector.

11. Using a 3/16-inch allen-head adapter, 6-inch extension, and ratchet wrench, remove the eight mounting screws.
12. Slide DSE free from LEB cap connectors.
13. Reinstall J-box and fitting assembly (V36-334030).
14. Reinstall and secure closeout panel (V37-334103).



## DATA STORAGE EQUIPMENT (DSE) REMOVAL

Sheet 4 of 5



SM-2A-17488

15. Reinstall volume B6 container and CO<sub>2</sub> absorbers, close and secure access panel.



DATA STORAGE EQUIPMENT (DSE) REMOVAL

Sheet 5 of 5

PACKAGING REQUIREMENTS

- 1. Package DSE in a suitable container for shipment to MSC.

CAUTION

The DSE should be handled with care.  
Do not drop or bump.

Remarks: ONE OF THE DSE MOUNTING  
SCREWS WAS INADVERTENTLY DROPPED  
DSE  
BENEATH THE MOUNTING BRACKET.

SM2A-08-SC106

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D 1 MK 1 1743 Z MAY 28

SM2A-08-SC106

**ENVIRONMENTAL CONTROL SYSTEM (ECS) INSPECTION**

Sheet 1 of 3

This procedure provides instructions for inspecting the ECS; components are located in the Left-hand Equipment Bay (LHEB).

**SAFETY**

1. Certain components may be pressurized. Do not disconnect plumbing, fittings, etc.
2. Avoid actuating any switches, controls, etc.; actuation of certain controls could cause injury to personnel inside/outside the CM.

**PHOTOGRAPHIC REQUIREMENTS**

Refer to procedure ①.

**TOOLS AND EQUIPMENT**

| Quantity     | Nomenclature     |
|--------------|------------------|
| As necessary | Sample container |

**INSTRUCTIONS****NOTE**

Do not remove ECS closeout panels unless directed by the NASA Team Leader.

1. Inspect ECS for damage, leaks, condensation, etc.
2. Inspect CM floor for presence of water or other fluids; measure (estimate) the quantity of liquid present. Record findings.

**NOTE**

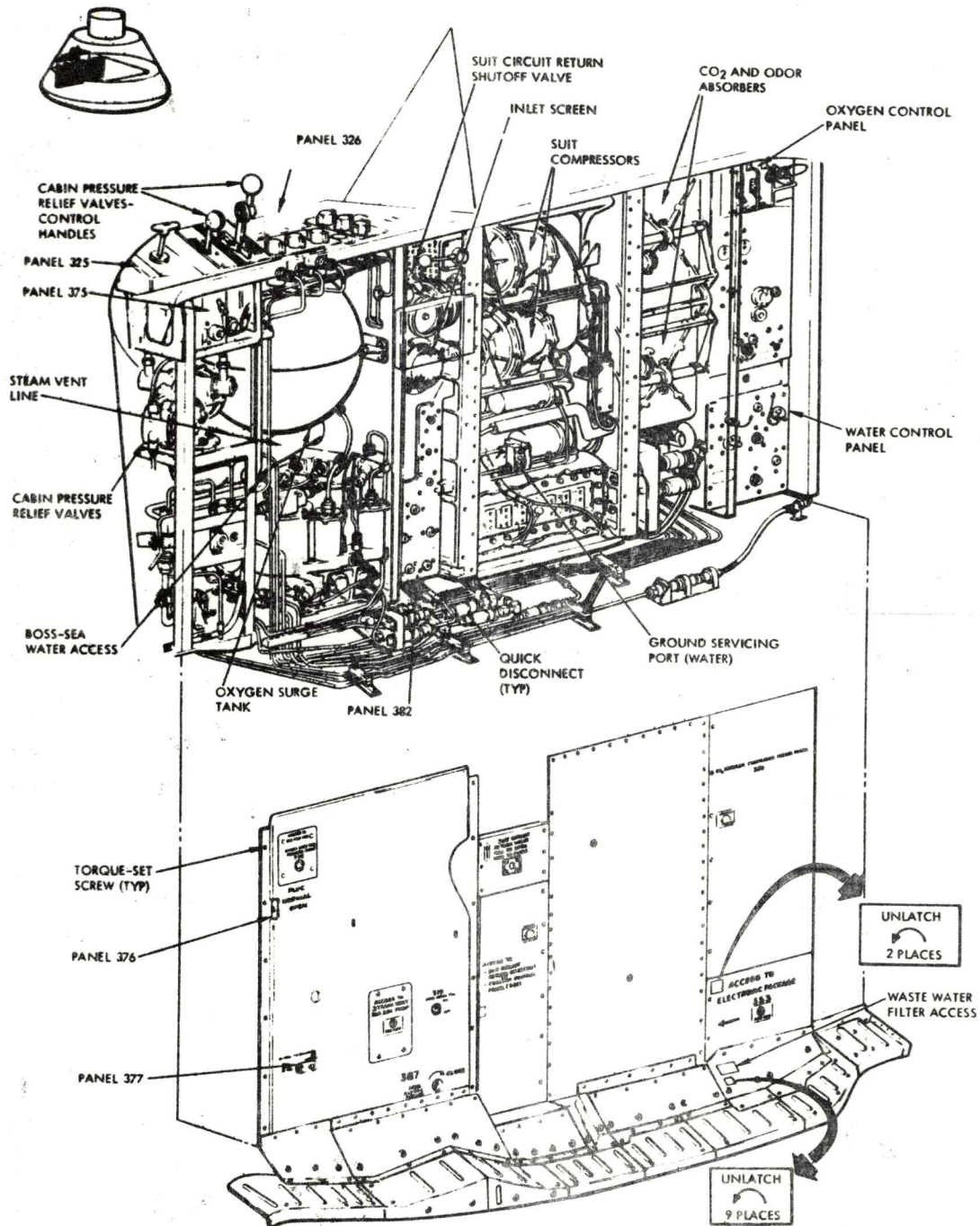
Should liquid be present within the CM, forward a sample to MSC as expeditiously as practical.

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## ENVIRONMENTAL CONTROL SYSTEM (ECS) INSPECTION

Sheet 2 of 3



LEFT-HAND EQUIPMENT BAY (LHEB)

SM-2A-1596A

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ENVIRONMENTAL CONTROL SYSTEM (ECS) INSPECTION

Sheet 3 of 3

PACKAGING REQUIREMENTS

1. Bottle liquid sample(s) (as necessary) for return shipment to MSC.
2. Label sample(s) as follows:
  - a. Flight mission number
  - b. Time and date sample obtained
  - c. Identify area from which sample was obtained
  - d. Name of person obtaining sample
  - e. Label bottle - Floor Sample.

Remarks: SMALL TRACE OF LIQUID ON  
AFT BULKHEAD BELOW CENTER  
COUCH. THIS WAS NOTICED AT 1850Z  
MAY 26 AFTER HATCH OPENED. NOT  
ENOUGH TO SAMPLE. BELIEVED TO BE  
SEA WATER BLOWN IN DURING RECOVERY.

SM2A-08-SC106

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START 2055 Z MAY 26

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COMMAND MODULE EXTERIOR INSPECTION

Sheet 1 of 11

This procedure provides instructions for conducting a thorough walk-around inspection of the CM exterior surface areas following flight/recovery.

WARNING

Verify that procedure (26) has been completed prior to accomplishing this procedure.

CAUTION

- Take precautions as necessary to protect the ablator surface and eliminate degradation of the ablator and char.
- At no time shall any person stand on or place tools or equipment on any portion of the CM without first applying an adequate protective cover. In particular, tools, equipment, or hard objects of any kind shall never be placed in a precarious manner, which could result in their falling and striking the CM.

SAFETY

1. Observe standard safety precautions when working around RCS engines and pyrotechnic devices. Sheet 8 illustrates/identifies the various RCS engines. Procedure (A) and (B) provide anomaly procedures which may be associated with the RCS and Pyrotechnic devices.

PHOTOGRAPHIC REQUIREMENTS

Refer to procedure (1).

TOOLS AND EQUIPMENT

Not applicable.

NOTE: AT 1615 Z MAY 31 WHILE <sup>MOVING</sup> ~~ABOVE~~ CM FROM HANGER DECK TO FLIGHT DECK THE CM +2 SIDE CAME IN CONTACT WITH NBC TRUCK. AS A RESULT AN AREA APPROX 3'X12" WAS DAMAGED. PHOTOS TAKEN BOTH OF TRUCK

NOTE: NO DAMAGE APPEARED TO  
HAVE BEEN CAUSED BY RECOVERY  
WITH EXCEPTION OF DAMAGE TO SEA ANCHOR ATTACH 14

SM2A-08-SC106

COMMAND MODULE EXTERIOR INSPECTION

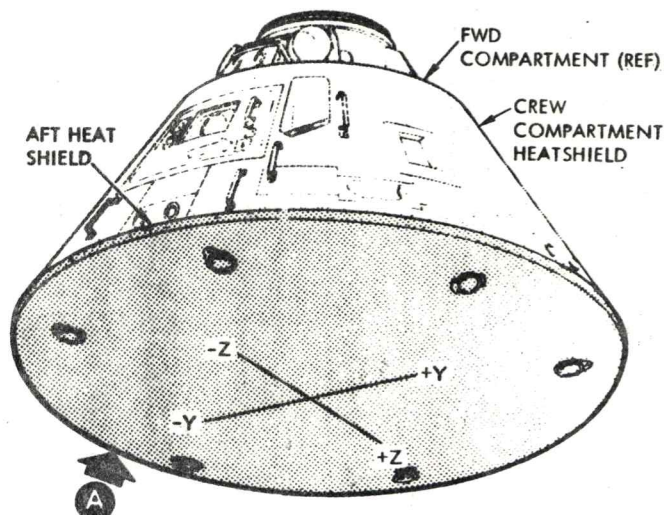
Sheet 2 of 11

INSTRUCTIONS (AFT HEAT SHIELD)

1. Inspect heat shield for general appearance. Record findings, as well as any damage incurred during recovery operations.

PACKAGING REQUIREMENTS

Not required; however, take precautions as necessary to protect the aft heat shield/sensors from damage during postretrieval inspection and transit operations.



Remarks: COMPRESSION PAD

#6, STREAKING - GOUGE  
ABOUT 6" AND 24" TOWARD  
-Z AXIS ON SAME RADIUS  
AS COMP PAD #6

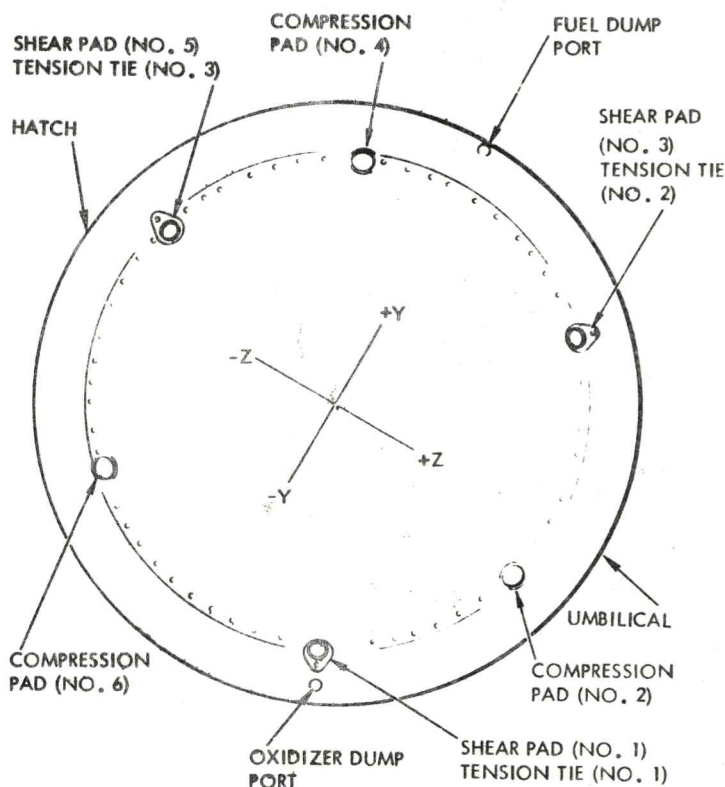
GOUGE 2 6" FROM  
OXIDIZER DUMP PORT. SMALL  
MILKY BUBBLES IN AREA  
STREAKING COMP PAD  
#2

STREAKING SHEAR PAD  
#3, TENSION TIE #2

STREAKING COMP PAD #4

STREAKING SHEAR PAD  
#5, TENSION TIE #3, GOUGE

4" FROM EDGE OF PAD TOWARD  
-Z AXIS AND 12" FROM PAD  
TOWARD -Y AXIS



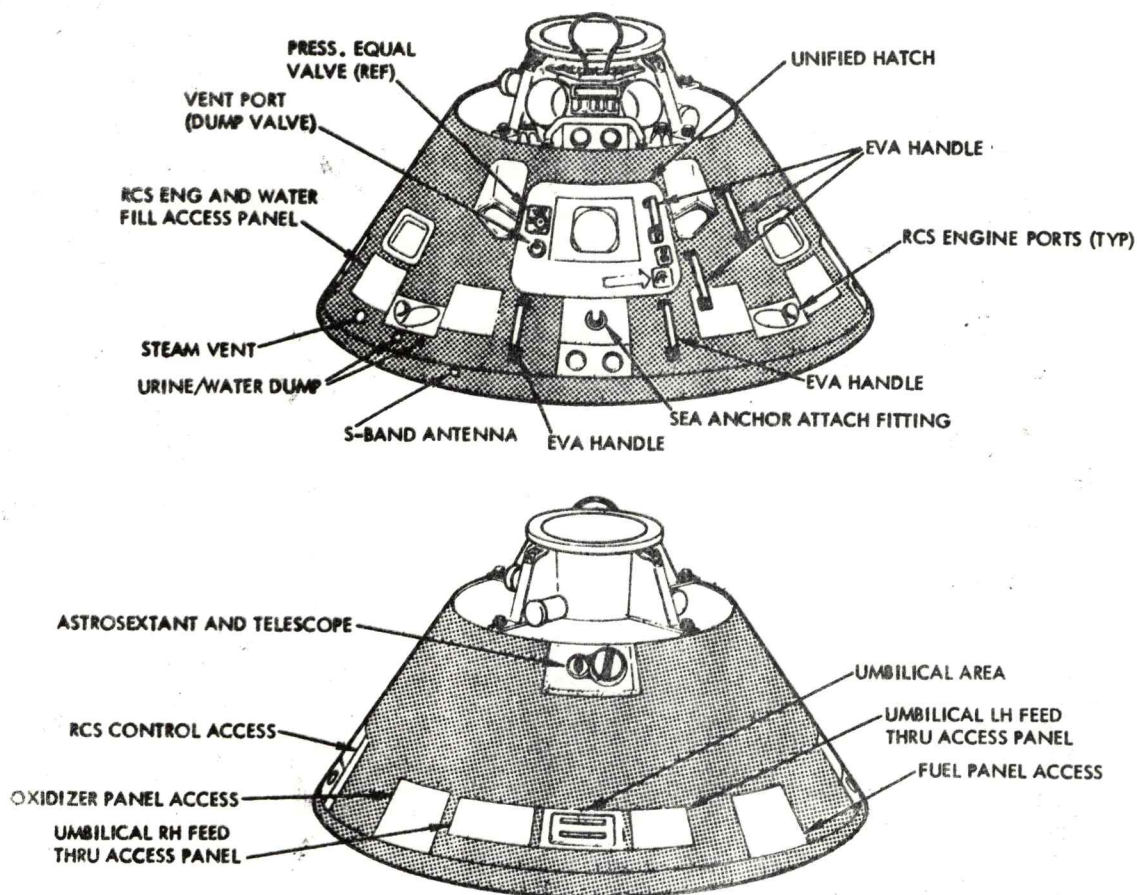
DETAIL A

SM-2A-1066J



## COMMAND MODULE EXTERIOR INSPECTION

Sheet 3 of 11

INSTRUCTIONS (CREW COMPARTMENT HEAT SHIELD)

SM-2A-1065R

1. Inspect urine/water dump nozzles; record any abnormal findings.

Remarks: OTHER THAN SLIGHT CHAR CARRY OVER  
ON SURFACE - NONE



## COMMAND MODULE EXTERIOR INSPECTION

Sheet 4 of 11

INSTRUCTIONS (CREW COMPARTMENT HEAT SHIELD)

2. Inspect umbilical area for general conditions. Record findings, as well as any damage incurred during recovery operations.

Remarks: UMBILICAL SEPARATION CLEAN-AREA  
SHOWS LITTLE CHAR - SOME OF THE  
TUBING ENDS ARE OPEN.

3. Inspect steam and vent ports; record any abnormal findings.

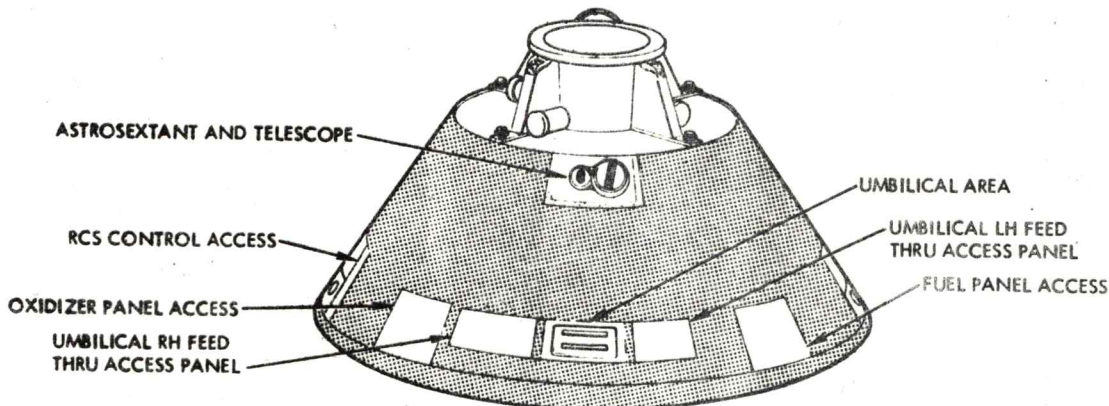
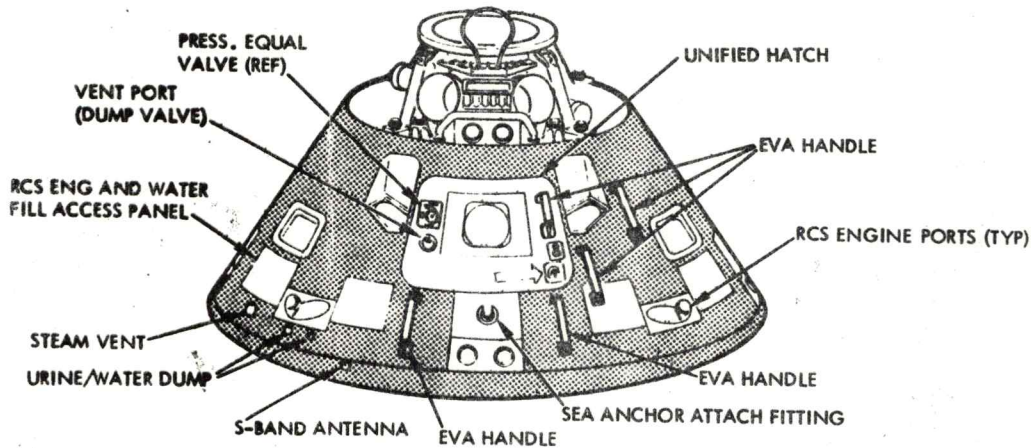
Remarks: NONE - AREA LOOKS GOOD

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## COMMAND MODULE EXTERIOR INSPECTION

Sheet 5 of 11

## INSTRUCTIONS (CREW COMPARTMENT HEAT SHIELD)



SM-2A-1065R

4. Inspect astrosextant and telescope area; record any abnormal findings.

Remarks: OTHER THAN SLIGHT CHAR UPPER  
PORTION - AREA LOOKS GOOD - NO WATER  
IN CAVITIES

## NOTE

If snagging line/hook assembly has been utilized, place in a plastic bag and tape to the hatch exterior. Refer to packaging requirements.



## COMMAND MODULE EXTERIOR INSPECTION

Sheet 6 of 11

## INSTRUCTIONS (CREW COMPARTMENT HEAT SHIELD)

5. Inspect ~~snag line~~ <sup>SEA ANCHOR</sup> attach fitting; record any abnormal findings.

Remarks: PART OF ABLATOR BUILD-UP WAS  
TORN OFF BY SWIMMER INSERTING  
SEA ANCHOR / COLLAR HOOKS INTO RING

6. Inspect CM windows for cracks, sooting, pits, notches and any indication of abnormalities.

## CAUTION

Windows shall not be touched by any person or retrieval equipment.

Remarks: HATCH WINDOW - EXTERIOR FILM IS CLOUDY  
LH REAR WINDOW - BLUE TINT - HAZY EXTERIOR  
RH REAR WINDOW - BLUE TINT - HAZY EXTERIOR  
LH SIDE WINDOW - EXTERIOR CLOUDY  
RH SIDE WINDOW - EXTERIOR CLOUDY

RH REAR WINDOW HAS BEEN TOUCHED (EXT)

DURING RECOVERY SWIMMER PLACED STICKY  
BAC "DAISEY" ON EXT HATCH WINDOW  
WAS REMOVED FOLLOWING RECOVERY

## PACKAGING REQUIREMENTS

- ✓ 1. Install window covers. In the absence of window covers, use waterproof paper (or similar material) to cover windows.
- ✓ 2. Cover umbilical area with waterproof paper (or similar material), tape down all edges.
- ✓ 3. Take precautions, as necessary, to protect crew compartment heat shield (ablator surface) from damage during postretrieval inspection and transit operations.
- ✓ 4. Cover astrosixtant and telescope with waterproof paper (or similar material), tape down all edges.

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## COMMAND MODULE EXTERIOR INSPECTION

Sheet 7 of 11

INSTRUCTIONS (UNIFIED HATCH)PACKAGING REQUIREMENTS (Cont)

5. Secure and stow grappling hook as follows:
- Retract and tape individual hooks in stowed position.
  - Coil and tape attaching line.
  - Bag grappling hook and attaching line.
  - Tape (stow) bagged assembly to CM exterior.

Remarks: NOT DEPLOYED

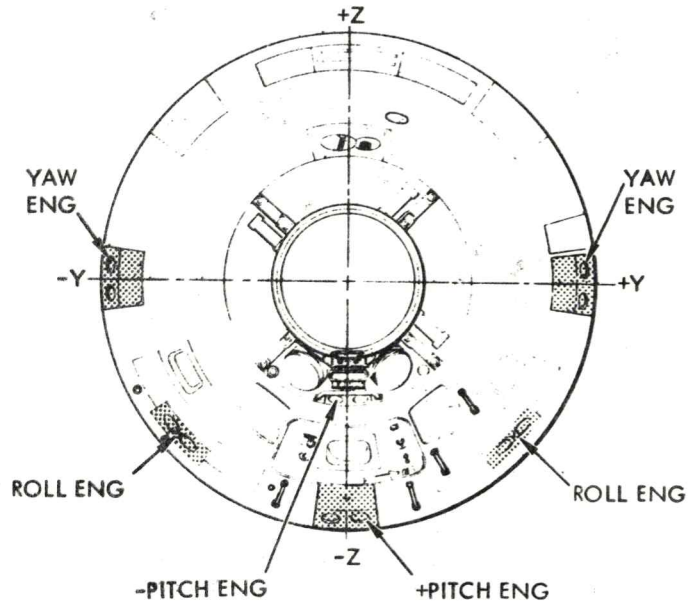
## COMMAND MODULE EXTERIOR INSPECTION

Sheet 8 of 11

INSTRUCTIONS (RCS)**WARNING**

Because of potential hazards associated with the RCS, any visual inspection of the thrusters (engine ports) must be conducted from a safe distance.

1. Visually inspect the exterior areas of the RCS (exhaust cones, throats, liners, adjacent skin, and mounting plate bolts). Note all abnormalities as well as general condition.



SM-2A-1061F

Remarks: +Y YAW - SLIGHT CHAR WITHIN RADIUS OF NOZZLE FACE,  
~~COME~~ SMOOTH LINER

SYS 2 ROLL ENG - CCW BLISTERING IN LINER, CW SMOOTH LINER

+ PITCH ENG - LITTLE CHAR - SMOOTH LINERS

SYS 1 ROLL ENG - ABLATOR CAVITATION DIRECTLY BELOW 3'X4" AREA

CCW - CAVITATION IN ~~THE~~ LINER

CW - BLISTERING IN LINER

↓  
 SAME  
 FOR SYS 2

PACKAGING REQUIREMENTS

Not applicable.

-Y YAW - SAME AS +Y YAW

- PITCH - SMOOTH LINERS

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## COMMAND MODULE EXTERIOR INSPECTION

Sheet 9 of 11

INSTRUCTIONS (FORWARD COMPARTMENT)

1. Inspect forward compartment structure for evidence of burning, damage, etc.

## CAUTION

Do not disturb or walk on the upper deck before complete photographic coverage has been accomplished.

## WARNING

If a parachute, antenna, or the flashing beacon has failed to deploy, use caution when working on the upper deck.

Remarks:

REFER TO PROCEDURES 16 & 17  
SEE REMARKS PAGE 198

2. Inspect all visible pyrotechnic cartridges for firing. (Procedure B illustrates the various pyrotechnic devices.)

Remarks:

ALL FIRED

3. Inspect forward compartment components (antennas, swimmer umbilical, sea dye marker, recovery beacon, mortars, chute attach fittings, recovery loop, etc.) for evidence of damage, bending, crushing, etc.

Remarks:

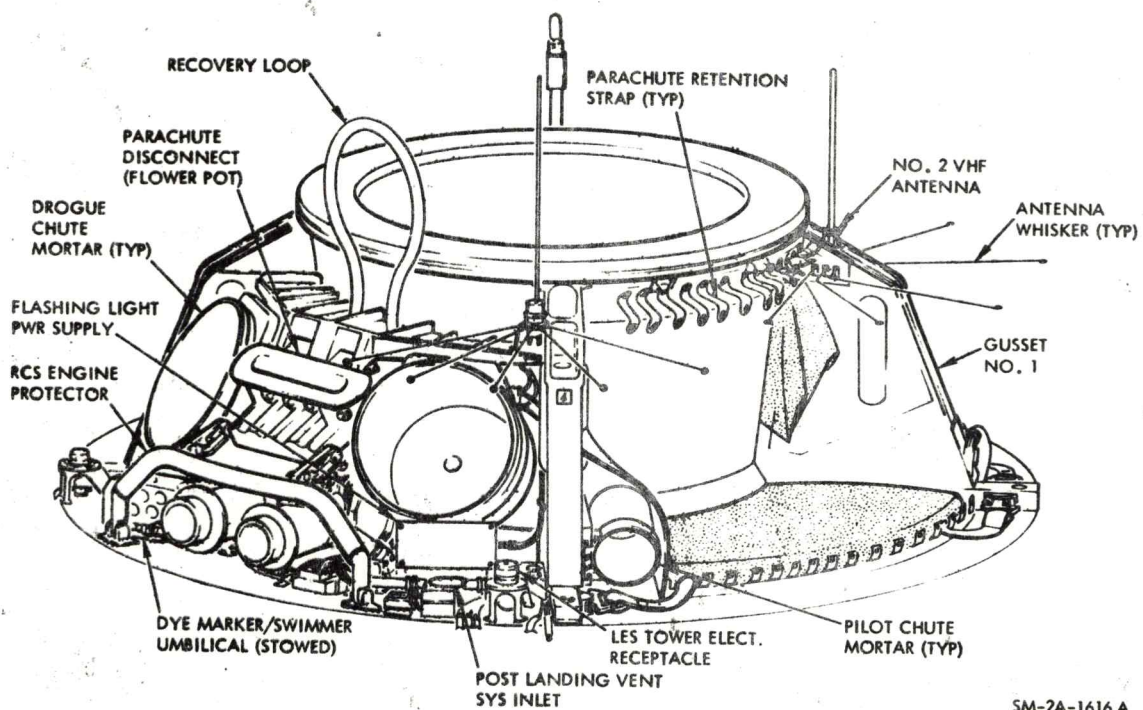
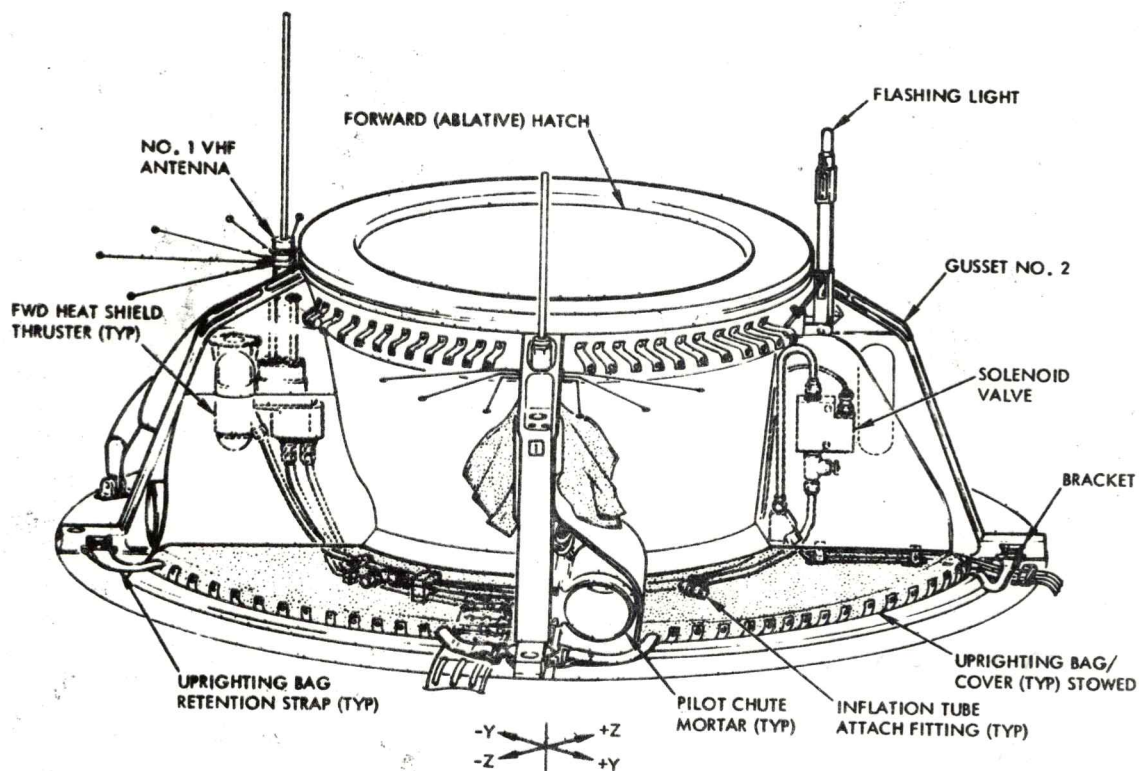
REFER TO PROCEDURES 16 & 17

SEA DYE MARKER SHOULD BE CHECKED  
PUT OUT VERY LITTLE DYE



## COMMAND MODULE EXTERIOR INSPECTION

Sheet 10 of 11



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## COMMAND MODULE EXTERIOR INSPECTION

Sheet 11 of 11

INSTRUCTIONS (FORWARD COMPARTMENT) (Cont)

4. Inspect upper airlock lip and top of airlock (-Z bay) above drogue parachute for evidence of drogue cable riser abrasion; note extent of abrasion. Inspect parachute retention flap straps; note any ripping, tearing, discoloration, etc.

Remarks: NO APPARENT DROGUE CABLE RISER  
ABRASION - RETENTION FLAPS APPEAR  
NORMAL.

PACKAGING REQUIREMENTS

1. If sea dye marker was deployed, remove and package in plastic bags for shipment to NR.

REMARKS: ① ME417-0014 ITEM (+Y SIDE ROLL BAR)  
 IS DAMAGED - TWO PIECES OF BAKELITE MATERIAL FROM  
 THIS ITEM FOUND IN RIGHT HAND PLV OPENING.

② +Y SIDE OF ROLL BAR NEXT TO NEG PITCH ENGINES  
 HAS BEEN ABRASED.

③ -Y PORTION OF SHAPED CHARGE HOLDER RING IS OUTBOARD  
 OF THE TWO -Y HOLDER SPRINGS. SPRINGS APPEAR IN  
 GOOD SHAPE. THIS PORTION OF THE RING IS CONFINED  
 WITHIN THE ENVELOPE OF THE TUNNEL TOP. IT DOES  
 NOT APPEAR TO HAVE BEEN BENT OUT OF SHAPE.  
 HOLDER RING SHIMS HAVE RAPPED AROUND -Z-Y  
 HOLDER SPRING. FIBER FAIRING V36-316046 ON  
 OUTBOARD EDGE OF TUNNEL TOP HAS BEEN  
 DAMAGED. ABOUT 17% MISSING SYMETRICAL GUSSET  
 #4. NEAR GUSSET #3 ABOUT 13% OF FAIRING  
 DAMAGED. ABOUT 12% MISSING IN +Z BAY CLOSE  
 #2 GUSSET.

④ HOLDER SPRINGS +Y SIDE GOOD SHAPE. AND THAT  
 PORTION OF THE RING WAS CAPTURED.

⑤ +Z PORTION OF HOLDER RING GROOVE  
 CONTAINS SHRAPNEL LIKE MATERIAL.



START 2030 Z MAY 27

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UPRIGHTING SYSTEM INSPECTION AND REMOVAL

Sheet 1 of 4

The uprighting bags (if deployed) shall be removed and packaged on board the recovery ship.

NOTE

If the inflated bags contain water, weigh each bag as directed by the NASA Team Leader.

SAFETY

1. If a drogue or pilot parachute has failed to deploy, exercise extreme caution when working on the upper deck.
2. If one or both of the antennas/whiskers, the dye marker or the flashing light has failed to deploy, use caution when working on the upper deck.

PHOTOGRAPHIC REQUIREMENTS

Refer to procedure ①.

TOOLS AND EQUIPMENT

| Quantity | Nomenclature   |
|----------|--|
| 1        | Screwdriver, #2 phillips                               |
| 1        | Wrench, 3/8-inch open end                              |
| 1        | Ratchet, 3/8-inch drive                                |
| 1        | Socket, 3/8-inch drive (12 point)                      |
| 3        | Bags, (for storage of uprighting bags)                 |
| 6        | Polyethylene bags (for sealing air hoses and fittings) |

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## UPRIGHTING SYSTEM INSPECTION AND REMOVAL

Sheet 2 of 4

INSTRUCTIONS

## UPRIGHTING BAG(S) NOT DEPLOYED

1. Uprighting bag(s) which have not deployed shall remain installed (intact) until postflight evaluation. However, cover(s) fabricated from heavy cardboard (or an equivalent substitute) should be placed over the bags to prevent damage during the postflight inspection.

## INSPECTION OF DEPLOYED BAGS

1. Record number of bags deployed and degree of inflation; fully inflated, partially inflated, or not inflated.

Remarks: \_\_\_\_\_

2. Prior to removal of bags from spacecraft, inspect bags, retention straps, hoses and attaching hardware for security, cuts, tears, abrasions and other abnormal conditions.

Remarks: \_\_\_\_\_

## REMOVAL OF DEPLOYED BAGS

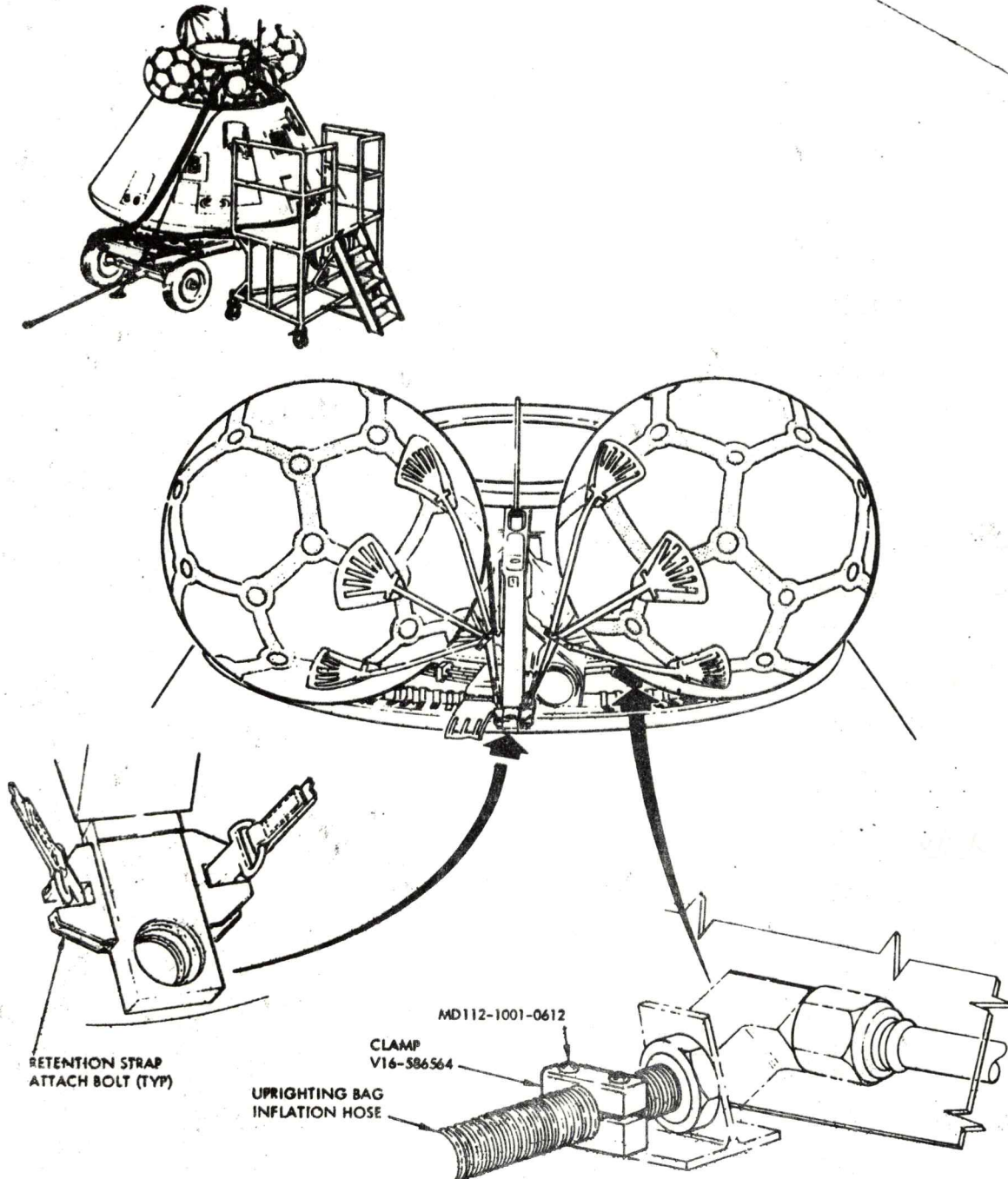
1. Remove bolts (2) securing uprighting bag(s) retention straps to attach fitting on structure.

## NOTE

If bags are fully inflated, it may be necessary to relieve tension on the retention straps prior to removal of attach bolts. To relieve tension, perform steps 2 and 3.

## UPRIGHTING SYSTEM INSPECTION AND REMOVAL

Sheet 3 of 4



SM-2A-1671A

FINISH 2145Z MAY 27

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## UPRIGHTING SYSTEM INSPECTION AND REMOVAL

Sheet 4 of 4

## CAUTION

Bag may contain water. Provide support for bag upon removal of retention strap attach bolts.

2. Loosen screws (2) securing hose clamps (V16-586564) to air hose.
3. Remove hose from fitting.
4. Seal hose and air fittings opening with polyethylene bags.
5. Following removal of inflated bags, weigh and record weight of each bag to determine amount of water pumped (if any) into each bag.

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_PACKAGING REQUIREMENTS

1. If removed, package uprighting bags in suitable containers for return shipment.

Remarks: BAGS WERE NOT DEPLOYED.  
CARDBOARD COVERS WERE PLACED OVER  
BAG PACKS.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



STARTED 0246Z MAY 28

SM2A-08-SC106

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VHF ANTENNA (NO. 1) INSPECTION AND STOWAGE

Sheet 1 of 8

Following CM recovery, the No. 1 VHF antenna blade and whisker assembly shall be inspected and then stowed to prevent ground-handling damage.

SAFETY

1. If a drogue or pilot parachute has failed to deploy, exercise extreme caution when working on the upper deck.
2. If one or both of the antennas/whiskers, the dye marker or the flashing light has failed to deploy, use caution when working on the upper deck.
3. While working with the No. 1 antenna/whiskers, keep face away from the area immediately above and outboard of the assemblies.

PHOTOGRAPHIC REQUIREMENTS

Refer to procedure ① .

TOOLS AND EQUIPMENT.

| Quantity | Nomenclature         |
|----------|----------------------|
| 1        | Safety (clevis) pin  |
| 1        | Spring scale (40 oz) |

INSTRUCTIONS

Inspection - Antenna/Whiskers

1. Inspect blade and whisker assembly for general condition.

WARNING

- Exercise extreme caution when inspecting an antenna/whisker assembly which has failed to deploy.
- Note position/condition of the antenna downlock.

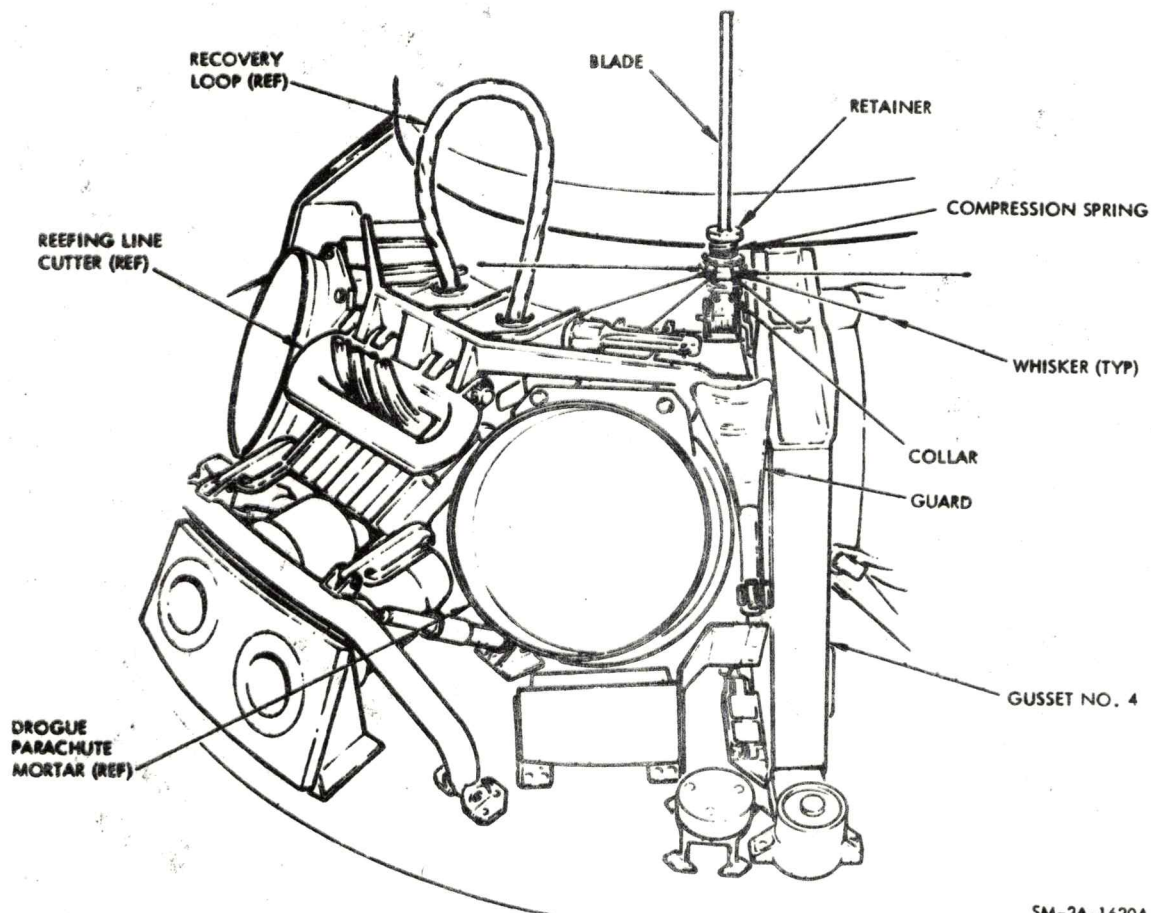
A NOMALLY

SEE REMARKS PAGE 210

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## VHF ANTENNA (NO. 1) INSPECTION AND STOWAGE

Sheet 2 of 8



SM-2A-1620A

2. If the reefing line is still secured to the downlock, apply downward pressure (to prevent inadvertent deployment) and insert the safety (clevis) pin. Refer to sheet 5.

Remarks:

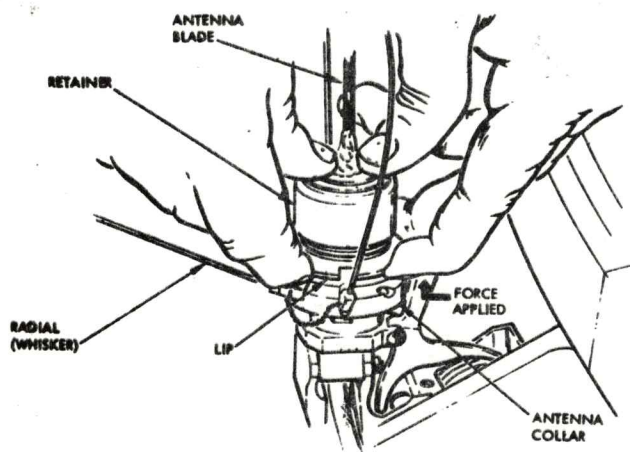
N/A

## VIII ANTENNA (NO. 1) INSPECTION AND STOWAGE

Sheet 3 of 8

## Stowing Antenna Assembly

1. Using both hands, grasp the antenna lip and retainer (as shown) and apply an upward force to depress the compression spring and raise the whiskers.



SM-2A-1621

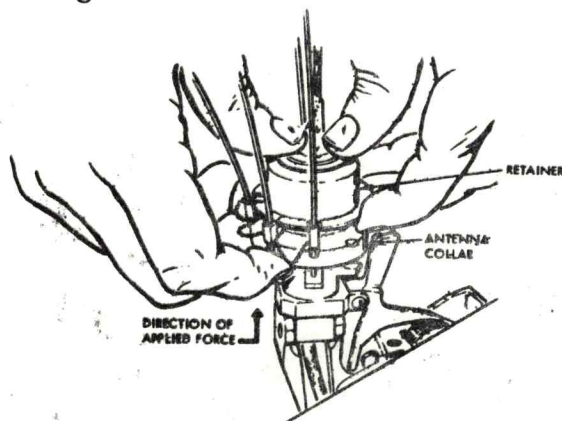
Remarks:

OK

2. Reposition the hand in contact with the whiskers and grasp the bottom of the antenna collar. Then apply an upward force to seat the collar against the retainer.

## NOTE

Verify the radial pivots are seating properly in the pivot guides.



SM-2A-1622

Remarks:

OK

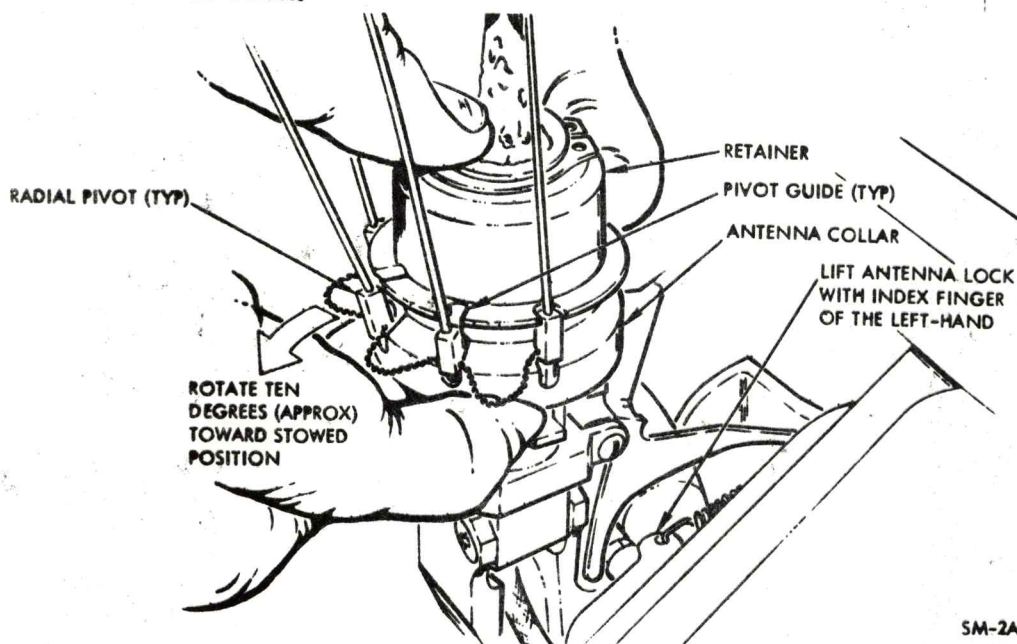
225



## VHF ANTENNA (NO. 1) INSPECTION AND STOWAGE

Sheet 4 of 8

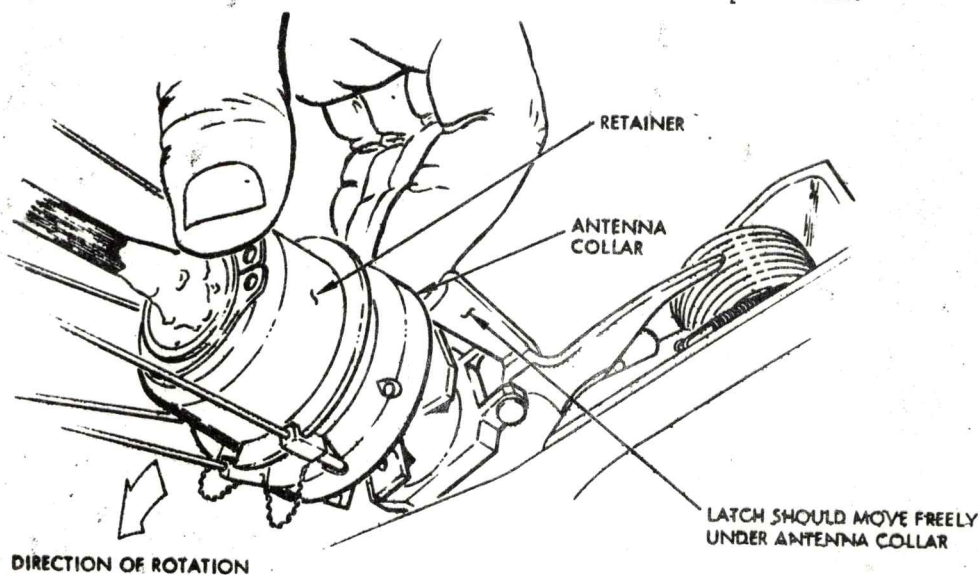
3. While holding the collar against the retainer with one hand, release the antenna lock.



