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Report No. FAA-NA-75-158

FAA WJH Technical Center
00090587

TERMINAL FACILITY CONFIGURATION AND DATA SURVEY

O'HARE TOWER/TRACON

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U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
National Aviation Facilities Experimental Center
Atlantic City, New Jersey 08405

PREFACE

This document is published by the National Aviation Facilities Experimental Center, Atlantic City, New Jersey, in response to a requirement from Systems Research and Development Service to provide basic data to the sustaining engineering program. It is intended only as a reference source, containing operational information, equipment content, layout, and physical design characteristics of major terminal facilities. It will be published as a series of facility supplements which will be updated as required during March of each year as long as the information is required for system planners. Changes to the reported conditions, of a nature believed to warrant an errata page, are to be forwarded to NAFEC, attention to ANA-260, annually during the month of January. Suggestions on content, involving modification, revisions and/or additions, are also encouraged at that time.

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CHICAGO-O'HARE INTERNATIONAL

NA-75-158

1. NAME OF FACILITY: O'HARE

2. TYPE FACILITY: TOWER/TRACON

3. GEOGRAPHIC LOCATION:
   CHICAGO, COOK COUNTY, ILLINOIS

4. MAILING ADDRESS/FACILITY OFFICERS:
   AIRPORT TRAFFIC CONTROL TOWER
   CHICAGO-O'HARE INTERNATIONAL AIRPORT
   P. O. BOX 66036
   CHICAGO, ILLINOIS 60666
   PHONE: FTS 312-686-3670

   PATRICK O'SULLIVAN, CHIEF
   JAMES BURNS, JR., DEPUTY CHIEF
   MICHAEL POWDERLY, FOO

5. TYPE OF TOWER CAB:
   EIGHT-SIDED CAB
   APPROXIMATELY 200 FEET FROM GROUND TO CAB FLOOR

6. DISTANCE BETWEEN TRACON AND PRIMARY TOWER CAB:
   TWENTY FLOORS

7. TYPE OF RADAR AND LOCATION:
   ASR-7 W/ATCBI-4 AT O'HARE
   ASR-7 W/ATCBI-4 LOCATED 12 MILES SOUTH OF MIDWAY

8. NUMBER OF DISPLAYS:
   a. TRACON/RAPCON: FOUR VERTICAL, SEVEN HORIZONTAL (TRACON)
   b. MAINTENANCE ROOM: TWO VERTICAL

9. NUMBER AND TYPE OF BRITE SYSTEM(S): TWO BRITE-II SYSTEMS
   NUMBER AND TYPE OF DISPLAY(S): THREE BRITE-II, ONE BRITE-IV, AND ONE ATLANTIC TECH BRITE DISPLAY

10. ALPHA/NUMERIC CAPABILITY ON BRITE DISPLAY(S): YES

11. TYPE OF RADAR SERVICE PROVIDED: TCA

12. LIST OF AUTHORIZED POSITIONS OF OPERATION:

TOWER:
GROUND CONTROL-1 (GC-1)
GROUND CONTROL-2 (GC-2)
LOCAL CONTROL-1 (LC-1)
LOCAL CONTROL-2 (LC-2)
LOCAL CONTROL-3 (LC-3)
LOCAL CONTROL-4 (LC-4)
CLEARANCE DELIVERY (CD)
B-STAND
FLIGHT DATA (FD)

TRACON:
EAST ARRIVAL HANDOFF (EHO)
EAST ARRIVAL RADAR (EAR)
WEST ARRIVAL RADAR (WAR)
WEST ARRIVAL HANDOFF (WHO)
SOUTH DEPARTURE RADAR (SDR)
WEST/SOUTH DEPARTURE HANDOFF (WSDHO)
WEST DEPARTURE RADAR (WDR)
SOUTH SATELLITE ARRIVAL (SSATAR)
SOUTH SATELLITE DEPARTURE (SSATDR)
SOUTH SATELLITE HANDOFF (SSATHO)
PARALLEL APPROACH MONITOR (PARMON)
NORTH SATELLITE (NSAT)
EAST DEPARTURE RADAR (EDR)
EAST DEPARTURE/NORTH SATELLITE HANDOFF (ED/NSATHO)