SM-2A-1623

Remarks: OK

4. Rotate the antenna approximately 10 degrees (latch should move freely). Continue rotation toward the stowed position.



SM-2A-1624

Remarks: OK

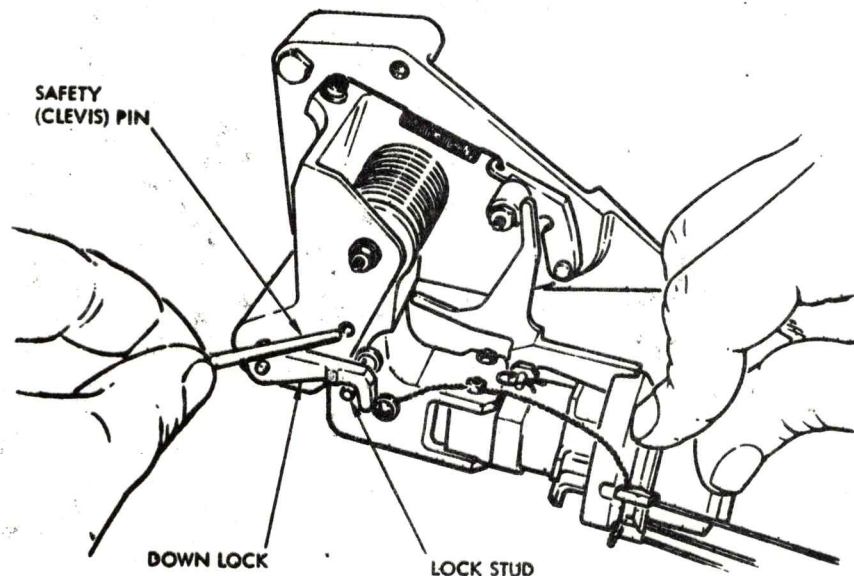
**VHF ANTENNA (NO. 1) INSPECTION AND STOWAGE**

Sheet 5 of 8

5. When the safety pin holes align, insert the safety (clevis) pin.

**NOTE**

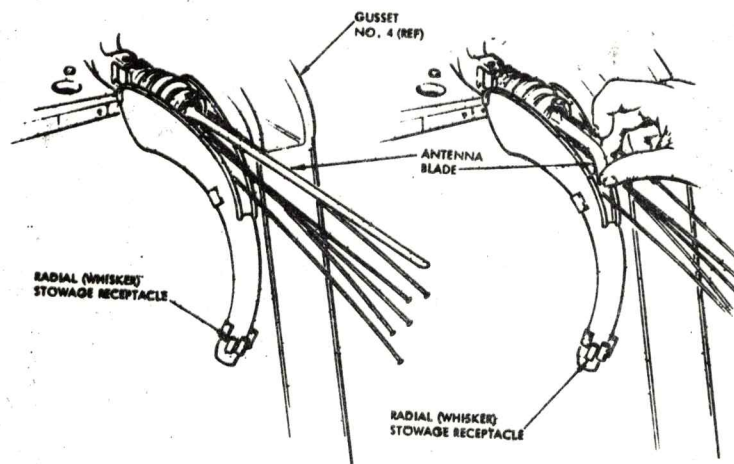
Prior to insertion of the safety pin, position the downlock over the lock stud as shown.



SM-2A-1625

Remarks: OK

6. Stow antenna blade. (Grasp blade between thumb and forefinger, as shown, and apply sufficient pressure to position the blade in radial stowage receptacle.)



SM-2A-1627A

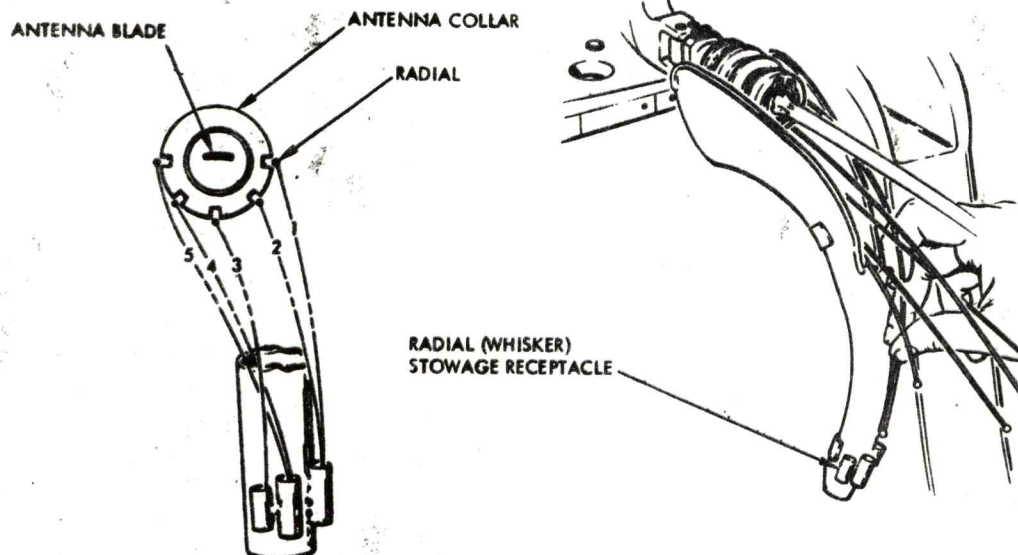
Remarks: OK

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## VHF ANTENNA (NO. 1) INSPECTION AND STOWAGE

Sheet 6 of 8

7. Stow whiskers in accordance with the numbering sequence provided in the following illustration. (Stowage shall be accomplished by grasping each whisker, lengthwise, at the middle with the thumb and forefinger, as shown, and applying a slight downward pressure with the thumb.)



SM-2A-16268

Remarks:

STOWAGE NORMAL

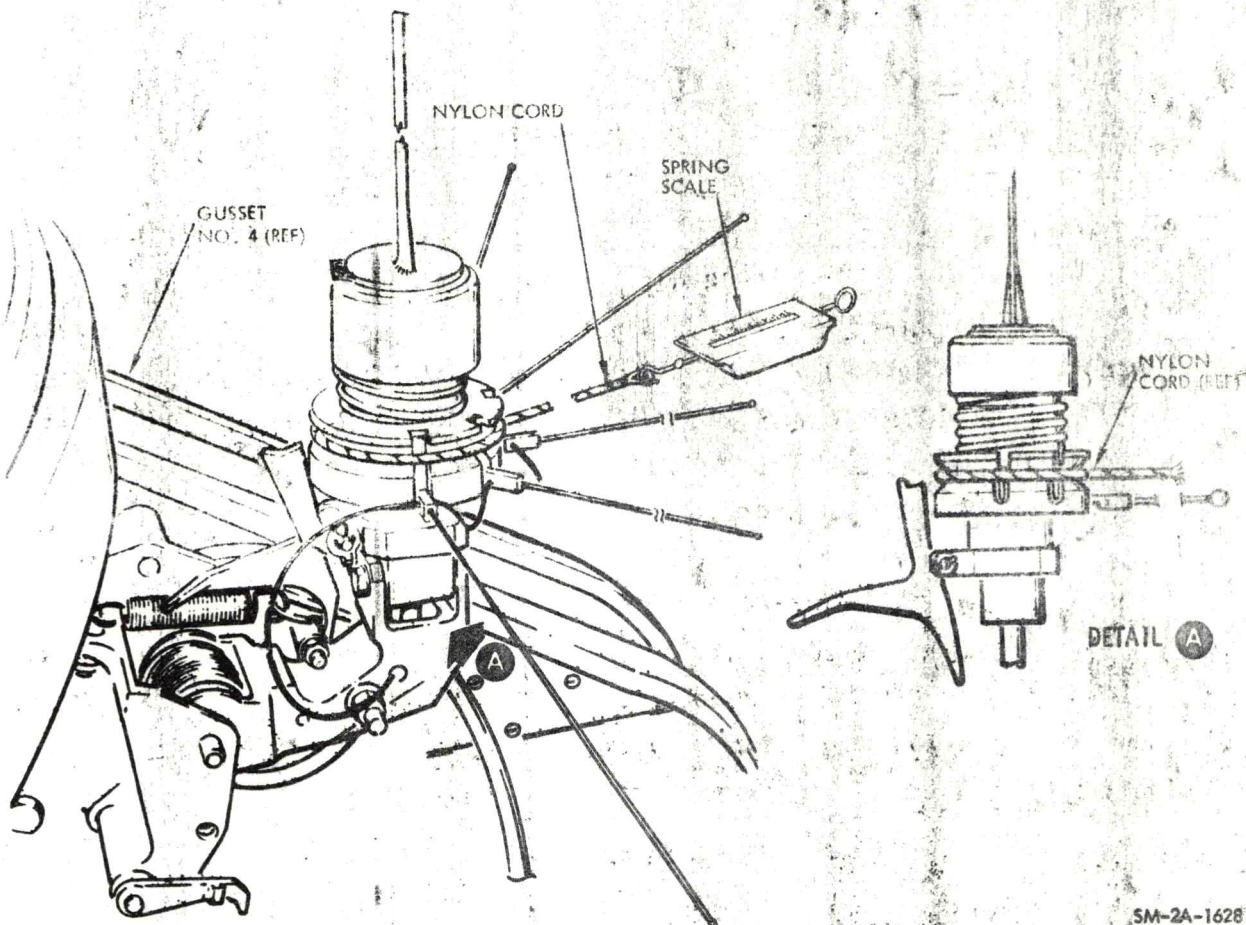


## VHF ANTENNA (NO. 1) INSPECTION AND STOWAGE

Sheet 7 of 8

## Spring Scale Check

1. If visual inspection reveals the No. 1 antenna has deployed <sup>PARTIALLY</sup> but not locked, proceed as follows: <sup>SIMILAR CASE</sup>
- Secure a length of nylon cord around the collar (as illustrated).
  - Secure free end of cord to the spring scale.
  - Grasp the spring scale and pull outboard (normal to the antenna).
  - Record force required to start motion FORCE > 16 oz oz. (Force greater than 16 oz shall not be applied.)



SM-2A-1628

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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VHF ANTENNA (NO. 1) INSPECTION AND STOWAGE

Sheet 8 of 8

- e. Manually place antenna in the stowed position and then release. Verify that antenna locks in the up position.

NOTE

When inspection is complete, stow the antenna per instructions provided on sheets 3 through 6.

Remarks: ANTENNA MANUALLY STOWED - RELEASED -  
RESULT - ANT DEPLOYED PROPERLY AND LOCKED

PACKAGING REQUIREMENTS

Not applicable.

Remarks: ① 1815Z MAY 26 CM ON PRINCETON DECIC -  
NOTICED NO. 1 ANT NOT DEPLOYED - TWO RADIALS WERE  
OUT OF STOWAGE RECEPTACLE - THREE RADIALS AND  
THE ANT BLADE WERE STILL STOWED - PARACHUTE  
SHROUD LINE WAS WRAPPED ON ANT - PHOTOS WERE  
TAKEN ② 2140Z MAY 26 (APPROX TIME) ANTENNA FULLY  
DEPLOYED - PROBABLY DUE TO SHIP'S VIBRATIONS. ③ 0320Z  
MAY 27 - SHROUD LINES INADVERTENTLY REMOVED FROM  
ANTENNA. ④ 0246Z MAY 28 THIS PROCEDURE ①6 PERFORMED  
WITH RESULTS LISTED ON PRECEDING PAGES.

⑤ IN ADDITION TO THIS PROCEDURE THE ANTENNA  
WAS AGAIN MANUALLY STOWED AND ALLOWED  
TO DEPLOY VERY SLOWLY. THE #1 RADIAL MADE  
CONTACT WITH #4 GUSSET AND WHEN THE ANT  
WAS RELEASED FROM THIS POINT IT WOULD NOT  
DEPLOY TO THE UPRIGHT POSITION. TWO RADIALS  
(#4 & 5) DID COME OUT OF THEIR STOWAGE RECEPTACLE  
AND THE RESULTANT CONFIGURATION RESEMBLED  
THE "AS RECOVERED" CONFIGURATION.

NOTE: SEVERAL PHOTOS WERE TAKEN

START 0300Z MAY 27

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VHF ANTENNA (NO. 2) INSPECTION AND STOWAGE

Sheet 1 of 4

Following CM recovery, the No. 2 VHF antenna blade and whisker assemblies shall be inspected and then stowed to prevent ground-handling damage.

SAFETY

1. If a drogue or pilot parachute has failed to deploy, exercise extreme caution when working on the upper deck.
2. If one or both of the antennas/whiskers, the dye marker, or the flashing light has failed to deploy, use caution when working on the upper deck.
3. While working with the No. 2 antenna/whiskers, keep face away from the area immediately above and outboard of the assemblies.

PHOTOGRAPHIC REQUIREMENTS

Refer to procedure ①.

TOOLS AND EQUIPMENT

| Quantity | Nomenclature              |
|----------|---------------------------|
| 1 roll   | Electrical tape           |
| 2 ft     | Wire (sized as necessary) |

INSTRUCTIONS

Inspection - Antenna/Whiskers Deployed

1. Inspect blade and whisker assemblies for general condition.

NOTE

If visual inspection reveals partial deployment of either the blade or whiskers, obtain necessary photographs. Stow the whiskers (per instructions provided on sheet 3); then stow the antenna blade. (Refer to sheet 4.)

ANOMALLY

SEE REMARKS PAGE 214

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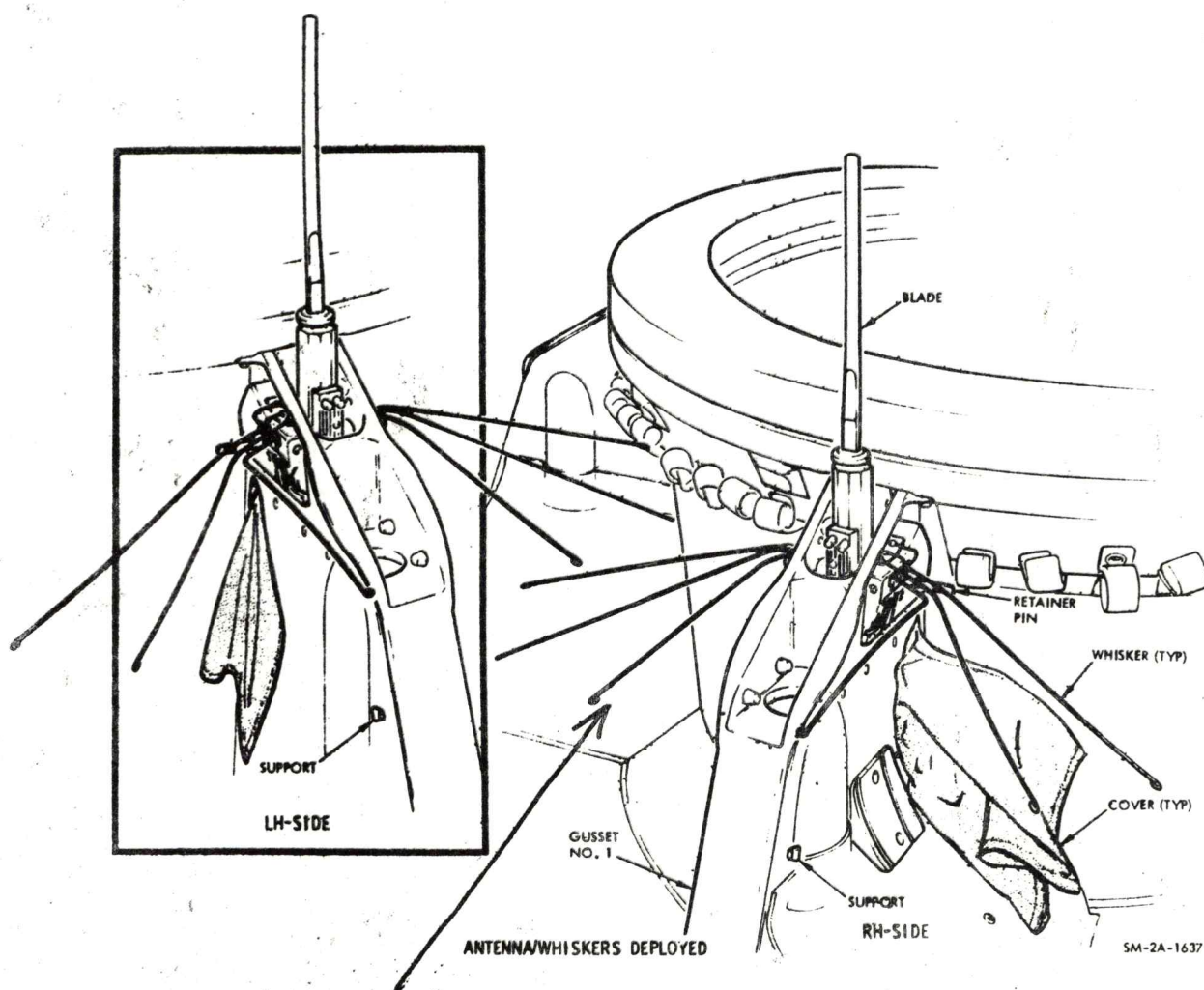
## VHF ANTENNA (NO. 2) INSPECTION AND STOWAGE

Sheet 2 of 4

INSTRUCTIONS

## WARNING

Exercise extreme caution when inspecting an antenna/whisker assembly which has failed to deploy.



THIS RADIAL DID  
NOT DEPLOY

232

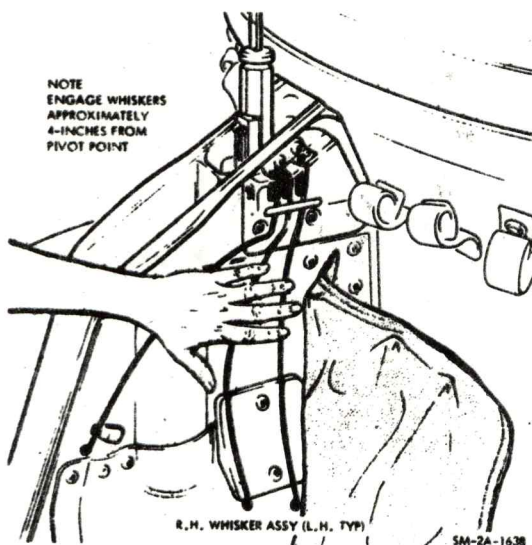
## VHF ANTENNA (NO. 2) INSPECTION AND STOWAGE

Sheet 3 of 4

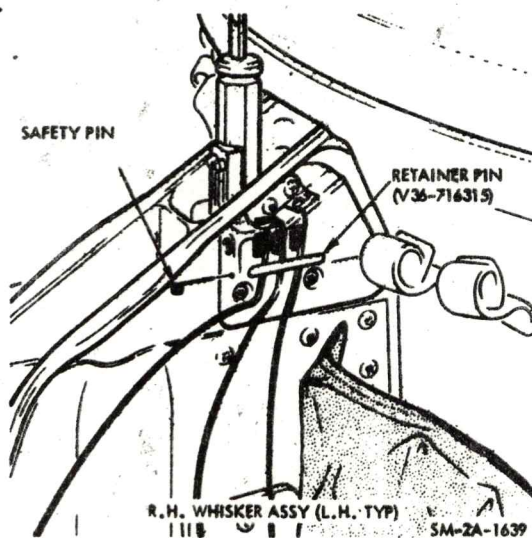
## STOWING ANTENNA BLADE/WHISKERS

## Stowing Whiskers

1. Place open hand against the whiskers and apply downward pressure.

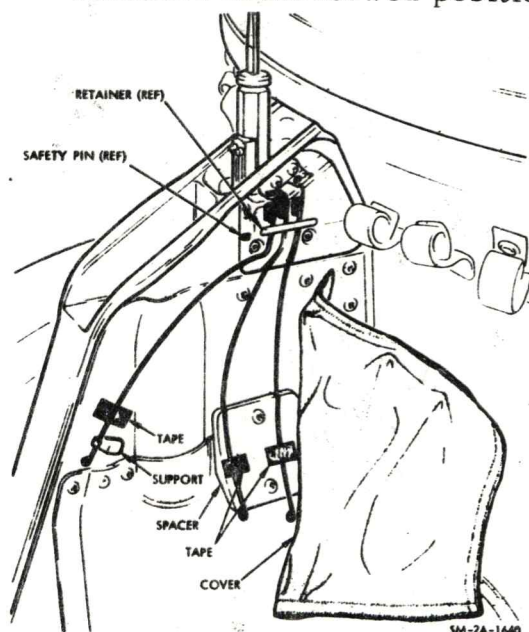


2. Position the V36-716315 retainer to the stowed position and insert the safety pin.

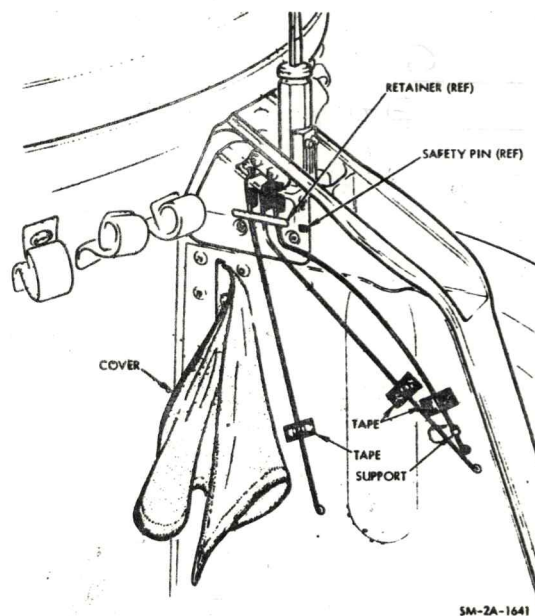


3. After securing the whisker assemblies, stow the individual whiskers as follows:

- a. Right whiskers. Stow and tape whiskers in the stowed position.



- b. Left whiskers. Stow and tape whiskers in the stowed position.





FINISH 0313Z MAY 27

SM2A-08-SC106

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VHF ANTENNA (NO. 2) INSPECTION AND STOWAGE

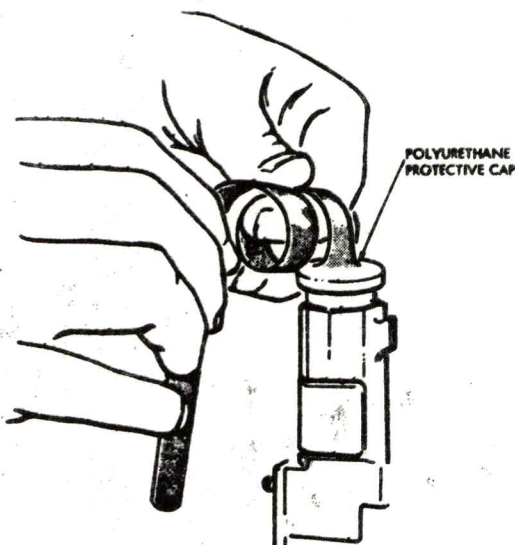
Sheet 4 of 4

STOWING/TAPING ANTENNA BLADE

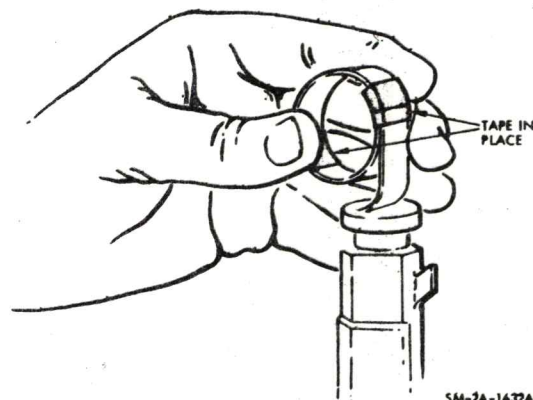
1. Grasp antenna blade between the thumb and index finger and coil the antenna.
3. Apply thumb pressure to retain coiled blade in the coiled position.

NOTE

When properly coiled, tape the blade in the coiled position.

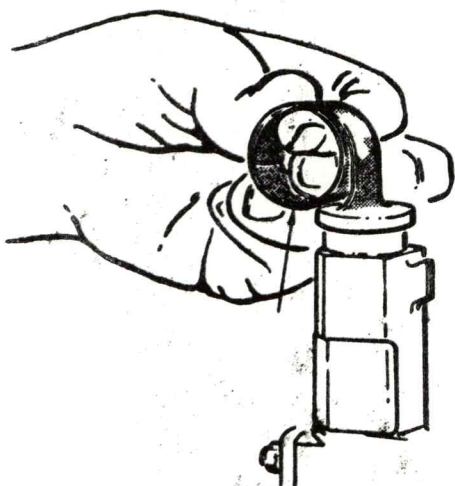


SM-2A-1629



SM-2A-1632A

2. Continue coiling until a complete circle is formed.



SM-2A-1630

PACKAGING REQUIREMENTS

Not applicable.

Remarks: RADIAL SD  
MARKED ON PAGE  
212 APPEARS TO BE  
HUNG UP ON ITS  
STOWAGE SUPPORT.



START 0315Z MAY 27

SM2A-08-SC106

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**FLASHING LIGHT INSPECTION AND STOWAGE**

Sheet 1 of 2

Following CM recovery, the flashing light shall be inspected and then stowed to prevent ground-handling damage.

**SAFETY**

1. If a drogue or pilot parachute has failed to deploy, exercise extreme caution when working on the upper deck.
2. If an antenna or the flashing light has failed to deploy, use caution when working on the upper deck.

**TOOLS AND EQUIPMENT**

| Quantity | Nomenclature |
|----------|--------------|
| 3 feet   | Nylon cord   |

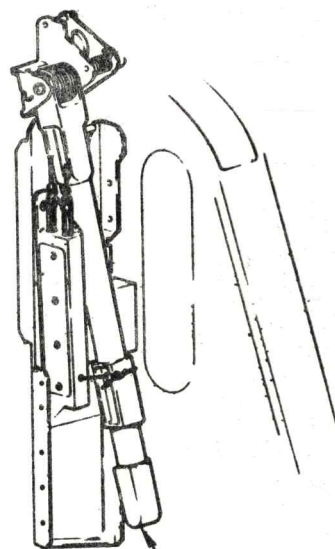
**PHOTOGRAPHIC REQUIREMENTS**

Refer to procedure (1).

**INSTRUCTIONS**

**WARNING**

- If the flashing light has not deployed, do not disturb.
- If the flashing light has malfunctioned in any way (partially deployed, hung-up, bent, etc.), do not disturb.



FLASHING LIGHT  
STOWED POSITION  
SM-2A-1593A

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FINISH 0316Z MAY 27

SM2A-08-SC106

18

FLASHING LIGHT INSPECTION AND STOWAGE

Sheet 2 of 2

1. Inspect flashing light for general condition.
2. When inspection is complete, manually place the flashing light in the stowed position. Utilize nylon cord to secure light in the stowed position. (Refer to sheet 1.)

PACKAGING REQUIREMENTS

Not applicable.

Remarks:

A-O K

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START 2200Z MAY 27

SM2A-08-SC106

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RCS ACCESS PANEL REMOVAL

Sheet 1 of 3

This procedure provides instructions for removing the access panels illustrated on sheet 2.

SAFETY

1. Observe standard safety precautions when entering RCS access areas. If a leak is noted, refer to procedure (A) RCS ANOMALY.
2. Explosive-operated valves are located behind the fuel, oxidizer, helium and umbilical access panels. Whether or not they have fired cannot be determined by visual inspection; therefore, it must be assumed that they are "live." Their firing would not cause injury or damage, per se; however, it could release propellant trapped in the lines.

PHOTOGRAPHIC REQUIREMENTS

Refer to procedure (1).

TOOLS AND EQUIPMENT

| Quantity | Nomenclature             |
|----------|--------------------------|
| 1        | Access panel removal kit |

INSTRUCTIONS

NOTE

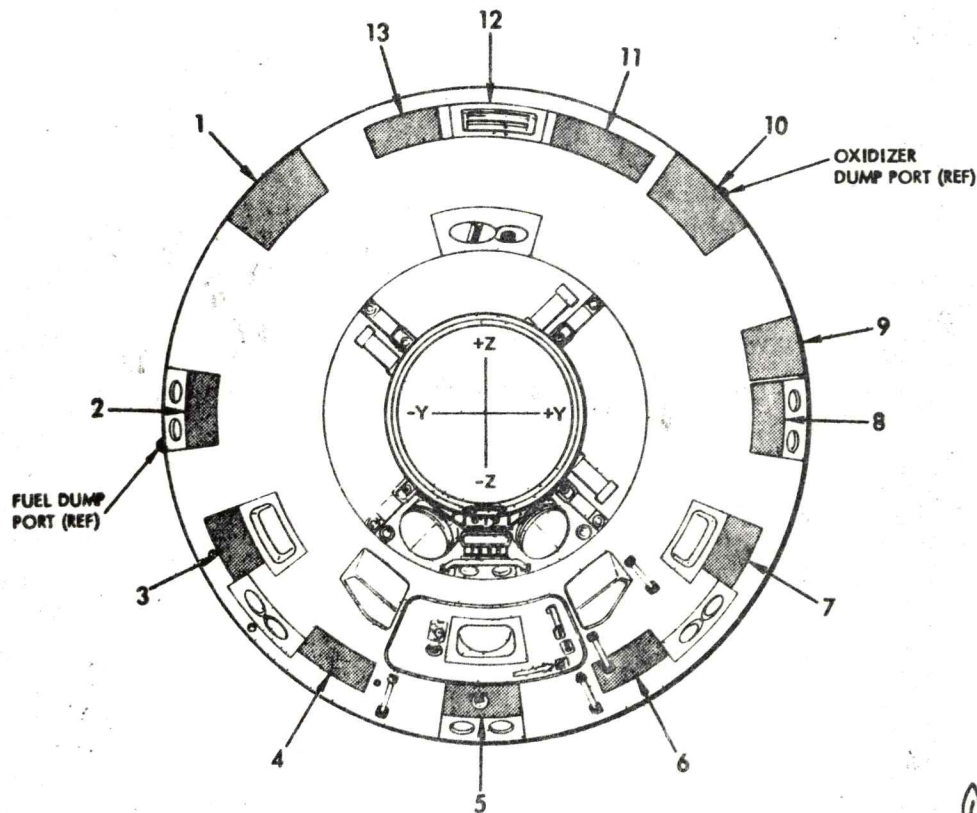
Prior to commencing ablator plug removal (drilling), verify all engine nozzles covered with tape to prevent an accumulation of chips/shavings.

1. Using a wire brush or screwdriver, scrape any charred area to locate ablator plugs.
2. Using a #32 drill, remove RTV compound from plug installation holes in each corner of panel.
3. Using pronged tool, remove as many plugs as possible.

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## RCS ACCESS PANEL REMOVAL

Sheet 2 of 3



| INDEX | PANEL   | BASIC PHOTO DES |
|-------|---|-----------------|
| 1     | FUEL SERVICING PANEL                                  | CE-10 ✓         |
| 2     | SYS 2 H <sub>2</sub> O SERVICING PANEL & -YAW ENGINES | CE-29 ✓         |
| 3     | CCW ROLL ENG & POTABLE WATER FILL VALVE               | CE-27           |
| 4     | CW ROLL ENGINES                                       | CE-25           |
| 5     | +PITCH ENGINES  | CE-23           |
| 6     | CCW ROLL ENGINES                                      | CE-21           |
| 7     | CW ROLL ENGINES                                       | CE-19           |
| 8     | SYS 1 H <sub>2</sub> O SERVICING PANEL & +YAW ENGINES | CE-17 ✓         |
| 9     | CM RCS CONTROL BOX (C19A1)                            | CE-16 ✓         |
| 10    | OXIDIZER SERVICING PANEL                              | CE-14 ✓         |
| 11    | UMBILICAL RH FEED THRU                                | CE-13 ✓         |
| 12    | UMBILICAL AREA  | CE-12           |
| 13    | UMBILICAL LH FEED THRU                                | CE-11 ✓         |

NOTE:  
↓

TWO CLOSEUP SHOTS  
OF MISTURB

SM-2A-1114J

Do not remove the following panels: Index 3, 4, 5, 6, 7, and 12.

Changed 9 April 1969

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RCS ACCESS PANEL/SEA WATER REMOVAL

Sheet 3 of 3

4. Remove remaining plugs with a pneumatic drill and 1/2-inch bit.

CAUTION

Care should be taken when drilling to prevent damage to panel attachment bolts under each plug.

5. Using torq-set screwdriver, remove all screws.
6. Insert 5-inch bolts into each corner hole (to facilitate loosening and handling) and remove panel.
7. Following removal of RCS access panels, sea water in the toroidal area shall be drained (e. g. siphoned) and the area refilled with fresh water and again drained. If time permits, the cycle should be repeated.

PACKAGING REQUIREMENTS

1. Place ablator plugs and screws in plastic bags; identify bags, and secure to plumbing within the applicable access area.

Remarks: BEHIND PANEL #1 MOISTURE  
DROPLETS NOTICED ON SYSTEM #1 FUEL  
TANK (LEFT HAND TANK). CLOSE UP PHOTOS  
TAKEN AND DROPLETS WERE WIPED  
UP WITH STERILE GAUZE AND PACKAGED.  
SOME DROPLETS ON PRESSURE VESSEL  
INBOARD OF TANK. (2100Z MAY 28)

NO SEA WATER IN TOROIDAL COMPT.

PANEL 13  
ONE PANEL SCREW HAD TO BE DRILLED  
OUT. ~~IT WAS ON PANEL 13~~

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# PARACHUTE AND FWD HEAT SHIELD INSPECTION

Sheet 1 of 2

This procedure provides instructions for inspecting and packaging the forward heat shield and its parachute, the drogue parachutes, pilot parachutes, and the main parachutes, in the event any of these items are recovered.

## SAFETY

1. If a drogue or pilot parachute has failed to deploy, remain out of line of fire of the parachute mortar and exercise extreme caution when working in the vicinity of the upper deck.
2. If one or both of the VHF antennas, the dye marker, or the flashing light has failed to deploy, use caution when working on the upper deck.
3. If the parachute on a recovered heat shield has failed to deploy, do not attempt to deploy or unpack the parachute on board the recovery vessel.
4. All unfired pyros shall be conspicuously identified (red flags).

## PHOTOGRAPHIC REQUIREMENTS

1. General photographic coverage as directed by NASA Team Leader.

## TOOLS AND EQUIPMENT

| Quantity | Nomenclature  |
|----------|---------------|
| 3        | Parachute bag |

## INSTRUCTIONS

### CAUTION

Verify that procedure (26) has been completed prior to accomplishing this procedure.

1. Inspect the forward heat shield for damage and evidence of recontact with the CM.

Remarks: NO APPARENT CONTACT - ~~REMAINING REMAINS~~

2. Inspect EVA handle and record any abnormal findings. Note degree of heat damage, sharpness of edges, and local effects to the ablator.

Remarks: ① TOP HAND RAIL - APPROX 10% MISSING (ALL ON +Z SIDE), EDGES SHARP AND JAGGED ② SIDE EVA RAIL IN GOOD SHAPE - ONE RL DISC CRACKED (TOP) BUT STILL INTACT - NO CONTAMINATION ③ DISC CRACKED ON TOP HAND RAIL +Z SIDE WITH LITTLE CONTAMINATION.

FINISH 2013 Z MAY 28

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PARACHUTE AND FWD HEAT SHIELD INSPECTION

Sheet 2 of 2

PACKAGING REQUIREMENTS

FORWARD HEAT SHIELD PLUS EXTRACTION CHUTE

NOTE

Attach appropriate RADIATION WARNING decals/strickers to shipping crate. (Refer to procedure (26).)

1. If intact, have ship's carpenter fabricate a crate suitable for shipping cover back to NR.
2. Should damage be extensive, package individual components in bags, or wrap with paper, and package in a cardboard or wooden box.

PARACHUTES ONE MAIN CHUTE RECOVERED

1. Package parachutes and attaching hardware within individual parachute recovery bags for return shipment.

NOTE 8  
SLIGHT ODOR OF AMMONIA WAS NOTICED IN CHUTE AREA AT ONE TIME. HOWEVER

NOTE  
CLOSE INVESTIGATION DID NOT REVEAL EXACT AREA OF CHUTE

- Parachutes should be protected from direct sunlight.
- Do not wash or dry parachutes.

Remarks: <sup>FWD</sup> CRACKS APPEAR IN THE HEAT SHIELD AS FOLLOWS (1) FROM THE CORNER OF (LEFT CORN) OF THE (-) PITCH ENG OPENING NEARLY TO THE TOP OF THE APEX (2) JUST TO THE RIGHT OF THE OPENING (3) 1/4 INCH TO THE RIGHT OF THE #4 GUSSET TOWER BOLT HOLE (4) 21 INCHES LEFT OF #1 GUSSET TOWER BOLT HOLE (5) 10 INCHES RIGHT OF #1 GUSSET TOWER BOLT HOLE (6) 11 INCHES LEFT OF #3 GUSSET TOWER BOLT HOLE.

GREATEST DAMAGE IS NEAR (-) PITCH ENGINE OPENING PROBABLY DUE TO WATER IMPACT.

1900Z MAY 31 - +2, TOP PORTION OF FORWARD HEAT SHIELD DAMAGED DURING OFF LOADING



# EQUIPMENT RETURN

ITEMS CIRCLED

IN ADDITION TO ASHUR LIST THE  
FOLLOWING ITEMS WERE ALSO RETURNED  
TO HOUSTON.

|                     |                  |
|---------------------|------------------|
| 18 mm Lens          | SEB 33100018-302 |
| Timer               | SEB 33100092-002 |
| FILTER              | 2012816 AK       |
| FILTER              | 2012808 AK       |
| FILTER              | SEB 33100031-003 |
| 16mm MOUNT AK7      | V36-753001       |
| SCISSOR             | SDB-42100115-702 |
| COAS FILTER         | 41297-70111      |
| 250 mm LENS         | SEB 33100032-241 |
| APOLLO TV COLOR SYS | SEB-16100977-301 |
| S/C TOOL KIT        | ? (TOOL MISSING) |

THE CREW GOT AWAY WITH SOME STUFF SO  
BE MY GUEST IN FIGURING OUT WHAT!

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# APOLLO SPACECRAFT HARDWARE UTILIZATION REQUEST

|                          |                                     |                        |
|--------------------------|-------------------------------------|------------------------|
| SPACECRAFT NUMBER<br>106 | SYSTEM(S) AFFECTED<br>Stowage Items | ASHUR NUMBER<br>106000 |
|--------------------------|-------------------------------------|------------------------|

POSE  
To specify the postflight disposition of stowage items on Spacecraft 106.

JUSTIFICATION  
Proper control and disposition of stowage items.

*George W. S. Abbey 5-6-69*  
George W. S. Abbey, PA

DESCRIPTION  
All items listed below shall be dispositioned after flight, in accordance with this ASHUR

1. The complete acceptance data package for these items being returned, either directly to MSC or via Downey, will be flown or hand-carried to Houston immediately after launch so as to arrive prior to or concurrent with the arrival of the hardware. Data packages shall be noted with the flown status and placed in individual folders according to CASHUR item numbers, and noted with item number, nomenclature, and P/N. All GAEC data packages for LM items appearing on the LM launch stowage lists but not being returned via this ASHUR for 106/LM-4 should be returned to MSC-Houston, bldg. 420, for release to the appropriate system manager or technical monitor for reference purposes. The data packages should be marked by item number as shown on the stowage lists, segregated from the items appearing on the ASHUR, and directed to attention: J. Thompson, PF3.
2. All items returned to Houston will be returned to bldg. 420, which will constitute a bonded receiving inspection area.
3. Hardware and the updated acceptance data packages for items not reflecting an interim disposition shall be returned to bldg. 420 receiving inspection bonded storage and, after quality inspection and program office accountability, shall be transferred directly to the central bonded storage area in bldg. 421. The hardware will remain in bldg. 421 until removal is authorized by a separate ASHUR.
4. Hardware, reflecting an interim disposition, and the updated acceptance data package shall be dispositioned as follows:

|   |                                  |                                 |   |  |
|---|----------------------------------|---------------------------------|---|--|
| TO BE ACCOMPLISHED BY:  |                                  |                                 | CONTACT FOR STATUS<br>Elinor Walters, X3242   |  |
| <input checked="" type="checkbox"/> NR  | <input type="checkbox"/> KSC MAB | <input type="checkbox"/> VENDOR | FINAL DISPOSITION OF HARDWARE<br>As specified   |  |
| <input type="checkbox"/> GAEC   | <input type="checkbox"/> MSC     | <input type="checkbox"/> OTHER  |   |  |
| LOCATION OF WORK ACTIVITY:<br>Cape Kennedy, Florida<br>Houston, Texas      Downey, California |                                  |                                 | TYPE OF ACTION  |  |
| REQUESTED BY<br>Elinor Walters  | ORGANIZATION<br>PP3              | DATE                            | <input type="checkbox"/> POSTFLIGHT TEST REQUEST  |  |
| REF ANALYST<br><i>Stanley H. Jandt</i><br><i>W. S. R. ext-1</i>                               |                                  |                                 | <input type="checkbox"/> FLIGHT REUSE REQUEST   |  |
|   |                                  |                                 | <input type="checkbox"/> DISPOSITION REQUEST  |  |
| ASHUR APPROVED<br><i>Ronald D. Dinkins</i>  |                                  | DATE<br>5/5/69                  | ASHUR DISAPPROVED   |  |
|   |                                  |                                 | <div style="border: 2px solid black; border-radius: 50%; padding: 10px; display: inline-block;">                 243             </div> |  |
|   |                                  |                                 | SHEET 1 OF 3  |  |



# **APOLLO SPACECRAFT HARDWARE UTILIZATION REQUEST (Cont'd)**

|                           |   |                            |
|---------------------------|---|----------------------------|
| CECRAFT NUMBER<br><br>106 | SYSTEM(S) AFFECTED<br><br>Stowage Items | ASHUR NUMBER<br><br>106000 |
| MSC TPS NUMBER            | CONTRACTOR WORK DOCUMENT NUMBER         | PHOTOGRAPH NUMBER          |

U- The equipment so noted shall be removed from the spacecraft onboard the recovery ship and returned to MSC with the first courier(s) leaving the recovery area. This hardware and the updated acceptance data package for items reflecting an interim disposition shall be released from bldg. 420 by authority of a duly executed TPS for accomplishment of the activity shown on this consolidated ASHUR. To minimize the delay in releasing this hardware and, in particular, those items which contain data (cameras, film packs, tape cartridges, etc.), the TPS should be written, signed, and available in bldg. 420, before the equipment arrives. This hardware, upon completion of this activity, will be returned to bldg. 421 for bonded storage.

R- The equipment so noted shall be removed as indicated and returned to MSC as noted. Where a courier is indicated, it will be handled in a routine manner and by the courier assigned by the recovery team leader to return routine hardware. This equipment will be delivered to bldg. 420 by courier. After being inventoried, the equipment will be dispatched by receiving inspection to the central bonded storage area in bldg. 421. Unless interim disposition is noted.

5. All equipment receiving interim disposition by the consolidated ASHUR, as well as the hardware going into bldg. 421 bonded storage immediately, should be maintained in postflight status and not be downgraded.

Items marked for interim disposition on this ASHUR will not require an additional ASHUR for accomplishment of the original intent as identified on the consolidated ASHUR. However, the TPS should be approved by NC3 prior to release to individuals.

All items, including those receiving interim disposition dispositioned per this ASHUR that incur inflight anomalies, or are in discrepant condition upon receipt at bldg. 420, will be held pending investigation of the anomaly/discrepancy. This will be accomplished by initiation and subsequent approval of a second ASHUR.

## 6. Special recovery handling instructions:

a. This item will be removed onboard the recovery ship by the recovery team leader and returned to MSC for debriefing with interim disposition to J.O'Neill, CF (Item A0114 - A0114.23)

b. These items should not be exposed to extreme temperatures or magnetic fields. (Items A0127 and A0128)

c. Do not open the medical kit. Release to the medical examiner onboard the recovery ship. (Item B0100) Return to Bldg. 421 immediately after inspection by medical personnel.

d. These items are to be packaged and returned with the pressure garment assembly (PGA) to MSC. (Items B0105, B0105.1, B0106, B0107, B0109, B0112, B0121, B0200, B0201, B0202, B0203, B0208, E0200.1, E0200.2. )

e. Food containers should be removed with the contents remaining enclosed and returned with the food.

|                            |      |                 |
|----------------------------|------|-----------------|
| SIGNATURE OF ASHUR CONTACT | DATE | SHEET 2<br>OF 3 |
|----------------------------|------|-----------------|

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# APOLLO SPACECRAFT HARDWARE UTILIZATION REQUEST (Cont'd)

|                          |                                     |                       |
|--------------------------|-------------------------------------|-----------------------|
| SPACECRAFT NUMBER<br>106 | SYSTEM(S) AFFECTED<br>Stowage Items | ASMR NUMBER<br>106000 |
| MSC TPS NUMBER           | CONTRACTOR WORK DOCUMENT NUMBER     | PHOTOGRAPH NUMBER     |

- f. This dosimeter should arrive concurrent with the film. (Item D0101)
- g. The CO<sub>2</sub> absorbers will be removed from the spacecraft, sealed in plastic bags, placed in the special container, and returned with the spacecraft to Downey for release to Aerojet, Von Carmen Research Center, Azusa, California (Item 00327) for postflight testing. Immediately after postflight testing, Aerojet should return the absorbers to NR-Downey for 106 bonded storage.
- h. Do not open the DSEA. The tapes should remain in the DSEA. The DSEA should not be exposed to extremes of temperatures or humidity and should not come in contact with magnetic fields. (Item 03005)
- i. Do not open the film pack. Film pack should not be exposed to temperature extremes. (Item KO400)
- j. The DSE tapes are to be left in the recorder. (Item V-I)

|                           |      |                |
|---------------------------|------|----------------|
| SIGNATURE OF ASMR CONTACT | DATE | SHEET <u>3</u> |
|                           |      | OF <u>3</u>    |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO.                          | NOMENCLATURE                       | PART NUMBER     | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED |                           |                          |   |               |                          |                | Interim DISPOSITION OF HARDWARE |  |
|-----------------------------------|------------------------------------|-----------------|------------------|------------------|---------------------------------|---------------------------|--------------------------|---|---------------|--------------------------|----------------|---------------------------------|--|
|                                   |                                    |                 |                  |                  | RETURN TO DISC VIA CARRIER      | RETURN TO DISC VIA BOMMEY | RETAINED WITH SPACECRAFT | CARRIER DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE | PURPOSE       | RETURN TO                |                |                                 |  |
| Section I. Stowed Operational GFE |                                    |                 |                  |                  |                                 |                           |                          |   |               |                          |                |                                 |  |
| A0100                             | CAMERA, 16MM DATA ACQUISITION      | SEB33100100-201 | 1 1              |                  | X                               | U                         |                          |   | E. Edmonds    | Data Verification        | J. Taylor CF32 |                                 |  |
| A0101                             | MAGAZINE, 16MM DATA ACQUISITION    | SEB33100125-205 | 12 12            |                  | X                               | U                         |                          |   | E. Edmonds    | Data Reduction           | J. Taylor CF32 |                                 |  |
| A0101.                            | MAGAZINE, 16MM DATA ACQUISITION    | SEB33100125-205 | 6 6              |                  | X                               | U                         |                          |   | E. Edmonds    | Data Reduction           | J. Taylor CF32 |                                 |  |
| A0102                             | LENS, 18MM                         | SEB33100023-204 | 1 1              |                  |                                 |                           | X                        |   |               |                          |                |                                 |  |
| A0103                             | LENS, 75MM                         | SEB33100078-202 | 1 1              |                  |                                 |                           | X                        |   |               |                          |                |                                 |  |
| A0104                             | CABLE POWER DAC                    | SEB33100038-301 | 1                |                  |                                 |                           | X                        |   |               |                          |                |                                 |  |
| A0105                             | LENS, 5MM WITH COVER               | SEB33100056-206 | 1 1              |                  |                                 |                           | X                        |   |               |                          |                |                                 |  |
| A0106                             | MIRROR, RIGHT ANGLE                | SEB33100051-204 | 1                |                  |                                 |                           | X                        |   |               |                          |                |                                 |  |
| A0107                             | CAMERA, 70MM ELECTRIC HASSELBLAD   | SEB33100102-204 | 1 1              |                  | X                               | U                         |                          |   | E. Edmonds    | Data Verification        | J. Taylor CF32 |                                 |  |
| A0108                             | MAGAZINE, LUNAR SURFACE HASSELBLAD | SEB33100082-205 | 6 6              |                  | X                               | U                         |                          |   | E. Edmonds    | Data Reduction           | J. Taylor CF32 |                                 |  |
| A0108.                            | " " "                              | SEB33100082-205 | 3 3              |                  | X                               | U                         |                          |   | E. Edmonds    | Data Reduction           | J. Taylor CF32 |                                 |  |
| A0110                             | FILTER, PHOTAR-2A                  | SEB33100050-206 | 1                |                  |                                 |                           | X                        |   |               |                          |                |                                 |  |
| A0112                             | KIT, PILOTS PREFERENCE             | SEB12100018-202 | 3                |                  |                                 |                           |                          |   | Astronauts    | Personal                 | Flight Crew    |                                 |  |
| A0113                             | TAPE                               | SEB12100050-201 | 1                |                  |                                 |                           | X                        |   |               |                          |                |                                 |  |
| A0114                             | FILE, FLIGHT DATA                  | SKB321CC079     | 1 1              |                  | X                               | U                         |                          |   | E. Edmonds 6A | For Astronaut Debriefing | J. O'Neill CF  |                                 |  |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM<br>NO.        | NOMENCLATURE                     | PART NUMBER                | QUANTITY<br>PER<br>S/C | REMOVAL<br>LOCATION | REMOVED ON<br>CARRIER AND<br>PACKAGED | RETURN TO<br>MSC VIA<br>COURIER | RETURN TO<br>MSC VIA<br>DOWNNEY | RETAINED WITH<br>SPACECRAFT | COURIER<br>DISPOSITION OF<br>MESSAGE/LOCATION<br>RECIPIENT<br>SEE NOTE: | Interim DISPOSITION<br>OF HARDWARE |           |
|--------------------|----------------------------------|----------------------------|------------------------|---------------------|---------------------------------------|---------------------------------|---------------------------------|-----------------------------|---|------------------------------------|-----------|
|                    |                                  |                            |                        |                     |                                       |                                 |                                 |                             |   | PURPOSE                            | RETURN TO |
| <del>AO114.1</del> | <del>CHECKLIST, LAUNCH LOT</del> | <del>SKB32100079-303</del> | <del>1</del>           |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.2            | CHECKLIST, ENTRY                 | SKB32100079-305            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.3            | CHECKLIST CMP                    | SKB32100079-301            | 1 0                    |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.4            | CHECKLIST, LMP                   | SKB32100079-302            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.5            | PLAN, FLIGHT                     | SKB32100079-350            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.6            | PLANS, ALTERNATE FLIGHTS         | SKB32100079-351            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.7            | MAPS, LUNAR IMK(CSM)             | SKB32100079-322            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.8            | MAPS + PHOTOS, EARTH<br>IMK      | SKB32100079-320            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.9            | DATA, CSM SYSTEMS                | SKB32100079-340            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.10           | PROCEDURES, CSM<br>MALFUNCTION   | SKB32100079-341            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.11           | RENDEZVOUS, CSM                  | SKB32100079-352            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.12           | LOG, CSM CREW                    | SKB32100079-331            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |
| AO114.13           | UPDATES, CSM                     | SKB32100079-330            | 1                      |                     |                                       |                                 |                                 |                             |   | 6A                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                | PART NUMBER                | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO MSC VIA CARRIER | RETURN TO MSC VIA BOAT | RETAINED WITH SPACECRAFT | CARRIER DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE | Interim DISPOSITION OF HARDWARE |           |
|----------|-----------------------------|----------------------------|------------------|------------------|---------------------------------|---------------------------|------------------------|--------------------------|---|---------------------------------|-----------|
|          |                             |                            |                  |                  |                                 |                           |                        |                          |   | PURPOSE                         | RETURN TO |
| A0114.14 | MAP, ORBITAL                | SKB32100058-201            | 1 ?              |                  |                                 |                           |                        |                          |   | 6A                              |           |
| A0114.15 | RENDEZVOUS, IM              | SKB32100079-390            | 1 (              |                  |                                 |                           |                        |                          |   | 6A                              |           |
| A0114.16 | CHART, TARGET OF OPP        | SKB32100097-301            | 2 ?              |                  |                                 |                           |                        |                          |   | 6A                              |           |
| A0114.17 | PHOTOCHART, LUNAR ORB (CSM) | SKB32100079-321            | 1 (              |                  |                                 |                           |                        |                          |   | 6A                              |           |
| A0114.18 | MAP, LUNAR LANDMARK (LM)    | <del>SKB32100079-375</del> | <del>1</del>     |                  |                                 |                           |                        |                          |   | 6A                              |           |
| A0114.19 | SYSTEMS ACT, C/L, IM        | SKB32100079-360            | 2 2              |                  |                                 |                           |                        |                          |   | 6A                              |           |
| A0114.20 | ALT. & CONTINGENCY C/L, CSM | SKB32100079-304            | 1 (              |                  |                                 |                           |                        |                          |   | 6A                              |           |
| A0114.21 | ABORT + RESCUE RENDEZVOUS   | SKB32100079-391            | 1 (              |                  |                                 |                           |                        |                          |   | 6A                              |           |
| A0114.22 | LUNAR ORB PHOTO             | SKB33100100-207            | 1 (              |                  |                                 |                           |                        |                          |   |                                 |           |
| A0115    | EXERCISER IN-FLIGHT         | SEB33100186-204            | 1                |                  |                                 |                           | X                      |                          |   |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106 |   |                 |                  |                  |                                 |                          |                          |  |               |         |                   |                                 |  |
|---|---|-----------------|------------------|------------------|---------------------------------|--------------------------|--------------------------|--|---------------|---------|-------------------|---------------------------------|--|
| ITEM NO.  | NOMENCLATURE                              | PART NUMBER     | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED |                          |                          |  |               |         |                   | Interim DISPOSITION OF HARDWARE |  |
|   |   |                 |                  |                  | RETURN TO MSC VIA CARRIER       | RETURN TO MSC VIA BOMBEY | RETAINED WITH SPACECRAFT | COURTIER DISPOSITION BY RECIPIENT/LOCATION | REMARKS       | PURPOSE | RETURN TO         |                                 |  |
| A0117   | COVER, METER                              | SEB33100063-301 | 1                |                  |                                 |                          | X                        |  |               |         |                   |                                 |  |
| A0118   | COVER, METER                              | SEB33100063-302 | 1                |                  |                                 |                          | X                        |  |               |         |                   |                                 |  |
| A0119   | SPOTMETER, AUTO .1 DEGREE                 | SEB33100104-201 | 1                |                  | X                               | U                        |                          |  | E. Edmonds    |         | Data Verification | J. Taylor CF32                  |  |
| A0122   | TIMER, INTERVAL-2 SPEED                   | SEB33100092-301 | 1                |                  |                                 |                          | X                        |  |               |         |                   |                                 |  |
| A0125   | GLARESHIELD, FLOODLITE                    | SEB32100095-305 | 1                |                  |                                 |                          | X                        |  |               |         |                   |                                 |  |
| A0127   | RECORDER, VOICE (WITH CASSETTE AND BATTs) | SEB33100262-301 | 1                |                  | X                               | U                        |                          |  | E. Edmonds 6B |         | Data Reduction    | J. Taylor CF32                  |  |
| A0128   | TAPE, CASSETTE                            | SEB33100263-301 | 4                |                  | X                               | U                        |                          |  | E. Edmonds 6B |         | Data Reduction    | J. Taylor CF32                  |  |
| A0129   | BATTERY, VOICE RECORDER                   | SEB33100264-301 | 4                |                  |                                 |                          | X                        |  |               |         |                   |                                 |  |
| A0130   | MONOCULAR, 10X40                          | SEB12100078-302 | 1                |                  | X                               | R                        |                          |  | D. Stullken   |         |                   |                                 |  |
| A0131   | INTERVALOMETER, HASSELBLAD ELEC. CAMERA   | SEB33100043-301 | 1                |                  |                                 |                          | X                        |  |               |         |                   |                                 |  |
| A0132   | LENS, 250 MM                              | SEB33100032-201 | 1                |                  |                                 |                          | X                        |  |               |         |                   |                                 |  |
| A0134   | FUSE, 16MM CAMERA (SPARE)                 | SEB33100266-301 | 1                |                  |                                 |                          | X                        |  |               |         |                   |                                 |  |
| A0137   | CLIP, FLT. DATA FILE                      | SEB32100094-301 | 6                |                  |                                 |                          | X                        |  |               |         |                   |                                 |  |
| A0138   | DATA CARD K17                             | SEB32100025-302 | 1                |                  |                                 |                          |                          |  |               |         |                   |                                 |  |
| A0140   | " " "                                     | SEB33100100-207 | 1                |                  |                                 |                          |                          |  |               |         |                   |                                 |  |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                      | PART NUMBER     | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO SSC VIA CARRIER | RETURN TO SSC VIA DOONEY | RETAINED WITH SPACECRAFT | CARRIER DISPOSITION OF HARDWARE RECEIPT/LOCATION SEE NOTE | Interim DISPOSITION OF HARDWARE |                  |
|----------|-----------------------------------|-----------------|------------------|------------------|---------------------------------|---------------------------|--------------------------|--------------------------|---|---------------------------------|------------------|
|          |                                   |                 |                  |                  |                                 |                           |                          |                          |   | PURPOSE                         | RETURN TO        |
| 21000    | 16mm Cam                          | SEB33100100-207 | 1                |                  |                                 |                           |                          |                          |   |                                 |                  |
| A1007    | KIT, PILOTS PREFERENCE (PPK)      | SEB12100018-202 | 2                |                  |                                 |                           |                          |                          | Astronauts  | Personal                        | Flight Crew      |
| A1018    | CAMERA 70MM ELECTRIC              | SEB33100102-203 | 1                |                  | X                               | U                         |                          |                          | E. Edmonds  | Data verification               | J. Taylor, CF2   |
| A1010    | KIT, MEDICAL ACCESSORIES          | SEB42100082-209 | 1                |                  | X                               | R                         |                          |                          | Med. Personnel  | Removal of Narcotics.           | T. Gallagher EC7 |
| B0101    | KIT, SURVIVAL RUCKSACK No. 1      | SEB40100151-202 | 1                |                  |                                 |                           | X                        |                          |   |                                 |                  |
| B0102    | RUCKSACK, SURVIVAL No. 2          | SEB40100152-202 | 1                |                  |                                 |                           | X                        |                          |   |                                 |                  |
| B0103    | DISPENSER, TISSUE                 | SEB42100086-203 | 7                |                  |                                 |                           | X                        |                          |   |                                 |                  |
| B0104    | ASSY. C/M UTILITY TOWEL RED       | SEB42100079-204 | 1                |                  |                                 |                           | X                        |                          |   | Cleaning                        | T. Gallagher EC7 |
| B0104    | 2 ASSY. C/M UTILITY TOWEL (WHITE) | SEB42100079-205 | 1                |                  |                                 |                           | X                        |                          |   | Cleaning                        | T. Gallagher EC7 |
| B0104    | 3 ASSY. C/M UTILITY TOWEL (BLUE)  | SEB42100079-206 | 1                |                  |                                 |                           | X                        |                          |   | Cleaning                        | T. Gallagher EC7 |
| B0105    | BAG, HELMET STOWAGE IN-FLIGHT     | SEB13100077-206 | 3                | ASTRODS HAVE ONE | X                               | R                         |                          |                          | D. Stullken 6D  |                                 |                  |
| B0105    | 1 BAG ACCESSORY                   | SEB13100114-701 | 3                | COULD NOT LOCATE | X                               | R                         |                          |                          | D. Stullken 6D  |                                 |                  |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE           | PART NUMBER         | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND RETURN TO BSC VIA |          |                   |                      |                          |                         |          | Interim DISPOSITION OF HARDWARE |                 |
|----------|------------------------|---------------------|------------------|------------------|--|----------|-------------------|----------------------|--------------------------|-------------------------|----------|---------------------------------|-----------------|
|          |                        |                     |                  |                  | PACKAGED                                 | RECEIVED | RETURN TO BSC VIA | RETURN TO BSC / DOCK | RETAINED WITH SPACECRAFT | DISPOSITION OF HARDWARE | RECEIVED | PURPOSE                         | RETURN TO       |
| BO106    | GARMENT, CONSTANT WEAR | SEB13100061-208     | 3 3              |                  | X  | R        |                   |                      |                          | D. Stullken 6D          |          | Cleaning                        | R. Marak EC7    |
| BO107    | GARMENT, LIQUID COOLED | A6L-400000-09       | 1 1              |                  | X  | R        |                   |                      |                          | D. Stullken 6D          |          | Cleaning                        | J. McBarron EC9 |
| BO109    | KIT, EMU MAINTENANCE   | A6L-503000-05       | 1 1              |                  | X  | R        |                   |                      |                          | D. Stullken 6D          |          |                                 |                 |
| BO110    | DISPENSER, WATER       | 14-0431             | 1                |                  |  |          |                   | X                    |                          |                         |          |                                 |                 |
| BO111.1  | MASK AND HOSE OXYGEN   | 651-400-07          | 2                |                  |  |          |                   | X                    |                          |                         |          |                                 |                 |
| BO111.2  | MASK AND HOSE, OXYGEN  | 651-400-08          | 1                |                  |  |          |                   | X                    |                          |                         |          |                                 |                 |
| BO112    | COVERALL, INFLIGHT     | BW-1043-003 or -004 | 3 3              |                  | X  | R        |                   |                      |                          | D. Stullken 6D          |          | Cleaning                        | R. Marak EC7    |
| BO112.1  | ASSY. JACKET           | BW-1043-06 or -07   | 3 3              |                  |  |          |                   |                      |                          |                         | 6D       |                                 |                 |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                           | PART NUMBER          | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO SEC VIA COURIER | RETURN TO SEC VIA BOMBEY | RETAINED WITH SPACECRAFT | COURIER DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE | Interim DISPOSITION OF HARDWARE |           |
|----------|--|----------------------|------------------|------------------|---------------------------------|---------------------------|--------------------------|--------------------------|---|---------------------------------|-----------|
|          |  |                      |                  |                  |                                 |                           |                          |                          |   | PURPOSE                         | RETURN TO |
| B0112.2  | 2 ASSY. TROUSER                        | BW-1043-02           | 3 3              |                  |                                 |                           |                          |                          |   | 6D                              |           |
| B0112.3  | 3 ASSY. BOOT R.H.                      | BW-1043-03           | 3 3              |                  |                                 |                           |                          |                          |   | 6D                              |           |
| B0112.4  | 4 ASSY. BOOT L. H.                     | BW-1043-04           | 3 3              |                  |                                 |                           |                          |                          |   | 6D                              |           |
| B0113    | SUBSYSTEM, FECAL CONTAINMENT           | A6L-501000-02 or -03 | 3                |                  |                                 | X                         |                          |                          |   |                                 |           |
| B0115    | PENLIGHTS                              | ACR-FA-5             | 5                |                  |                                 | X                         |                          |                          |   |                                 |           |
| B0116    | CLAMP, UCTA                            | 14-149-01            | 3                |                  |                                 | X                         |                          |                          |   |                                 |           |
| B0117    | SYSTEM, URINE TRANSFER                 | 14-0133-01           | 3                |                  |                                 | X                         |                          |                          |   |                                 |           |
| B0118    | ASSY, URINE RECIEVER (SPARE)           | 14-02051             | 1                |                  |                                 | X                         |                          |                          |   |                                 |           |
| B0120.1  | STOWAGE BAG ASSY. ROLL-ON CUFF (RED)   | SEB42100112-201      | 1                |                  |                                 | X                         |                          |                          |   |                                 |           |
| B0120.2  | STOWAGE BAG ASSY. ROLL-ON CUFF (WHITE) | SEB42100112-202      | 1                |                  |                                 | X                         |                          |                          |   |                                 |           |
| B0120.3  | STOWAGE BAG ASSY. ROLL-ON CUFF (BLUE)  | SEB42100112-203      | 1                |                  |                                 | X                         |                          |                          |   |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                               | PART NUMBER          | QUANTITY PER S/C | REMOVAL LOCATION | <div> <div>REMOVED ON CARRIER AND PACKAGED</div> <div>RETURN TO MSC VIA CARRIER</div> <div>RETURN TO MSC VIA DOONEY</div> <div>RETAINED WITH SPACECRAFT</div> <div>CARRIER DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE</div> </div> |   |  |   |  |  |  | Interim DISPOSITION OF HARDWARE |           |
|----------|--|----------------------|------------------|------------------|---|---|--|---|--|--|--|---------------------------------|-----------|
|          |  |                      |                  |                  |   |   |  |   |  |  |  | PURPOSE                         | RETURN TO |
| B0121    | SHIELD, HELMET PROTECTIVE                  | A7L-502003-02        | 1                |                  | X   | P |  |   |  |  |  | D. Stullken 6D                  |           |
| B0130    | PADS, HEADREST                             | BW-1052-001          | 3                |                  |   |   |  | X |  |  |  |                                 |           |
| B0132    | HEEL RESTRAINT (PR.)                       | BW-1053-001 and -002 | 3                |                  |   |   |  | X |  |  |  |                                 |           |
| B0134    | ADAPTER, UCTA TRANSFER                     | SEB12100083-301      | 1                |                  |   |   |  | X |  |  |  |                                 |           |
| B0135    | ADAPTER, CWG ELECTRICAL                    | A6L-507000-02        | 3                |                  |   |   |  | X |  |  |  |                                 |           |
| B0137    | EYEPATCH                                   | SEB12100084-301      | 1                |                  |   |   |  | X |  |  |  |                                 |           |
| B0138    | PROTECTIVE COVER, PGA ELECTRICAL CONNECTOR | A7L-101118-01        | 3                |                  |   |   |  | X |  |  |  |                                 |           |
| CO100    | ITEMS, FOOD AND HYGIENE                    | 14-0122              | 1                |                  | X   | 1 |  |   |  |  |  | D. Stullken 6E                  |           |
| CO100.1  | SPOONS, PKG.                               | SEB39104130          | 1                |                  |   |   |  |   |  |  |  |                                 |           |
| CO100.2  | FOOD, WET PKG.                             | SEB39104128          | TBD              |                  |   |   |  |   |  |  |  |                                 |           |
| CO101    | PACKAGE, FOOD                              | 14-0123              | 1                |                  | X   | 1 |  |   |  |  |  | D. Stullken 6E                  |           |
| CO101.1  | VALVE ADAPTER, CONTING FEEDING             | 14-0139              | 1                |                  |   |   |  |   |  |  |  |                                 |           |
| CO101.2  | BOUCH, FOOD RETAINER                       | SEB13100131-302      | 3                |                  |   |   |  |   |  |  |  |                                 |           |
| CO101.3  | FOOD, WET PKG.                             | SEB39104128          | TBD              |                  |   |   |  |   |  |  |  |                                 |           |
| CO101.4  | FRUIT, DRIED                               | SEB39104302          | TBD              |                  |   |   |  |   |  |  |  |                                 |           |
| CO101.5  | BEVERAGE, PKG EXTRA                        | 14-02130             | TBD              |                  |   |   |  |   |  |  |  |                                 |           |

ALL SENT TO HOU.

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                 | PART NUMBER     | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED |                          |                          |                                 |             |          |                | Interim DISPOSITION OF HARDWARE |  |
|----------|------------------------------|-----------------|------------------|------------------|---------------------------------|--------------------------|--------------------------|---------------------------------|-------------|----------|----------------|---------------------------------|--|
|          |                              |                 |                  |                  | RETURN TO SSC VIA CARRIER       | RETURN TO SSC VIA BOPNET | RETAINED WITH SPACECRAFT | Courier DISPOSITION OF HARDWARE | REQUIREMENT | SEE NOTE | PURPOSE        | RETURN TO                       |  |
| C0106    | FOOD, WET PKG                | SEB39104128     | TBD              | ALL SENT TO HOU. | X                               | R                        |                          |                                 |             |          | D. Stullken 6E |                                 |  |
| C0107    | FOOD, TUBE                   | SEB39104303     | 2                |                  | X                               | R                        |                          |                                 |             |          | D. Stullken 6E |                                 |  |
| C0108    | FRUIT, DRIED                 | SEB39104302     | TBD              |                  | X                               | R                        |                          |                                 |             |          | D. Stullken 6E |                                 |  |
| C0109    | BEVERAGE, PKG- EXTRA         | 14-02130        | TBD              |                  | X                               | R                        |                          |                                 |             |          | D. Stullken 6E |                                 |  |
| C0100    | BREAD                        |                 |                  |                  |                                 |                          |                          |                                 |             |          |                |                                 |  |
| D0100    | METER, RADIATION SURVEY      | RFB-OP-4-2-001  | 1                |                  |                                 |                          | X                        |                                 |             |          |                |                                 |  |
| D0101    | DOSIMETER, PASSIVE RADIATION | SEB12100045-303 | 1                |                  | X                               | U                        |                          |                                 |             |          | E. Edmonds 6F  | Data Reduction W. Davis TG5     |  |
| E0104    | HEADSET, LIGHTWEIGHT         | SLB16100920-303 | 3                |                  |                                 |                          | X                        |                                 |             |          |                |                                 |  |
| E0106    | TV SUBSYSTEM, CM             | SMZ16100595-305 | 1                |                  |                                 |                          | X                        |                                 |             |          |                |                                 |  |
| E0106.1  | TV CAMERA, APOLLO            | 1976347-501     | 1                |                  |                                 |                          | X                        |                                 |             |          |                |                                 |  |
| E0106.2  | LENS, 100MM TV               | 1769492-1       | 1                |                  |                                 |                          | X                        |                                 |             |          |                |                                 |  |
| E0106.4  | CABLE, 12FT. TV              | SEB16100612-201 | 1                |                  |                                 |                          | X                        |                                 |             |          |                |                                 |  |
| E0106.5  | LENS, WIDE ANGLE 80 DEG. TV  | 1978336-501     | 1                |                  |                                 |                          | X                        |                                 |             |          |                |                                 |  |
| E0106.6  | RINGSIGHT, TV CAMERA         | SEB33100031-204 | 1                |                  |                                 |                          | X                        |                                 |             |          |                |                                 |  |
| E0106.7  | FILTER, VARIABLE DENSITY     | 2263025-501     | 1                |                  |                                 |                          | X                        |                                 |             |          |                |                                 |  |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                          | PART NUMBER  | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO SSC VIA CARRIER | RETURN TO SSC VIA DOONEY | RETAINED WITH SPACECRAFT | CARRIER DISPOSITION OF HARDWARE (OCCUPANT/LOCATION SEE NOTE) | Interim DISPOSITION OF HARDWARE |           |
|----------|---------------------------------------|--------------|------------------|------------------|---------------------------------|---------------------------|--------------------------|--------------------------|--|---------------------------------|-----------|
|          |                                       |              |                  |                  |                                 |                           |                          |                          |  | PURPOSE                         | RETURN TO |
| E0107    | EARTUBES, UNIVERSAL                   | 75101-126-02 | 1                |                  |                                 | X                         |                          |                          |  |                                 |           |
| E0108    | EARTUBES, UNIVERSAL                   | 75101-126-03 | 2                |                  |                                 | X                         |                          |                          |  |                                 |           |
| H0100    | HANDHOLD, G+N                         | 2021301-011  | 2                |                  |                                 |                           | X                        |                          |  |                                 |           |
| H0102    | SUN FILTER, OUA HIGH DENSITY          | 2012808      | 1                |                  |                                 | X                         |                          |                          |  |                                 |           |
| H0103    | SUN FILTER, OUA HIGH DENSITY          | 2012816      | 1                |                  |                                 | X                         |                          |                          |  |                                 |           |
| H0104    | PANEL, INDICATOR- VERB/ NOUN LIST     | 2021499      | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| H0105    | PANEL, INDICATOR- NORTHERN STAR CHART | 2021487      | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| H0106    | PANEL, INDICATOR- SOUTHERN STAR CHART | 2021488      | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO.                | NOMENCLATURE            | PART NUMBER             | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED |                          |                          |                                  |                  |                     |               | Interim DISPOSITION OF HARDWARE |                 |
|-------------------------|-------------------------|-------------------------|------------------|------------------|---------------------------------|--------------------------|--------------------------|----------------------------------|------------------|---------------------|---------------|---------------------------------|-----------------|
|                         |                         |                         |                  |                  | RETURN TO SSC VIA CARRIER       | RETURN TO SSC VIA BOMBEY | RETAINED WITH SPACECRAFT | COURTESY DISPOSITION OF HARDWARE | RECEIPT/LOCATION | ASSIGNMENT SEE NOTE | PURPOSE       | RETURN TO                       |                 |
| Section II Crew Appare. |                         |                         |                  |                  |                                 |                          |                          |                                  |                  |                     |               |                                 |                 |
| A0200                   | SUNGLASSES              | SEB12100033-201 or -001 | 3 3              | ASTRO HAVE TWO   | X                               | R                        |                          |                                  |                  |                     | D. STULLKEN   |                                 |                 |
| A0201                   | POUCH, SUNGLASSES       | SEB12100034-203         | 3 3              |                  | X                               | R                        |                          |                                  |                  |                     | D. STULLKEN   |                                 |                 |
| A0202                   | CHRONOGRAPH             | SEB12100039-001 or -002 | 3 3              | ON CREW          | X                               | R                        |                          |                                  |                  |                     | D. STULLKEN   |                                 |                 |
| A0203                   | WATCHBAND               | SEB12100030-202         | 3 3              | ON CREW          | X                               | R                        |                          |                                  |                  |                     | D. STULLKEN   |                                 |                 |
| A0204                   | PENS, DATA RECORDING    | SEB12100051-204         | 2 2 2            | 1 WITH CREW      | X                               | R                        |                          |                                  |                  |                     | D. STULLKEN   |                                 |                 |
| A0205                   | PEN MARKER              | SEB12100082-301         | 3 3              | 1 WITH CREW      | X                               | R                        |                          |                                  |                  |                     | D. STULLKEN   |                                 |                 |
| A0206                   | PENCIL                  | SEB12100081-301         | 9 3 6            | 3 WITH CREW      | X                               | R                        |                          |                                  |                  |                     | D. STULLKEN   |                                 |                 |
| A0207                   | SLIDERULE               | SEB33100047-302         | 1                |                  | X                               | R                        |                          |                                  |                  |                     | D. STULLKEN   |                                 |                 |
| A0208                   | BAG, MOTION SICKNESS    | SEB12100085-301         | 3                |                  |                                 |                          | X                        |                                  |                  |                     |               |                                 |                 |
| B0200                   | PRESSURE GARMET ASSY-EV | A7L-100000              | 2 2              |                  | X                               | R                        |                          |                                  |                  |                     | D. STULLKEN6d | Cleaning                        | J. McBarron EC9 |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                   | PART NUMBER       | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO SSC VIA CARRIER | RETURN TO SSC VIA DOONEY | RETAINED WITH SPACECRAFT | CARRIER OF DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE | Interim Disposition of Hardware |                 |
|----------|--------------------------------|-------------------|------------------|------------------|---------------------------------|---------------------------|--------------------------|--------------------------|--|---------------------------------|-----------------|
|          |                                |                   |                  |                  |                                 |                           |                          |                          |  | PURPOSE                         | RETURN TO       |
| BO200 1  | TORSO LIMB SUIT ASSY- EV       | A7L-100002        | 2 2              |                  |                                 |                           |                          |                          |  |                                 |                 |
| BO200 2  | HELMET ASSY, PRESSURE          | A7L-102003-11     | 2 2              |                  |                                 |                           |                          |                          |  |                                 |                 |
| BO200 3  | GLOVES, IV-PAIR                | A7L-103000-05/-06 | 2 2              |                  |                                 |                           |                          |                          |  |                                 |                 |
| BO200 4  | COMMUNICATION CARRIER          | 16536G-04         | 2 2              |                  |                                 |                           |                          |                          |  |                                 |                 |
| BO200 5  | POCKET, CHECKLIST AND SCISSORS | A7L-201049-03     | 2 2              |                  |                                 |                           |                          |                          |  |                                 |                 |
| BO200 6  | POCKET, CHECKLIST              | A7L-201047-03     | 2 2              |                  |                                 |                           |                          |                          |  |                                 |                 |
| BO201 1  | PRESSURE GARMENT ASSY- IV      | A7L-100000        | 1 (              |                  | X                               | R                         |                          |                          | D. STULLIEN 6d   | Cleaning                        | J. McBarron EC9 |
| BO201 2  | TORSO LIMB SUIT ASSY- IV       | A7L-100004        | 1 (              |                  |                                 |                           |                          |                          |  |                                 |                 |
| BO201 2  | HELMET ASSY, PRESSURE          | A7L-102003-11     | 1 (              |                  |                                 |                           |                          |                          |  |                                 |                 |
| BO201 3  | GLOVES, IV-PAIR                | A7L-103000-05/-06 | 1 (              |                  |                                 |                           |                          |                          |  |                                 |                 |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                              | PART NUMBER             | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO SSC VIA AIRCRAFT | RETURN TO SSC VIA SHUTTLE | RETAINED WITH SPACECRAFT | CARRIER DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE | Interim DISPOSITION OF HARDWARE |           |
|----------|---|-------------------------|------------------|------------------|---------------------------------|----------------------------|---------------------------|--------------------------|---|---------------------------------|-----------|
|          |   |                         |                  |                  |                                 |                            |                           |                          |   | PURPOSE                         | RETURN TO |
| BO201 4  | CARRIER, COMMUNICATION                    | 16536G-04               | 1                |                  |                                 |                            |                           |                          |   |                                 |           |
| BO201 5  | POCKET, CHECKLIST AND SCISSORS            | A7L-201049-03           | 1                |                  |                                 |                            |                           |                          |   |                                 |           |
| BO201 6  | POCKET, CHECKLIST                         | A7L-201047-03           | 1                |                  |                                 |                            |                           |                          |   |                                 |           |
| BO202    | VEST, DUAL LIFE                           | SEB40100165-203         | 3 3              |                  | X                               | R                          |                           |                          | D. STULLKEN 6d  |                                 |           |
| BO203    | ASSY. BIOINSTRUMENTATION                  | SEB42100083-306         | 3 3              |                  | X                               | R                          |                           |                          | D. STULLKEN 6d  |                                 |           |
| BO203    | HARNESS, AXILLARY                         | SHB42100121-201 or -202 | 3 3              |                  |                                 |                            |                           |                          |   |                                 |           |
| BO203    | HARNESS, STERNAL                          | SHB42100120-203/204     | 3 3              |                  |                                 |                            |                           |                          |   |                                 |           |
| BO203    | CONDITIONER, IMPEDENCE PNEUMOGRAPH SIGNAL | 104230/103080           | 3 3              |                  |                                 |                            |                           |                          |   |                                 |           |
| BO203    | CONDITIONER, EKG SIGNAL                   | 104220/103070           | 3 3              |                  |                                 |                            |                           |                          |   |                                 |           |
| BO203    | POWER SUPPLY, DC-DC CONVERTER             | 104240/103110/or 104840 | 3 3              |                  |                                 |                            |                           |                          |   |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                   | PART NUMBER     | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO SSC VIA CARRIER | RETURN TO SSC VIA SHUTTLE | RETAINED WITH SPACECRAFT | CARRIER DISPOSITION OF HARDWARE (ACCOMPANY/LOCATION) SEE NOTE | Interim Disposition of Hardware |               |
|----------|--------------------------------|-----------------|------------------|------------------|---------------------------------|---------------------------|---------------------------|--------------------------|---|---------------------------------|---------------|
|          |                                |                 |                  |                  |                                 |                           |                           |                          |   | PURPOSE                         | RETURN TO     |
| B0204    | SCISSORS                       | SDB42100059-202 | 3 3              | ASTROS HAVE ONE  | X                               | R                         |                           |                          | D. STULLKEN   |                                 |               |
| B0205    | UCTA                           | 14-0108-02      | 3 3              |                  |                                 |                           | X                         |                          |   |                                 |               |
| B0206    | PENLIGHTS                      | ACR FA-5        | 3                |                  |                                 |                           | X                         |                          |   |                                 |               |
| B0207    | ASSY. BIOBELT                  | SEB13100084-202 | 3                |                  |                                 |                           | X                         |                          |   |                                 |               |
| B0208    | CARMENT, CONSTANT WEAR         | SEB13100061-208 | 3 3              |                  | X                               | R                         |                           |                          | D. STULLKEN 6d  | Cleaning                        | R. Marak EC7  |
| B0209    | SHIELD HEL                     | A7L502003-02    | 1 1              |                  |                                 |                           |                           |                          |   |                                 |               |
| B0200    | DOSIMETER, PERSONAL            | SEB16100703-201 | 3 3              |                  | X                               | U                         |                           |                          | E. EDMONDS  | Data Reduction                  | W. Davis, TG5 |
| B0201    | DOSIMETER, PASSIVE             | SEB12100045-201 | 9 9              |                  | X                               | U                         |                           |                          | E. EDMONDS  | Data Reduction                  | W. Davis, TG5 |
| B0200 1  | BARPIECE, MOLDED (COM CARRIER) | TBD             | 6 5              | REST WITH CREW   | X                               | R                         |                           |                          | D. STULLKEN 6d  |                                 |               |
| B0200 2  | BARPIECE, (COM CARRIER)        | TBD             | 6 2              | "                | X                               | R                         |                           |                          | D. STULLKEN 6d  |                                 |               |



# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO.                           | NOMENCLATURE                         | PART NUMBER    | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO SSC VIA CARRIER | RETURN TO SSC VIA BOMBEY | RETAINED WITH SPACECRAFT | COURTESY DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE | Interim DISPOSITION OF HARDWARE |           |
|------------------------------------|--------------------------------------|----------------|------------------|------------------|---------------------------------|---------------------------|--------------------------|--------------------------|--|---------------------------------|-----------|
|                                    |                                      |                |                  |                  |                                 |                           |                          |                          |  | PURPOSE                         | RETURN TO |
| Section III Stowed Operational CFE |                                      |                |                  |                  |                                 |                           |                          |                          |  |                                 |           |
| 00300                              | CONTAINER, PGA                       | V36-601010-601 | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| 00301                              | CONTAINER, TEMPORARY STOWAGE         | V36-601015-51  | 3                |                  |                                 |                           | X                        |                          |  |                                 |           |
| 00302                              | SHADE, RENDEZVOUS-LEFT               | V36-770036-11  | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| 00303                              | SHADE, RENDEZVOUS-RIGHT              | V36-601135-91  | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| 00304                              | SHADE, SIDE-LEFT                     | V36-770034-1   | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| 00305                              | SHADE, SIDE-RIGHT                    | V36-770034-2   | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| 00306                              | SHADE, HATCH                         | V36-770032     | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| 00307                              | CONTAINER, WINDOW SHADES             | V36-785011     | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| 00308                              | TOOL SET ASSEMBLY                    | V36-601135-201 | 1                |                  |                                 |                           | X                        |                          |  |                                 |           |
| 00309                              | BOX, SANITATION SUPPLY STOWAGE (AFT) | V36-601421     | 1                |                  |                                 |                           |                          | X                        |  |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                         | PART NUMBER     | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO MSC VIA CARRIER | RETURN TO MSC VIA COMNET | RETAINED WITH SPACECRAFT | COUNTRIES OF ORIGIN OF SPACECRAFT | COUNTRIES OF ORIGIN OF SPACECRAFT | COUNTRIES OF ORIGIN OF SPACECRAFT | Interim DISPOSITION OF HARDWARE |           |
|----------|--------------------------------------|-----------------|------------------|------------------|---------------------------------|---------------------------|--------------------------|--------------------------|-----------------------------------|-----------------------------------|-----------------------------------|---------------------------------|-----------|
|          |                                      |                 |                  |                  |                                 |                           |                          |                          |                                   |                                   |                                   | PURPOSE                         | RETURN TO |
| 00310    | BOX, SANITATION SUPPLY STOWAGE (FWD) | V36-601420      | 1                |                  |                                 |                           |                          | X                        |                                   |                                   |                                   |                                 |           |
| 00311    | FECAL COLLECTION ASSY                | V36-601398-121  | 30               |                  |                                 |                           | X                        |                          |                                   |                                   |                                   |                                 |           |
| 00312    | ADAPTER, CWG-ELECTRICAL              | V36-715103-11   | 4                |                  |                                 |                           | X                        |                          |                                   |                                   |                                   |                                 |           |
| 00313    | CONTAINER, CWG ADAPTER               | V36-788022      | 4                |                  |                                 |                           | X                        |                          |                                   |                                   |                                   |                                 |           |
| 00314    | CONTROL HEAD, CCU                    | V36-715100-21   | 4                |                  |                                 |                           | X                        |                          |                                   |                                   |                                   |                                 |           |
| 00315    | CONTAINER, CCU CONTROL HEAD          | V36-787047      | 1                |                  |                                 |                           | X                        |                          |                                   |                                   |                                   |                                 |           |
| 00318    | PUMP, SEA WATER                      | ME281-0023-0002 | 1                |                  |                                 |                           | X                        |                          |                                   |                                   |                                   |                                 |           |

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## POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                              | PART NUMBER                      | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO SSC VIA CARRIER | RETURN TO SSC VIA JET/BOAT | RETAINED WITH SPACECRAFT | CARRIER DISPOSITION OF HARDWARE (LOCATION/REQUIREMENT SEE NOTE) | Interim DISPOSITION OF HARDWARE |           |
|----------|---|----------------------------------|------------------|------------------|---------------------------------|---------------------------|----------------------------|--------------------------|---|---------------------------------|-----------|
|          |   |                                  |                  |                  |                                 |                           |                            |                          |   | PURPOSE                         | RETURN TO |
| 00319    | CONTAINER, SEA WATER PUMP                 | V36-787049                       | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00320    | CREWMAN OPTICAL ALIGNMENT SIGHT           | ME331-0017-0102                  | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00320    | 1 FILTER, SNAP-ON, COAS                   | ME331-0017-0097                  | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00321    | LIGHT BULB COAS                           | 434-0097-002<br>or B50258-1      | 2                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00322    | RESTRAINT ASSY, CREWMAN SLEEPING (LEFT)   | V36-601012-141                   | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00323    | RESTRAINT ASSY, CREWMAN SLEEPING (RIGHT)  | V36-601012-241                   | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00324    | RESTRAINT ASSY, CREWMAN SLEEPING (CENTER) | V36-601012-141                   | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00325    | HOSE ASSY, URINE                          | V36-601399-11                    | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00326    | CONTAINER, URINE HOSE                     | V36-787048                       | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00327    | CO2 ABSORBER                              | V36-613624 or<br>ME901-0218-0051 | 20               |                  |                                 |                           |                            |                          | 6G  |                                 |           |
| 00328    | SHIM, CO2 ABSORBER                        | V16-613205-3                     | 18               |                  |                                 |                           |                            | X                        |   |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE         | PART NUMBER    | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO MSC VIA CARRIER | RETURN TO MSC V/A | RETURN TO J/DOONEY SPACECRAFT | RETAINED WITH CARRIER | COMPLETE DISPOSITION OF HARDWARE RECEIPT/LOCATION SEE NOTE | Interim DISPOSITION OF HARDWARE |           |
|----------|----------------------|----------------|------------------|------------------|---------------------------------|---------------------------|-------------------|-------------------------------|-----------------------|--|---------------------------------|-----------|
|          |                      |                |                  |                  |                                 |                           |                   |                               |                       |  | PURPOSE                         | RETURN TO |
| 00329    | BRACKET, DATA CAMERA | V36-753001     | 1                |                  |                                 |                           |                   | X                             |                       |  |                                 |           |
| 00330    | PLV DUCT             | V36-611818-21  | 2                |                  |                                 |                           |                   | X                             |                       |  |                                 |           |
| 00331    | PLV DUCT             | V36-611818-31  | 1                |                  |                                 |                           |                   | X                             |                       |  |                                 |           |
| 00332    | CONTAINER, PLV       | V36-788021     | 1                |                  |                                 |                           |                   | X                             |                       |  |                                 |           |
| 00333    | CONTAINER, A1        | V36-787020     | 1                |                  |                                 |                           |                   | X                             |                       |  |                                 |           |
| 00334    | CONTAINER, A3        | V36-331003-611 | 1                |                  |                                 |                           |                   | X                             |                       |  |                                 |           |
| 00335    | CONTAINER, A4        | V36-331003-681 | 1                |                  |                                 |                           |                   | X                             |                       |  |                                 |           |
| 00336    | CONTAINER, A5        | V36-787039-21  | 1                |                  |                                 |                           |                   | X                             |                       |  |                                 |           |
| 00337    | CONTAINER, A6        | V36-331003-661 | 1                |                  |                                 |                           |                   | X                             |                       |  |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                    | PART NUMBER     | QUANTITY PER S/C | REMOVAL LOCATION | <div>REMOVED OR CARRIED AND PACKAGED</div> <div>RETURN TO SSC VIA SUPPLIES</div> <div>RETURN TO SSC VIA / GROUND</div> <div>RETAINED WITH SPACECRAFT</div> <div>COURTIER DISPOSITION OF HARDWARE/LOCATION</div> <div>REGULATORY REQUIREMENT SEE NOTE</div> |  |   |   |  |  |  | Interim DISPOSITION OF HARDWARE |           |
|----------|---------------------------------|-----------------|------------------|------------------|--|--|---|---|--|--|--|---------------------------------|-----------|
|          |                                 |                 |                  |                  |  |  |   |   |  |  |  | PURPOSE                         | RETURN TO |
| 00338    | CONTAINER, A7                   | V36-787026-11   | 1                |                  |  |  |   | X |  |  |  |                                 |           |
| 00339    | CONTAINER, A8                   | V36-787022-21   | 1                |                  |  |  |   | X |  |  |  |                                 |           |
| 00340    | CONTAINER, B3                   | V36-334064      | 1                |                  |  |  |   | X |  |  |  |                                 |           |
| 00341    | CONTAINER, B4                   | V36-334068      | 1                |                  |  |  |   | X |  |  |  |                                 |           |
| 00342    | CONTAINER, B5                   | V36-331091-41   | 1                |                  |  |  |   | X |  |  |  |                                 |           |
| 00343    | CONTAINER, B6                   | V36-331091-41   | 1                |                  |  |  |   | X |  |  |  |                                 |           |
| 00344    | CONTAINER, R 12                 | V36-331092-401  | 1                |                  |  |  |   | X |  |  |  |                                 |           |
| 00345    | CONTAINER, U4                   | V36-785021      | 1                |                  |  |  |   | X |  |  |  |                                 |           |
| 00346    | FILTER ASSY, Q.D.GAS + LIQ. WMS | V36-612547      | 2                |                  |  |  | X |   |  |  |  |                                 |           |
| 00347    | FIRE EXTINGUISHER               | ME280-0010-0003 | 1                |                  |  |  |   | X |  |  |  |                                 |           |

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## POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                               | PART NUMBER                      | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO MSC VIA CARRIER | RETURN TO MSC VIA / DOWNEY | RETAINED WITH SPACECRAFT | CARRIER DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE | Interim DISPOSITION OF HARDWARE |           |
|----------|--|----------------------------------|------------------|------------------|---------------------------------|---------------------------|----------------------------|--------------------------|---|---------------------------------|-----------|
|          |  |                                  |                  |                  |                                 |                           |                            |                          |   | PURPOSE                         | RETURN TO |
| 00348    | LM DOCKING TARGET                          | ME476-0082-0007<br>or V36-601194 | 1                |                  |                                 |                           |                            | X                        |   |                                 | OFFLOADED |
| 00349    | PROBE, DOCKING                             | V36-575101-401                   | 1                |                  |                                 |                           |                            |                          |   |                                 |           |
| 00350    | HATCH, FORWARD                             | V36-326601                       | 1                |                  |                                 |                           |                            | X                        |   |                                 |           |
| 00351    | COUPLING ASSY, PGA 02<br>UMB INTERCONNECTS | ME273-0076-0001                  | 3                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00352    | CONTAINER, 02 INTER-<br>CONNECT            | V36-787044                       | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00353    | CABLE, CCU-LEFT                            | V36-715104-51                    | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00354    | CABLE, CCU-CENTER                          | V36-715104-61                    | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00355    | CABLE, CCU-RIGHT                           | V36-715104-71                    | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |
| 00356    | CABLE, CCU-SPARE                           | V36-715104-81                    | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                            | PART NUMBER   | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO SSC VIA CARRIER | RETURN TO SSC VIA / DOONEY | RETAINED WITH SPACECRAFT | CARRIER STORAGE OF HARDWARE RECIPIENT/LOCATION SEE NOTE | Interim DISPOSITION OF HARDWARE |           |
|----------|---|---------------|------------------|------------------|---------------------------------|---------------------------|----------------------------|--------------------------|---|---------------------------------|-----------|
|          |   |               |                  |                  |                                 |                           |                            |                          |   | PURPOSE                         | RETURN TO |
| 00357    | UMBILICAL, O2-LEFT                      | V36-601207-11 | 1                |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00358    | UMBILICAL, O2-CENTER                    | V36-601207-21 | 1                |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00359    | UMBILICAL, O2-RIGHT                     | V36-601207-31 | 1                |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00360    | STRAPS, INFLIGHT RETAINER (GENERAL USE) | V36-788020    | 3                |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00360    | 1 STRAPS, INFLIGHT RETAINER (STOWAGE)   | V36-758820    | 10               |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00361    | SNAG LINE                               | V36-571025    | 1                |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00362    | CONTAINER, SNAG LINE                    | V36-787019-51 | 1                |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00363    | STRAP, CCU CABLE                        | V36-758888-11 | 1                |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00364    | CUSHION, B3                             | V36-784003-41 | 1                |                  |                                 |                           | X                          |                          |   |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE                             | PART NUMBER   | QUANTITY PER S/C | REMOVAL LOCATION | <div>REMOVED ON CARRIER AND PACKAGED</div> <div>RETURN TO MSC VIA CARRIER</div> <div>RETURN TO MSC VIA /DOWNNEY</div> <div>RETAINED WITH SPACECRAFT</div> <div>CARRIER DISPOSITION OF HARDWARE</div> <div>DISPOSITION/LOCATION OF RECEIPT/MENT SEE NOTE</div> |  |  |   |  |  |  | Interim DISPOSITION OF HARDWARE |           |
|----------|--|---------------|------------------|------------------|---|--|--|---|--|--|--|---------------------------------|-----------|
|          |  |               |                  |                  |   |  |  |   |  |  |  | PURPOSE                         | RETURN TO |
| 00365    | CUSHION, B8                              | V36-784004-51 | 1                |                  |   |  |  | X |  |  |  |                                 |           |
| 00366    | AMPULE, CHLORINATION                     | F01-610347    | 10               |                  |   |  |  | X |  |  |  |                                 |           |
| 00367    | BUFFER AMPULE, CHLOR.                    | F01-610347-11 | 10               |                  |   |  |  | X |  |  |  |                                 |           |
| 00368    | CONTAINER, CHLORINATION AMPULES          | V36-784006    | 2                |                  |   |  |  | X |  |  |  |                                 |           |
| 00369    | KNOB, CHLORINE SYRINGE                   | V36-610338    | 1                |                  |   |  |  | X |  |  |  |                                 |           |
| 00370    | CASING, CHLORINATION SYRINGE             | V36-610320    | 1                |                  |   |  |  | X |  |  |  |                                 |           |
| 00371    | NEEDLE, CHLORINATION                     | V36-610307-11 | 1                |                  |   |  |  | X |  |  |  |                                 |           |
| 00372    | CONTAINER, CHLORINATION AMPULE + SYRINGE | V36-784005    | 1                |                  |   |  |  | X |  |  |  |                                 |           |
| 00375    | CONTAINER, O2 MASK + HOSE                | V36-601234-21 | 1                |                  |   |  |  | X |  |  |  |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE           | PART NUMBER    | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO MSC VIA CARRIER | RETURN TO MSC VIA JET | RETURNED WITH SPACECRAFT | COLLECT DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE. | Interim DISPOSITION OF HARDWARE |           |
|----------|------------------------|----------------|------------------|------------------|---------------------------------|---------------------------|-----------------------|--------------------------|--|---------------------------------|-----------|
|          |                        |                |                  |                  |                                 |                           |                       |                          |  | PURPOSE                         | RETURN TO |
| 00376    | BRACKET, TV MOUNTING   | V36-715120-21  | 1                |                  |                                 |                           |                       | X                        |  |                                 |           |
| 00377    | HANDLE ADAPTER, TOOL E | V36-601405-11  | 1                |                  |                                 |                           | X                     |                          |  |                                 |           |
| 00378    | O2 HOSE SCREEN CAP     | V36-601083     | 3                |                  |                                 |                           | X                     |                          |  |                                 |           |
| 00380    | BAG, 16MM MAG (LM XFR) | V36-787061-201 | 1                |                  |                                 |                           | X                     |                          |  |                                 |           |
| 00381    | BAG, 70MM MAG (LM XFR) | V36-787062-101 | 1                |                  |                                 |                           | X                     |                          |  |                                 |           |
| 00385    | STRAP, COUCH RESTRAINT | V36-601348     | 1                |                  |                                 |                           | X                     |                          |  |                                 |           |
| 00386    | STRAP, COUCH RESTRAINT | V36-601349     | 1                |                  |                                 |                           | X                     |                          |  |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE               | PART NUMBER     | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO MSC VIA CARRIER | RETURN TO MSC VIA / DOUBLE | RETAINED WITH SPACECRAFT | CARRIER DISPOSITION OF HARDWARE RECEIPT/LOCATION SEE NOTE | Interim DISPOSITION OF HARDWARE |           |
|----------|----------------------------|-----------------|------------------|------------------|---------------------------------|---------------------------|----------------------------|--------------------------|---|---------------------------------|-----------|
|          |                            |                 |                  |                  |                                 |                           |                            |                          |   | PURPOSE                         | RETURN TO |
| 00387    | COUPLING ASSY, WATER PANEL | V36-612558-11   | 1                |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00388    | WATER PANEL, WMS-Q/D       | ME273-0075-2024 | 1                |                  |                                 |                           |                            | X                        |   |                                 |           |
| 00389    | POWER CABLE, WMS           | V36-421315      | 1                |                  |                                 |                           |                            | X                        |   |                                 |           |
| 00390    | PRESSURE CAP, WMS-Q/D      | ME265-0017-0002 | 1                |                  |                                 |                           |                            | X                        |   |                                 |           |
| 00391    | CABLE, GROUNDING           | V36-441435-31   | 1                |                  |                                 |                           |                            | X                        |   |                                 |           |
| 00392    | STRAP, COUCH RESTRAINT     | V36-601160      | 1                |                  |                                 |                           |                            | X                        |   |                                 |           |
| 00393    | CLAMP, O2 HOSE             | V36-601082      | 3                |                  |                                 | X                         |                            |                          |   |                                 |           |
| 00394    | STRAP, PROBE STOWAGE       | V36-601389-41   | 1                |                  |                                 |                           |                            | X                        |   |                                 |           |
| 00395    | STRAP, PROBE STOWAGE       | V36-601389-51   | 1                |                  |                                 |                           |                            | X                        |   |                                 |           |
| 00398    | CABIN VENT, Q.D.           | V36-612547-11   |                  |                  |                                 | X                         |                            |                          |   |                                 |           |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE              | PART NUMBER    | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIED AND PACKAGED | RETURN TO MSC VIA CHABLES | RETURN TO MSC VIA JODNEY | RETAINED WITH SPACECRAFT | COMPLETE DISPOSITION OF HARDWARE/LOCATION | REQUIREMENT SEE NOTE: | Interim DISPOSITION OF HARDWARE |            |
|----------|---------------------------|----------------|------------------|------------------|---------------------------------|---------------------------|--------------------------|--------------------------|---|-----------------------|---------------------------------|------------|
|          |                           |                |                  |                  |                                 |                           |                          |                          |   |                       | PURPOSE                         | RETURN TO  |
| 00399    | GLARESHIELD, DSKY         | V36-761270     | 1                |                  |                                 |                           | X                        |                          |   |                       |                                 |            |
| 03005    | DSEA                      | LSC360-12-5 -1 | 1                |                  | X                               | U                         |                          |                          | E. EDMONDS 6h                             |                       | DATA REDUCTION                  | D. O'BRIEN |
| 06300    | GLARESHIELD, EMCA         | V36-761271     | 1                |                  |                                 |                           | X                        |                          |   |                       |                                 |            |
| 06301    | GLARESHADE, MISSION TIMER | V36-761272     | 1                |                  |                                 |                           | X                        |                          |   |                       |                                 |            |
| 06302    | ADAPTER, DOCKING TARGET   | V36-601190-11  | 1                |                  |                                 |                           |                          | X                        |   |                       |                                 |            |
| 06303    | CONTAINER, FWD. HATCH     | V36-601 509    | 1                |                  |                                 |                           |                          | X                        |   |                       |                                 |            |
| 06304    | ROPE, SLEEP RESTRAINT     | V36-601169     | 5                |                  |                                 |                           | X                        |                          |   |                       |                                 |            |
| 06307    | CUSHION, A5               | V36-787077     | 1                |                  |                                 |                           |                          | X                        |   |                       |                                 |            |
| 06309    | STRAP, GLADE SHADE        | V36-788028     | 4                |                  |                                 |                           | X                        |                          |   |                       |                                 |            |
| 06311    | CUSHION, RIO FWD          | V36-782025     | 1                |                  |                                 |                           | X                        |                          |   |                       |                                 |            |

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# POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT

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| ITEM NO. | NOMENCLATURE               | PART NUMBER    | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED | RETURN TO MSC VIA CARRIER | RETURN TO MSC VIA DOUBLET | RETAINED WITH SPACECRAFT | COMPOSED WITH SPACECRAFT | DISPOSITION OF HARDWARE RECIPIENT/LOCATION SEE NOTE: | Interim DISPOSITION OF HARDWARE |           |
|----------|----------------------------|----------------|------------------|------------------|---------------------------------|---------------------------|---------------------------|--------------------------|--------------------------|--|---------------------------------|-----------|
|          |                            |                |                  |                  |                                 |                           |                           |                          |                          |  | PURPOSE                         | RETURN TO |
| 06314    | ADAPTER, HASSELBLAD CAMERA | V36-752060     | 1                |                  |                                 |                           |                           | X                        |                          |  |                                 |           |
| 06315    | STRAP UTILITY              | V36-601118-11  | 6                |                  |                                 |                           |                           | X                        |                          |  |                                 |           |
| 06317    | BAG, GFE CWG ELECTRICAL    | V36-788022-101 | 1                |                  |                                 |                           |                           | X                        |                          |  |                                 |           |
| 06319    | BAG, DE-AERATION           | V36-612560     | 1                |                  |                                 |                           |                           | X                        |                          |  |                                 |           |
| 06320    | STRAP, HARNESS             | V36-601323-11  | 3                |                  |                                 |                           |                           | X                        |                          |  |                                 |           |
| 06321    | BAG, 16MM MAG              | V36-787061     | 1                |                  |                                 |                           |                           | X                        |                          |  |                                 |           |
| 06322    | BAG, 16MM MAG              | V36-784013     | 1                |                  |                                 |                           |                           | X                        |                          |  |                                 |           |
| 06323    | BAG, 70MM MAG              | V36-787062     | 1                |                  |                                 |                           |                           | X                        |                          |  |                                 |           |

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## Section 4 - Stowed Experimental GFE

## POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| ITEM NO. | NOMENCLATURE   | PART NUMBER | QUANTITY PER S/C | REMOVAL LOCATION | REMOVED ON CARRIER AND PACKAGED |                          |                          |         |                         |                  |          | Interim DISPOSITION OF HARDWARE |   |
|----------|----------------|-------------|------------------|------------------|---------------------------------|--------------------------|--------------------------|---------|-------------------------|------------------|----------|---------------------------------|---|
|          |                |             |                  |                  | RETURN TO MSC VIA CARRIER       | RETURN TO MSC VIA DOBNEY | RETAINED WITH SPACECRAFT | Courier | DISPOSITION OF HARDWARE | RECEIPT/LOCATION | SEE NOTE | PURPOSE                         | RETURN TO                                       |
| 0400     | FILM PACK, AAP | SK-10000    | 1 (              |                  | X                               | U                        |                          |         | E. Edmonds              | 61               |          | EVALUATION                      | DR. Dozier/<br>Harvell Williams,<br>MSFC-RSSL-P |



## Section V- Miscellaneous

## POST LAUNCH HARDWARE DISPOSITION - SPACECRAFT 106

| EN<br>NO. | NOMENCLATURE                    | PART NUMBER | QUANTITY<br>PER<br>S/C | REMOVAL<br>LOCATION | <div>REMOVED ON<br/>CARRIER AND<br/>PACKAGED</div> <div>RETURN TO<br/>MSC VIA<br/>DUNDEE</div> <div>RETURN TO<br/>MSC VIA<br/>DUNDEE</div> <div>RETAINED WITH<br/>SPACECRAFT</div> <div>COUNCIL<br/>DISPOSITION OF<br/>HARDWARE<br/>RECIPIENT/LOCATION<br/>SEE NOTE</div> |   |  |   |  |            |    | Interim DISPOSITION<br>OF HARDWARE |                                  |
|-----------|---------------------------------|-------------|------------------------|---------------------|---|---|--|---|--|------------|----|------------------------------------|----------------------------------|
|           |                                 |             |                        |                     |   |   |  |   |  |            |    | PURPOSE                            | RETURN TO                        |
| -I        | DATA STORAGE EQUIPMENT<br>(DSE) | ME435-0035  | 1 (                    |                     | X   | U |  |   |  | E. Edmonds | 6J | Data Reduction                     | R. F. Jones, EE2                 |
| -II       | MEDICAL WATER SAMPLES           | N/A         | 9 9                    |                     | X   | U |  |   |  | E. Edmonds |    | Analysis                           | R. Sauer, DB3                    |
| -III      | CABIN LIQUID SAMPLE             | N/A         | 1                      |                     |   |   |  | X |  |            |    |                                    |                                  |
| -IV       | FECAL SAMPLES                   | N/A         | N/A                    |                     | X   | U |  |   |  |            |    | Analysis                           | R. Sauer, DB3/<br>C. Barnes, DC7 |
| -V        | SEA WATER SAMPLE                | N/A         | N/A                    |                     |   |   |  | X |  |            |    |                                    |                                  |

**CREW EQUIPMENT REMOVAL**

Sheet 1 of 59

The purpose of this procedure is to illustrate the various items of crew equipment stowed within the CM. In addition, removal instructions are provided (as necessary) to facilitate timely removal of selected items by the NASA Landing Recovery Team.