13. NORMAL STAFFING BY SHIFT:

TOWER - 07 TO 15 - LC-4, LC-1, GC-1, GC-2, CD, FD
15 TO 23 SAME
23 TO 07 - LC-1, GC-1, CD

TRACON - 07 TO 15-EHO, EAR, WAR, WHO, NSAT, EDR, WDR, SSATAR, SSATDR, AND PARMON, PARMON AS NEEDED

15 TO 23-SAME

23 TO 07-HO, AR, DR, SAT

14. AUTHORIZED POSITION CONSOLIDATION:
TOWER: LC-4 TO LC-1, GC-2 TO GC-1, FD TO CD

TRACON: EHO TO WHO, EAR TO WAR, EDR AND WDR TO SDR, NSAT AND SSAT TO POSITION 16

15. SATELLITE AIRPORTS (APPROACH CONTROL AND/OR RADAR SERVICES PROVIDED):
CHICAGOLAND - 12 nmi N - NO TOWER
PALWAUKEE - 8 nmi N - FAA TOWER
GLENVIEW - 7 nmi NE - USN TOWER
MEIGGS - 16 nmi ESE - FAA TOWER
MIDWAY - 13 nmi SE - FAA TOWER
HALEY AAF - 15 nmi NNE - NO TOWER
CRYSTAL LAKE - 23 nmi NW - NO TOWER
SCHAUMBURG - 9 nmi W - NO TOWER
HOWELL - 20.5 nmi SSE - NO TOWER
WAUKEEGAN - 26 nmi N - NO TOWER
GALT - 32 nmi NW - NO TOWER
CAMPBELL - 22 nmi NNW - NO TOWER

16. NUMBER OF ARTS KEYPACKS (LOCATIONS):
a. TOWER: LC-1, LC-4
b. TRACON/RAPCON: POSITION 7, EHO, EAR, WAR, WHO, POSITION 13, NSAT, EDR, EDRHO, SSATAR, SSATDR(2). SSATAR AND DRHO(2), PARMON(2), PARMON, POSITION 1, POSITION 2, POSITION 3, POSITION 27, POSITION 26
c. MAINTENANCE: TWO W/ARTS III INDICATORS

17. AIR/GROUND FREQUENCIES BY POSITION (MHz):
TOWER FREQUENCIES:
LC-1 120.75, 126.2, 118.1, 125.0, 390.9, 243.0, 121.5, 121.9, 121.75

LC-4 118.1, 126.9, 125.0, 120.75, 390.9, 124.35, 243.0, 121.5, 121.9, 121.75

GC-1 121.75, 121.9, 121.6, 126.9

GC-2 121.9, 121.75, 126.9, 348.6

CD 121.6, 121.9, 121.75, 126.9

TRACON FREQUENCIES:

#4 N. SAT 134.4, 124.35, 306.2, 243.0, 125.0, 308.4, 345.2, 126.9

#5 E. DEPT 125.0, 337.4, 315.6, 308.4, 127.4, 134.4, 119.9, 175.4

#8 EAR HO 119.0, 125.7, 134.4, 353.9, 363.8, 128.45, 243.0

#9 EAR 119.0, 125.7, 128.45, 135.15, 353.9, 363.8, 121.5, 134.4

#11 WAR 125.7, 119.0, 126.05, 128.45, 363.8, 353.9, 121.45, 135.15

#12 WAR HO 119.9, 121.5, 125.7, 119.0, 363.8, 353.9, 243.0, 128.45

#14 SDR 127.4, 269.5, 125.4, 134.4, 119.35, 118.4, 125.0, 337.4

#16 WDR 125.4, 290.2, 119.35, 118.4, 338.0, 127.4, 119.9, 126.05

#17 & 18 S SAT 126.05, 118.4, 338.0, 125.4, 127.4, 125.0, 128.45, 119.35

#23 PARMON 126.2, 124.35, 121.5, 125.0, 125.4, 127.4, 119.35, 118.1, 120.75, 390.9

#24 QUALAMON 118.1, 120.75, 126.9, 126.2, 390.9, 124.35, 119.0, 125.7, 243.0, 125.0, 125.4, 127.4, 134.4, 269.5

#25 PARMON 125.4, 290.2, 127.4, 269.5, 118.1, 120.75, 125.0, 381.6, 390.9

18. FLIGHT DATA HANDLING ACTIVITY PECULIAR TO THE FACILITY:
FLIGHT PROGRESS STRIPS (DEPARTURES) ARE DROPPED DOWN A TUBE BY THE TOWER LOCAL CONTROLLER FOR USE BY DEPARTURE CONTROL. THERE IS NO FDEP LOCATED IN THE TRACON.

19. TRAFFIC COUNT FOR A REPRESENTATIVE BUSY DAY: 2/11/75

	AC IFR/VFR	AT IFR/VFR	GA IFR/VFR	MIL IFR/VFR	TOTAL IFR/VFR
00 - 08	194/0	51/0	14/0	0/0	259/0
08 - 16	771/0	67/10	60/1	8/0	906/11
16 - 24	683/0	52/10	50/6	8/0	793/16

20. FUTURE PLANNING:
DURING FY-77 TWO HORIZONTAL INDICATIONS WILL BE REMOVED AND TWO VERTICALS WILL BE ADDED. THE EQUIPMENT IS EXPECTED TO BE RECONFIGURED AS INDICATED IN THE DRAWING.