**NOTE**

- Removal, recording and disposition shall be in accordance with requirements established by NASA-ASHUR, No. 106000.
- Should recovery be accomplished by other than the prime recovery ship (PRS), equipment shall only be removed upon specific instructions from MSC.

**SAFETY**

1. Observe standard safety precautions when working in the CM.
2. Do not reposition any switch, circuit breaker, or control. Repositioning of a switch, circuit breaker, or control could cause injury to personnel outside the CM, or cause damage to an onboard system.

**NOTE**

Specific safety precautions are provided as part of the individual component removal procedures (as applicable).

**PHOTOGRAPHIC REQUIREMENTS**

1. Obtain photographs of individual items of equipment/hardware following removal and prior to packaging.

**TOOLS AND EQUIPMENT**

| Quantity | Nomenclature                                     |
|----------|--|
| 1        | Torq-set screwdrivers (assorted)                 |
| 1        | Socket set, 1/4-inch drive                       |
| 1        | Combination wrench set                           |
| 3 pr     | Rubber gloves                                    |
| 1        | Knife-short blade                                |
|          | Allen-head adapters (assorted)                   |
| 20       | Polyethylene bags (for O <sub>2</sub> absorbers) |
|          | Shipping containers (as applicable)              |

## CREW EQUIPMENT REMOVAL

Sheet 2 of 59

INSTRUCTIONS

## GENERAL

1. Unless otherwise directed, remove equipment per instructions received from the NASA Team Leader.

## NOTE

Stowage locations may vary (from those specified) to some extent because of last minute changes and time available to the crew.

2. Refer to the following table for a specific listing of equipment/hardware by item number and related illustrations.

## NOTE

- Dispose of equipment as per NASA-ASHUR, No. 106000.
  - For additional instructions relative to handling, removal and packaging of components removed from the CM, refer to the page titled "IMPORTANT," located in the front of this manual, immediately behind the INTRODUCTION.
  - Stowage compartments and locker locations are illustrated on sheet .
3. Following equipment removal, forward to the Recovery Team Leader for inspection and packaging by the onboard representative.
  4. Close and secure all access panels/covers.
  5. Package and dispose of equipment in accordance with the consolidated ASHUR.



## CREW EQUIPMENT REMOVAL

Sheet 3 of 59

## Apollo 10 Stowed Equipment, Item No. /Figure Ref Index

| Item No.  | Figure Reference               | Page No.         | Item No.  | Figure Reference       | Page No.    |
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| A 0100    | 21-17                          | 255              | A 0115    | 21-11 (Sht 1)          | 247         |
| A 0101    | 21-17, 21-21                   | 255, 259         | A 0117    | 21-28                  | 266         |
| A 0101.1  | 21-35                          | 273              | A 0118    | 21-28                  | 266         |
| A 0102    | 21-17                          | 255              | A 0119    | 21-8                   | 244         |
| A 0103    | 21-17                          | 255              | A 0122    | 21-8                   | 244         |
| A 0104    | 21-17                          | 255              | A 0125    | 21-25                  | 263         |
| A 0105    | 21-17                          | 255              | A 0127    | 21-21                  | 259         |
| A 0106    | 21-17                          | 255              | A 0128    | 21-39                  | 278         |
| A 0107    | 21-17, 21-35                   | 255, 273         | A 0129    | 21-39                  | 278         |
| A 0108    | 21-17, 21-35                   | 255, 273         | A 0130    | 21-39                  | 278         |
| A 0110    | 21-17                          | 255              | A 0131    | 21-39                  | 278         |
| A 0112    | 21-2 (Sht 7),<br>21-11 (Sht 1) | 235,<br>247      | A 0132    | 21-39                  | 278         |
| A 0113    | 21-31                          | 269              | A 0133    | 21-39                  | 278         |
| A 0114    | 21-26,<br>21-27, 21-28         | 264,<br>265, 266 | A 0134    | 21-28                  | 266         |
| A 0114.1  | 21-27                          | 265              | A 1007    | 21-2 (Sht 7),<br>21-35 | 235,<br>273 |
| A 0114.2  | 21-26                          | 264              | B 0100    | 21-32                  | 270         |
| A 0114.3  | 21-27                          | 265              | B 0100.1  | 21-32                  | 270         |
| A 0114.4  | 21-27                          | 265              | B 0100.2  | 21-32                  | 270         |
| A 0114.5  | 21-27                          | 265              | B 0100.3  | 21-32                  | 270         |
| A 0114.6  | 21-28                          | 266              | B 0100.4  | 21-32                  | 270         |
| A 0114.7  | 21-28                          | 266              | B 0100.5  | 21-32                  | 270         |
| A 0114.8  | 21-28                          | 266              | B 0100.6  | 21-32                  | 270         |
| A 0114.9  | 21-28                          | 266              | B 0100.7  | 21-32                  | 270         |
| A 0114.10 | 21-28                          | 266              | B 0100.8  | 21-32                  | 270         |
| A 0114.11 | 21-28                          | 266              | B 0100.9  | 21-32                  | 270         |
| A 0114.12 | 21-28                          | 266              | B 0100.10 | 21-32                  | 270         |
| A 0114.13 | 21-28                          | 266              | B 0100.11 | 21-32                  | 270         |
| A 0114.14 | 21-28                          | 266              | B 0100.12 | 21-32                  | 270         |
| A 0114.15 | 21-26                          | 264              | B 0100.13 | 21-32                  | 270         |
| A 0114.16 | 21-27                          | 265              | B 0100.14 | 21-32                  | 270         |
| A 0114.17 | 21-27                          | 265              | B 0100.15 | 21-32                  | 270         |
| A 0114.18 | 21-26                          | 264              | B 0100.16 | 21-32                  | 270         |
| A 0114.19 | 21-26                          | 264              | B 0100.17 | 21-32                  | 270         |
| A 0114.20 | 21-28                          | 266              | B 0100.19 | 21-32                  | 270         |
| A 0114.21 | 21-27                          | 265              | B 0100.20 | 21-32                  | 270         |
| A 0114.22 | 21-27                          | 265              | B 0100.21 | 21-32                  | 270         |
| A 0114.23 | 21-28                          | 266              | B 0100.22 | 21-32                  | 270         |
| A 0114.24 | 21-28                          | 266              | B 0100.23 | 21-32                  | 270         |
| A 0114.25 | 21-28                          | 266              | B 0100.24 | 21-32                  | 270         |

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## Apollo 10 Stowed Equipment, Item No. / Figure Ref Index

| Item No.  | Figure Reference               | Page No.              | Item No. | Figure Reference               | Page No.    |
|-----------|--------------------------------|-----------------------|----------|--------------------------------|-------------|
| B 0100.25 | 21-32                          | 270                   | B 0111.1 | 21-42                          | 281         |
| B 0100.26 | 21-32                          | 270                   | B 0111.2 | 21-42                          | 281         |
| B 0100.27 | 21-32                          | 270                   | B 0112   | 21-2 (Sht 7)                   | 237         |
| B 0101    | 21-29                          | 267                   | B 0112.1 | 21-2 (Sht 7)                   | 237         |
| B 0101.1  | 21-29                          | 267                   | B 0112.2 | 21-2 (Sht 7)                   | 237         |
| B 0101.2  | 21-29                          | 267                   | B 0112.3 | 21-2 (Sht 7)                   | 237         |
| B 0101.3  | 21-29                          | 267                   | B 0112.4 | 21-2 (Sht 7)                   | 237         |
| B 0101.4  | 21-29                          | 267                   | B 0113   | 21-11 (Sht 2)                  | 248         |
| B 0101.5  | 21-29                          | 267                   | B 0115   | 21-2 (Sht 5),<br>21-4 (Sht 2)  | 235,<br>240 |
| B 0101.6  | 21-29                          | 267                   | B 0116   | 21-3                           | 238         |
| B 0101.7  | 21-29                          | 267                   | B 0117   | 21-34                          | 272         |
| B 0101.8  | 21-29                          | 267                   | B 0118   | 21-34                          | 272         |
| B 0101.9  | 21-29                          | 267                   | B 0120   | Deleted                        |             |
| B 0101.10 | 21-29                          | 267                   | B 0120.1 | 21-34                          | 272         |
| B 0101.11 | 21-29                          | 267                   | B 0120.2 | 21-34                          | 272         |
| B 0101.12 | 21-29                          | 267                   | B 0120.3 | 21-34                          | 272         |
| B 0101.13 | 21-29                          | 267                   | B 0121   | 21-3                           | 238         |
| B 0101.14 | 21-29                          | 267                   | B 0122   | 21-31                          | 269         |
| B 0102    | 21-29                          | 267                   | B 0128   | 21-32                          | 270         |
| B 0102.1  | 21-29                          | 267                   | B 0130   | 21-8                           | 244         |
| B 0102.2  | 21-29                          | 267                   | B 0132   | 21-2 (Sht 7)                   | 237         |
| B 0102.3  | 21-29                          | 267                   | B 0134   | 21-9                           | 245         |
| B 0102.4  | 21-29                          | 267                   | B 0135   | 21-11 (Sht 1)                  | 247         |
| B 0102.5  | 21-29                          | 267                   | B 0137   | 21-28                          | 266         |
| B 0102.6  | 21-29                          | 267                   | B 0138   | 21-37                          | 276         |
| B 0102.7  | 21-29                          | 267                   |          |                                |             |
| B 0102.8  | 21-29                          | 267                   | C 0100   | 21-15                          | 253         |
| B 0102.9  | 21-29                          | 267                   | C 0101   | 21-14                          | 252         |
| B 0103    | 21-4 (Sht 2),<br>21-11 (Sht 2) | 240,<br>248           | C 0102   | 21-14                          | 252         |
| B 0104.1  | 21-4 (Sht 2)                   | 240                   | C 0103   | 21-14                          | 252         |
| B 0104.2  | 21-4 (Sht 2)                   | 240                   |          |                                |             |
| B 0104.3  | 21-4 (Sht 2)                   | 240                   | D 0100   | 21-22                          | 260         |
| B 0105    | 21-14, 21-15,<br>21-31, 21-37  | 252, 253,<br>269, 276 | D 0101   | 21-35                          | 273         |
| B 0106    | 21-11 (Sht 1)                  | 247                   | E 0104   | 21-2 (Sht 1),<br>21-11 (Sht 1) | 231,<br>247 |
| B 0107    | 21-2 (Sht 3),<br>21-11 (Sht 2) | 233,<br>247           | E 0106   | 21-10                          | 246         |
| B 0109    | 21-11 (Sht 2)                  | 248                   | E 0106.1 | 21-10                          | 246         |
| B 0110    | 21-24                          | 262                   | E 0106.2 | 21-10                          | 246         |
| B 0111    | 21-42                          | 281                   | E 0106.4 | 21-10                          | 246         |



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## Apollo 10 Stowed Equipment, Item No. / Figure Ref Index

| Item No. | Figure Reference | Page No. | Item No. | Figure Reference | Page No. |
|----------|------------------|----------|----------|------------------|----------|
| E 0106.5 | 21-10            | 246      | B 0201.2 | 21-2 (Sht 5),    | 235,     |
| E 0106.6 | 21-10            | 246      |          | 21-37            | 276      |
| E 0106.7 | 21-10            | 246      | B 0201.3 | 21-37            | 276      |
| E 0107   | 21-2 (Sht 7)     | 237      | B 0201.4 | 21-2 (Sht 2)     | 232      |
| E 0108   | 21-2 (Sht 7)     | 237      | B 0201.5 | 21-2 (Sht 4)     | 234      |
|          |                  |          | B 0201.6 | 21-2 (Sht 4)     | 234      |
| H 0100   | 21-26            | 264      | B 0202   | 21-2 (Sht 6),    | 236,     |
| H 0102   | 21-26            | 264      |          | 21-2 (Sht 7)     | 237      |
| H 0103   | 21-26            | 264      | B 0203   | 21-2 (Sht 1)     | 231      |
| H 0104   | 21-28            | 266      | B 0203.1 | 21-2 (Sht 1)     | 231      |
| H 0105   | 21-28            | 266      | B 0203.2 | 21-2 (Sht 1)     | 231      |
| H 0106   | 21-28            | 266      | B 0203.4 | 21-2 (Sht 1)     | 231      |
|          |                  |          | B 0203.5 | 21-2 (Sht 1)     | 231      |
| A 0200   | 21-2 (Sht 6)     | 236      | B 0203.6 | 21-2 (Sht 1)     | 231      |
| A 0201   | 21-2 (Sht 6)     | 236      | B 0204   | 21-2 (Sht 5)     | 235      |
| A 0202   | 21-2 (Sht 6)     | 236      | B 0205   | 21-2 (Sht 1),    | 231,     |
| A 0203   | 21-2 (Sht 6)     | 236      |          | 21-2 (Sht 2)     | 232      |
| A 0204   | 21-2 (Sht 6)     | 236      | B 0206   | 21-2 (Sht 5)     | 235      |
| A 0205   | 21-2 (Sht 5),    | 235,     | B 0207   | 21-2 (Sht 2)     | 232      |
|          | 21-2 (Sht 7)     | 237      | B 0208   | 21-2 (Sht 2)     | 232      |
| A 0206   | 21-2 (Sht 5),    | 235,     |          |                  |          |
|          | 21-2 (Sht 7)     | 237      | D 0200   | 21-2 (Sht 5)     | 235      |
| A 0207   | 21-2 (Sht 7)     | 237      | D 0201   | 21-2 (Sht 2)     | 232      |
| A 0208   | 21-2 (Sht 6)     | 236      |          |                  |          |
|          |                  |          | Ø 0300   | 21-3             | 238      |
| B 0200   | 21-2 (Sht 5),    | 235,     | Ø 0301   | 21-4 (Sht 1)     | 239      |
|          | 21-37            | 276      | Ø 0302   | 21-41            | 280      |
| B 0200.1 | 21-2 (Sht 4),    | 234,     | Ø 0303   | 21-41            | 280      |
|          | 21-37            | 276      | Ø 0304   | 21-41            | 280      |
| B 0200.2 | 21-2 (Sht 5),    | 235,     | Ø 0305   | 21-41            | 280      |
|          | 21-2 (Sht 6),    | 236,     | Ø 0306   | 21-41            | 280      |
|          | 21-14, 21-15     | 252, 253 | Ø 0307   | 21-41            | 280      |
| B 0200.3 | 21-37            | 276      | Ø 0308   | 21-4 (Sht 1)     | 239      |
| B 0200.4 | 21-2 (Sht 2)     | 232      | Ø 0308.1 | 21-4 (Sht 1)     | 239      |
| B 0200.5 | 21-2 (Sht 4)     | 234      | Ø 0308.2 | 21-4 (Sht 1)     | 239      |
| B 0200.6 | 21-2 (Sht 4)     | 234      | Ø 0308.3 | 21-4 (Sht 1)     | 239      |
| B 0201   | 21-2 (Sht 5),    | 235,     | Ø 0308.4 | 21-4 (Sht 1)     | 239      |
|          | 21-37            | 276      | Ø 0308.5 | 21-4 (Sht 1)     | 239      |
| B 0201.1 | 21-2 (Sht 5),    | 235,     | Ø 0308.6 | 21-4 (Sht 1)     | 239      |
|          | 21-37            | 276      | Ø 0308.7 | 21-4 (Sht 1)     | 239      |



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| Item No.  | Figure Reference | Page No.  | Item No. | Figure Reference | Page No.  |
|-----------|------------------|-----------|----------|------------------|-----------|
| Ø 0308.8  | 21-4 (Sht 1)     | 239       | Ø 0335   | 21-7             | 243       |
| Ø 0308.9  | 21-4 (Sht 1)     | 239       | Ø 0336   | 21-8             | 244       |
| Ø 0308.10 | 21-4 (Sht 1)     | 239       | Ø 0337   | 21-9             | 245       |
| Ø 0308.11 | 21-4 (Sht 1)     | 239       | Ø 0338   | 21-10            | 246       |
| Ø 0308.12 | 21-4 (Sht 1)     | 239       | Ø 0339   | 21-11 (Sht 1)    | 247       |
| Ø 0308.13 | 21-4 (Sht 1)     | 239       | Ø 0340   | 21-17            | 255       |
| Ø 0308.14 | 21-4 (Sht 1)     | 239       | Ø 0341   | 21-18            | 256       |
| Ø 0309    | 21-33            | 271       | Ø 0342   | 21-19            | 257       |
| Ø 0310    | 21-33            | 271       | Ø 0343   | 21-19            | 257       |
| Ø 0311    | 21-33            | 271       | Ø 0344   | 21-28            | 266       |
| Ø 0311.1  | 21-33            | 271       | Ø 0345   | 21-39            | 278       |
| Ø 0311.2  | 21-33            | 271       | Ø 0346   | 21-30            | 268       |
| Ø 0311.3  | 21-33            | 271       | Ø 0347   | 21-6             | 242       |
| Ø 0311.4  | 21-33            | 271       | Ø 0348   | 21-38            | 277       |
| Ø 0312    | 21-11 (Sht 1)    | 247       | Ø 0349   | 21-1             | 230       |
| Ø 0313    | 21-11 (Sht 1)    | 247       | Ø 0350   | 21-1             | 230       |
| Ø 0314    | 21-13, 21-23     | 250, 261  | Ø 0351   | 21-4 (Sht 1)     | 239       |
| Ø 0315    | 21-13            | 250       | Ø 0352   | 21-4 (Sht 1)     | 239       |
| Ø 0316    | 21-9             | 245       | Ø 0353   | 21-23            | 261       |
| Ø 0317    | 21-6             | 242       | Ø 0354   | 21-23            | 261       |
| Ø 0318    | 21-4 (Sht 1)     | 239       | Ø 0355   | 21-23            | 261       |
| Ø 0319    | 21-4 (Sht 1)     | 239       | Ø 0356   | 21-13            | 250       |
| Ø 0320    | 21-40            | 279       | Ø 0357   | 21-23            | 261       |
| Ø 0321    | 21-38, 21-40     | 277, 279  | Ø 0358   | 21-4 (Sht 1),    | 239       |
| Ø 0322    | 21-37            | 276       |          | 21-23            | 261       |
| Ø 0323    | 21-37            | 276       | Ø 0359   | 21-23            | 261       |
| Ø 0325    | 21-9             | 245       | Ø 0360   | 21-4 (Sht 1)     | 239       |
| Ø 0326    | 21-9             | 245       | Ø 0360.1 | 21-4 (Sht 1),    | 239,      |
| Ø 0327    | 21-6, -7, -9,    | 242, 243, |          | 21-10, -13,      | 246, 250, |
|           | -19, -25         | 245, 257, |          | -17, -42         | 255, 281  |
|           |                  | 263       | Ø 0361   | 21-4 (Sht 1)     | 239       |
| Ø 0328    | 21-6, -7, -9,    | 242, 243, | Ø 0362   | 21-4 (Sht 1)     | 239       |
|           | -19              | 245, 257  | Ø 0363   | 21-13            | 250       |
| Ø 0329    | 21-38            | 277       | Ø 0364   | 21-17            | 255       |
| Ø 0330    | 21-4 (Sht 1)     | 239       | Ø 0365   | 21-21            | 259       |
| Ø 0331    | 21-4 (Sht 1)     | 239       | Ø 0366   | 21-4 (Sht 1),    | 239,      |
| Ø 0332    | 21-4 (Sht 1)     | 239       |          | 21-18, -20       | 256, 258  |
| Ø 0333    | 21-4 (Sht 1),    | 239,      | Ø 0367   | 21-4 (Sht 1),    | 239,      |
|           | 21-4 (Sht 2)     | 240       |          | 21-18, -20       | 256, 258  |
| Ø 0334    | 21-6             | 242       |          |                  |           |

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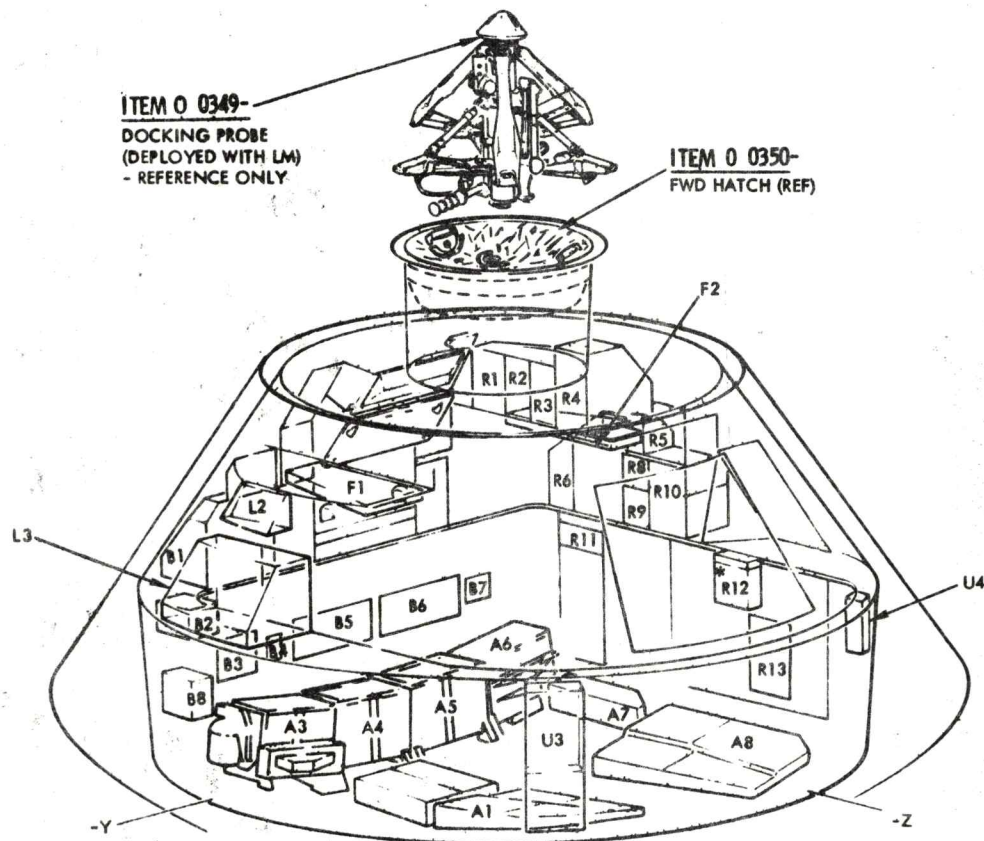
## Apollo 10 Stowed Equipment, Item No. /Figure Ref Index

| Item No. | Figure Reference       | Page No.    | Item No.  | Figure Reference | Page No. |
|----------|------------------------|-------------|-----------|------------------|----------|
| Ø 0368   | 21-4 (Sht 1),<br>21-18 | 239,<br>256 | Ø 3005    | 21-35            | 273      |
| Ø 0369   | 21-18                  | 256         | Ø 6300    | 21-26            | 264      |
| Ø 0370   | 21-18                  | 256         | Ø 6301    | 21-26            | 264      |
| Ø 0371   | 21-18                  | 256         | Ø 6302    | 21-38            | 277      |
| Ø 0372   | 21-18                  | 256         | Ø 6303    | 21-43            | 282      |
| Ø 0373   | 21-11 (Sht 2)          | 248         | Ø 6304    | 21-8, -37        | 244, 276 |
| Ø 0375   | 21-42                  | 281         | Ø 6307    | 21-8             | 244      |
| Ø 0376   | 21-10                  | 246         | Ø 6309    | 21-26            | 264      |
| Ø 0377   | 21-13                  | 250         | Ø 6311    | 21-33            | 271      |
| Ø 0378   | 21-3                   | 238         | Ø 6312    | 21-35            | 273      |
| Ø 0382   | 21-11 (Sht 2)          | 248         | Ø 6313    | 21-35            | 237      |
| Ø 0383   | 21-11 (Sht 2)          | 248         | Ø 6314    | 21-11 (Sht 1)    | 247      |
| Ø 0384   | 21-11 (Sht 2)          | 248         | Ø 6315    | 21-30            | 268      |
| Ø 0385   | 21-3                   | 238         | Ø 6316.1  | 21-11 (Sht 1)    | 247      |
| Ø 0386   | 21-3                   | 238         | Ø 6316.2  | 21-11 (Sht 1)    | 247      |
| Ø 0387   | 21-33                  | 271         | Ø 6316.3  | Deleted          |          |
| Ø 0388   | 21-33                  | 271         | Ø 6316.4  | 21-11 (Sht 1)    | 247      |
| Ø 0389   | 21-33                  | 271         | Ø 6316.5  | 21-11 (Sht 1)    | 247      |
| Ø 0390   | 21-33                  | 271         | Ø 6316.6  | 21-11 (Sht 1)    | 247      |
| Ø 0391   | 21-13                  | 250         | Ø 6316.7  | 21-11 (Sht 1)    | 247      |
| Ø 0392   | 21-3                   | 238         | Ø 6316.8  | 21-11 (Sht 1)    | 247      |
| Ø 0393   | 21-23                  | 261         | Ø 6316.9  | 21-16            | 254      |
| Ø 0394   | 21-4 (Sht 1)           | 239         | Ø 6316.10 | 21-16            | 254      |
| Ø 0395   | 21-4 (Sht 1)           | 239         | Ø 6316.11 | 21-16            | 254      |
| Ø 0398   | 21-31                  | 269         | Ø 6316.12 | 21-16            | 254      |
| Ø 0399   | 21-26                  | 264         | Ø 6317    | 21-11 (Sht 1)    | 247      |
|          |                        |             | Ø 6318    | 21-28            | 266      |



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| CONTAINER/<br>VOLUME NO. | ITEM<br>NO. (REF) | CONTAINER/<br>VOLUME NO. | ITEM<br>NO. (REF) | CONTAINER/<br>VOLUME NO. | ITEM<br>NO. (REF) |
|--------------------------|-------------------|--------------------------|-------------------|--------------------------|-------------------|
| A1                       | 0 0333            | B6                       | 0 0343            | R9                       | NONE              |
| A2                       | DELETED           | B7                       | NONE              | R10 (AFT)                | 0 0309            |
| A3                       | 0 0334            | B8                       | NONE              | R10 (FWD)                | 0 0310            |
| A4                       | 0 0335            | F1                       | REF ONLY          | R11                      | NONE              |
| A5                       | 0 0336            | F2                       | REF ONLY          | R12                      | 0 0344            |
| A6                       | 0 0337            | L2                       | NONE              | R13                      | NONE              |
| A7                       | 0 0338            | L3                       | NONE              | U3                       | NONE              |
| A8                       | 0 0339            | R1                       | NONE              | U4                       | 0 0345            |
| A10                      | DELETED           | R2                       | NONE              | PGA CONT                 | 0 0300            |
| B1                       | NONE              | R3                       | NONE              |                          |                   |
| B2                       | NONE              | R4                       | NONE              |                          |                   |
| B3                       | 0 0340            | R5                       | NONE              |                          |                   |
| B4                       | 0 0341            | R6                       | NONE              |                          |                   |
| B5                       | 0 0342            | R8                       | NONE              |                          |                   |

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Figure 21-1. Volume/Stowage Compartment Location



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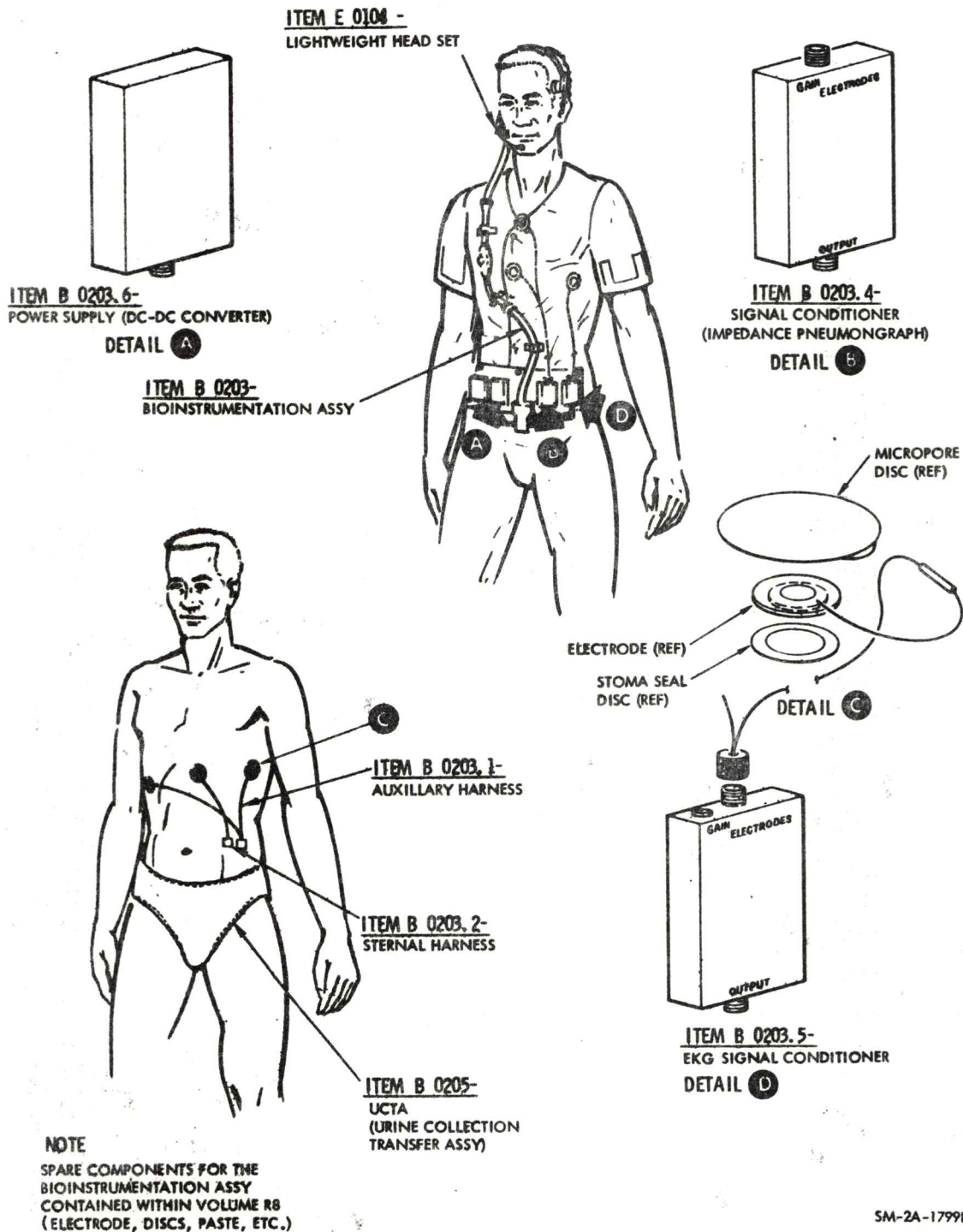
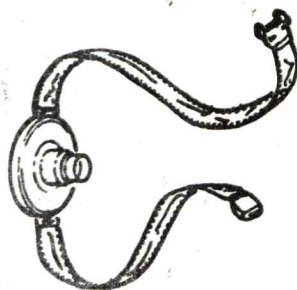


Figure 21-2. Spacesuit and Associated Equipment (Sheet 1 of 7)

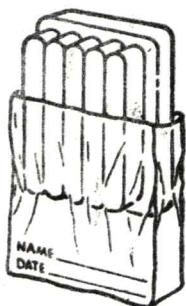
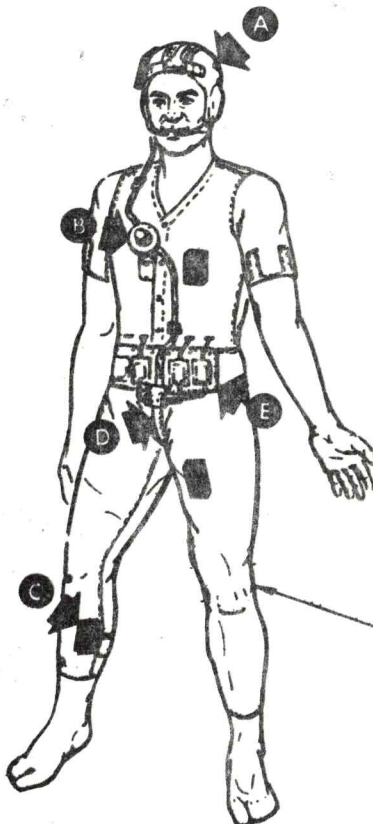
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SUIT ELECTRICAL HARNESS (REF)

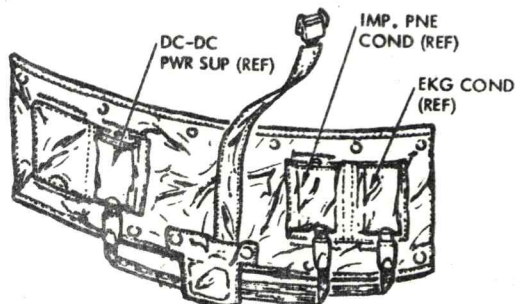
DETAIL B

ITEM D 0201-  
PASSIVE DOSIMETER  
(RADIATION)DETAIL C  
(TYPICAL 3 PLACES)ITEM B 0208-  
CONSTANT WEAR GARMENT (TYP)ITEM B 0200.4 (TWO)  
ITEM B 0201.4 (ONE)  
COMMUNICATIONS  
CARRIER

DETAIL A

ITEM B 0205- UCTA (TYP)  
(URINE COLLECTION-TRANSFER ASSY)

DETAIL D

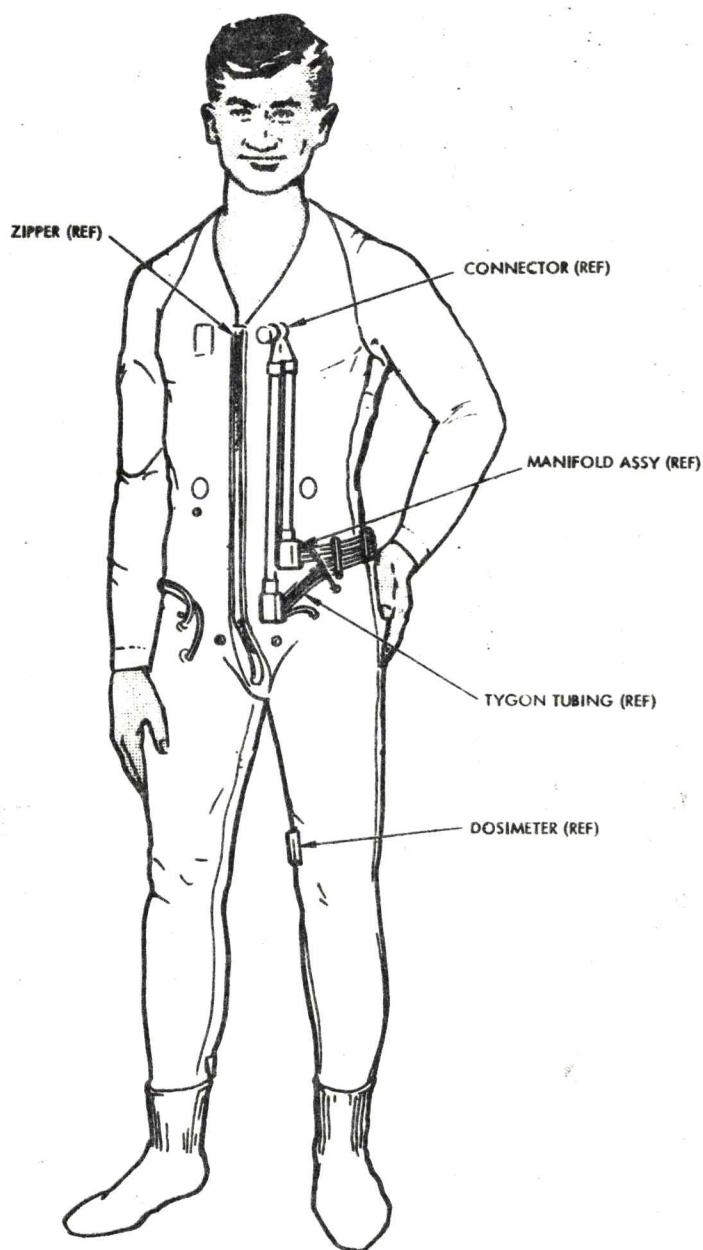
ITEM B 0207-  
BIOMEDICAL BELT ASSY  
DETAIL E

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Figure 21-2. Spacesuit and Associated Equipment (Sheet 2 of 7)

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ITEM B 0107 -  
LIQUID COOLED GARMENT\*

\*STOWAGE LOCATION, VOLUME A8

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Figure 21-2. Spacesuit and Associated Equipment (Sheet 3 of 7)

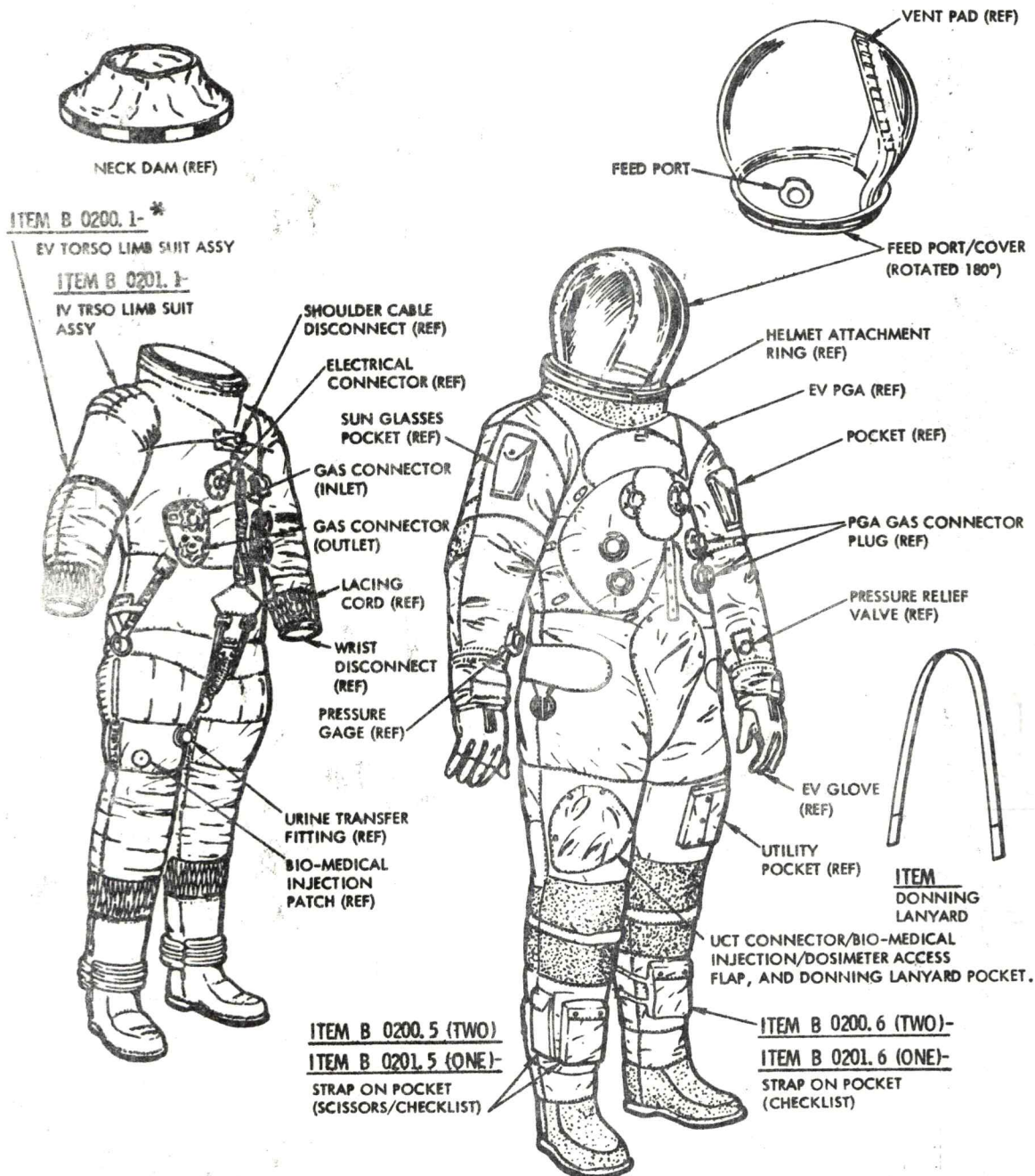
Changed 28 March 1969

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## NOTE:

\* TORSO LIMB SUITS WILL BE STOWED IN THE SLEEP RESTRAINT (UNDER CENTER COUCH)

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Figure 21-2. Spacesuit and Associated Equipment (Sheet 4 of 7)

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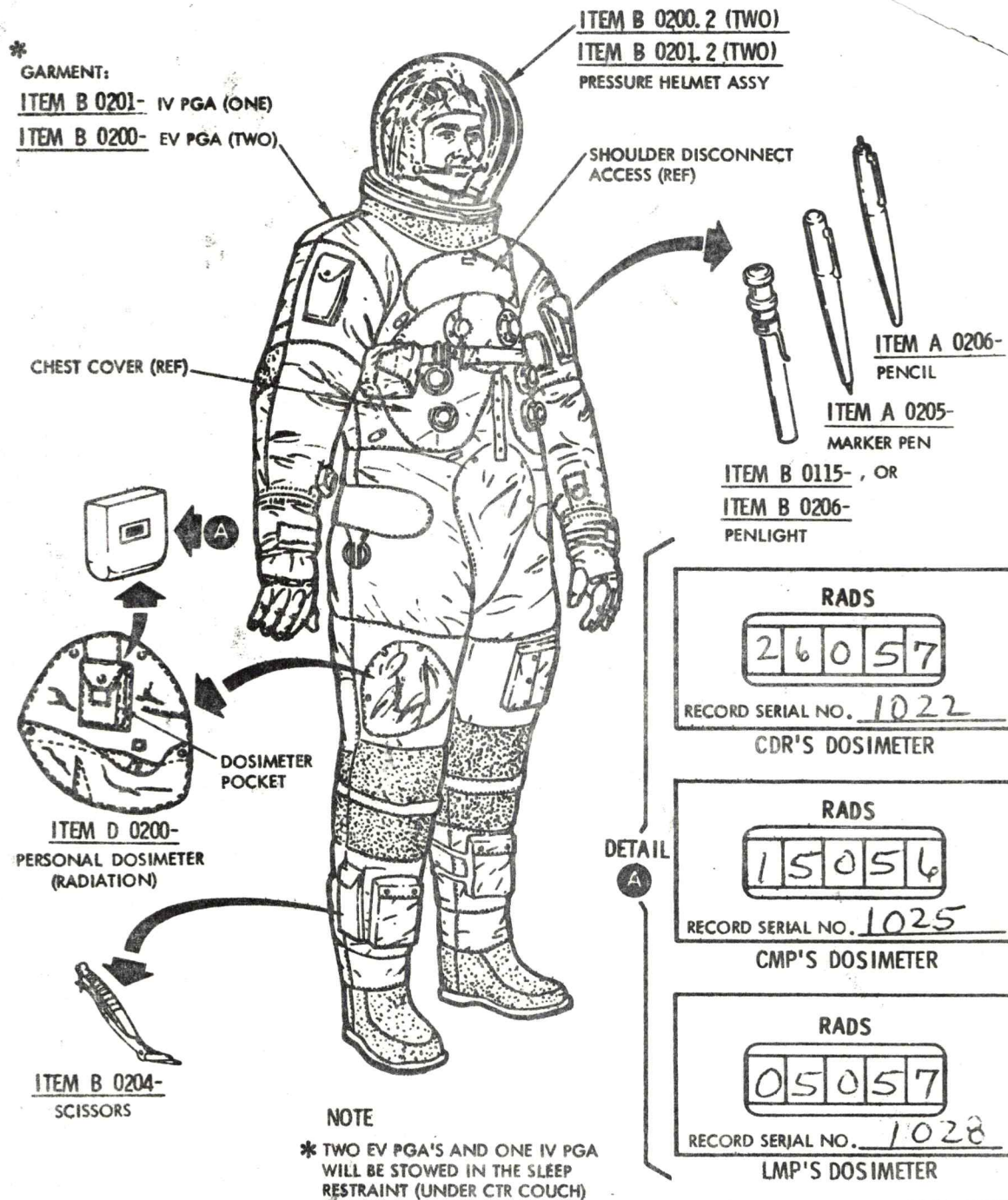
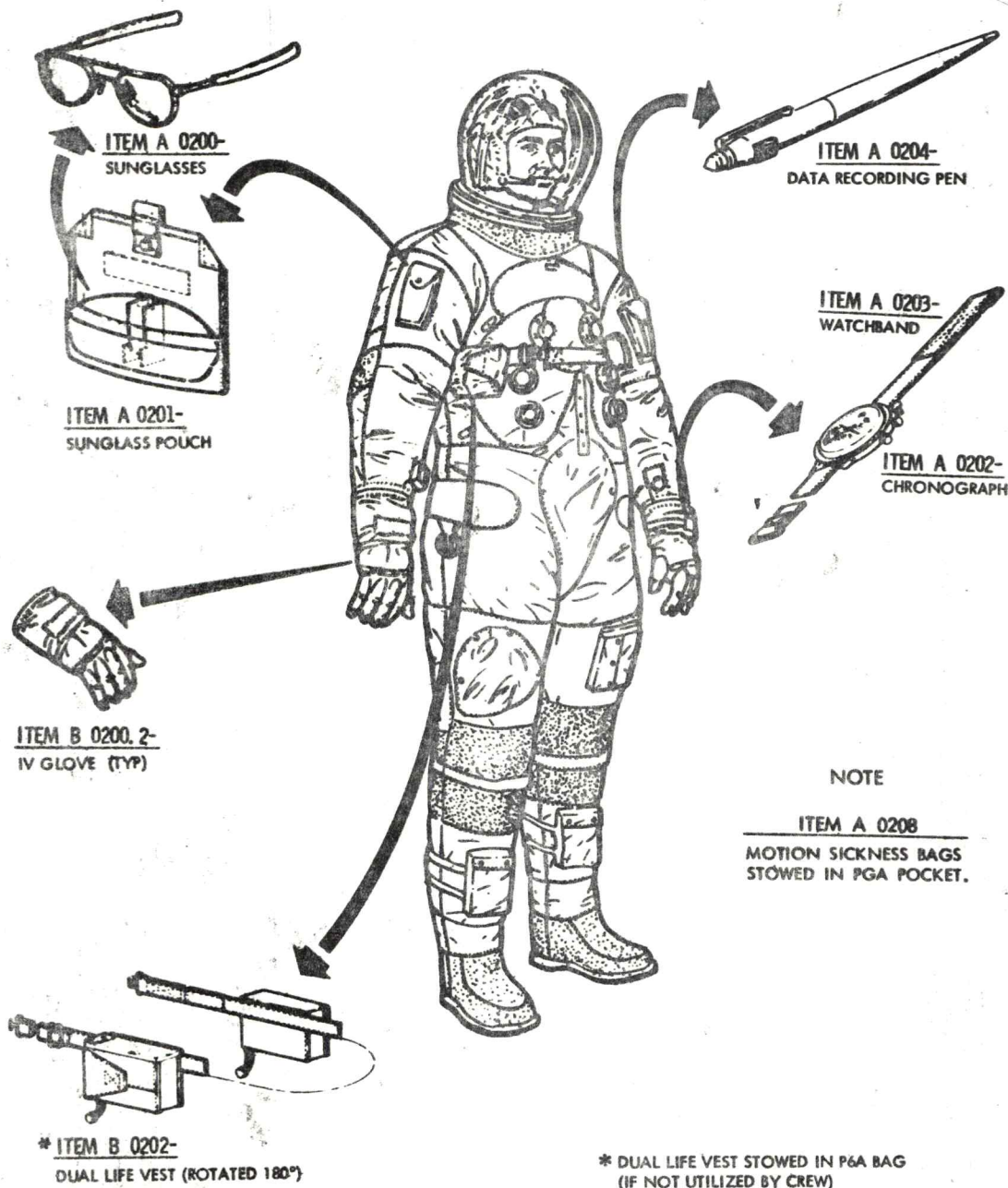