21. FDEP EQUIPMENT:
NUMBER OF FDEP'S BY LOCATION AND USE - ONE IN TOWER TO RECEIVE CLEARANCES FROM ARTCC

22. TOWER EN ROUTE AGREEMENTS: MILWAUKEE TOWER

23. ASSOCIATED FSS(S): CHICAGO FSS LOCATED AT DU PAGE AIRPORT

24. RADAR DATA PROCESSING WITH ADJACENT FACILITY(S):
RADAR DATA PROCESSING WITH CHICAGO ARTCC

25. WEATHER DATA POSTED WITHIN FACILITY (SOURCE AND HOW RECEIVED):
MIDWAY, GLENVIEW, PALWAUKEE BY VOICE
O'HARE RECEIVED FROM NATIONAL WEATHER SERVICE VIA ELECTROWRITER

26. RVR'S (RVV'S):
NUMBER OF RVR/RVV BY RUNWAY

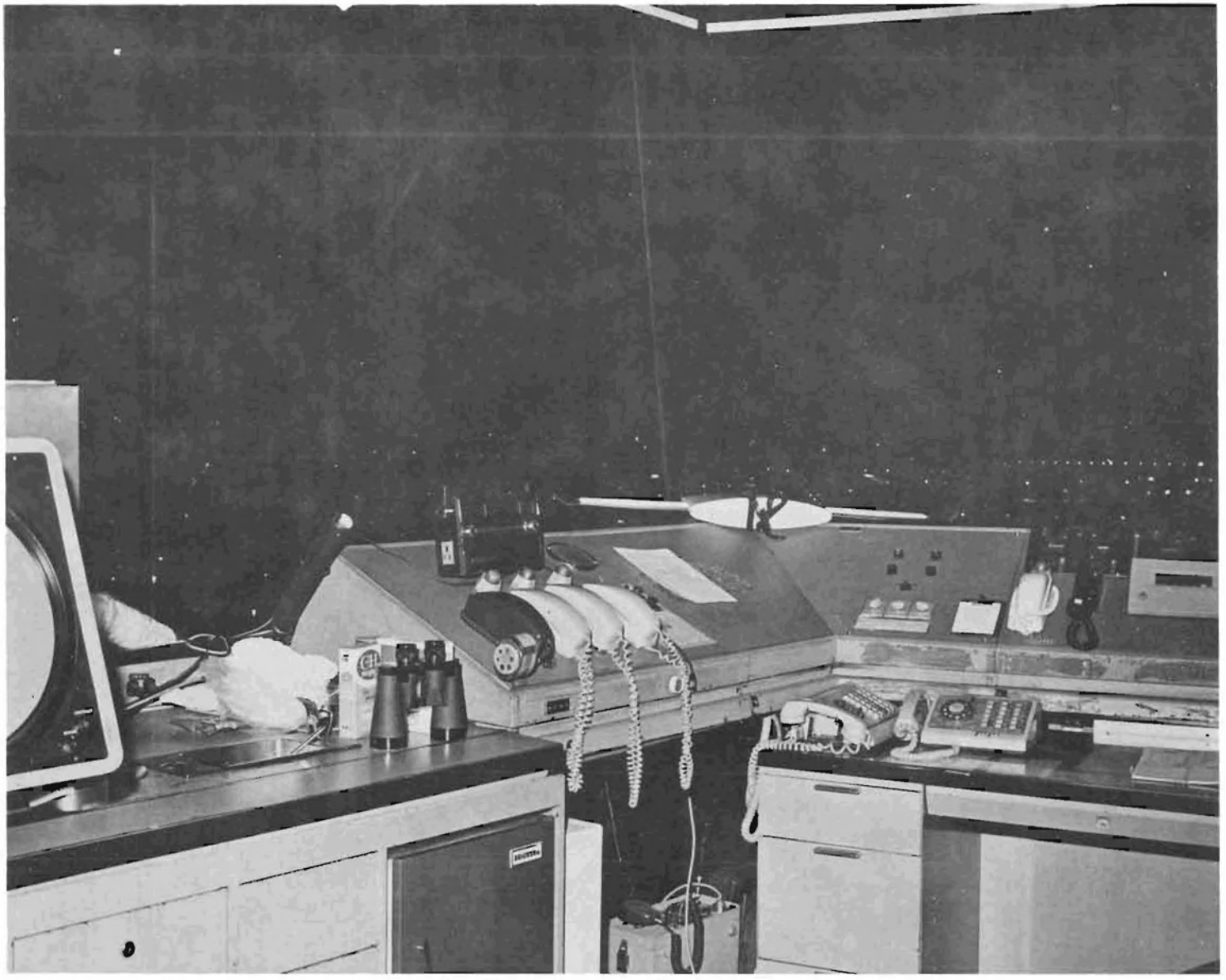
RUNWAY	RVR/TD	RVR/RO	RVV/TD
14L	X	X	
14R	X	X	
32L	X	X	
32R	X	X	
27R	X		
4L			X
9L			X

IN ADDITION, THE TRACON DISPLAYS RVR FOR MIDWAY.