Figure 21-2. Spacesuit and Associated Equipment (Sheet 5 of 7)



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SM-2A-1937C

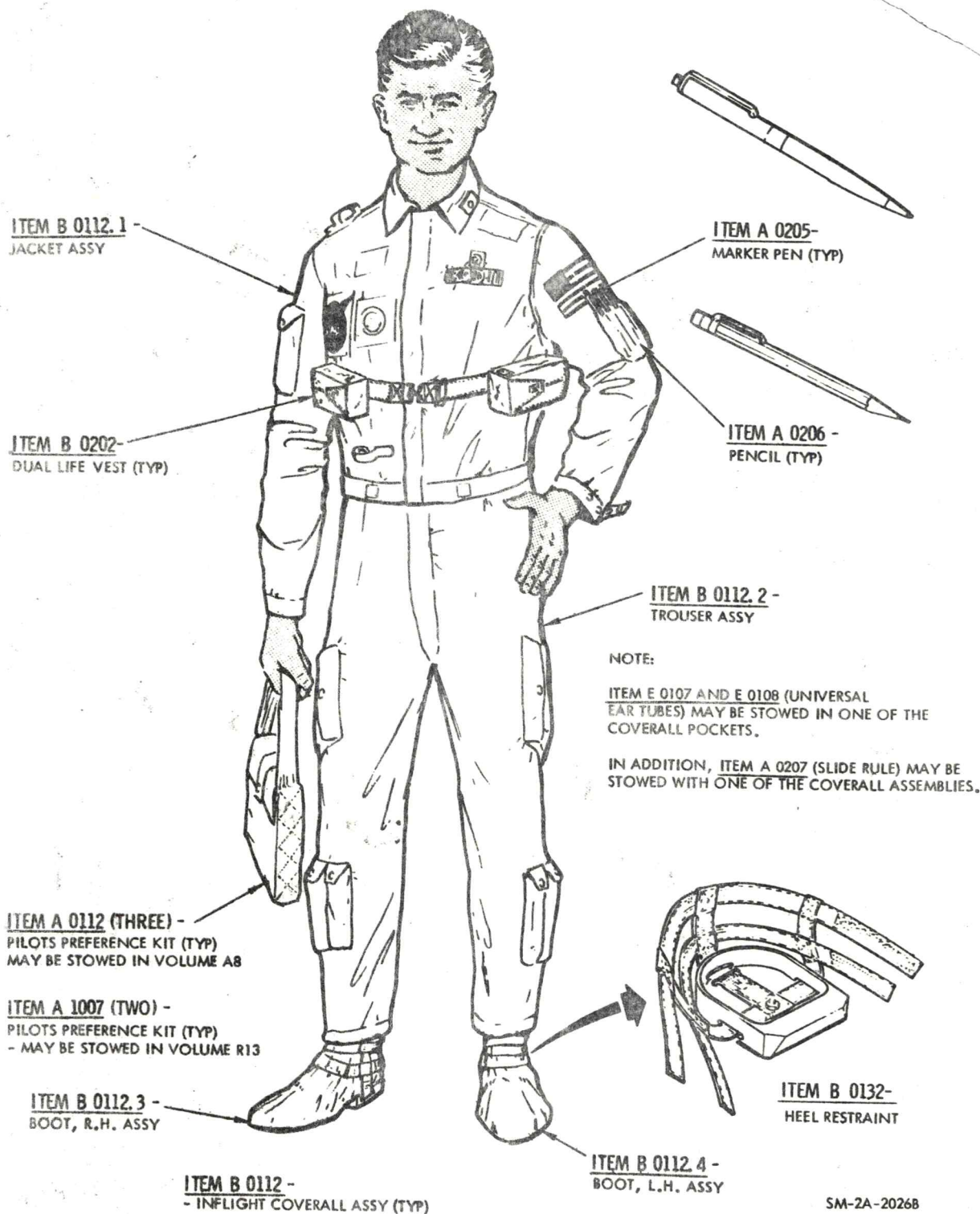
Figure 21-2. Spacesuit and Associated Equipment (Sheet 6 of 7)

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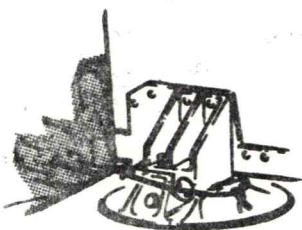


SM-2A-2026B

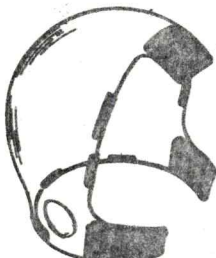
Figure 21-2. Spacesuit and Associated Equipment (Sheet 7 of 7)

## CREW EQUIPMENT REMOVAL

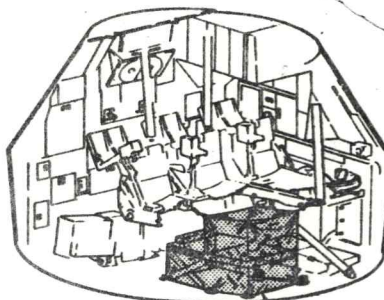
Sheet 16 of 59



\* TIE DOWN  
(TYP 6 PLACES)  
DETAIL B



DETAIL A  
ITEM B 0121  
PROTECTIVE SHIELD



PGA BAG  
(REF)

ITEM O 0392  
STRAP, COUCH  
RESTRAINT

ITEM O 0385  
STRAP, COUCH  
RESTRAINT

ITEM O 0386  
STRAP, COUCH  
RESTRAINT

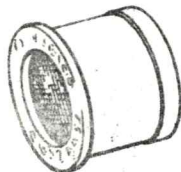
ITEM B 0202  
DUAL LIFE VEST (TYP)

ITEM O 0300-  
PGA CONTAINER

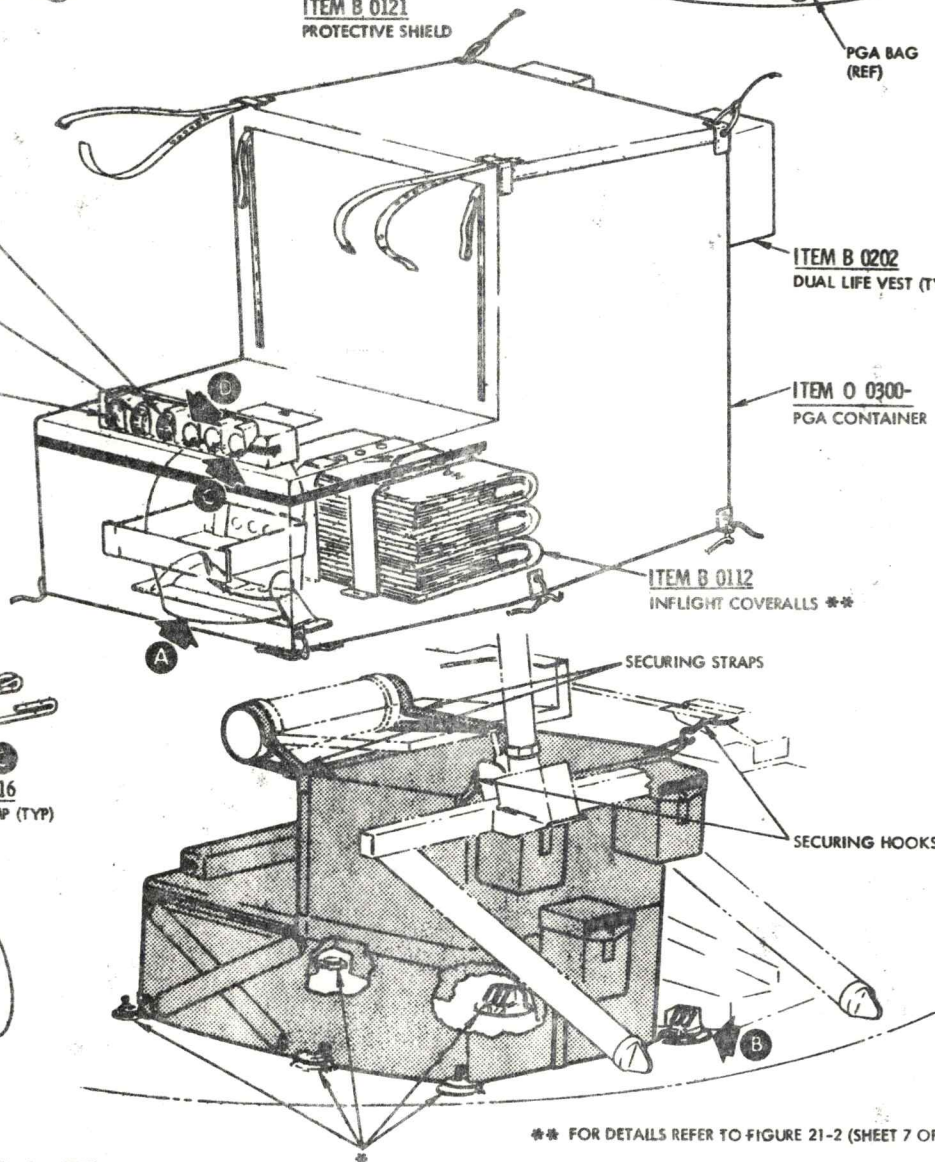
ITEM B 0112  
INFLIGHT COVERALLS \*\*



DETAIL C  
ITEM B 0116  
UCTA CLAMP (TYP)



DETAIL D  
ITEM O 0378  
O<sub>2</sub> HOSE SCREEN CAP (TYP)



SECURING STRAPS

SECURING HOOKS

\*\* FOR DETAILS REFER TO FIGURE 21-2 (SHEET 7 OF 7)

SM-2A-1796E

Figure 21-3. PGA Container

(288)



## Sheet 17 of 59

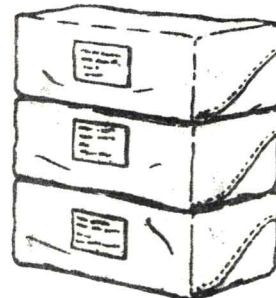
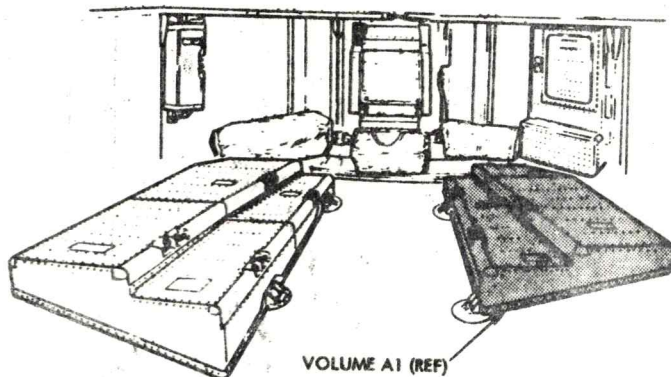


Figure 21-4. Volume A1 (Sheet 1 of 2)



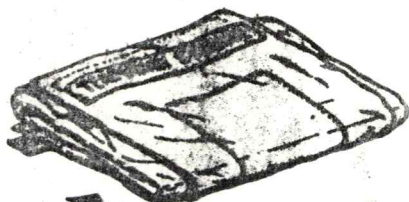
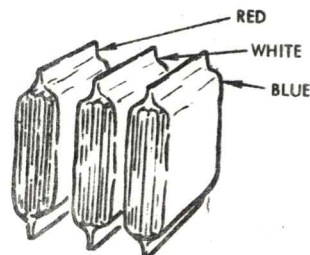
## CREW EQUIPMENT REMOVAL

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ITEM B 0103- TISSUE DISPENSER (TYP)

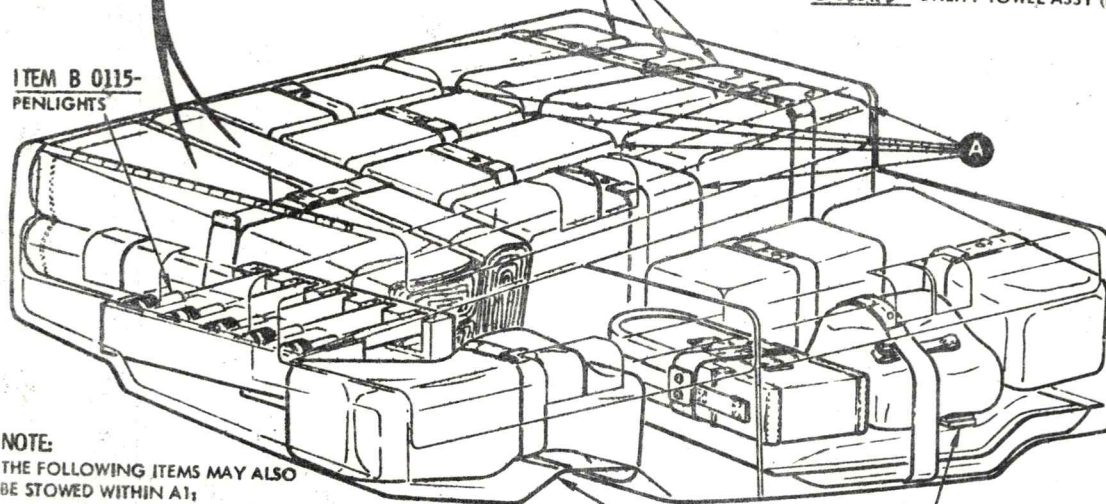
DETAIL A

ITEM O 0301-  
TEMPORARY STORAGE  
CONTAINER

UTILITY TOWELS (TYP)

DETAIL B

- ITEM: B 0104, 1- UTILITY TOWEL ASSY (RED)  
 B 0104, 2- UTILITY TOWEL ASSY (WHITE)  
 B 0104, 3- UTILITY TOWEL ASSY (BLUE)

ITEM B 0115-  
PENLIGHTS

## NOTE:

THE FOLLOWING ITEMS MAY ALSO  
BE STOWED WITHIN A1:

- ITEM O 0360- INFLIGHT RETAINER STRAPS (GENERAL USE)  
 ITEM O 0360, 1- INFLIGHT RETAINER STRAPS (STOWAGE)  
 ITEM O 0395- PROBE STOWAGE STRAP  
 ITEM O 0394- PROBE STOWAGE STRAP

SM-2A-1930C

Figure 21-4. Volume A1 (Sheet 2 of 2)

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CREW EQUIPMENT REMOVAL

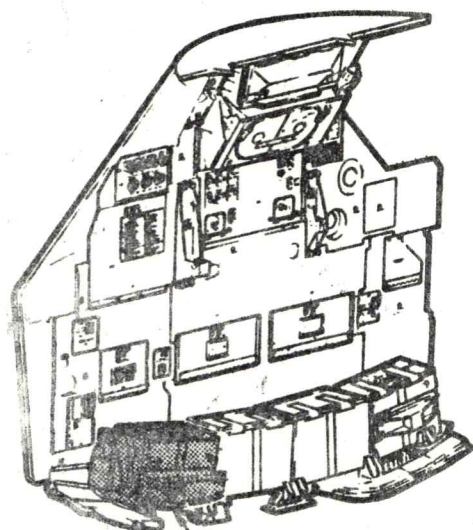
Sheet 19 of 59

Figure 21-5. Volume A2 (Deleted).

Changed 28 March 1969

## CREW EQUIPMENT REMOVAL

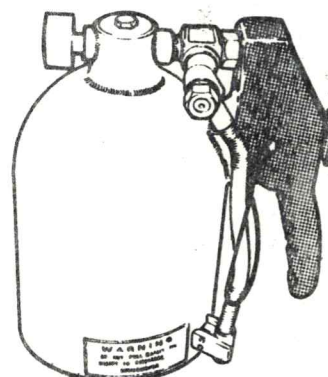
Sheet 20 of 59



VOLUME A3 (REF)

## CAUTION

- ALL PERSONNEL HANDLING CO<sub>2</sub> ABSORBERS MUST WEAR RUBBER GLOVES.
- AVOID CONTAMINATION OF SMOKING MATERIALS/HEAT GENERATING UNITS



DETAIL A

ITEM 0 0328-  
SHIM, CO<sub>2</sub> ABSORBER (TYP)

ITEM 0 0327-  
CO<sub>2</sub> ABSORBER (TYP)

VOLUME A3

ITEM 0 0347-  
FIRE EXTINGUISHER

ITEM 0 0334-  
A3 CONTAINER

STATIC GROUND (REF)

ITEM 0 0317-  
MOUNT, TRANSLATION  
CONTROLLER

RELEASE LATCH TO REMOVE

SM-2A-1927D

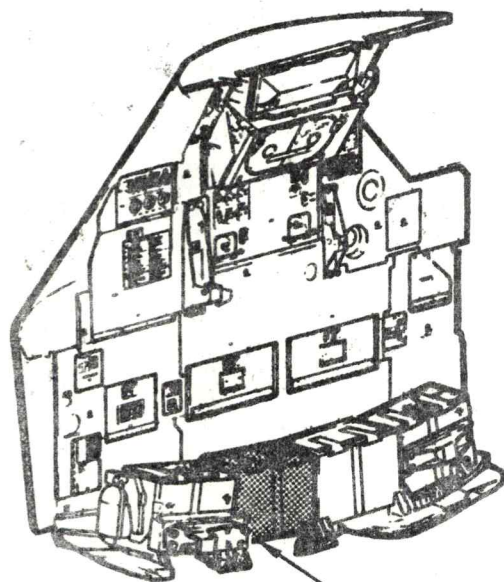
Figure 21-6. Volume A3

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## CREW EQUIPMENT REMOVAL

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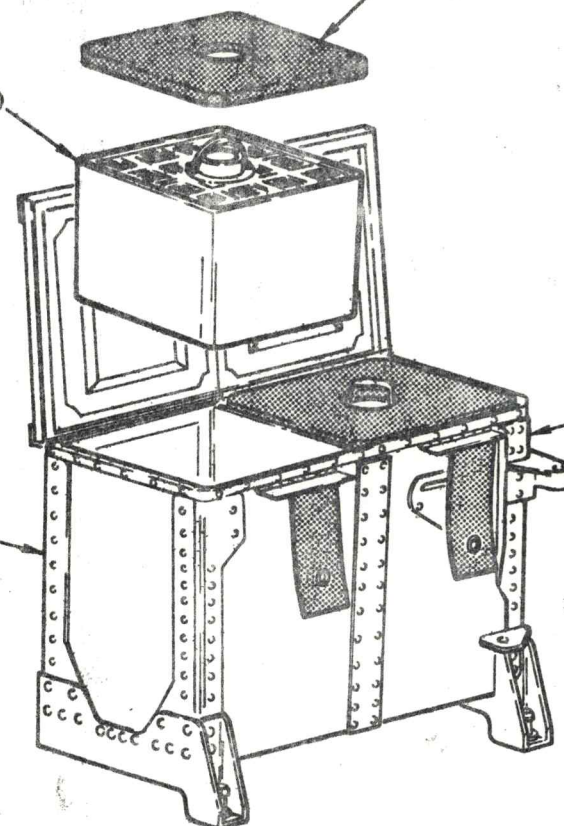
VOLUME A4 (REF)

## CAUTION

- ALL PERSONNEL HANDLING CO<sub>2</sub> ABSORBERS MUST WEAR RUBBER GLOVES.
- AVOID CONTAMINATION OF SMOKING MATERIALS/HEAT GENERATING UNITS

ITEM O 0327 -  
CO<sub>2</sub> ABSORBER (TYP)ITEM O 0328 -  
SHIM, CO<sub>2</sub> ABSORBER (TYP)

VOLUME A4

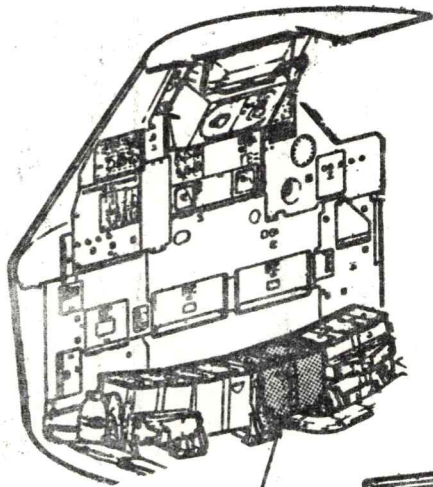
ITEM O 0335 -  
A4 CONTAINER

SM-2A-2020A

Figure 21-7. Volume A4

CREW EQUIPMENT REMOVAL

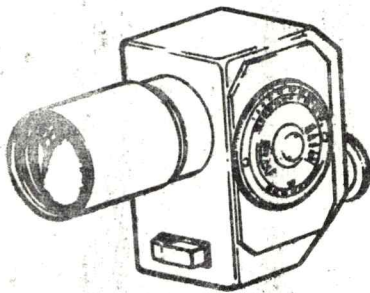
Sheet 22 of 59



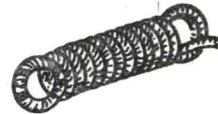
VOLUME A5 (REF)

ITEM B 0130 -  
HEADREST PADS  
(LOCATED ON CREW COUCHES)

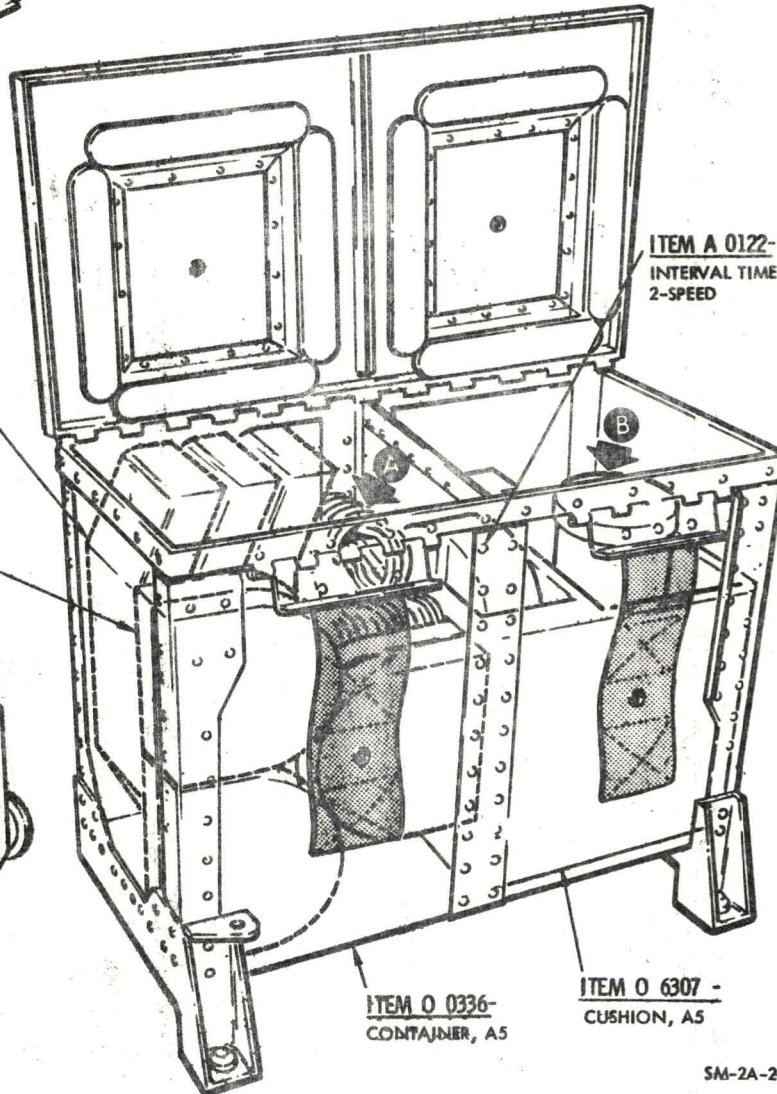
HEEL RESTRAINTS  
(REFER TO FIGURE 21-2  
SHEET 7 OF 7 FOR DETAILS)



DETAIL B  
ITEM A 0119-  
SPOTMETER, AUTO-1°



DETAIL A ITEM Q 6304-  
ROPE, SLEEP RESTRAINT (TYP)



ITEM A 0122-  
INTERVAL TIMER,  
2-SPEED

ITEM O 0336-  
CONTAINER, A5

ITEM O 6307 -  
CUSHION, A5

SM-2A-20246

Figure 21-8. Volume A5

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## CREW EQUIPMENT REMOVAL

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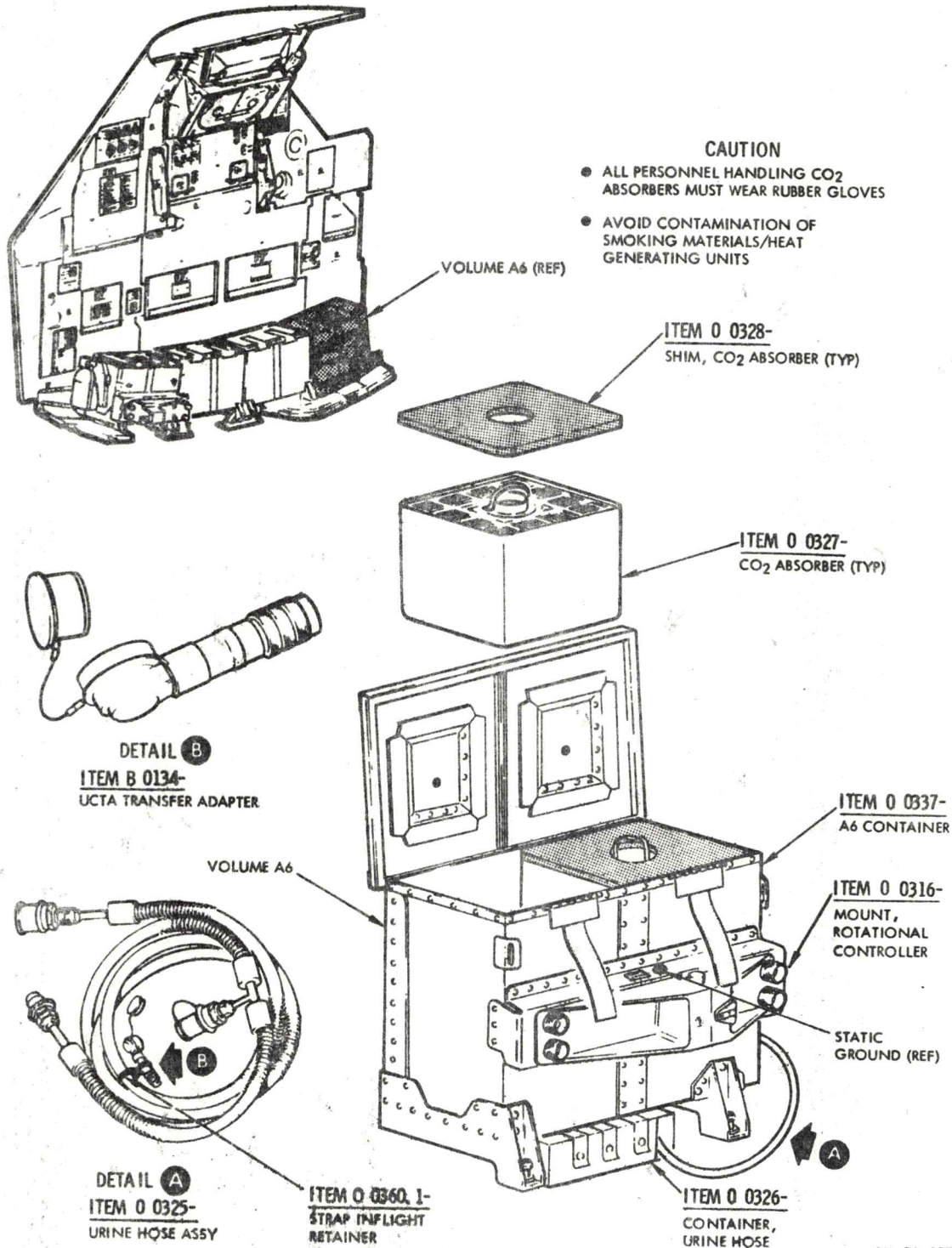


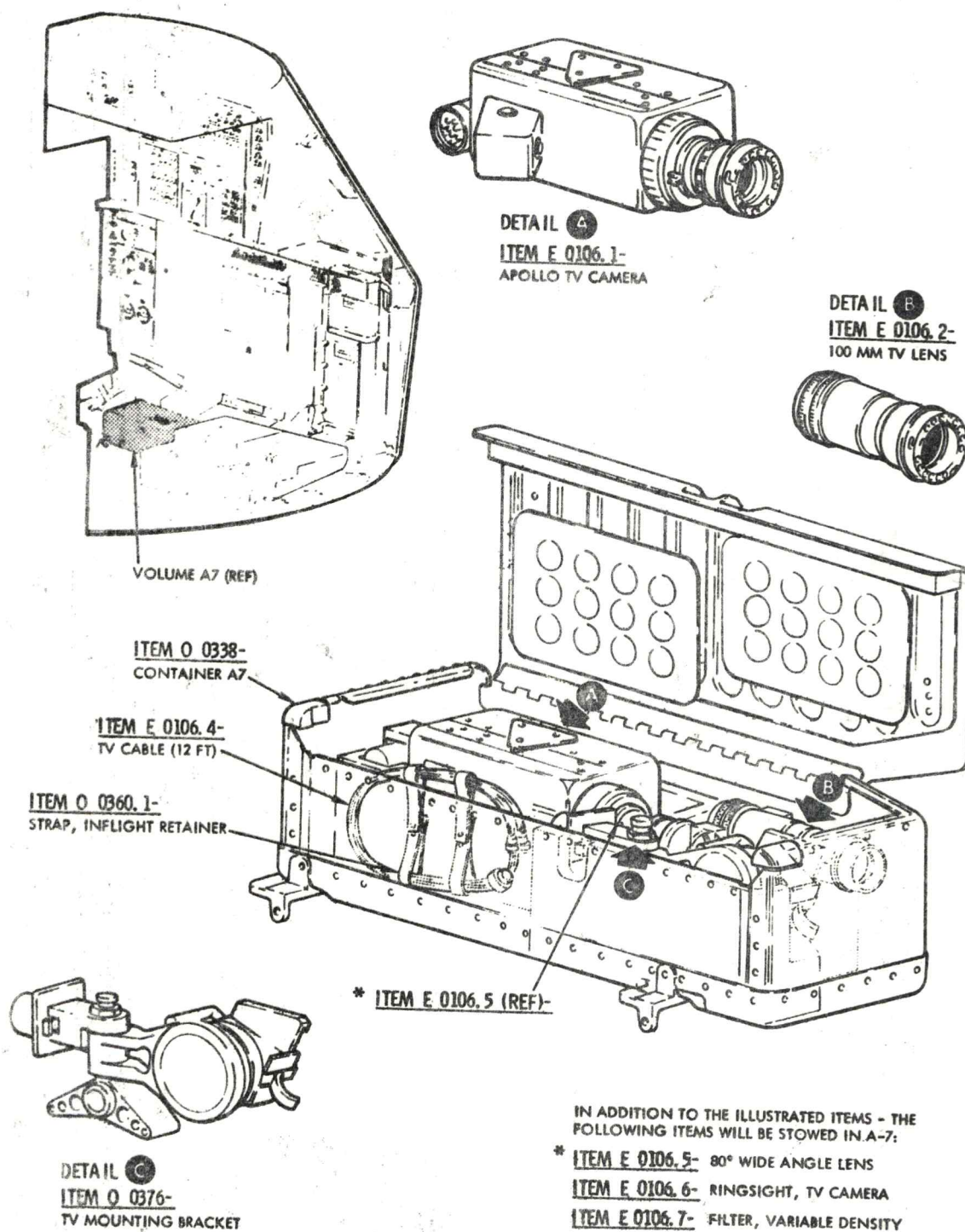
Figure 21-9. Volume A6

Changed 28 March 1969



## CREW EQUIPMENT REMOVAL

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## ITEM E 0106 - TV SUBSYSTEM

SM-2A-2050

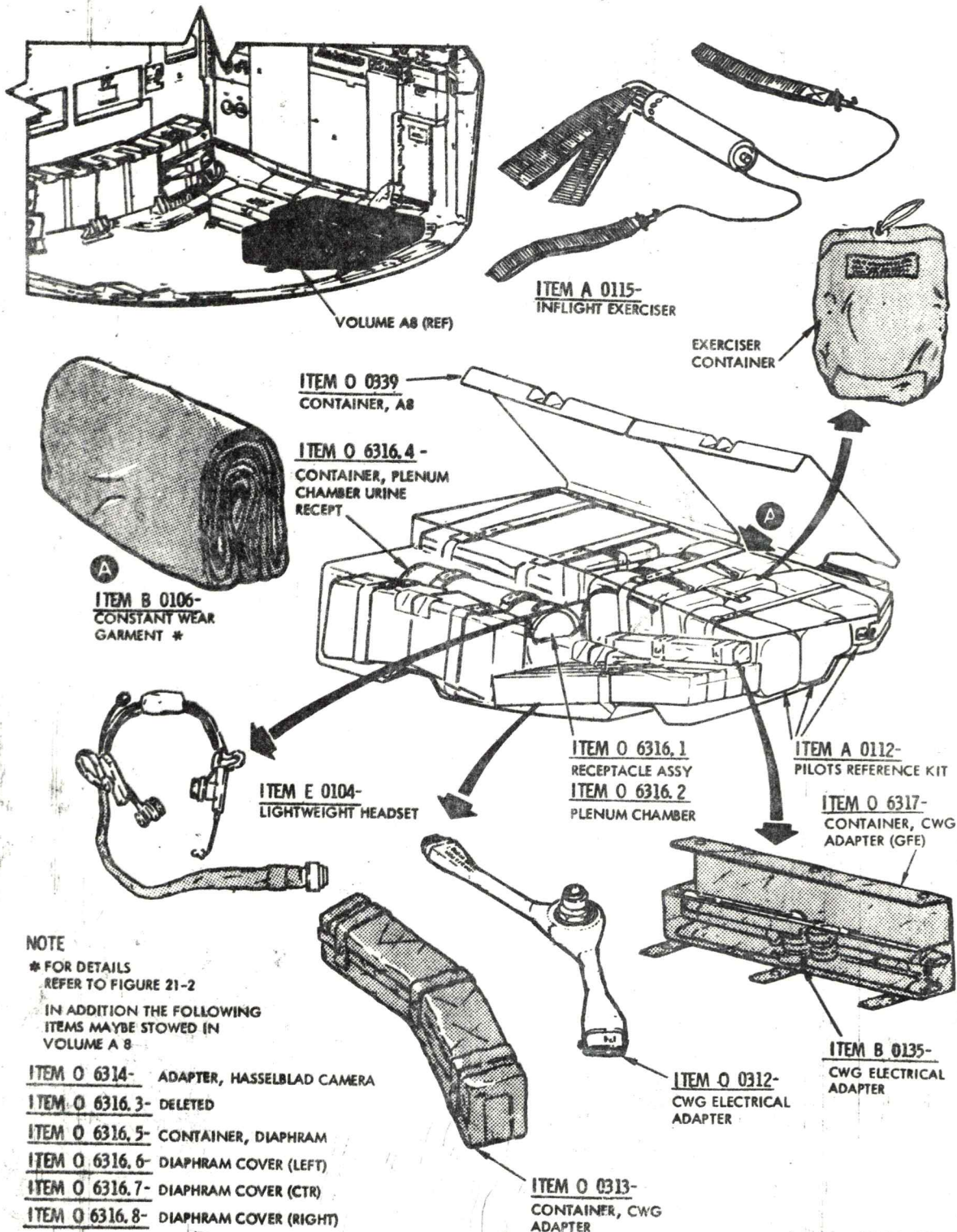
Figure 21-10. Volume A7

295

Changed 28 March 1969

## CREW EQUIPMENT REMOVAL

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SM-2A-1931C

Figure 21-11. Volume A8 (Sheet 1 of 2)



## CREW EQUIPMENT REMOVAL

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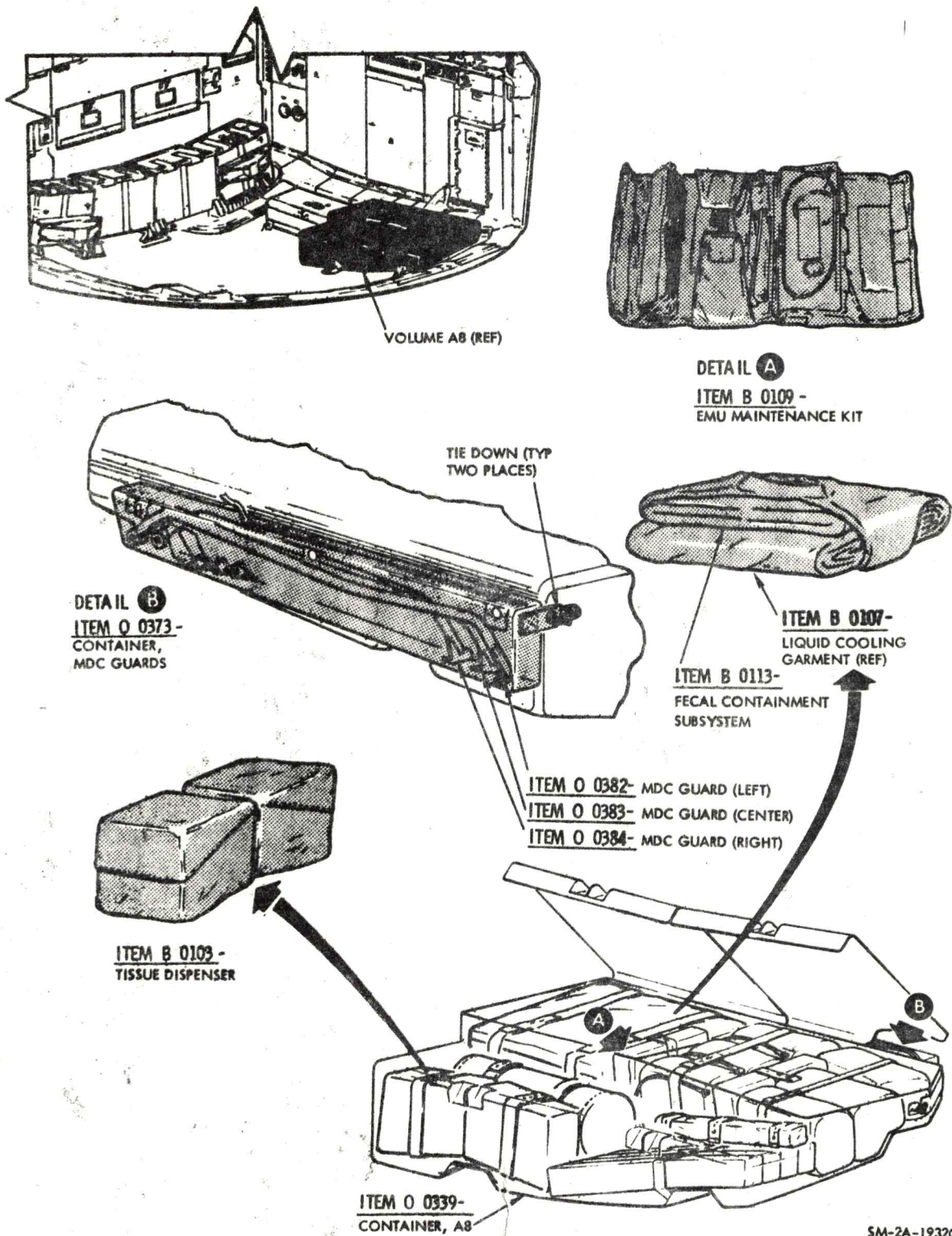


Figure 21-11. Volume A8 (Sheet 2 of 2)



CREW EQUIPMENT REMOVAL

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Figure 21-12. Volume A10 Deleted

Changed 28 March 1969

## CREW EQUIPMENT REMOVAL

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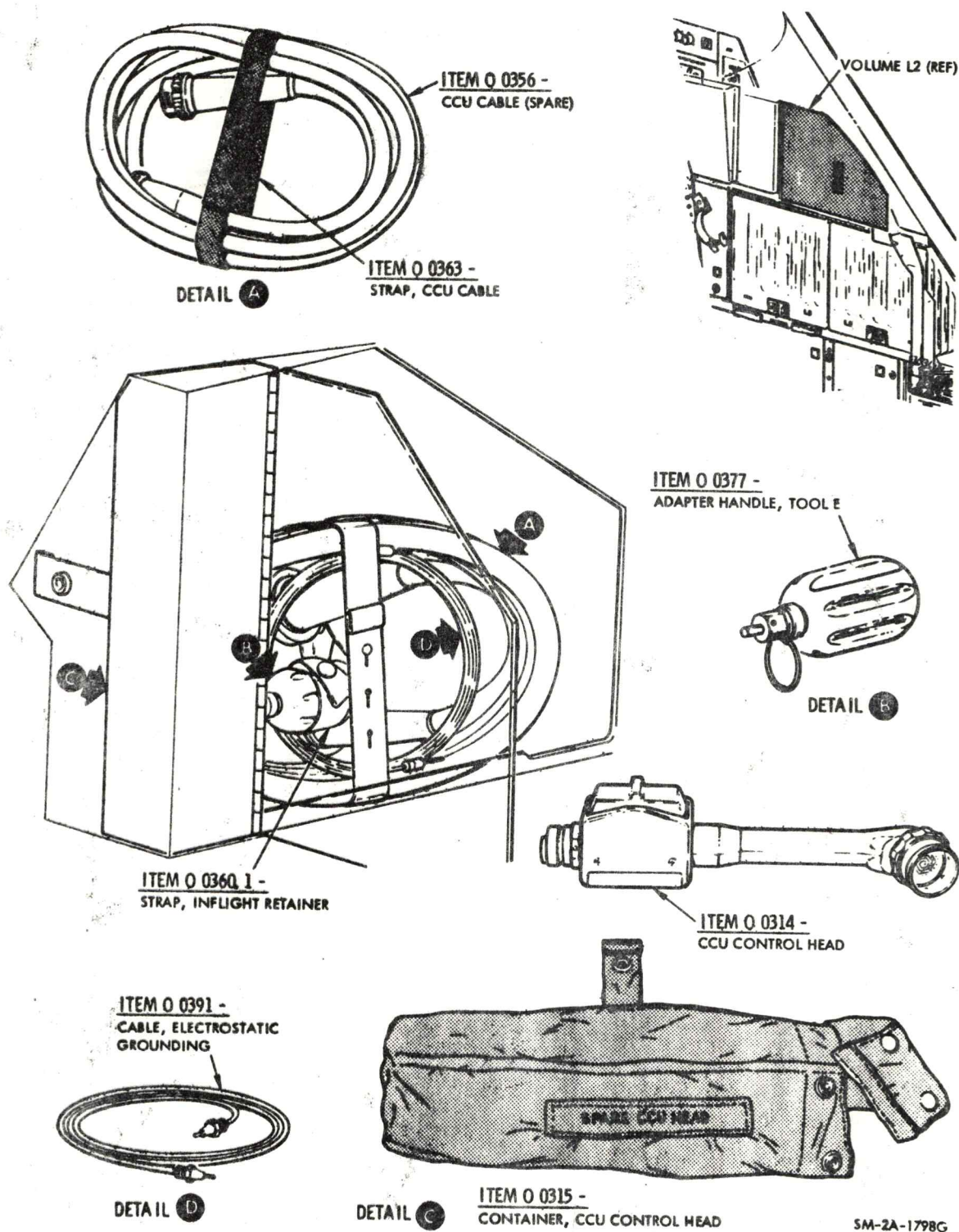


Figure 21-13. Volume L2

298

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## CREW EQUIPMENT REMOVAL

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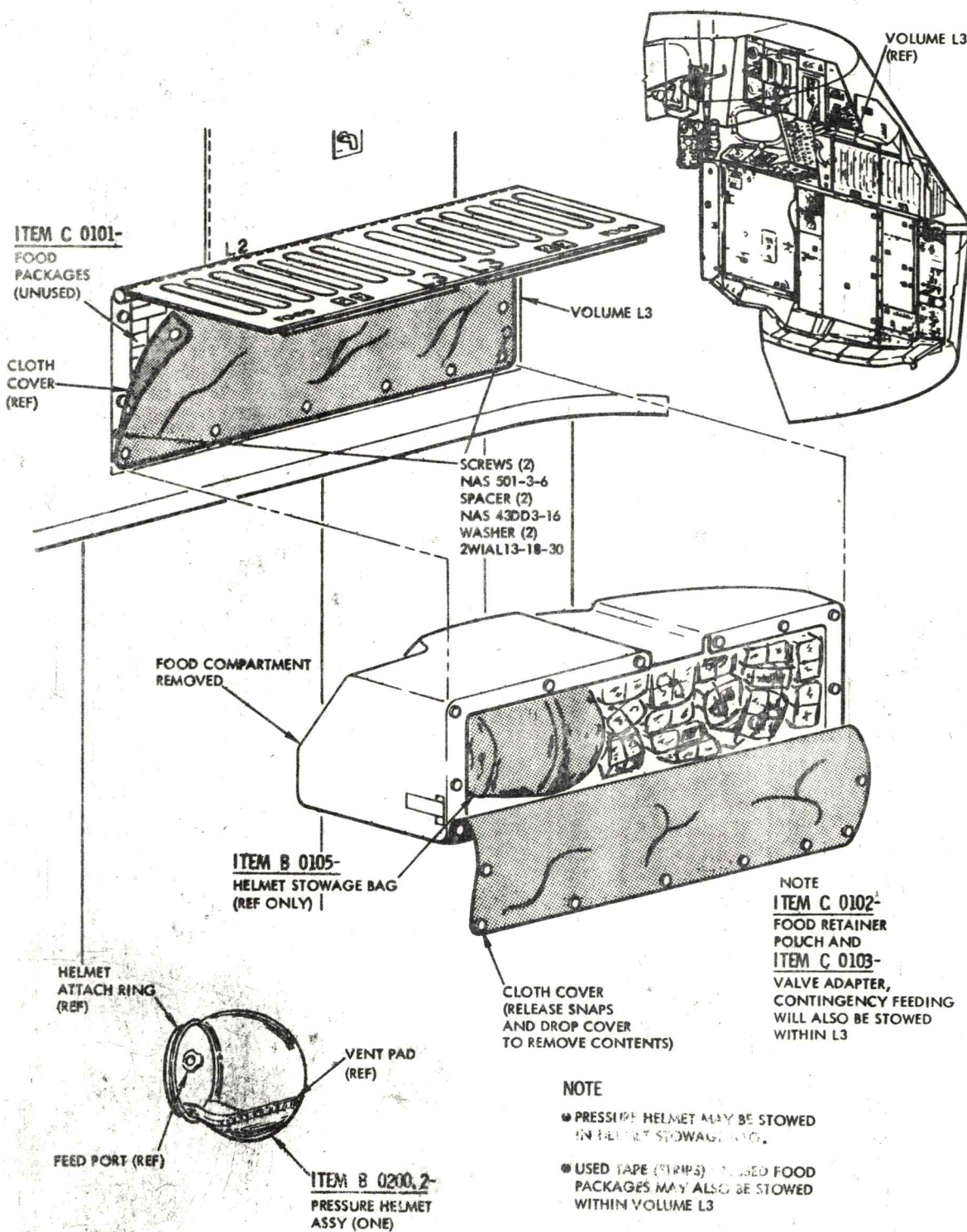
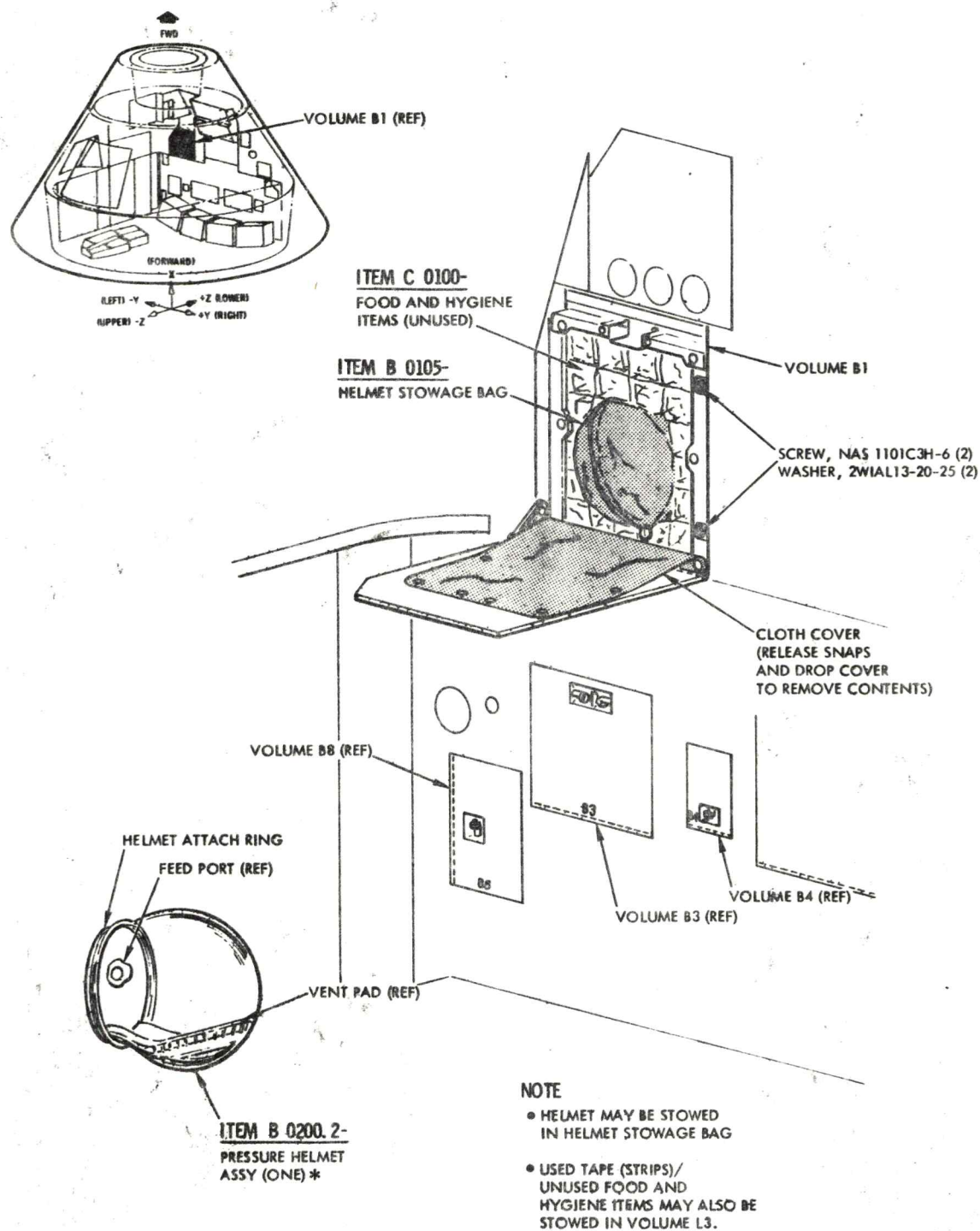


Figure 21-14. Volume L3

SM-2A-2023A

## CREW EQUIPMENT REMOVAL

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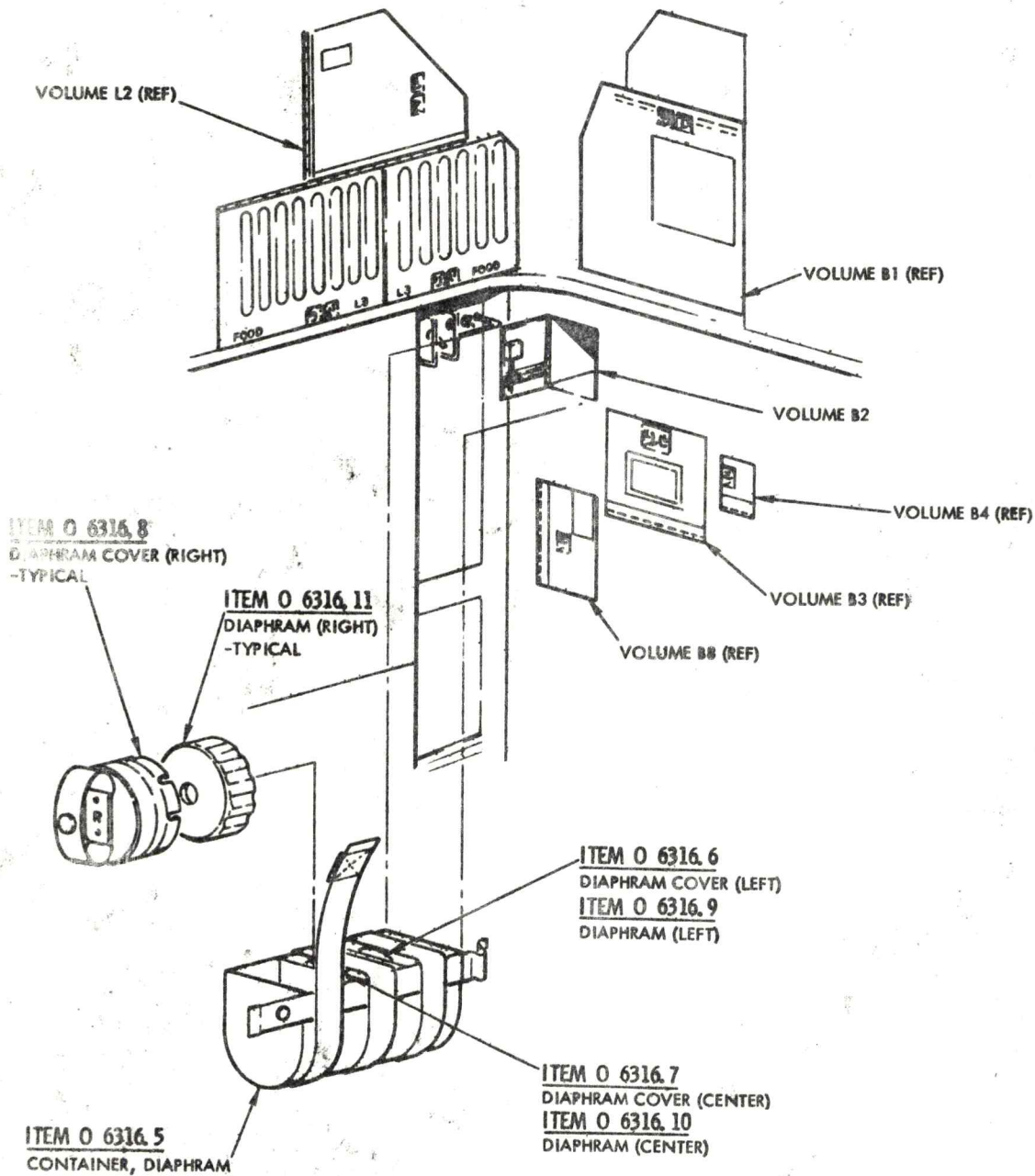


SM-2A-2022 A

Figure 21-15. Volume B1

## CREW EQUIPMENT REMOVAL

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SM-2A-19968

Figure 21-16. Volume B2

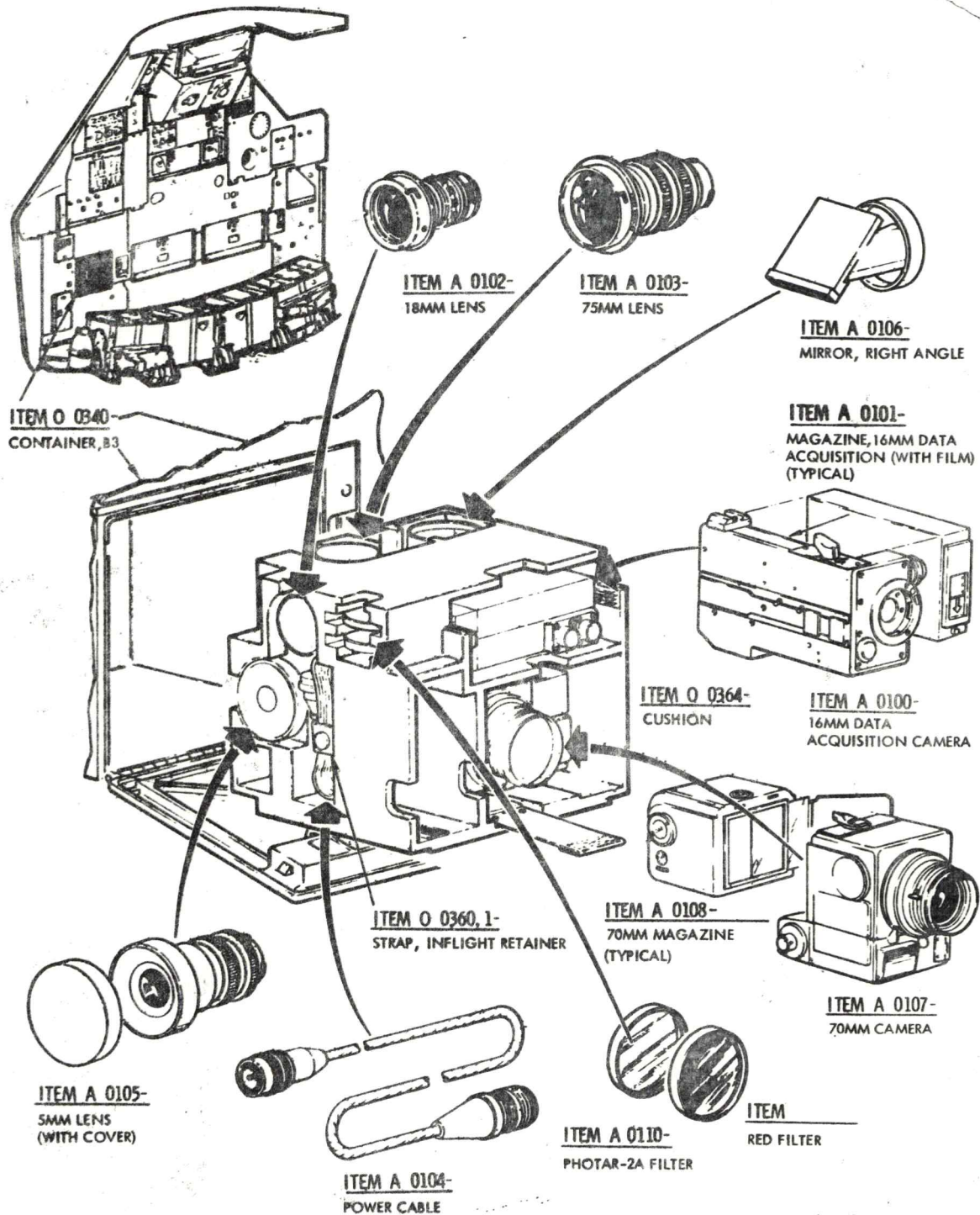
301

Changed 28 March 1969



## CREW EQUIPMENT REMOVAL

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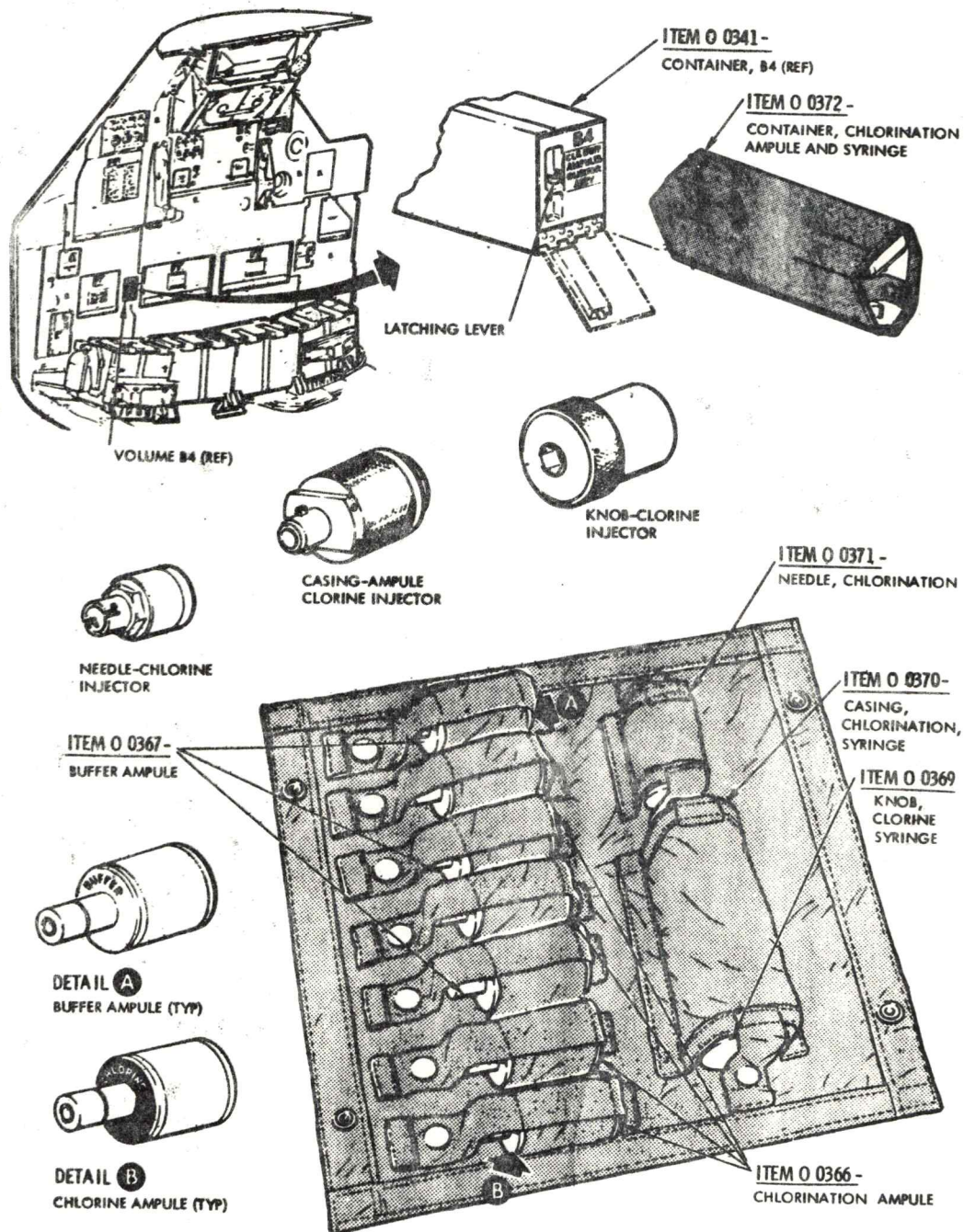
SM-2A-1721E

Figure 21-17. Volume B3

Changed 28 March 1969

## CREW EQUIPMENT REMOVAL

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SM-2A-1767E

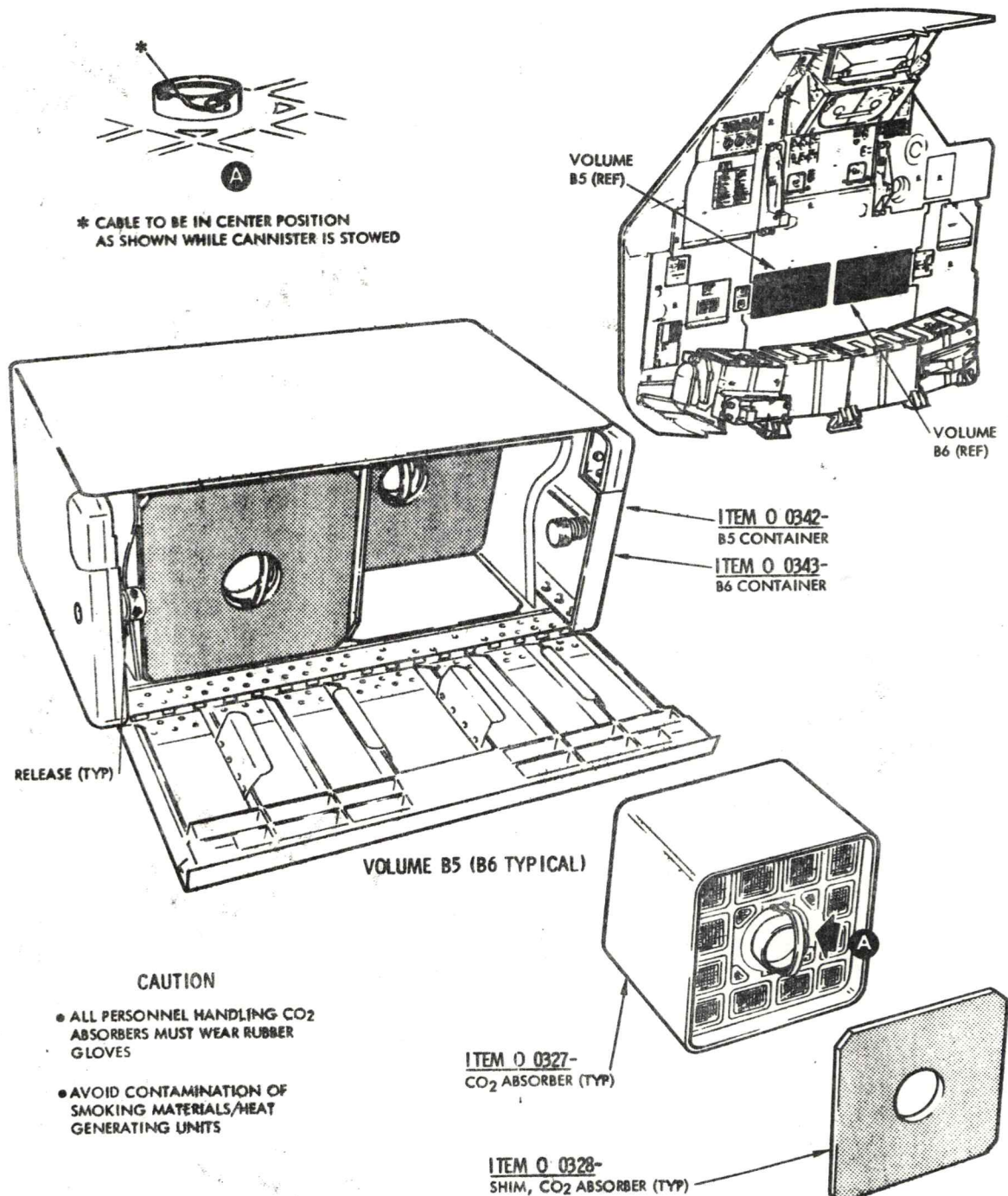
Figure 21-18. Volume B4

303



## CREW EQUIPMENT REMOVAL

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SM-2A-1928D

Figure 21-19. Volume B5 and B6

Changed 28 March 1969

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## CREW EQUIPMENT REMOVAL

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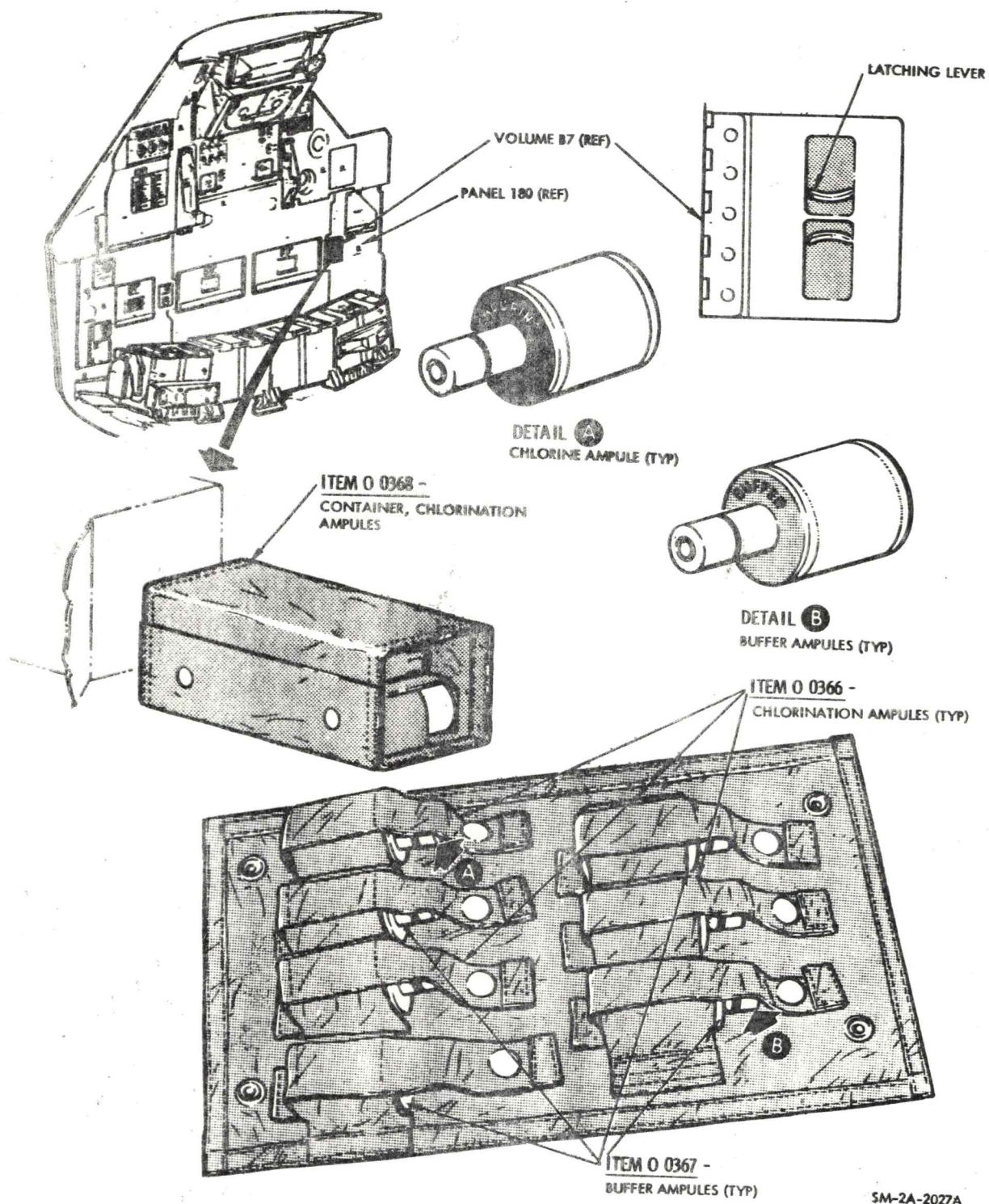


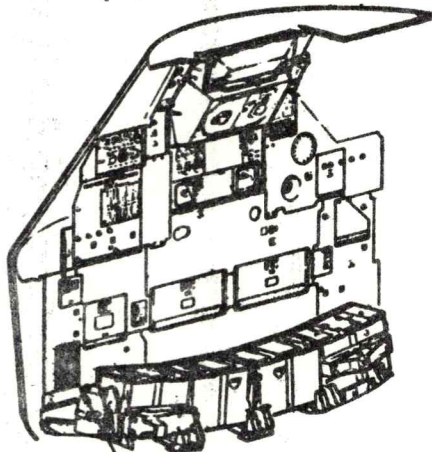
Figure 21-20. Volume B7

305

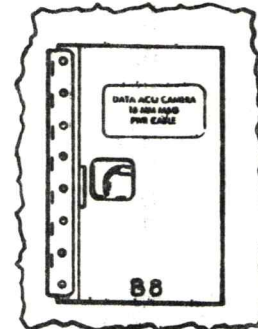
Changed 28 March 1969

## CREW EQUIPMENT REMOVAL

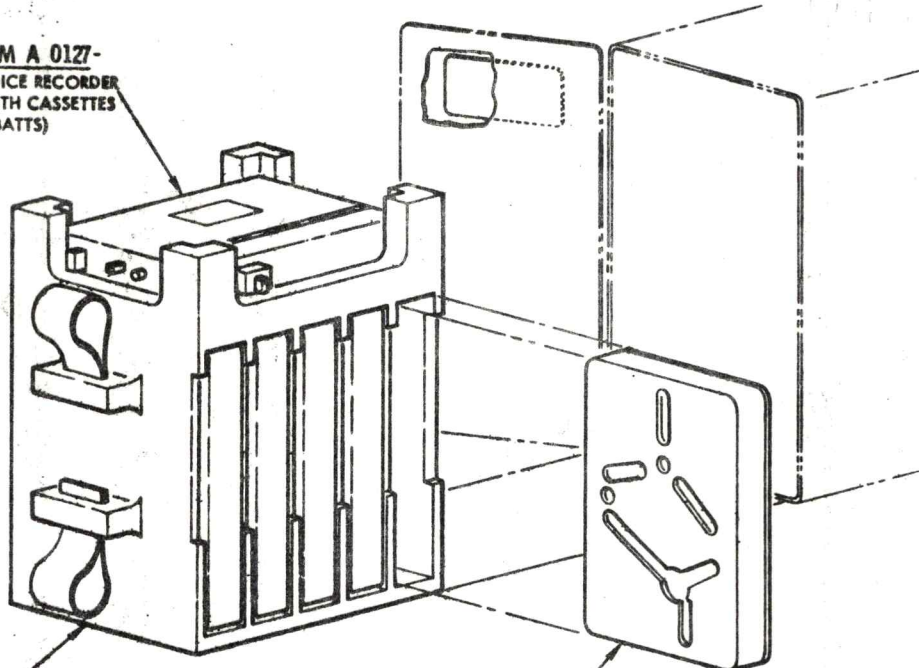
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VOLUME B8



ITEM A 0127-  
VOICE RECORDER  
(WITH CASSETTES  
& BATTs)



ITEM O 0365-  
CUSHION

ITEM A 0101-  
16 MM MAGAZINE  
(TYPICAL)

SM-2A-1768D

Figure 21-21. Volume B8

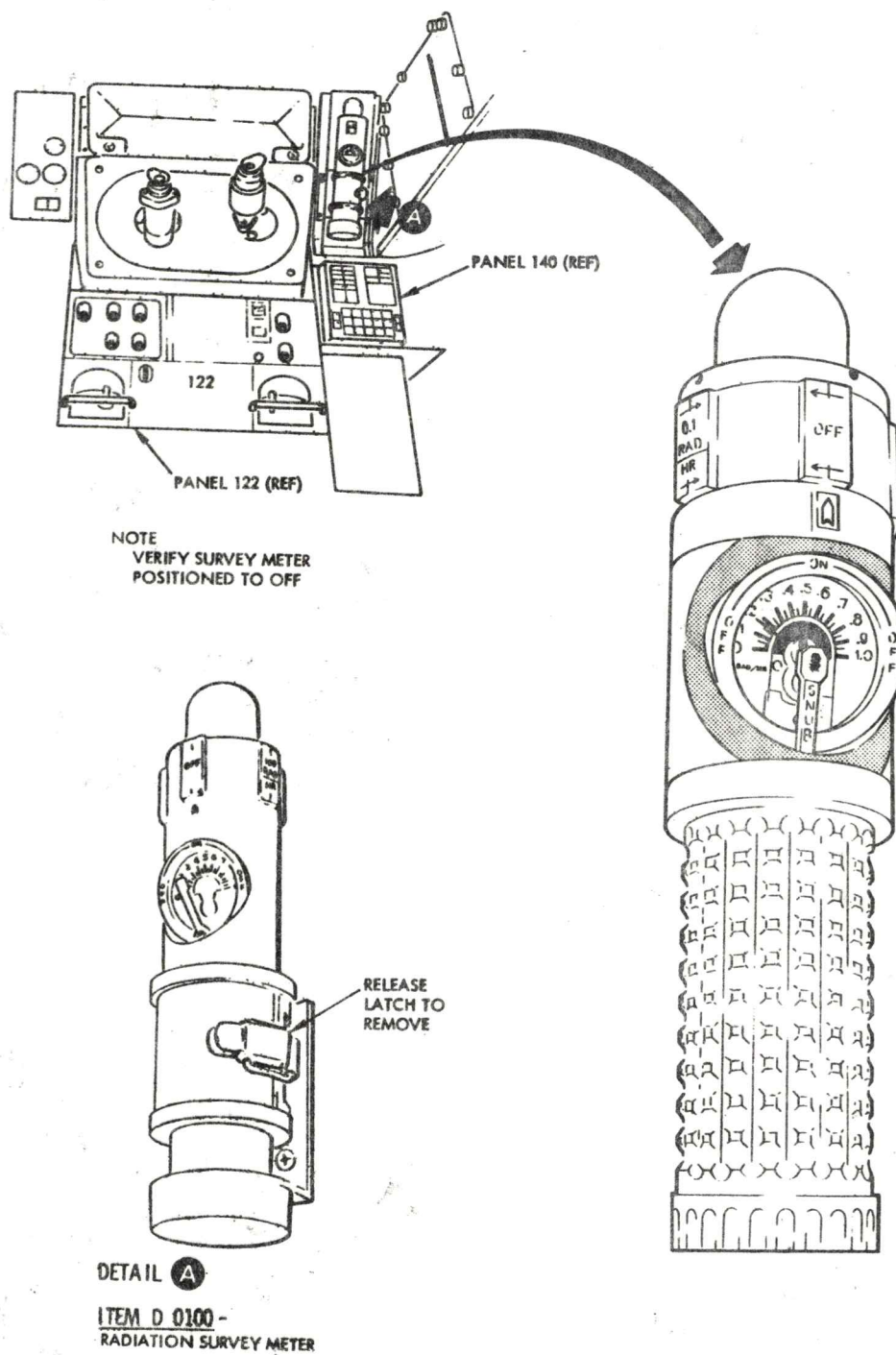
Changed 28 March 1969

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## CREW EQUIPMENT REMOVAL

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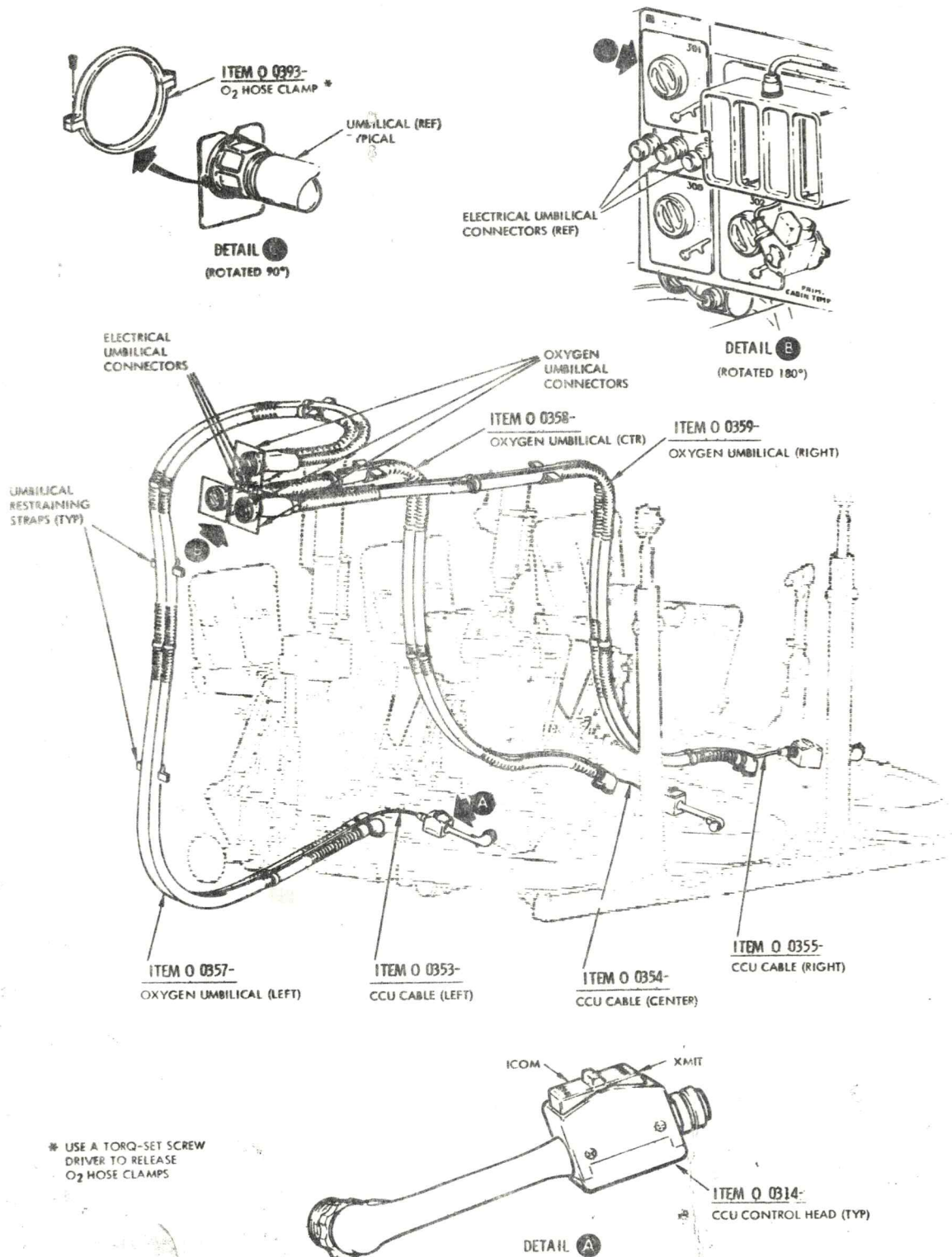
SM-2A-1935C

Figure 21-22. Radiation Survey Meter



## CREW EQUIPMENT REMOVAL

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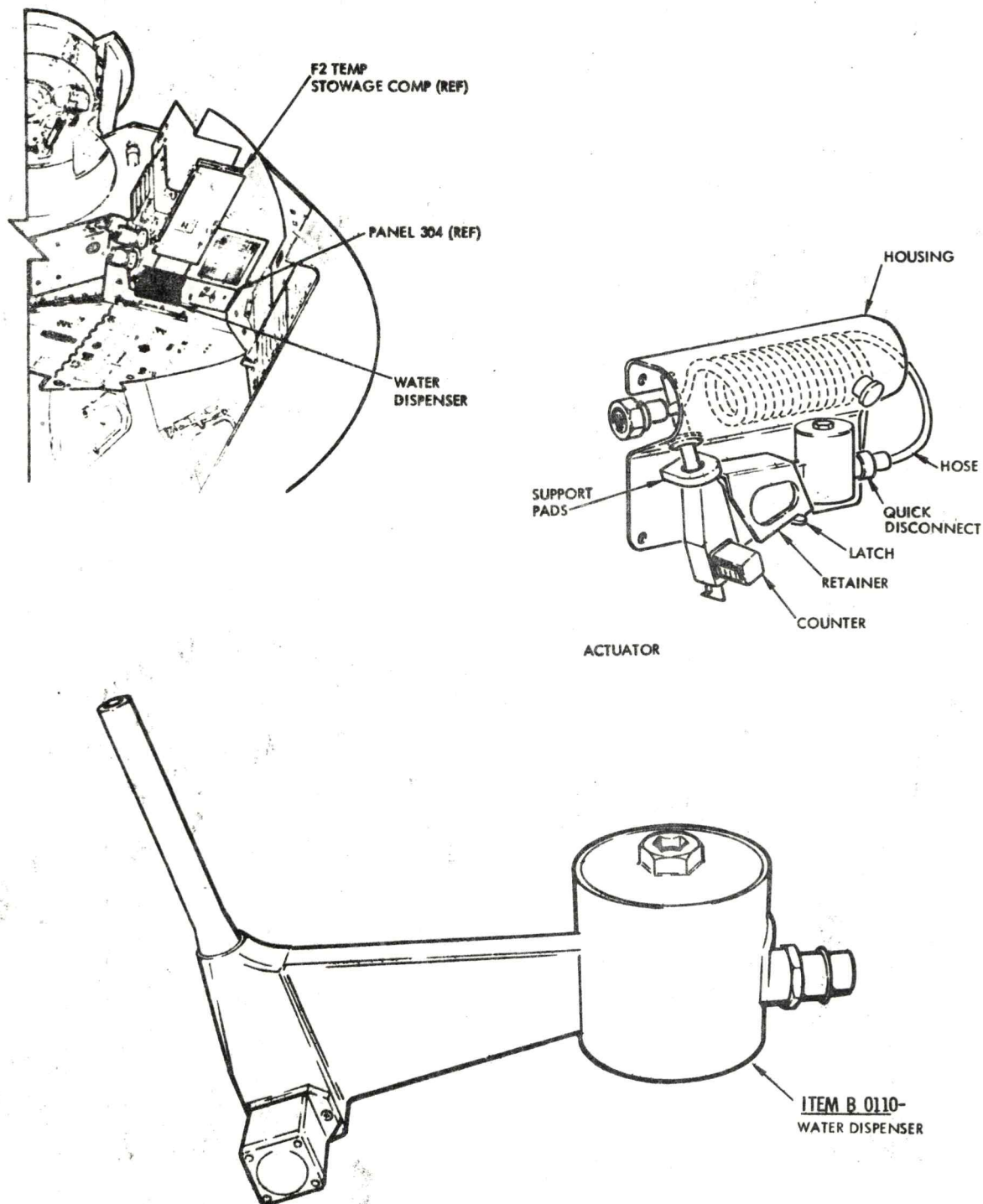


SM-2A-17875

Figure 21-23. Oxygen/Electrical Umbilicals and CCU Control Heads

## CREW EQUIPMENT REMOVAL

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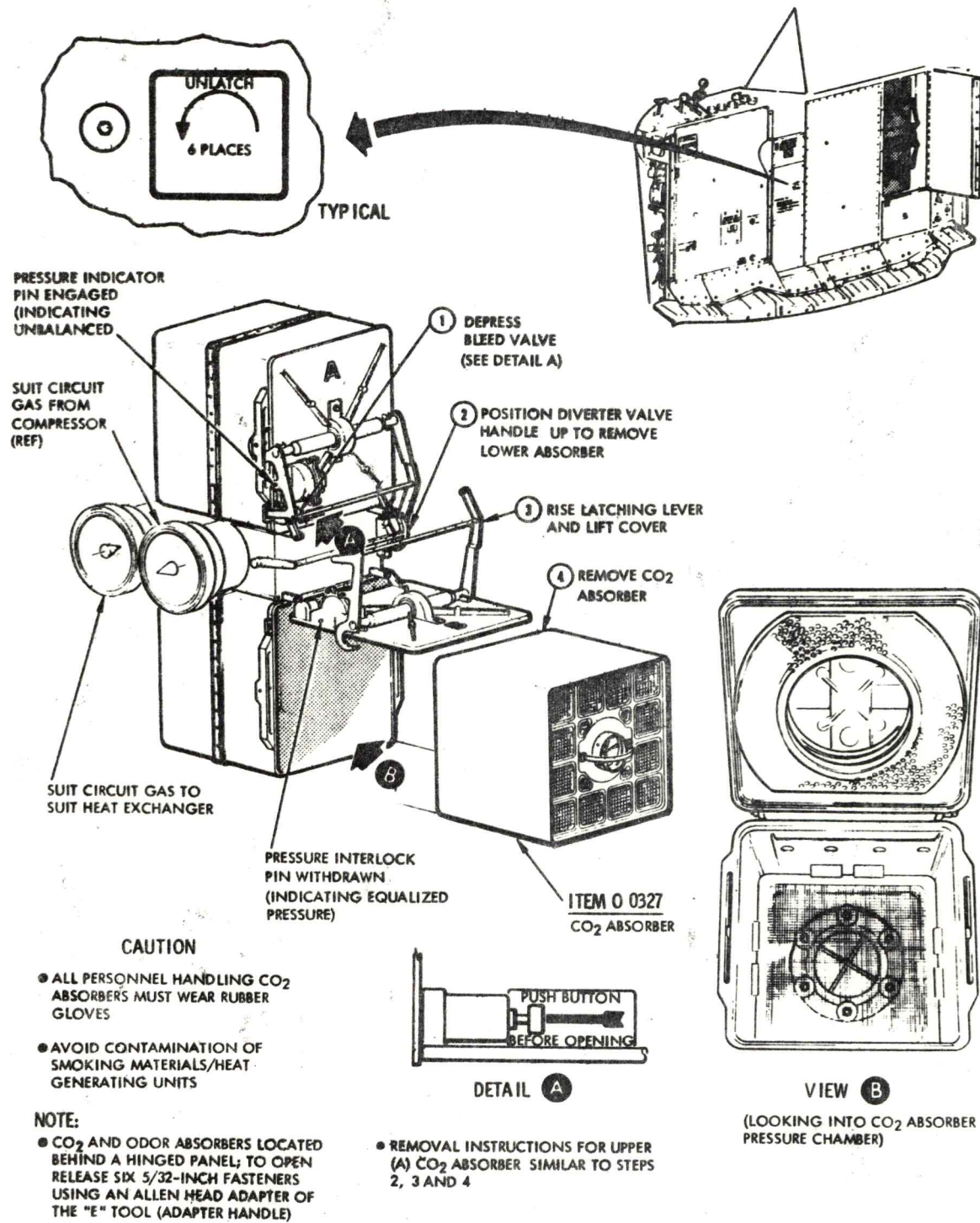


SM-2A-1789F

Figure 21-24. Water Dispenser and Cabin Analyzer

## CREW EQUIPMENT REMOVAL

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SM-2A-1936C

Figure 21-25. CO<sub>2</sub> Absorbers, Panel 350



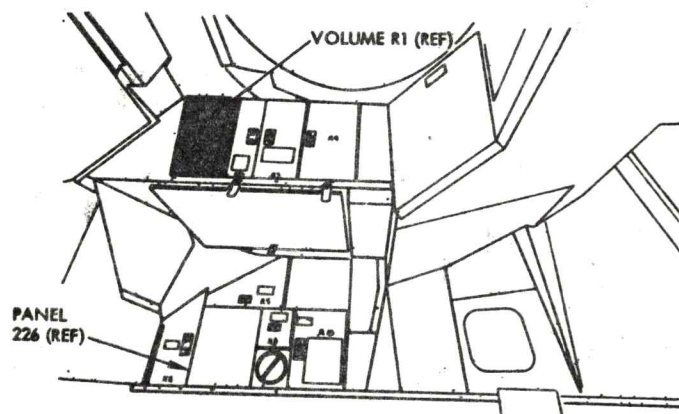
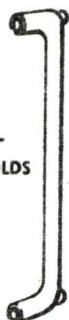
## CREW EQUIPMENT REMOVAL

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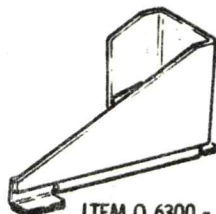
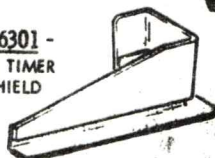
LATCHING LEVERS (TYP)



DETAIL A

ITEM H 0100 -  
G&N HANDHOLDSITEM H 0102 -  
OUA HD SUN FILTERITEM H 0103 -  
OUA HD SUN FILTER

VOLUME R1

ITEM O 0399 -  
DSKY GLARESHIELDITEM O 6300 -  
EMCA GLARESHIELDITEM O 6301 -  
MISSION TIMER  
GLARE SHIELDITEM O 6309 -  
STRAP, GLARE SHIELD (TYP)

ITEM A 0114.2 - CMP CHECKLIST\*  
 A 0114.15 - PROCEDURES \*  
 A 0114.18 - SOFT SUIT, EVA\*  
 A 0114.19 - HARD SUIT, EVA\*

\* PART OF ITEM A 0114, FLIGHT DATA FILE ASSY

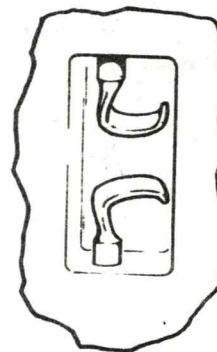
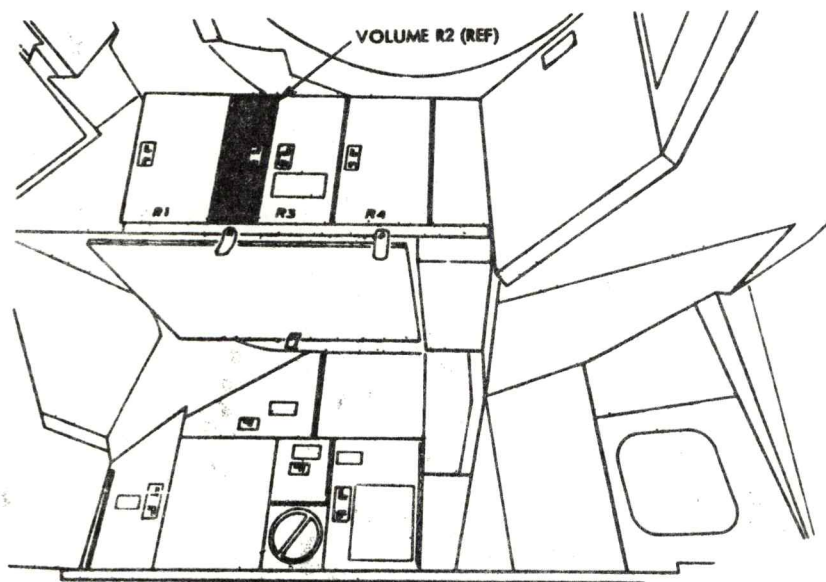
SM-2A-1775F

Figure 21-26. Volume R1

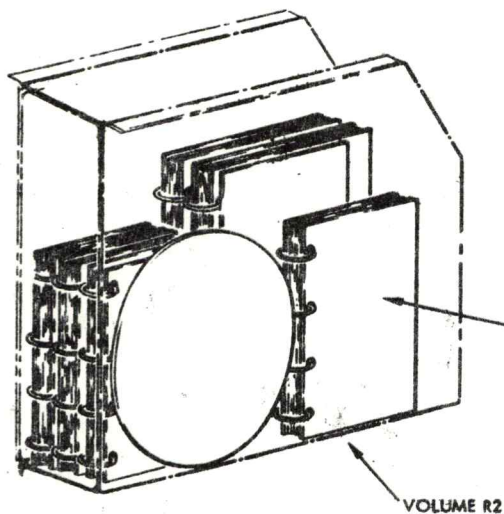
311

## CREW EQUIPMENT REMOVAL

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LATCHING LEVER (TYP)



- ITEM: A 0114.1-CDR CHECK LIST \*
- A 0114.3-LMP CHECK LIST \*
- A 0114.4-FLIGHT PLAN VOL. 1 \*
- A 0114.5-FLIGHT PLAN VOL. 2 \*
- A 0114.16-UPDATES \*
- A 0114.17-PHOTO LOG \*
- A 0114.21-MERCATOR START CHART \*
- A 0114.22-POLAR STAR CHART \*

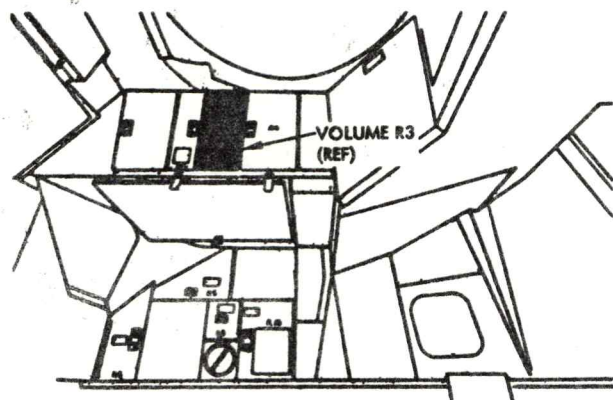
\* PART OF ITEM A0114, FLIGHT DATA FILE ASSY

SM-2A-1814F

Figure 21-27. Volume R2

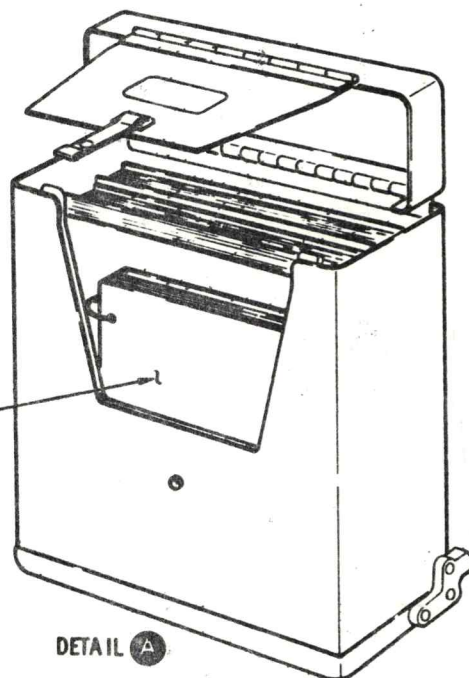
## CREW EQUIPMENT REMOVAL

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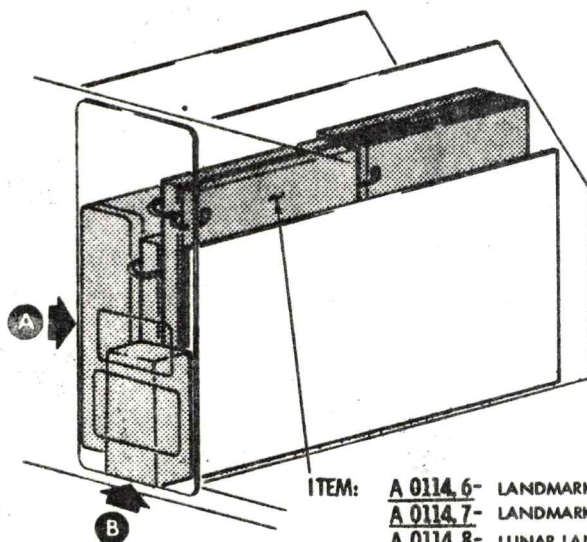


ITEM: A 0114.10-SYSTEMS DATA  
A 0114.11-MALFUNCTION PROCEDURES  
A 0114.12-CHARTS AND GRAPHS  
A 0114.14-CREW LOG

ITEM O 0344  
 CONTAINER, R12



ITEM A 0114.25-  
 DATA CARD KIT



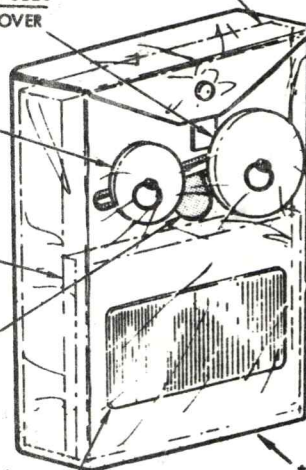
\*\*THE FOLLOWING ITEMS WILL ALSO  
 BE STOWED IN DATA CARD KIT:  
A 0134-FUSE, 16MM CAMERA  
H 0104-PANEL, IND-VERB/NOUN  
 LIST H 0105-PANEL, IND-  
 NORTHERN STAR CHART, H 0106-  
 PANEL, IND-SOUTHERN STAR CHART  
O 6318-TELCOM SWITCH GUIDE

ITEM A 0118  
 METER COVER

ITEM A 0117  
 METER COVER

ITEM A 0114.24  
 CLIP, DATA FILE

ITEM B 0137-  
 EYEPATCH



ITEM A 0125-  
 SHIELD,  
 FLOODLIGHT GLARE

SM-2A-1933C

Figure 21-28. Volume R3 and R12



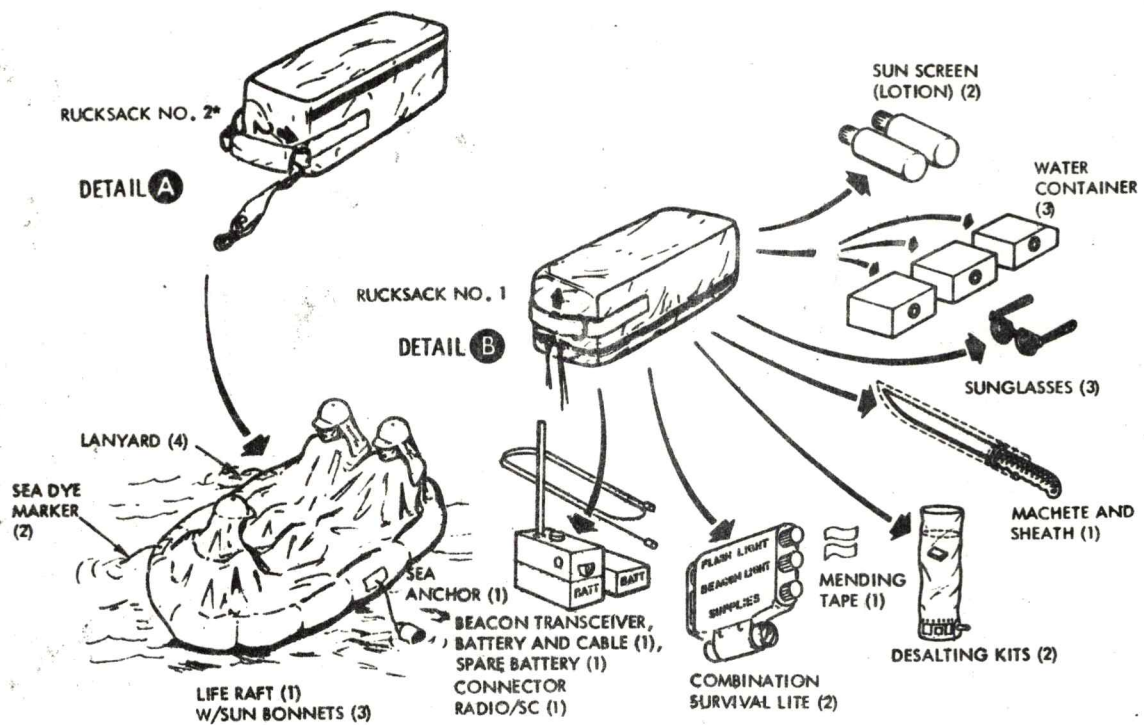
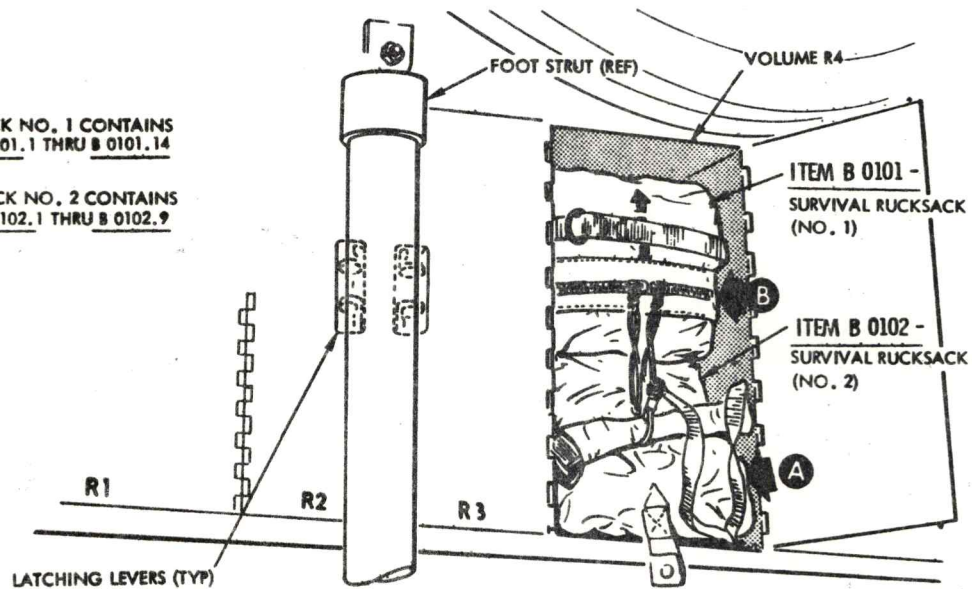
## CREW EQUIPMENT REMOVAL

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## NOTE:

• RUCKSACK NO. 1 CONTAINS  
ITEM B 0101.1 THRU B 0101.14

• RUCKSACK NO. 2 CONTAINS  
ITEM B 0102.1 THRU B 0102.9



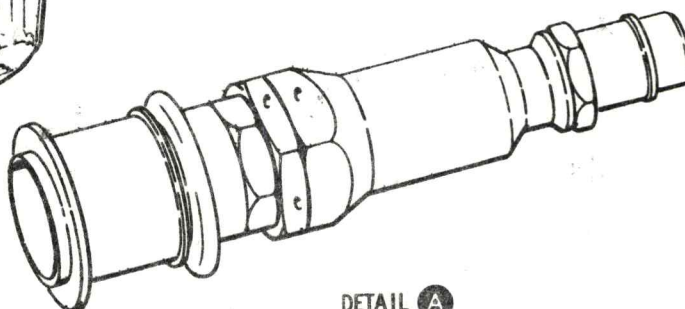
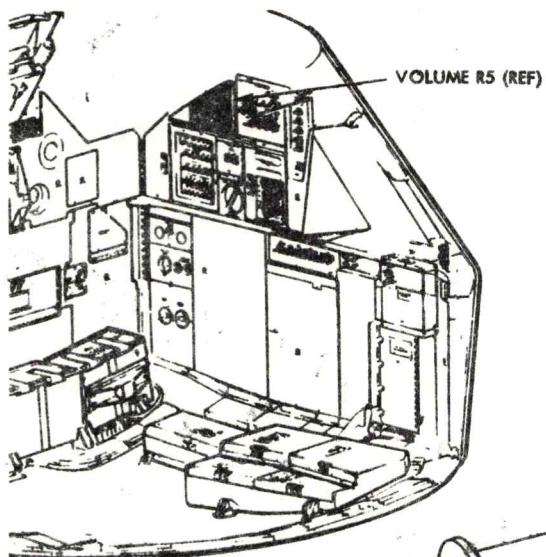
\*ALSO INCLUDES INFLATION ASSEMBLY

SM-2A-1776E

Figure 21-29. Volume R4

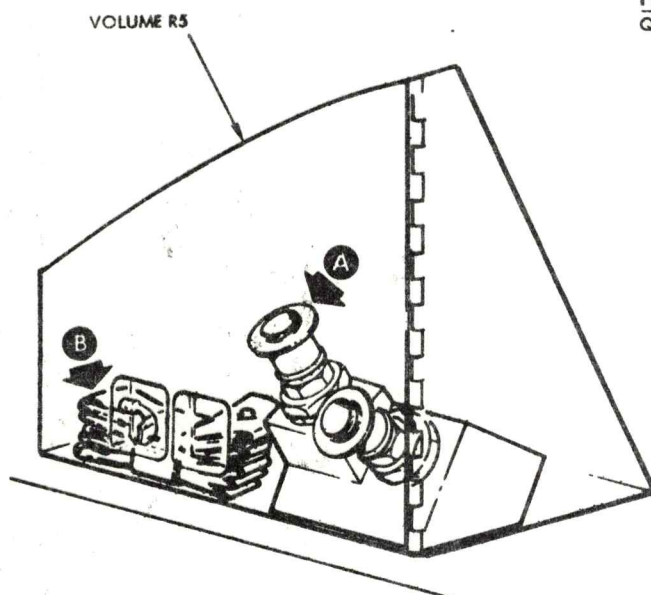
## CREW EQUIPMENT REMOVAL

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DETAIL A

ITEM 0 0346- FILTER ASSY  
Q.D. GAS AND LIQUID-WMS



DETAIL B

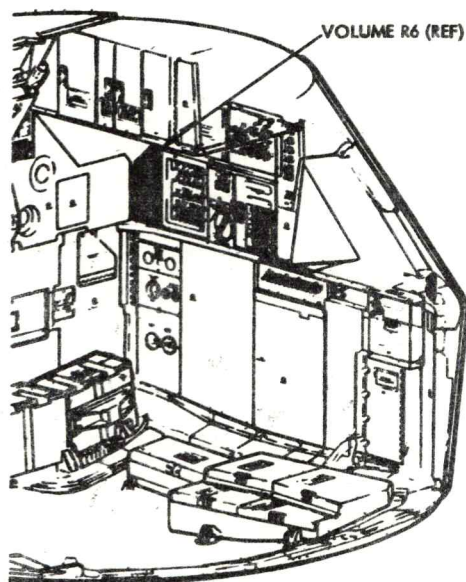
ITEM 0 6315 UTILITY STRAP (TYP)

SM-2A-1997B

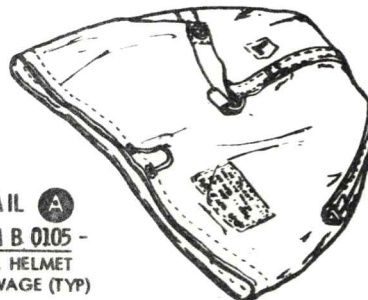
Figure 21-30. Volume R5

## CREW EQUIPMENT REMOVAL

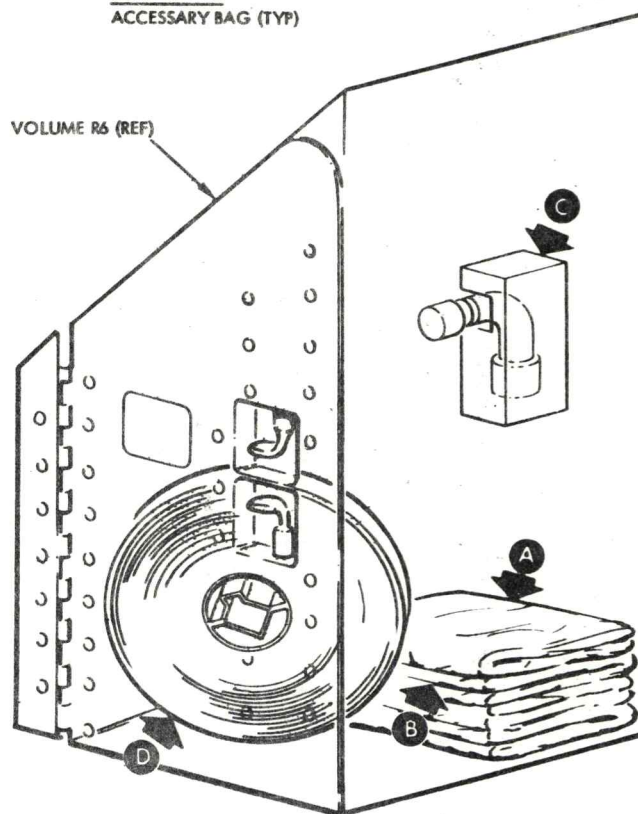
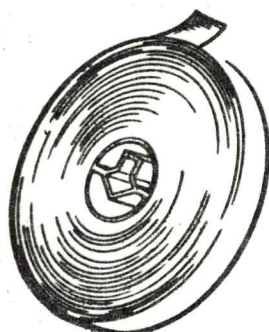
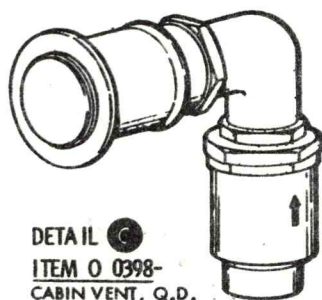
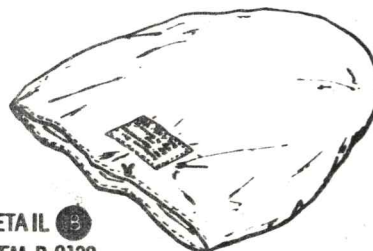
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DETAIL A  
ITEM B 0105 -  
BAG, HELMET  
STOWAGE (TYP)



DETAIL B  
ITEM B 0122 -  
ACCESSORY BAG (TYP)



SM-2A-1998C

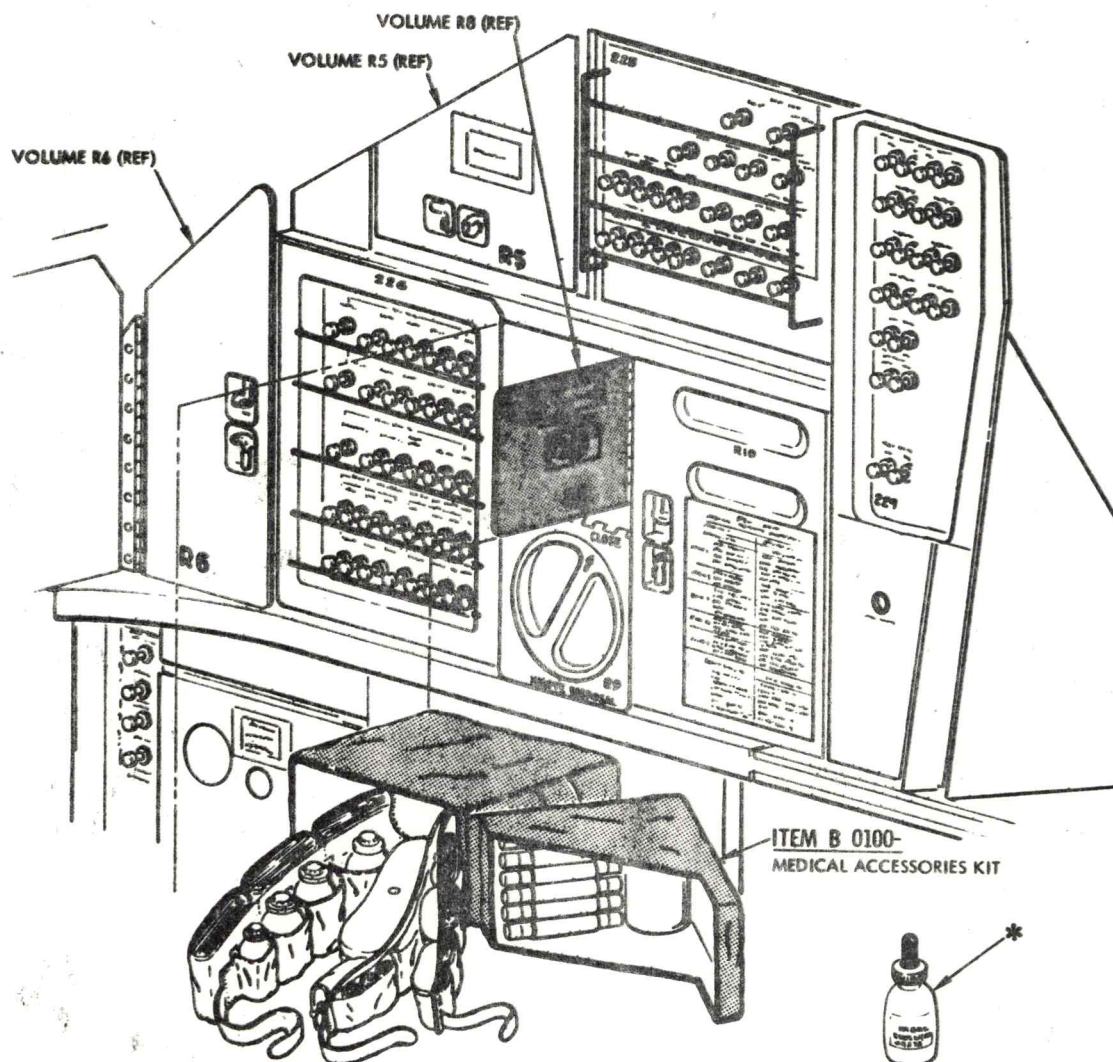
Figure 21-31. Volume R6

Changed 28 March 1969



## CREW EQUIPMENT REMOVAL

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## CONTENTS: MEDICAL ACCESSORIES KIT

|                  |                          |                  |                                    |
|------------------|--------------------------|------------------|------------------------------------|
| <u>B 0100.1</u>  | PAIN INJECTOR            | <u>B 0100.15</u> | EYEDROPS                           |
| <u>B 0100.2</u>  | MOTION SICKNESS INJECTOR | <u>B 0100.16</u> | RUCKSACK, MED ACC KIT              |
| <u>B 0100.3</u>  | COMPRESS BANDAGE         | <u>B 0100.17</u> | ELECTRODE BAG                      |
| <u>B 0100.4</u>  | BANDAIDS                 | <u>B 0100.19</u> | COVERING, MICROPORE DISK ELECTRODE |
| <u>B 0100.5</u>  | SKIN CREAM               | <u>B 0100.20</u> | ELECTRODE PASTE                    |
| <u>B 0100.6</u>  | NASAL EMOLLIENT *        | <u>B 0100.21</u> | ELECTRODE ATTACHMENT ASSY          |
| <u>B 0100.7</u>  | ANTIBIOTIC OINTMENT      | <u>B 0100.22</u> | THERMOMETER                        |
| <u>B 0100.8</u>  | PAIN PILLS               | <u>B 0100.23</u> | PH PAPER DISPENSER ASSY            |
| <u>B 0100.9</u>  | STIMULANT PILLS          | <u>B 0100.24</u> | UCTA ROLL-ON CUFF                  |
| <u>B 0100.10</u> | ANTIBIOTIC PILLS         | <u>B 0100.25</u> | ELECTRODE BAG ASSY                 |
| <u>B 0100.11</u> | MOTION SICKNESS PILLS    | <u>B 0100.26</u> | STERNAL HARNESS                    |
| <u>B 0100.12</u> | DIARRHEA PILLS           | <u>B 0100.27</u> | AUXILIARY HARNESS                  |
| <u>B 0100.13</u> | DECONGESTANT PILLS       | <u>B 0128</u>    | NASAL EMOLLIENT *                  |
| <u>B 0100.14</u> | ASPIRIN                  |                  |                                    |

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Figure 21-32. Volume R8

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Changed 28 March 1969

## CREW EQUIPMENT REMOVAL

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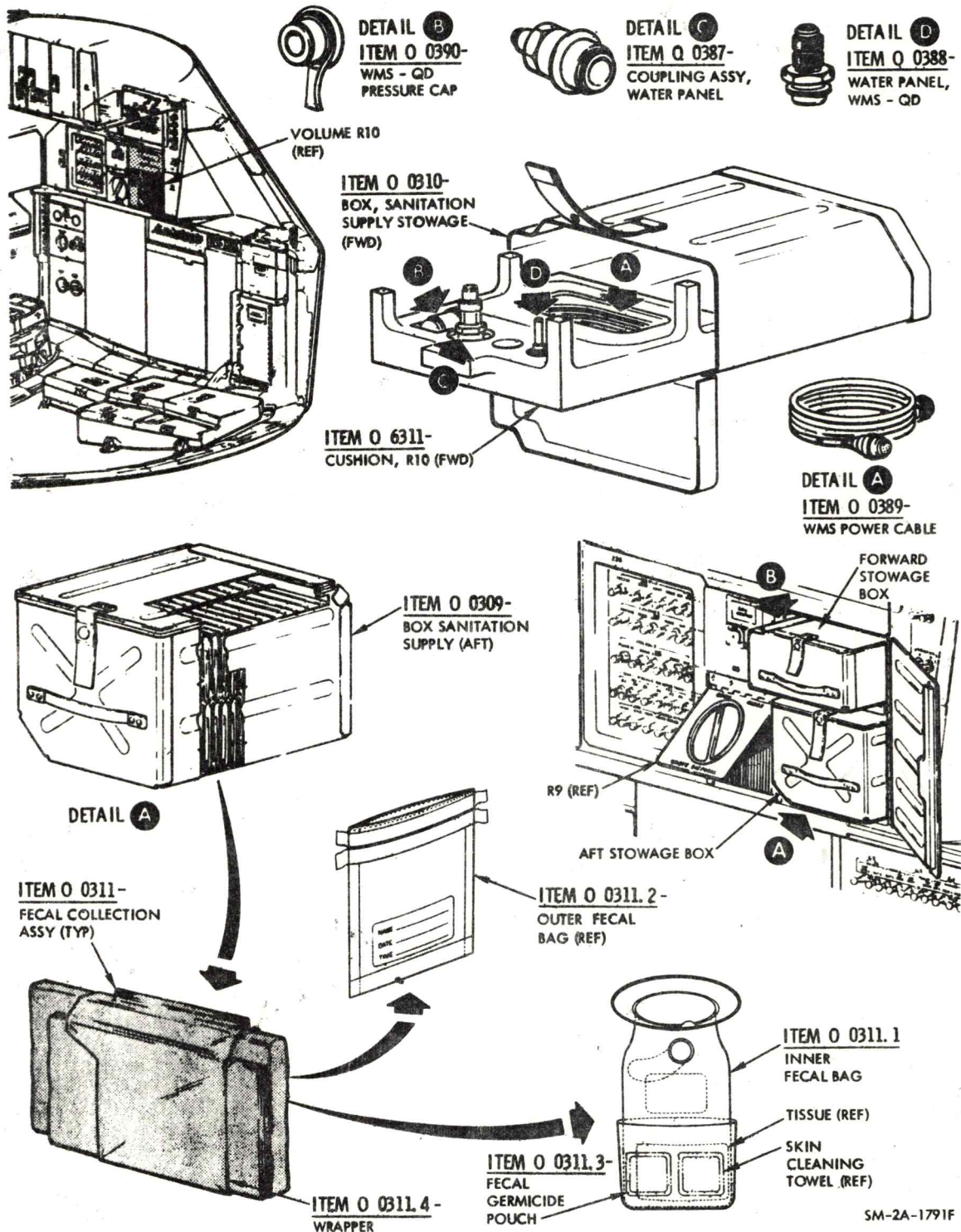


Figure 21-33. Volume R10



## CREW EQUIPMENT REMOVAL

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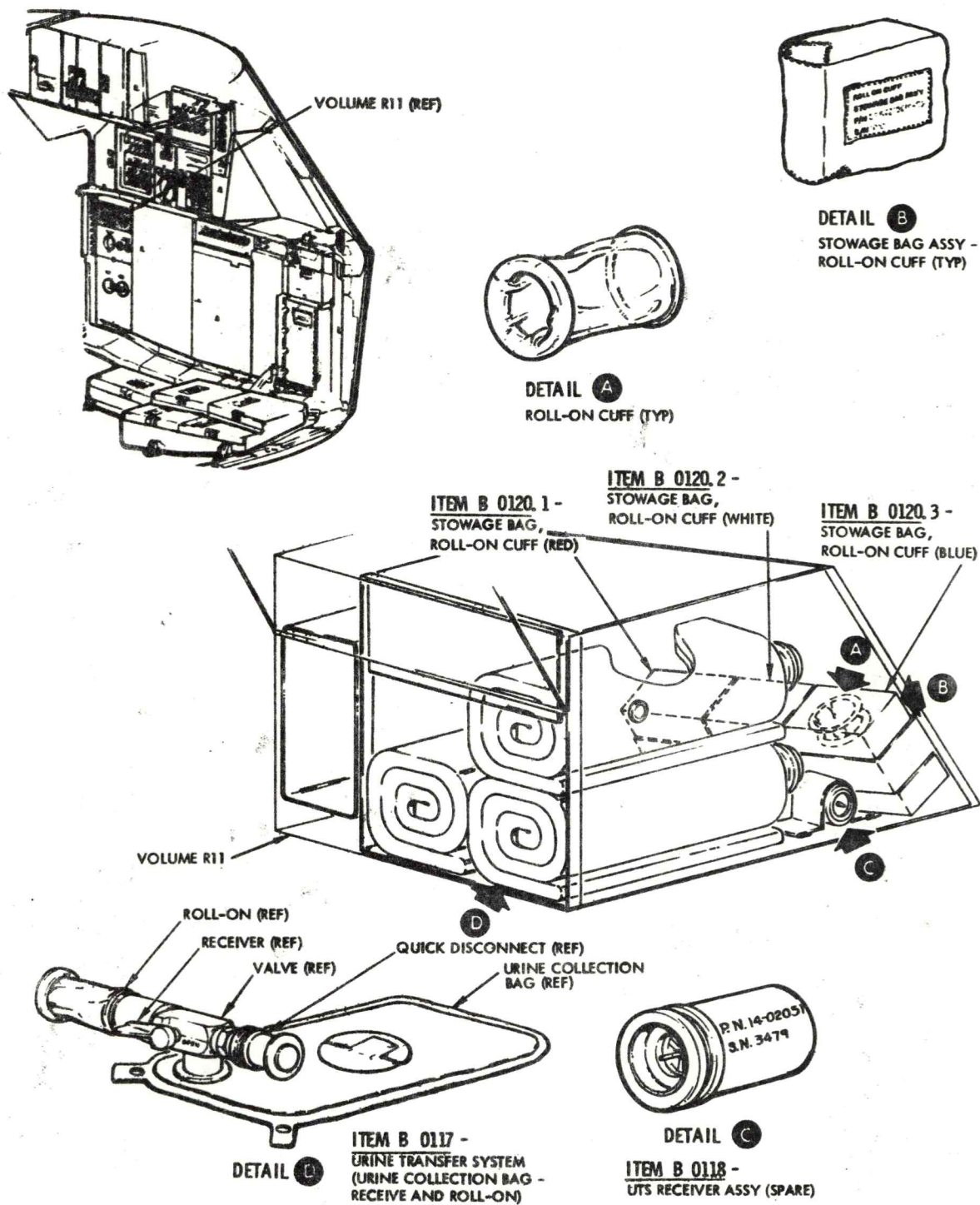


Figure 21-34. Volume R11

319



## CREW EQUIPMENT REMOVAL

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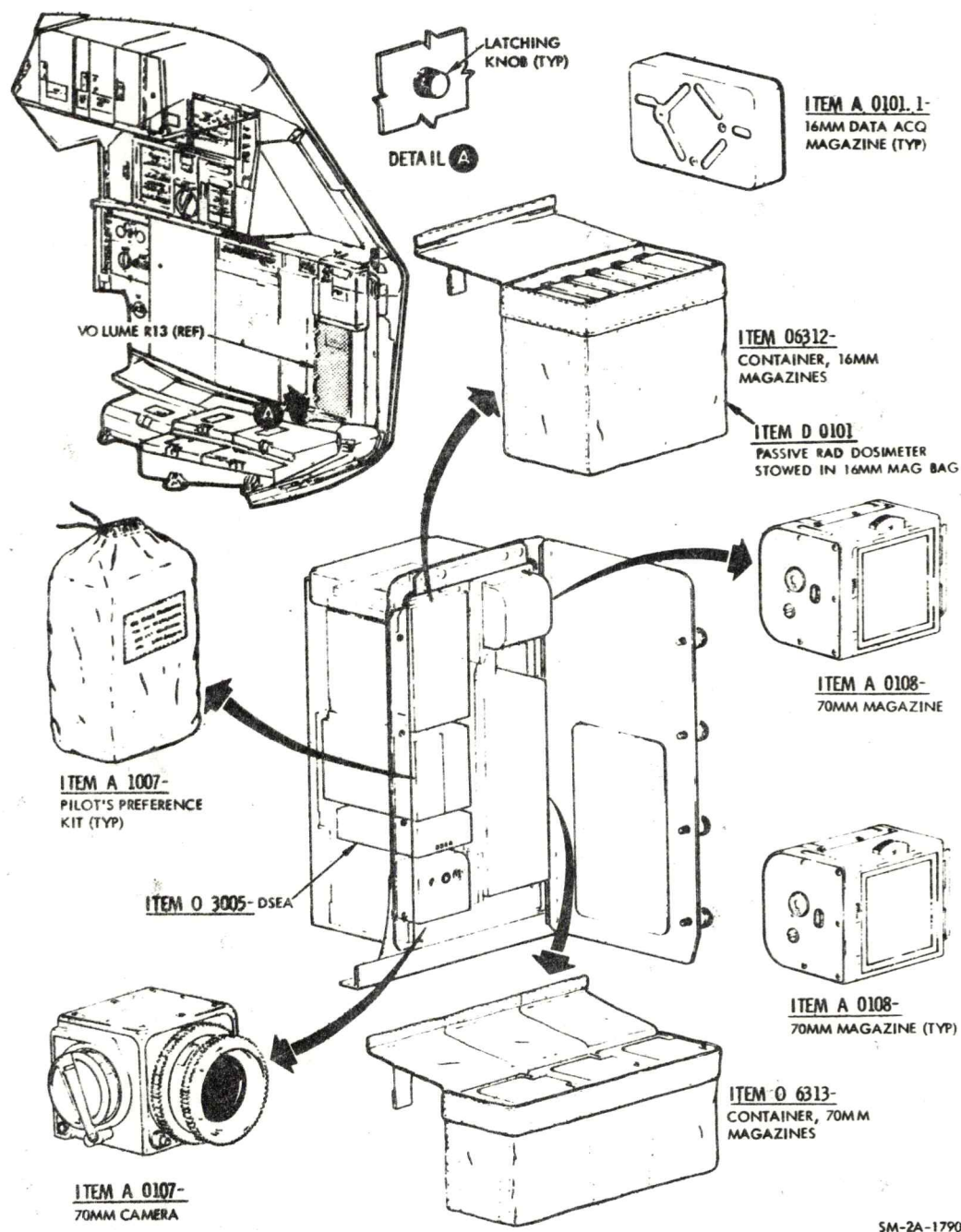


Figure 21-35. Volume R13

## CREW EQUIPMENT REMOVAL

Sheet 51 of 59

## WASTE DISPOSAL COMPARTMENT (RHEB)

INSTRUCTIONS

1. To remove fecal bags from waste disposal compartment, proceed as follows:
  - a. Using an allen-head adapter, remove two electrical cable close-out covers (AEB).
  - b. Using an allen-head adapter, remove 20 screws securing close-out panel to structure. Remove panel.
  - c. Using a short bladed knife, cut a slit across the top of the fecal compartment bladder.

## CAUTION

- Exercise care while cutting bladder. Do not damage/cut fecal bags.
  - If visual inspection of the fecal bags indicate leakage of the blue/colored liquid, the shipping container shall be marked "WARNING-POISON" and handled accordingly.
- d. Using rubber gloves, remove fecal bags from the waste disposal compartment.

## NOTE

In addition to fecal bags, the following items may also be stowed in the waste disposal compartment:

Tape (used)  
Tissues (used)  
Utility towels (red) - used  
Utility towels (white) - used  
Utility towels (blue) - used  
Food and hygiene items (used)  
Food packages (used)

## WARNING

Exercise care when handling fecal bags. Do not squeeze or compress the contents. If contents of bag accidentally contact skin, wash immediately with soap and water and seek medical aid.

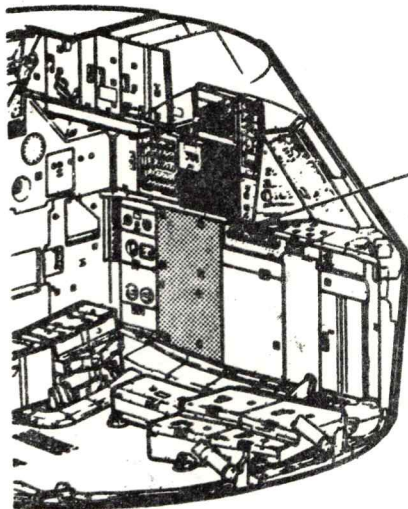
- e. Reinstall closeout panels.
2. Forward fecal bags to the Recovery Team Leader for inspection and disposition.

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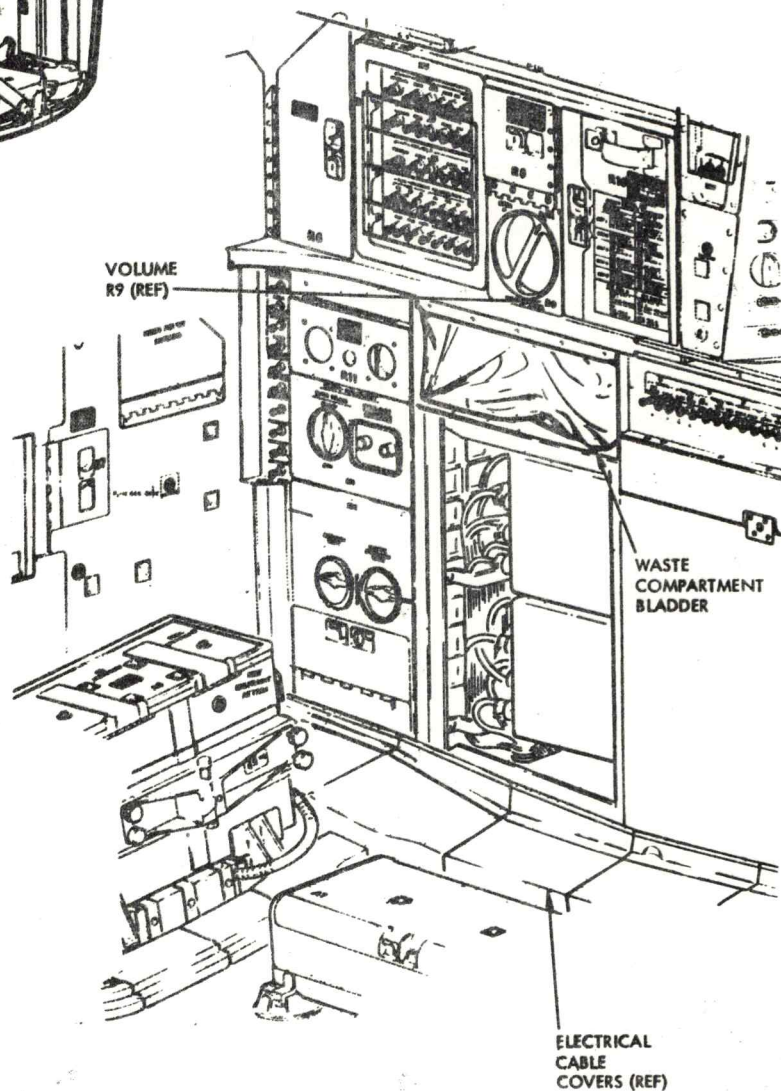


## CREW EQUIPMENT REMOVAL

Sheet 52 of 59

*Caution*

- GERMICIDE (BLUE-CLORED LIQUID) IS POISON. AVOID BODY CONTACT. DO NOT TAKE INTERNALLY.
- DO NOT DAMAGE/CUT FECAL BAGS WHEN CUTTING BLADDER



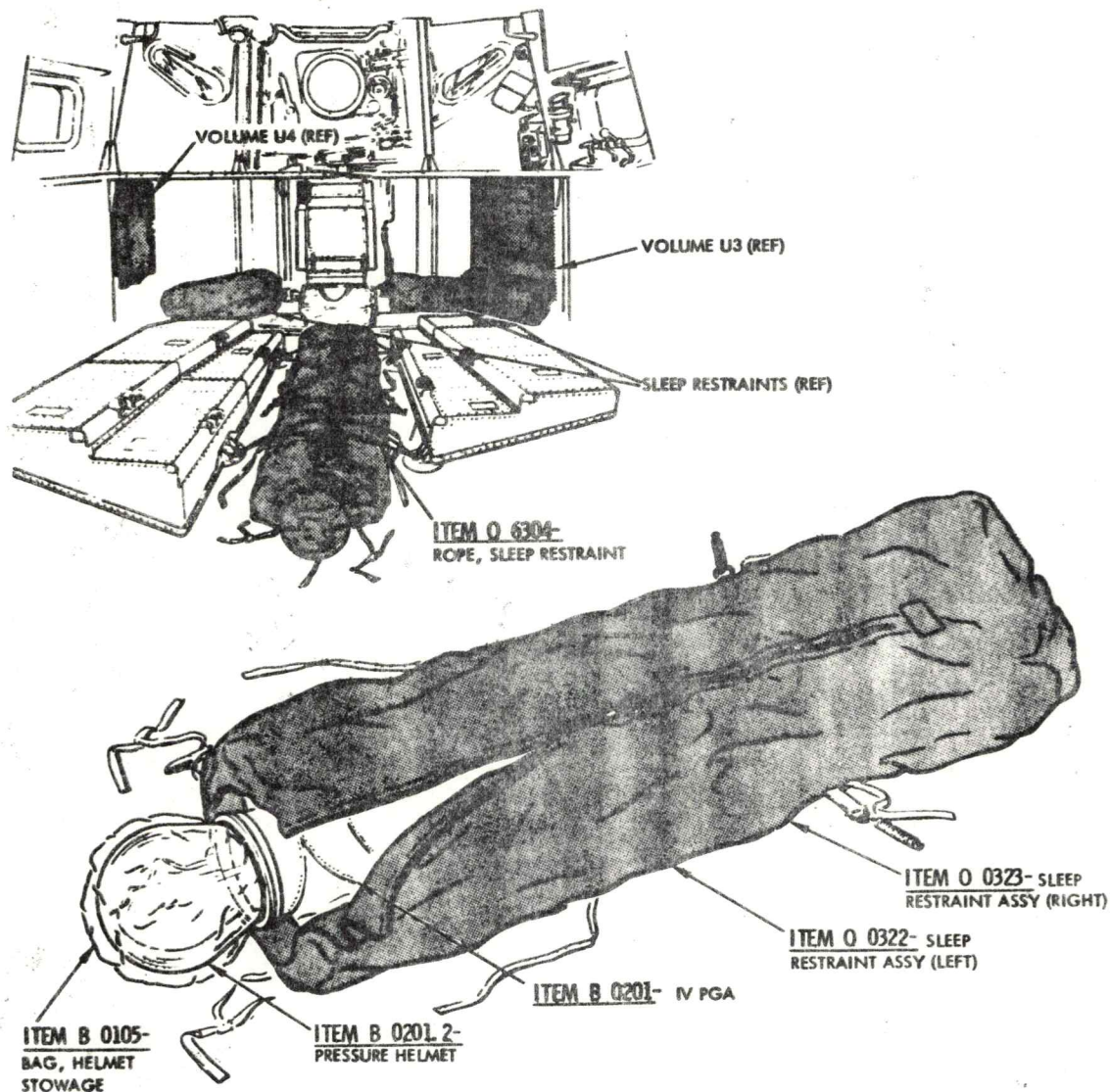
SM-2A-1795E

Figure 21-36. Waste Disposal Compartment



CREW EQUIPMENT REMOVAL

Sheet 53 of 59



NOTE:  
IN ADDITION, THE FOLLOWING ITEMS MAY BE FOUND STOWED  
WITHIN ONE OF THE SLEEP RESTRAINTS - SECURED BELOW  
THE CENTER COUCH:

- ITEM B 0138-  
PROTECTIVE COVER, PGA ELECT
- ITEM B 0200- EV PGA
- ITEM B 0200.1- EV-TORSO LIMB SUIT ASSY
- ITEM B 0200.3- IV GLOVES
- ITEM B 0201.1- IV-TORSO LIMB SUIT ASSY
- ITEM B 0201.3- IV GLOVES

ITEM O 6304- ROPE, SLEEP RESTRAINT  
(USED TO SECURE SLEEP RESTRAINT  
TO AEB)

SM-2A-2025 A

Figure 21-37. Sleep Restraints

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## CREW EQUIPMENT REMOVAL

Sheet 54 of 59

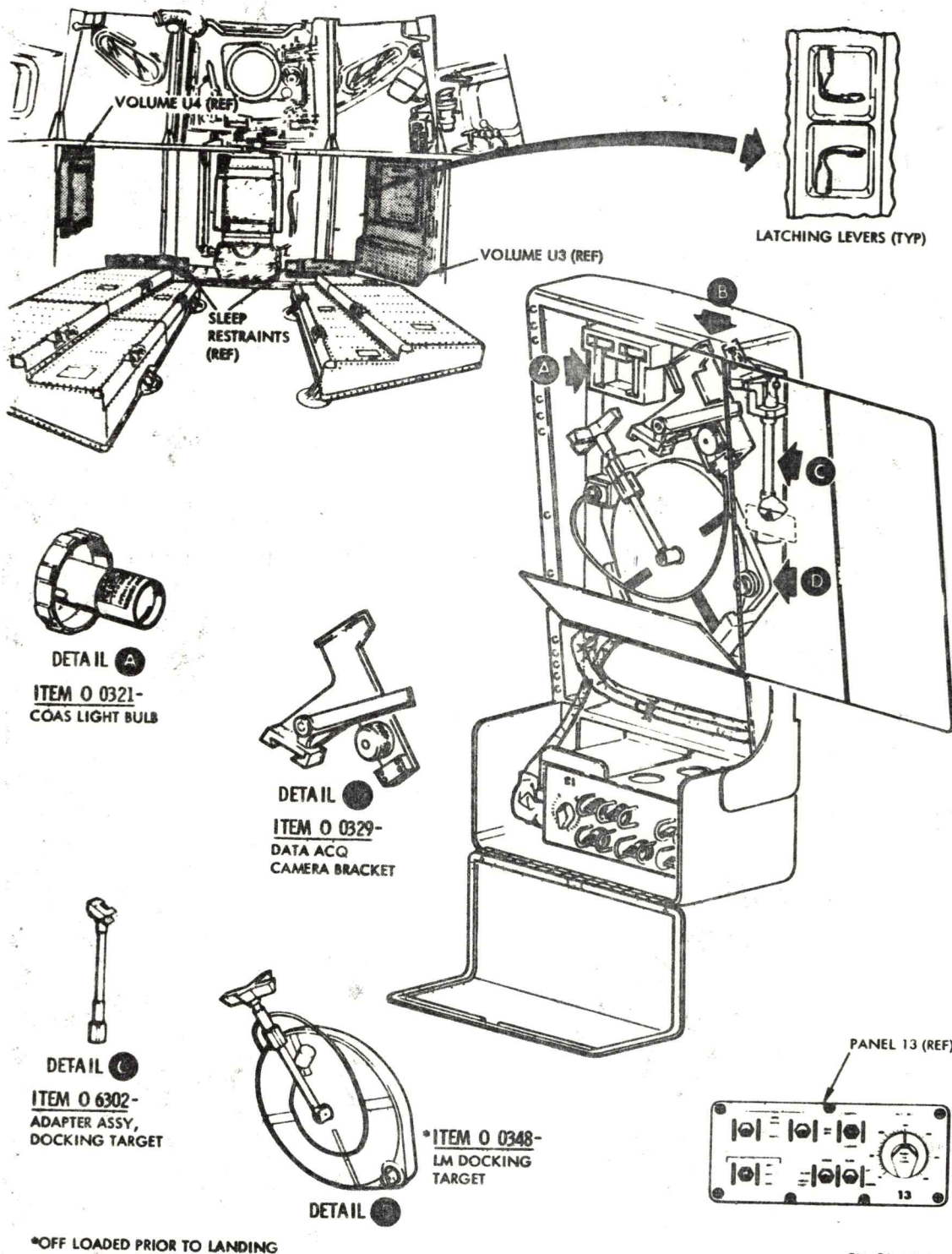
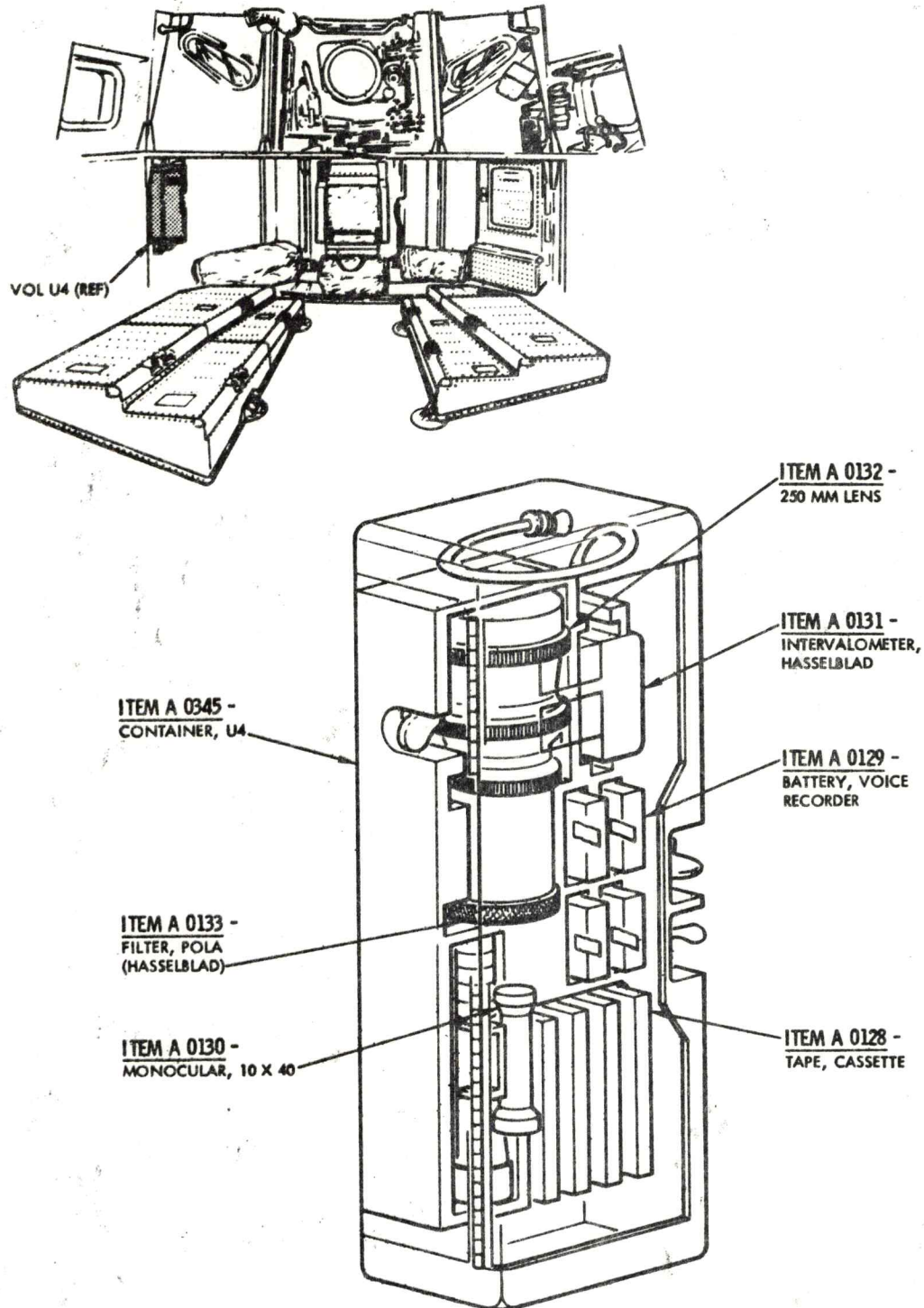


Figure 21-38. Volume U3



## CREW EQUIPMENT REMOVAL

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Figure 21-39. Volume U4



## CREW EQUIPMENT REMOVAL

Sheet 56 of 59

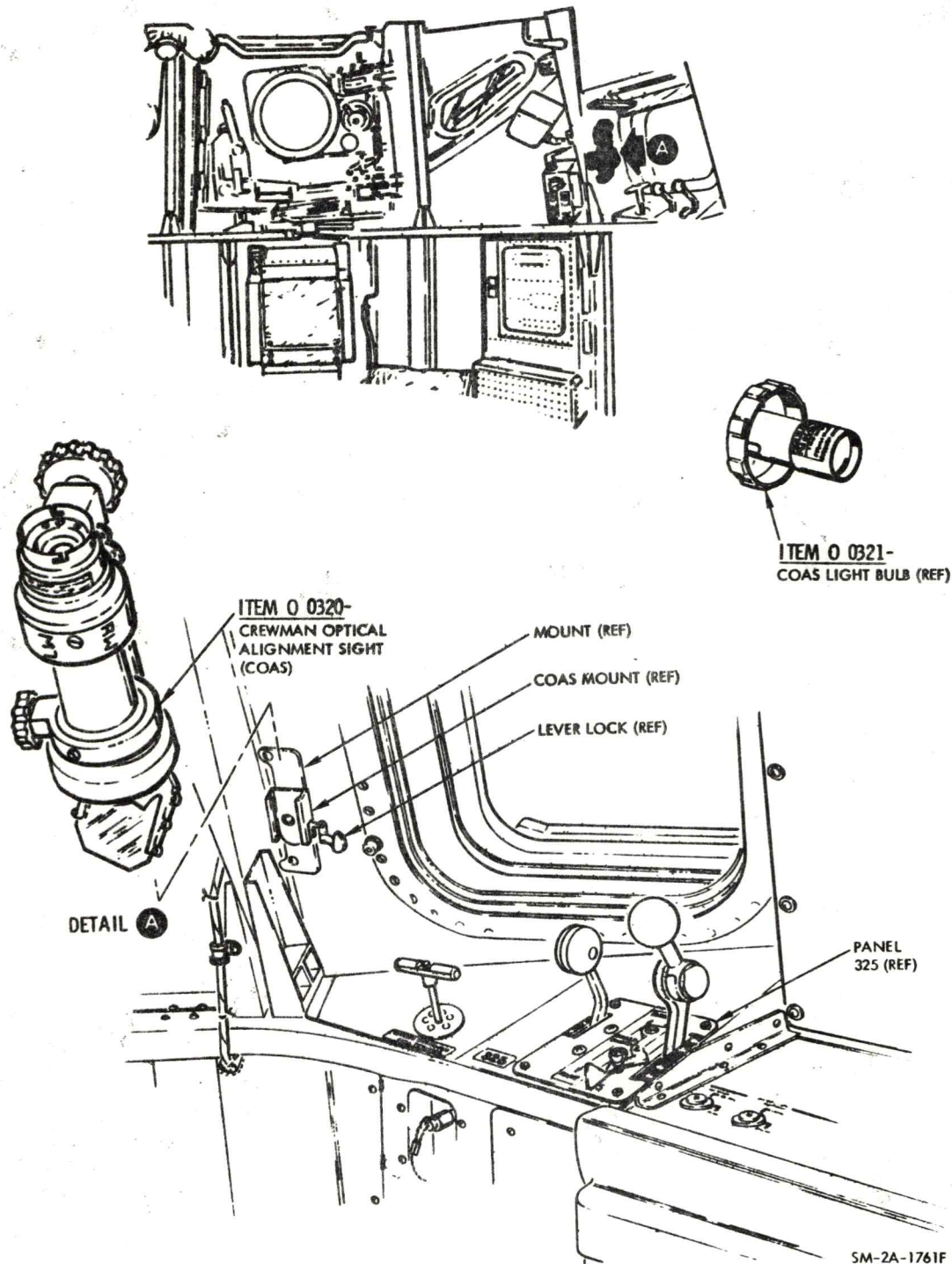


Figure 21-40. COAS and Light Bulb

CREW EQUIPMENT REMOVAL

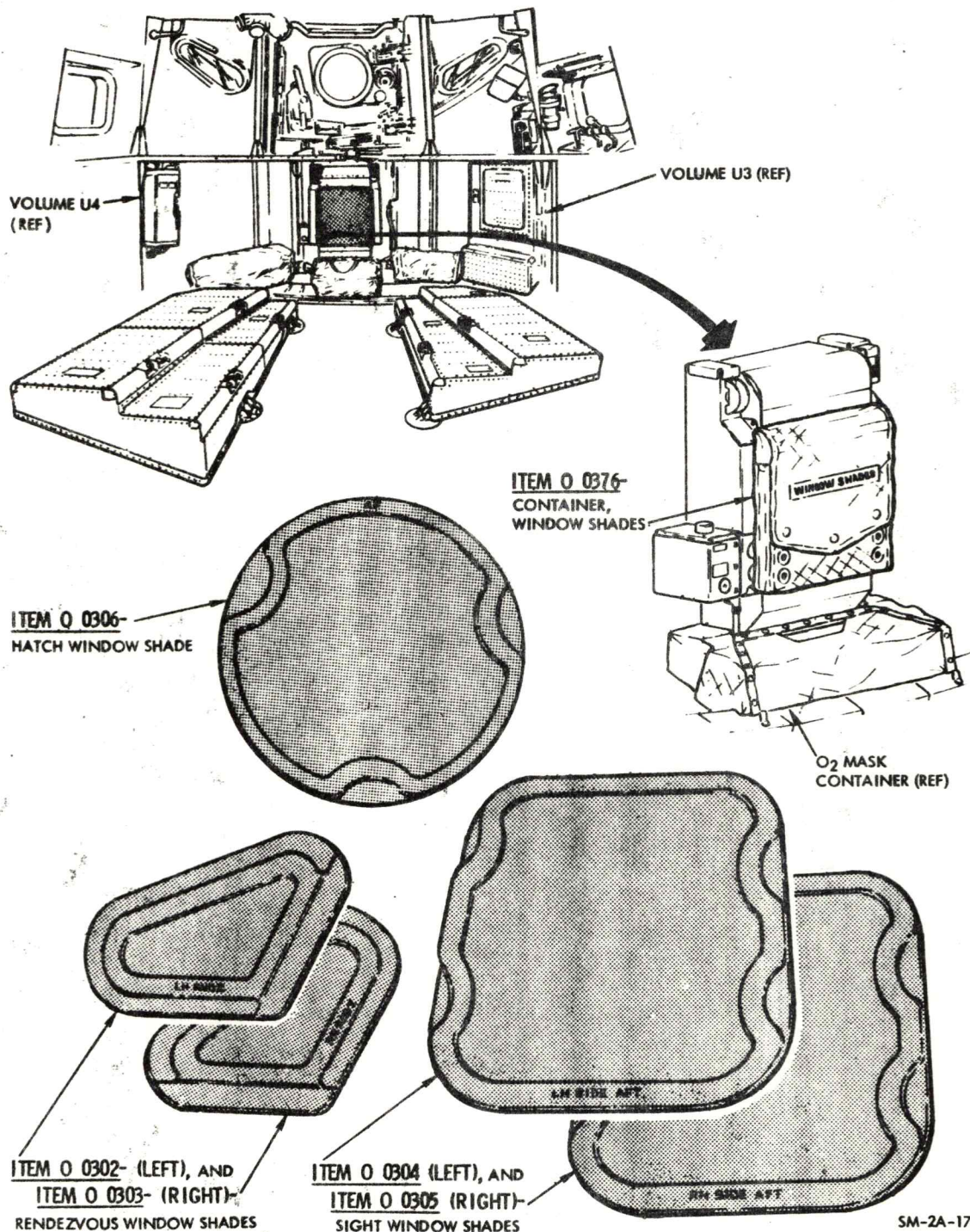


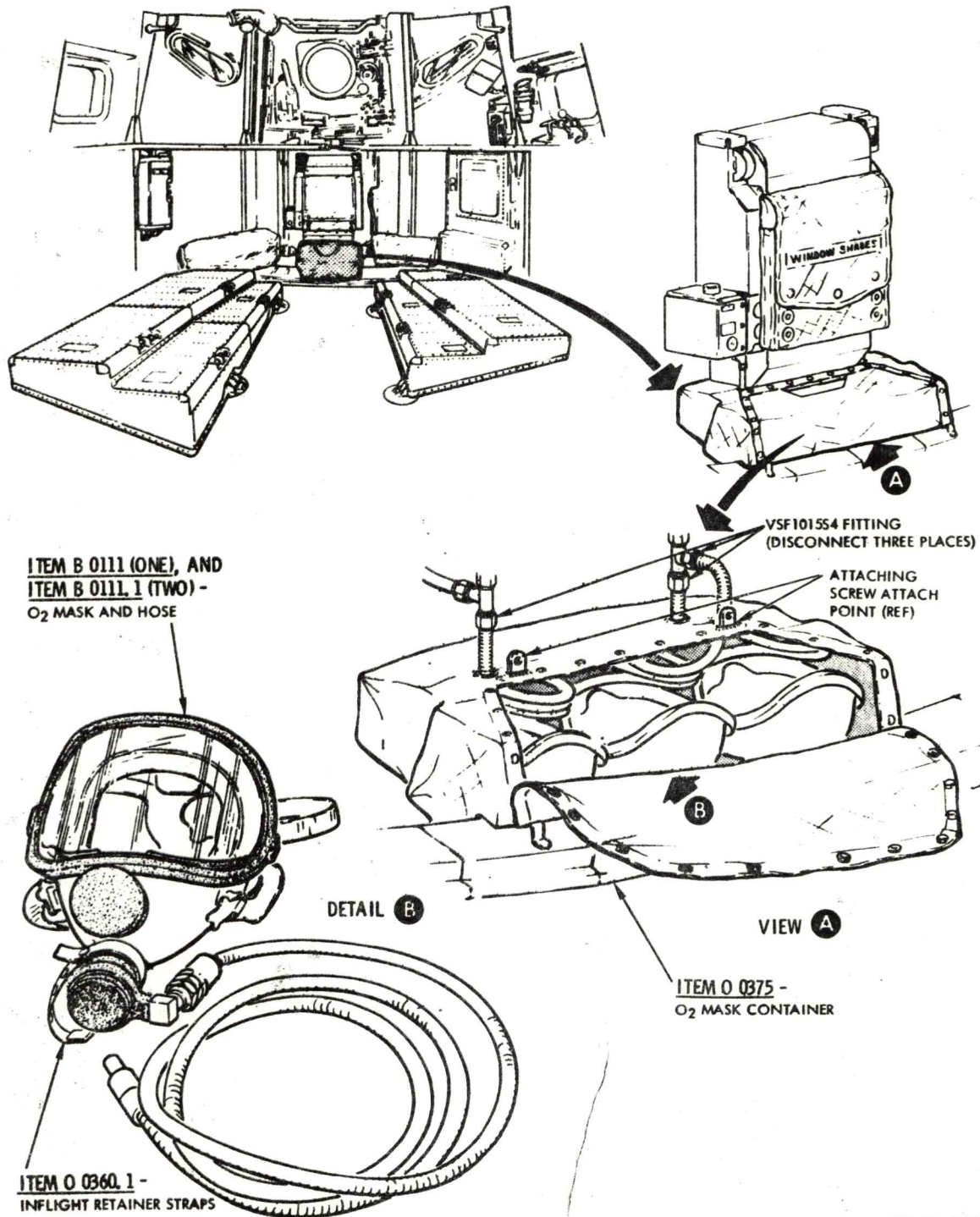
Figure 21-41. Window Shades

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## CREW EQUIPMENT REMOVAL

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Figure 21-42. O<sub>2</sub> Masks



## CREW EQUIPMENT REMOVAL

Sheet 59 of 59

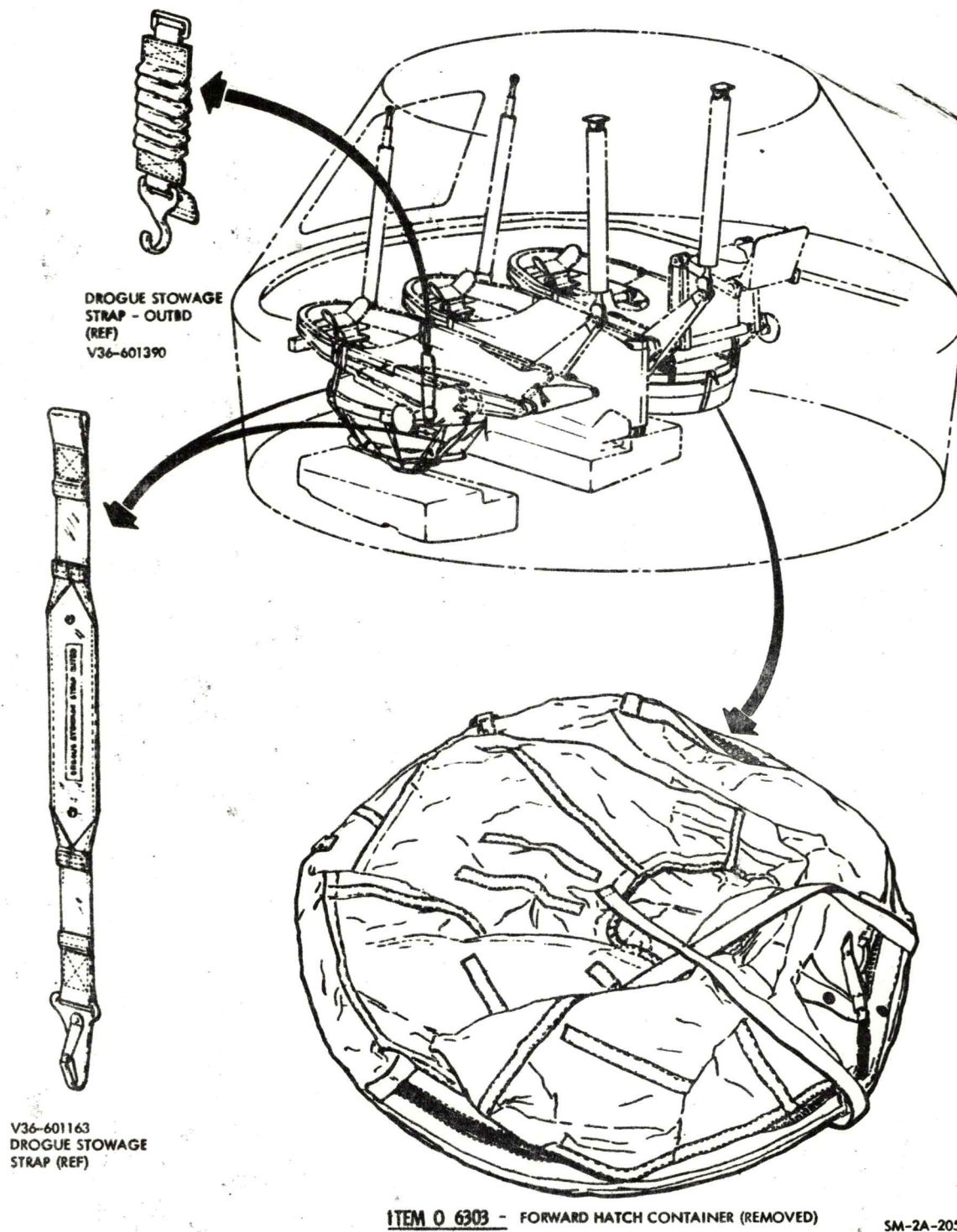


Figure 21-43. Forward Hatch Container/Drogue Stowage Straps

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**SECURING UNIFIED HATCH**

Sheet 1 of 3

Following systems shutdown, interior inspection, equipment removal, etc., the unified hatch shall be closed and secured.

**SAFETY**

1. If a drogue or pilot parachute has failed to deploy, exercise extreme caution when entering/securing the CM.
2. Observe standard safety precautions when working in the CM.

**PHOTOGRAPHIC REQUIREMENTS**

Refer to procedure (1).

**TOOLS AND EQUIPMENT**

| Quantity | Nomenclature    | Part No.        |
|----------|-----------------|-----------------|
| 1        | NASA hatch tool | SEZ34100078-101 |

**INSTRUCTIONS**

1. Verify all tools and equipment utilized to accomplish postretrieval procedures have been removed from the CM.
2. Verify all interior components/access panels, etc., are secured.
3. Verify lockpin has not sheared. (If sheared, orange portion of lockpin will extend approximately 1/2-inch beyond red portion of pin.)
4. Verify both control handles (hatch handle selector and gear box selector) are in the "N" (neutral) position.
5. Verify NASA safety pin installed.
6. Record pressure gage indication: WHITE (green/white).

**NOTE**

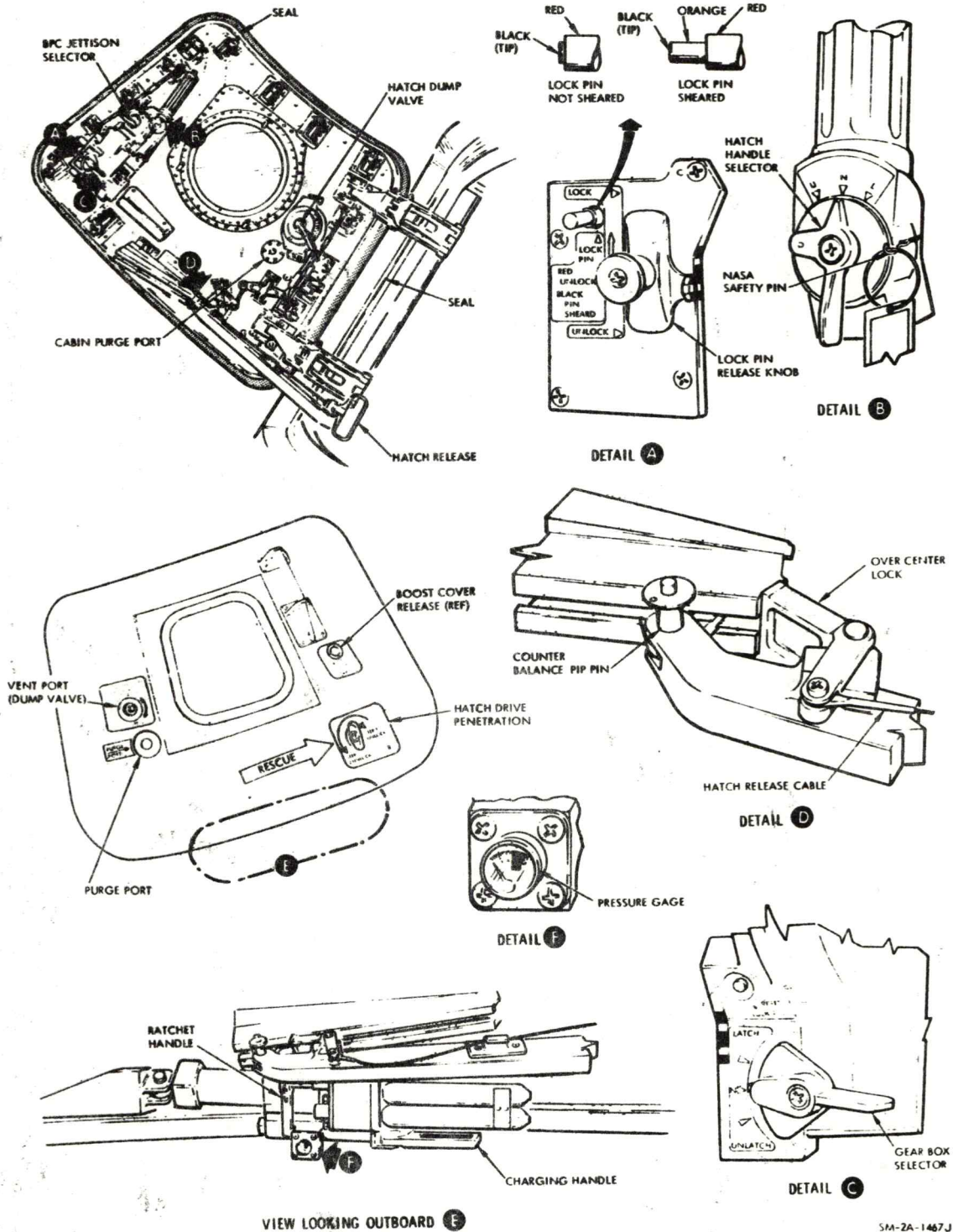
Prior to closing the hatch, open the dump valve by rotating the control handle located on the inside of the hatch (leave open).

7. Remove overcenter tool.
8. While holding the hatch (pulling back), release the overcenter lock.



## SECURING UNIFIED HATCH

Sheet 2 of 3



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## SECURING UNIFIED HATCH

Sheet 3 of 3

9. Push and hold hatch closed.
10. Insert NASA tool into hatch drive penetration (engage latching mechanism) and rotate in a clockwise direction.

PACKAGING REQUIREMENTS

1. Return tools to applicable containers for return shipment to MSC.

Remarks:

HATCH CLOSED NORMALLY  
0100Z MAY 31

HATCH WAS OPENED AND CLOSED 7 TIMES  
DURING RECOVERY & POST RETRIEVAL PERIOD  
FOR SECURITY PURPOSES

**ENGINE VENT PLUG REMOVAL**

Sheet 1 of 2

This procedure provides instructions for removing the pitch engine vent plugs prior to off-loading of the CM.

**NOTE**

Vent plugs will normally remain installed until all postretrieval procedures are completed. (If the vent plugs are not removed on board the recovery ship, removal shall be accomplished under the direction of the LST Director.)

**SAFETY**

1. Wear appropriate, protective clothing (face shield, rubber gloves, etc.).
2. Stand to one side of the engine ports when removing vent plugs.
3. Avoid body contact with the vent plugs following removal.

**NOTE**

For information relative to first aid, refer to procedure (C), EMERGENCY FIRST AID FOR PROPELLANT INJURY.

**PHOTOGRAPHIC REQUIREMENTS**

Refer to procedure (1).

**TOOLS AND EQUIPMENT**

| Quantity | Nomenclature  |
|----------|---------------|
| 1        | Face mask     |
| 1 pr     | Rubber gloves |

**INSTRUCTIONS**

1. Remove securing lines from drain tubing.
2. Loosen vent plug by turning serrated knob counterclockwise until knob hits handle.

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## MICROBIAL SAMPLING PROCEDURES

Sheet 1 of 2

This procedure provides instructions for obtaining microbial samples.

### IMPORTANT

THIS PROCEDURE SHALL BE PERFORMED BY THE FIRST PERSON ENTERING THE CM AND BEFORE ANY OTHER PROCEDURES ARE PERFORMED.

### SAFETY

1. Observe standard safety precautions when working within the CM.
2. Do not reposition any switch, CB, or control. Repositioning of a switch, CB, or control could cause injury to personnel outside the CM, or cause damage to an on-board system.

### PHOTOGRAPHIC REQUIREMENTS

Not applicable.

### TOOLS AND EQUIPMENT

| Quantity | Nomenclature                               |
|----------|--|
| 12       | Sterile swabs immersed in saline           |
| 6        | Test tubes containing trypticose soy broth |
| 6        | Test tubes containing veal infusion broth  |
| 2 pr     | Surgeons gloves                            |

### INSTRUCTIONS

#### CAUTION

- Rubber gloves MUST BE WORN during sampling procedures.
  - Do not touch surfaces to be swabbed prior to sampling.
1. Remove two sterile swabs from saline solution (press lightly against side of test tube to remove excess saline).
  2. Holding the two swabs in one hand, pass the swabs over the designated hardware (rotating the swab and applying light pressure).

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MICROBIAL SAMPLING PROCEDURE

Sheet 2 of 2

NOTE

If possible, 4 square inches of surface will be sampled.

3. Sample the following areas:

- a. CDR rotational hand-controller pistol grip (both sides). ✓
- b. Tip of drinking water gun. ✓
- c. Top of X-X head struts (using same swab). ✓
- d. Aft bulkhead in front of flight qualification recorder. ✓
- e. Soles of boots and palms of gloves (if PGA is in CM). ✓

CAUTION

Do not touch swab, inside of test tube, cap, or solution with hands.

- 4. Take one swab, place one-third (including cotton) in trypticose soy broth solution, break off and discard remainder of stick. Cap test tube and verify swab is in the solution.
- 5. Place the other swab in the veal infusion broth as per step 4.
- 6. Repeat steps 4 and 5 for each location sampled.

PACKAGING REQUIREMENTS

- 1. Label each test tube containing swab with:
  - a. Flight mission number
  - b. Location sampled
  - c. Time of sampling
  - d. Date of sampling
  - e. Name of person taking sample.
- 2. Forward test tubes to Recovery Team Leader for packaging.

Remarks: THIS PROCEDURE WAS CONDUCTED  
FOLLOWING TAPE SAMPLING DUE TO  
MEDICAL HELP & SWABS NOT SHOWING  
ON TIME!

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ADDENDUM TO PROCEDURE 24, PAGE 290

MICROBIAL SAMPLING (5-19-68)

PER REQUEST\* FROM DR. C.P. TRUBY OF THE  
LUNAR RECEIVING LABORATORY, ADD TO PARAGRAPH  
3 THE FOLLOWING AREAS TO BE SAMPLED:

- F. TOP OF VOLUME A4 ✓
- G. WASTE DISPOSAL RIM (INSIDE R9) ✓
- H. TOP OF ORDEAL CABLE STOW (VOLUME U3) ✓
- I. COUCH SUPPORT HEAD BEAM - RIGHT ✓
- J. COUCH SUPPORT HEAD BEAM - LEFT ✓
- K. RIGHT LEG PAN ✓
- L. MIDDLE LEG PAN ✓
- M. LEFT LEG PAN ✓
- N. GIRTH SHELF - LEFT ✓
- O. GIRTH SHELF - RIGHT ✓
- P. LEDGE BELOW LEFT WINDOW ✓
- Q. CMP ROTATIONAL HAND-CONTROLLER PISTOL GRIP ✓
- R. AFT BULKHEAD AT CENTER COUCH HEAD ✓

\* REQUEST COORDINATED WITH DWAYNE HARRISON  
OF THE LRL ON THE U.S.S. PRINCETON

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Sheet 1 of 2

Procedure 25 deleted.

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Sheet 2 of 2

Procedure 25 deleted.



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RADIATION SURVEY/SAFING

Sheet 1 of 6

Certain CM components contain radioactive material. (See sheet 3.) Accordingly, the purpose of this procedure is to identify and verify that these components have not been damaged. However, it should be noted that regardless of their condition, personnel responsible for postflight operations are subject to radiation exposure.

NOTE

If the radioluminescent discs are not damaged, external radiation exposure above allowable limits could only occur by prolonged, direct contact with one or more of the discs.

WARNING

- If one or more of the discs are damaged, external contamination can occur by touching contaminated discs or adjacent surfaces. (External contamination of personnel can be removed by thoroughly washing the contaminated area.)
- Damaged discs increase the probability of internal contamination via ingestion, and, less likely, inhalation. Therefore, external contamination should be removed before permitting any eating or drinking.

SAFETY

1. If propellant leaks (vapors) are evident, do not attempt to accomplish this procedure until the leakage has been stopped. (Refer to procedure (A).)
2. If a drogue or pilot parachute has failed to deploy, exercise extreme caution when working in the vicinity of the upper deck. (Refer to procedure (B).)
3. Do not allow unprotected parts of the body to come in contact with the radioluminescent discs/adjacent areas. Wear appropriate protective clothing (rubber gloves, etc.).
4. All radioluminescent discs shall be considered to be leaking radioactive contamination until confirmed otherwise.
5. Contaminated surfaces and areas should be marked with appropriate warning signs/decals.
6. All personnel responsible for accomplishing this procedure shall wear a film badge and a pocket dosimeter.

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## RADIATION SURVEY/SAFING

Sheet 2 of 6

PHOTOGRAPHIC REQUIREMENTS

1. Refer to procedure (1).

TOOLS AND EQUIPMENT

| Quantity | Nomenclature   |
|----------|--|
| 2        | Geiger-Mueller survey meter (with thin-end window probe) |
| 100      | Test stickers (tape)                                     |
| 50       | Containment stockers (tape)                              |
| 4 pr     | Rubber gloves  |
|          | Film badges  |
|          | Pocket dosimeters  |

INSTRUCTIONS

## WARNING

- Avoid body contact with discs and adjacent surfaces.
  - If body contact is made and radiation contamination is confirmed (with the Geiger-Mueller instrument), immediately remove any contaminated clothing and wash with soap and water.
1. Visually inspect all radioluminescent discs for damage.

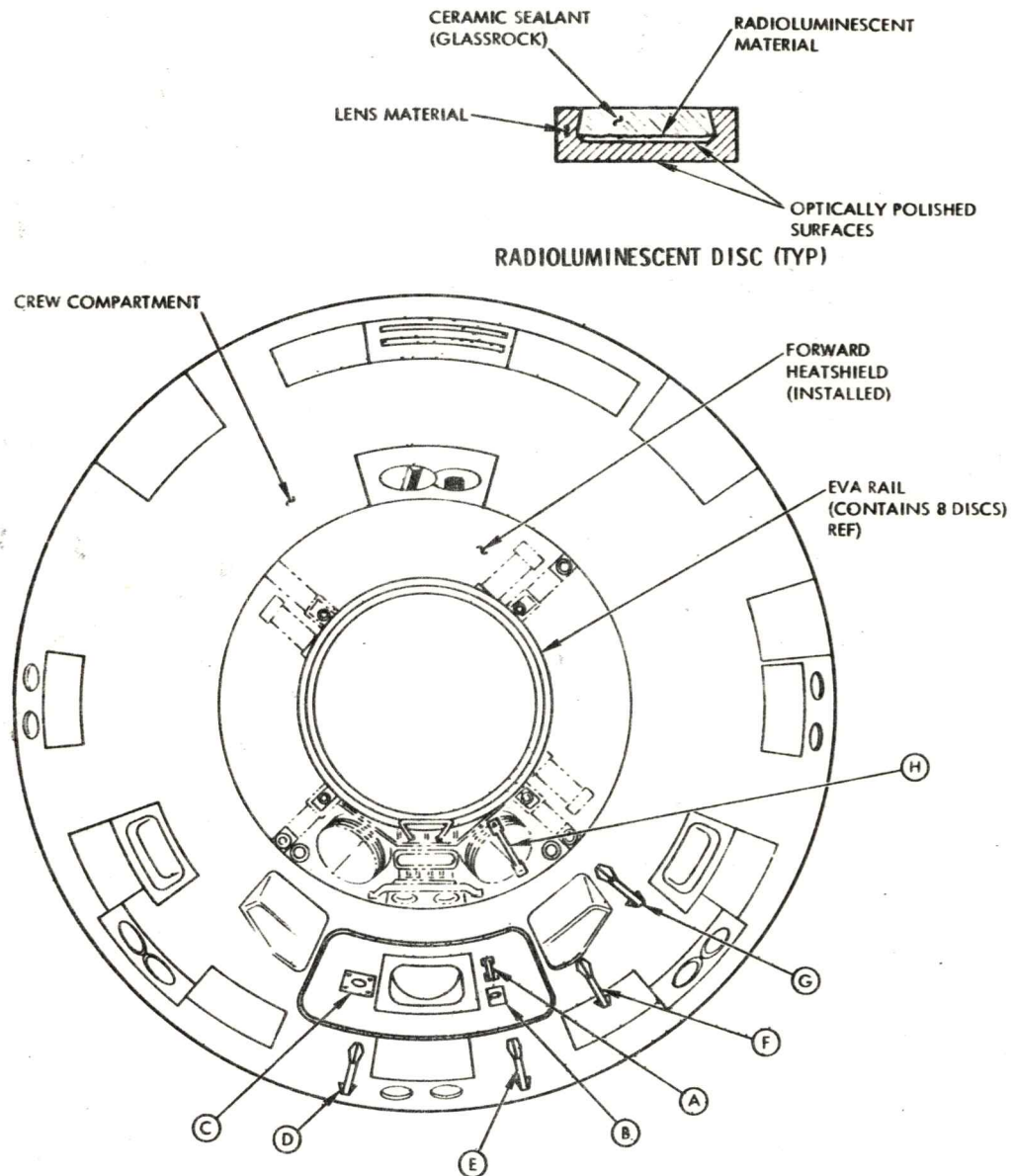
## NOTE

- If damage is evident, ascertain the leakage rate (per instructions in steps 2, 3, 4, and 6), and immediately cover source with containment stickers.
  - If any of the discs are missing or damaged, notify the Houston Recovery Control Center (RCC) via the PRS coordination circuit.
2. Apply test sticker to each disc.

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## RADIATION SURVEY/SAFING

Sheet 3 of 6



| INDEX | NOMENCLATURE                          |
|-------|---------------------------------------|
| A     | HATCH HANDLE (3 DISCS)                |
| B     | HATCH RELEASE MECHANISM (2 DISCS)     |
| C     | HATCH PRESS, EQUALIZE VALVE (4 DISCS) |
| D     | EVA HANDLE (4 DISCS)                  |
| E     | EVA HANDLE (4 DISCS)                  |
| F     | EVA HANDLE (4 DISCS)                  |
| G     | EVA HANDLE (4 DISCS)                  |
| H     | DEPLOYABLE EVA HANDLE (4 DISCS)       |

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## RADIATION SURVEY/SAFING

Sheet 4 of 6

INSTRUCTIONS (Cont)

3. Remove test stickers.

## NOTE

- Verify that the instrument has been properly calibrated.
  - Individual test stickers shall be monitored in an area removed from the CM.
4. Utilizing the Geiger-Mueller instrument, monitor each test sticker.

Record findings:

## CM EXTERIOR (CREW COMPARTMENT)

Hatch handle \_\_\_\_\_ 0  
(INDEX A) \_\_\_\_\_  
\_\_\_\_\_ ↓

Hatch release  
mechanism \_\_\_\_\_ 0  
(INDEX B) \_\_\_\_\_  
\_\_\_\_\_ ↓

Hatch pressure  
equalization valve \_\_\_\_\_ 0  
(INDEX C) \_\_\_\_\_  
\_\_\_\_\_ ↓

EVA handles  
(INDEX D) \_\_\_\_\_ 0

\_\_\_\_\_ ↓  
(INDEX E) \_\_\_\_\_ 0

\_\_\_\_\_ ↓  
(INDEX F) \_\_\_\_\_ 0

\_\_\_\_\_ ↓  
(INDEX G) \_\_\_\_\_ 0

## CM EXTERIOR (FWD HEATSHIELD)

Deployable EVA handle (as applicable)  
Handle (INDEX H) \_\_\_\_\_ 0

TOP DISC CRACKED BUT INTACT  
NO CONTAMINATION  
(SEE REMARKS) (341)

## RADIATION SURVEY/SAFING

Sheet 5 of 6

- Rem 5. Identify and package test stickers within individual packages for return shipment to MSC.
6. After monitoring the individual discs, apply containment stickers to all discs (regardless of condition).
7. After applying containment stickers (to all discs), utilize the Geiger-Mueller instrument to monitor the CM exterior surface areas for contamination. If a positive indication is obtained, proceed as follows:
- Attempt to remove the radiation source (contamination) by washing the contaminated area with a solution of detergent and water. (As directed by the NASA team leader.)
  - Contain the radiation source by applying containment stickers to all areas.
  - Display appropriate RADIATION WARNING decals/stickers.
8. Monitor each individual involved.

## CAUTION

- If clothing is contaminated, remove and stow in a plastic bag.
- Wash and stow rubber gloves (regardless of condition) within plastic bags.

PACKAGING REQUIREMENTS

1. Attach appropriate RADIATION WARNING decals/stickers to CM and plastic bags containing contaminated clothing/gloves.
2. Package test stickers for return shipment to MSC.
3. Package monitoring device for return shipment to MSC.

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RADIATION SURVEY/SAFING

Sheet 6 of 6

Remarks:

DISC +2 SIDE (TOP RAIL)  
CRACKED - AREA CONTAMINATED

At deactivation site - no  
contamination could be found.

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## HERMAL COATING SAMPLING

Sheet 1 of 2

After completion of the CM EXTERIOR INSPECTION (procedure (14)) a one foot square section of the thermal control coating shall be removed and packaged for return shipment to MSC.

### NOTE

The sample shall be taken from a relatively clean and unburned area on the leeward side of the CM.

### SAFETY

1. Observe standard safety precautions when working around the CM.

### WARNING

Verify that procedure (26) has been completed prior to accomplishing this procedure.

### PHOTOGRAPHIC REQUIREMENTS

1. Verify that photographs of the sample area have been obtained prior to removing the thermal coating material.

### TOOLS AND EQUIPMENT

| Quantity | Nomenclature   |
|----------|--|
| 1 pr     | Scissors   |
| 1        | X-acto knife (alternate)   |
| 1        | Container (cardboard tube/plastic bag, or a combination of both) |

### INSTRUCTIONS

1. After determining the best area from which to obtain the sample:
  - a. Attempt to lift/peel the desired section free.
  - b. Once the section is free, use scissors (or an X-acto knife) to cut out the desired section. If an X-acto knife is used, a piece of cardboard/hardstock should be used behind the thermal coating to avoid damaging the heatshield.

### PACKAGING REQUIREMENTS

1. Package the sample in a suitable container for return shipment to MSC.

Remarks: THREE STRIPS REMOVED TOTALLYING  
APPROXIMATELY ONE SQUARE FOOT (SEE  
NEXT PAGE)

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THERMAL COATING SAMPLE

Sheet 2 of 2

THERMAL CONTROL COATING  
(L.H. SIDE OF HATCH)

THERMAL CONTROL COATING SAMPLE-ONE SQ FOOT  
(MAY BE REMOVED FROM EITHER AREA-CHOICE  
OF AREA DEPENDENT UPON CONDITION).

(R.H. SIDE OF HATCH)

AREA  
REMOVED

SM-2A-2039

REACTION CONTROL SYSTEM (RCS) ANOMALY

Sheet 1 of 4

This procedure provides information for controlling RCS propellant leaks or fires.

SAFETY

1. Should fuel or oxidizer leaks be evident, all personnel shall be evacuated from the immediate area. Work in the RCS thruster areas should be minimized. (See adjacent illustration.)

PHOTOGRAPHIC REQUIREMENTS

1. If possible, obtain photographic coverage of any propellant leaks, fires, etc.

WARNING

Photographers shall not expose themselves to unnecessary dangers. Photographic coverage will not take precedence over crew egress or assisting injured personnel.

INSTRUCTIONS

LEAKS

1. Thoroughly wash down any areas contaminated with propellant liquid or fumes, if so directed by the NASA Team Leader.

WARNING

Individual(s) attempting to carry out this action must be wearing protective clothing and a self-contained breathing supply.

FIRES

1. Fires shall be doused with large amounts of water, using low-pressure nozzles.
2. Because of the wide flammability limits and reignition hazard, foams, powders, water fog, and vaporizing liquids are not as effective as water dilution. Both propellants are soluble in water; either salt or fresh water may be used to extinguish the flame.

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A

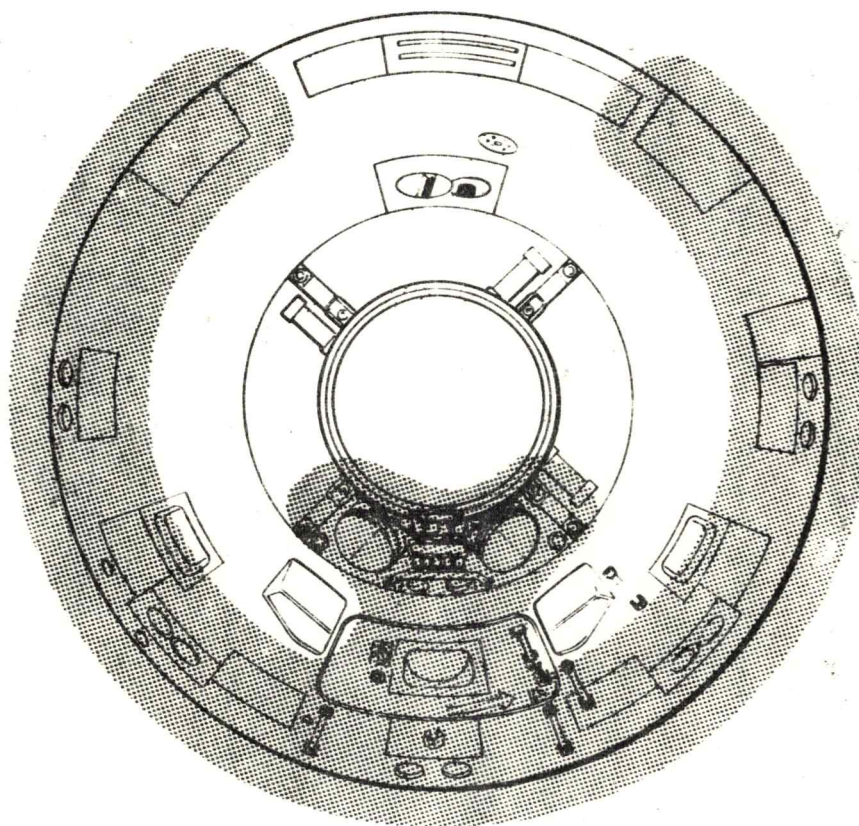
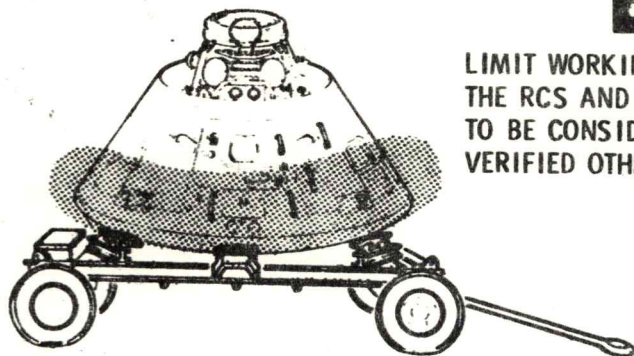
SM2A-08-SC106

REACTION CONTROL SYSTEM (RCS) ANOMALY

Sheet 2 of 4

*Warning*

LIMIT WORKING TIME IN DANGER AREAS.  
THE RCS AND ORDNANCE DEVICES ARE  
TO BE CONSIDERED DANGEROUS UNTIL  
VERIFIED OTHERWISE.



SM-2A-1133F

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## REACTION CONTROL SYSTEM (RCS) ANOMALY

Sheet 3 of 4

Because the fumes from a propellant fire are highly toxic, personnel must have a self-contained air supply and should fight the fire from an upwind position. After extinguishing the flame, continue to flush the spacecraft and surrounding equipment to ensure all traces of propellant have been diluted.

## NOTE

For information relative to first aid, refer to procedure ③, EMERGENCY FIRST AID FOR PROPELLANT INJURY.

## NOTE

Should a fuel and/or oxidizer leak occur, note duration, leak source, corrective action, etc.

Remarks: SLIGHT ODOR OF AMMONIA WAS  
DETECTED NEAR RECOVERD MAIN CHUTE, ~~HOW-~~  
EVER EXACT AREA COULD NOT BE LOCATED

NEAR CM  
WHILE  
ON BOARD  
CARRIER

PACKAGING REQUIREMENTS

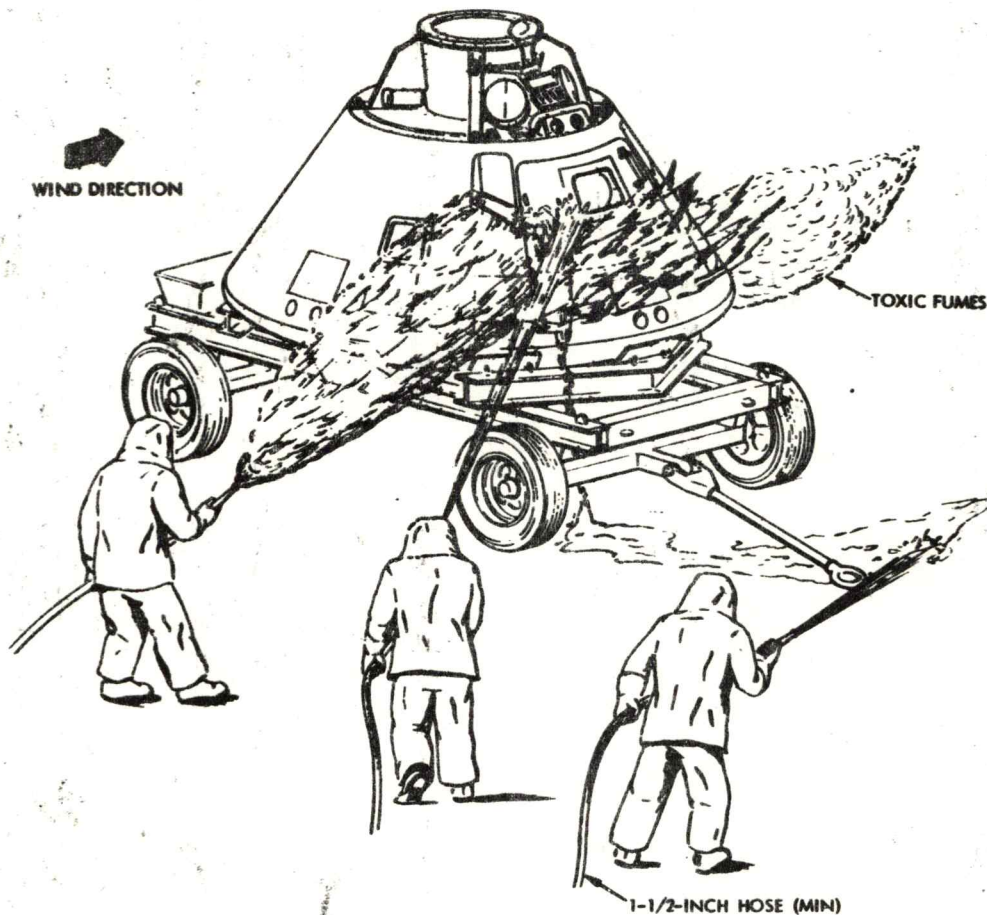
Not applicable.

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REACTION CONTROL SYSTEM (RCS) ANOMALY

Sheet 4 of 4



- 1 Direct water at base of flame.
- 2 Wash propellants away as soon as possible.
- 3 Wash down all equipment exposed to propellants.
- 4 Monitor CM to determine if RCS fumes are present after fire is extinguished.

**Warning**

- Do not stand in RCS thruster areas (approximately 20 feet from any nozzle).

**NOTE**

- Use high-capacity fog nozzle (low pressure) to disperse and absorb vapors.
- Fresh or salt water may be used to combat hypergolic fires.
- Remain upwind or crosswind when flushing CM with water.

SM-2A-837F

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3. If a

th

fr

4.

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## PYROTECHNIC ANOMALY

Sheet 1 of 3

Recovery team personnel shall inspect all external pyrotechnic devices to determine their condition (expended/not fired).

SAFETY

1. All pyrotechnic devices shall be considered unsafe until verified otherwise. Stay clear of all pyrotechnic devices until they have been confirmed safe.
2. Personnel responsible for determining the status/working with pyrotechnic devices shall wear garter grounding devices (Legstat).
3. If a parachute has failed to deploy, do not attempt to deploy or unpack the parachute. Erect a barrier around the CM to prevent personnel from entering the mortar line-of-fire.
4. The apex cover contains a pyro-deployed parachute. If the chute has failed to deploy, use extreme caution when handling. Do not attempt to deploy or unpack the parachute.
5. If one or both of the VHF antennas or the flashing light has not deployed, use caution when working on the upper deck.

PHOTOGRAPHIC REQUIREMENTS

1. Closeups of any unexpended pyrotechnic devices (if obtainable without undue risk to the photographer).
2. Closeups of any pyrotechnic devices which have fired, but appear unused or abnormal in any way.

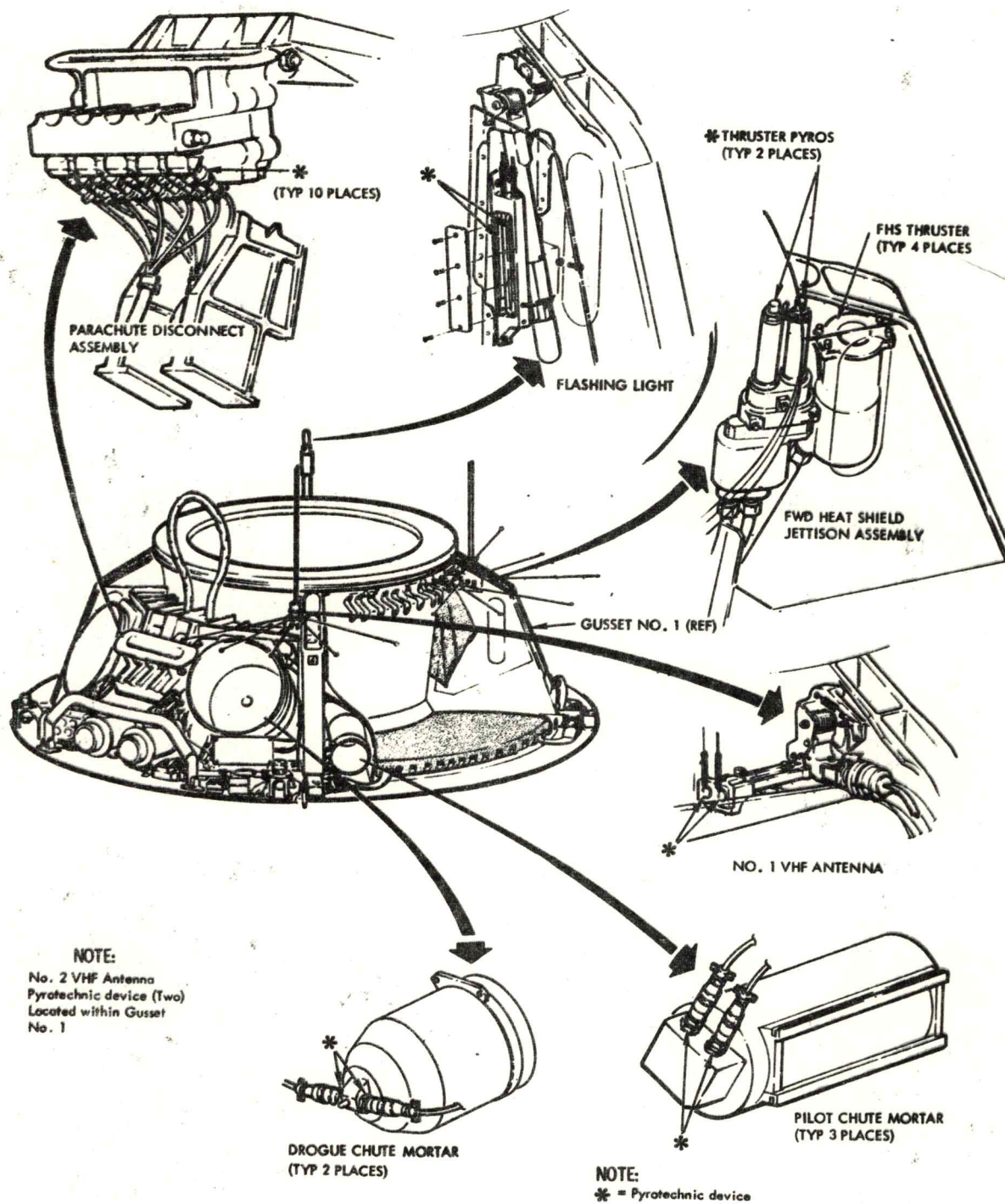
TOOLS AND EQUIPMENT

| Quantity | Nomenclature                       |
|----------|------------------------------------|
| 2        | Legstat (grounding device)         |
|          | Assorted handtools (nonconductive) |

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## PYROTECHNIC ANOMALY

Sheet 2 of 3



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## PYROTECHNIC ANOMALY

Sheet 3 of 3

INSTRUCTIONS

1. If any of the pyrotechnic devices appearing on the adjacent illustration have not fired, inform the Houston-Recovery Control Center (RCC) and the Landing-Safing team upon arrival at the port of entry.
2. Red flag any unexpended pyrotechnic devices.

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PACKAGING REQUIREMENTS

Not applicable.

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**EMERGENCY FIRST AID FOR PROPELLANT INJURY**

Sheet 1 of 2

This procedure provides recommended "first aid treatment" for personnel contaminated with RCS propellants; in addition, it also describes the various symptoms associated with propellant exposure.

**SAFETY****NOTE**

Speed is of prime importance when treating personnel exposed to raw propellants.

1. All personnel associated with postretrieval operations shall be thoroughly familiar with recommended first aid procedures as outlined in the following chart.

| Type of Exposure                             | Symptoms   | Action   |
|--|--|--|
| <b>FUEL (MMH)</b>                            |  |  |
| <b>Local Contact (Eyes and Skin)</b>         | Itching, tearing, swelling, stinging pain, temporary blindness | Removal of clothing and immediate deluging of affected area with water. Obtain qualified medical advice as soon as possible. |
| <b>Vapor Inhalation</b>                      | Coughing, choking, difficulty in breathing                     | Apply artificial respiration or supplemental oxygen and obtain qualified medical advice as soon as possible.                 |
| <b>Ingestion</b>                             | Lethargy, nausea, convulsions                                  | Obtain qualified medical advice as soon as possible.   |
| <b>OXIDIZER (N<sub>2</sub>O<sub>4</sub>)</b> |  |  |
| <b>Local Contact (Eyes and Skin)</b>         | Stinging, burning sensation, itching, possible blindness       | Immediate deluging of affected area with water. Obtain qualified medical advice as soon as possible.                         |
| <b>Vapor Inhalation</b>                      | Irritation of respiratory system                               | Obtain qualified medical advice as soon as possible.   |
| <b>Ingestion</b>                             | Nausea, unconsciousness  | Obtain qualified medical advice as soon as possible.   |

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## EMERGENCY FIRST AID FOR PROPELLANT INJURY

Sheet 2 of 2

Remarks:

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