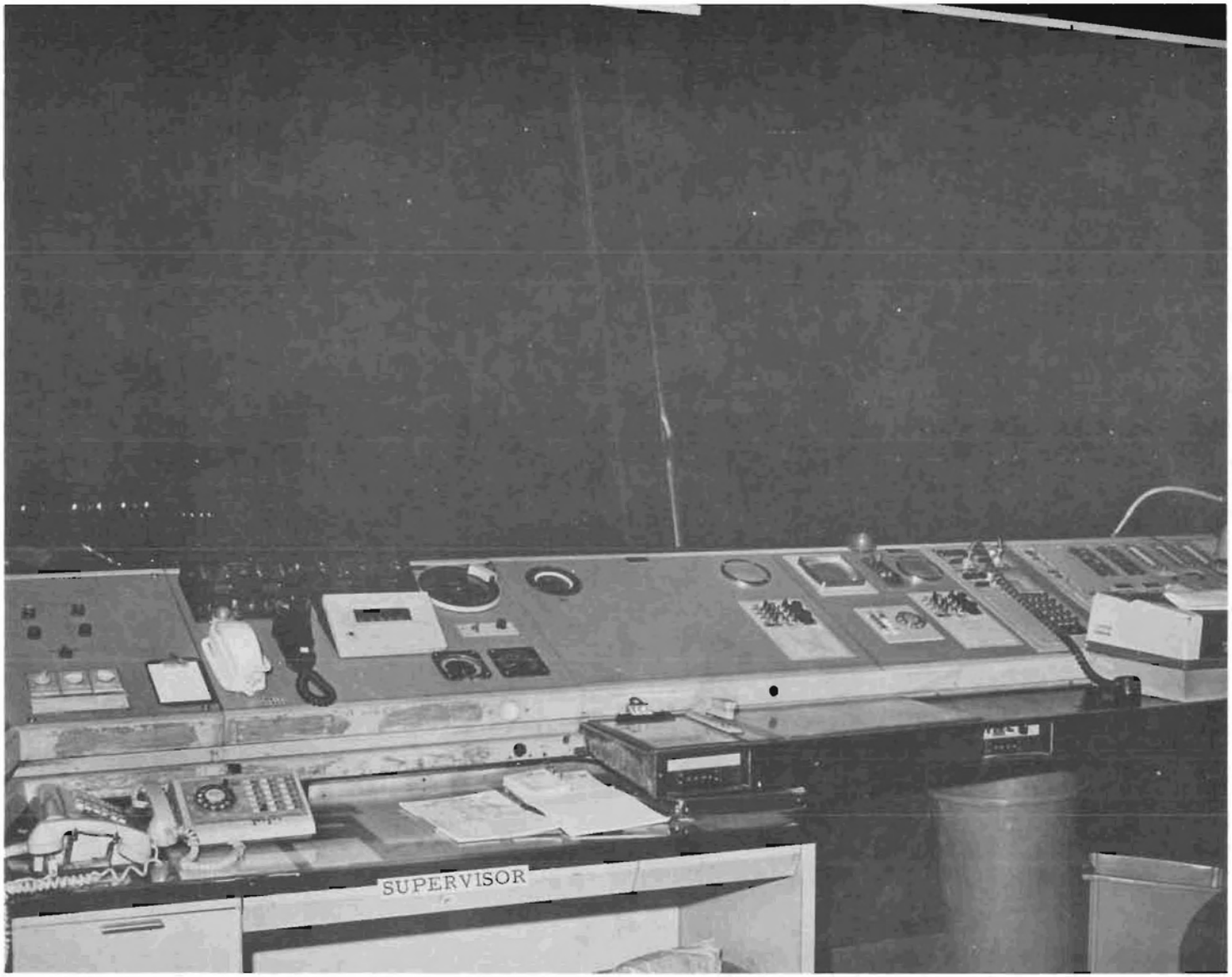
27. TYPE OF ASDE AND DISPLAY:
ASDE-2 W/3BRITE II DISPLAYS (INCLUDED IN ITEM 9)
TWO CHANNELS WHICH MAY BE INDEPENDENTLY OPERATED AND CONTROLLED SIMULTANEOUSLY.

28. ARTS III COMPUTER:
a. CAPACITY (NO. OF K): 56K
b. NO. OF INPUT/OUTPUT CHANNELS: - 34
c. IS THIS FACILITY AN ASSEMBLY SITE: YES

29. ACCESS TO CAB FOR MOVEMENT OF EQUIPMENT:
UP AND DOWN CIRCULAR STAIRS MANUALLY.



ORD 7/75 ORD TOWER-1



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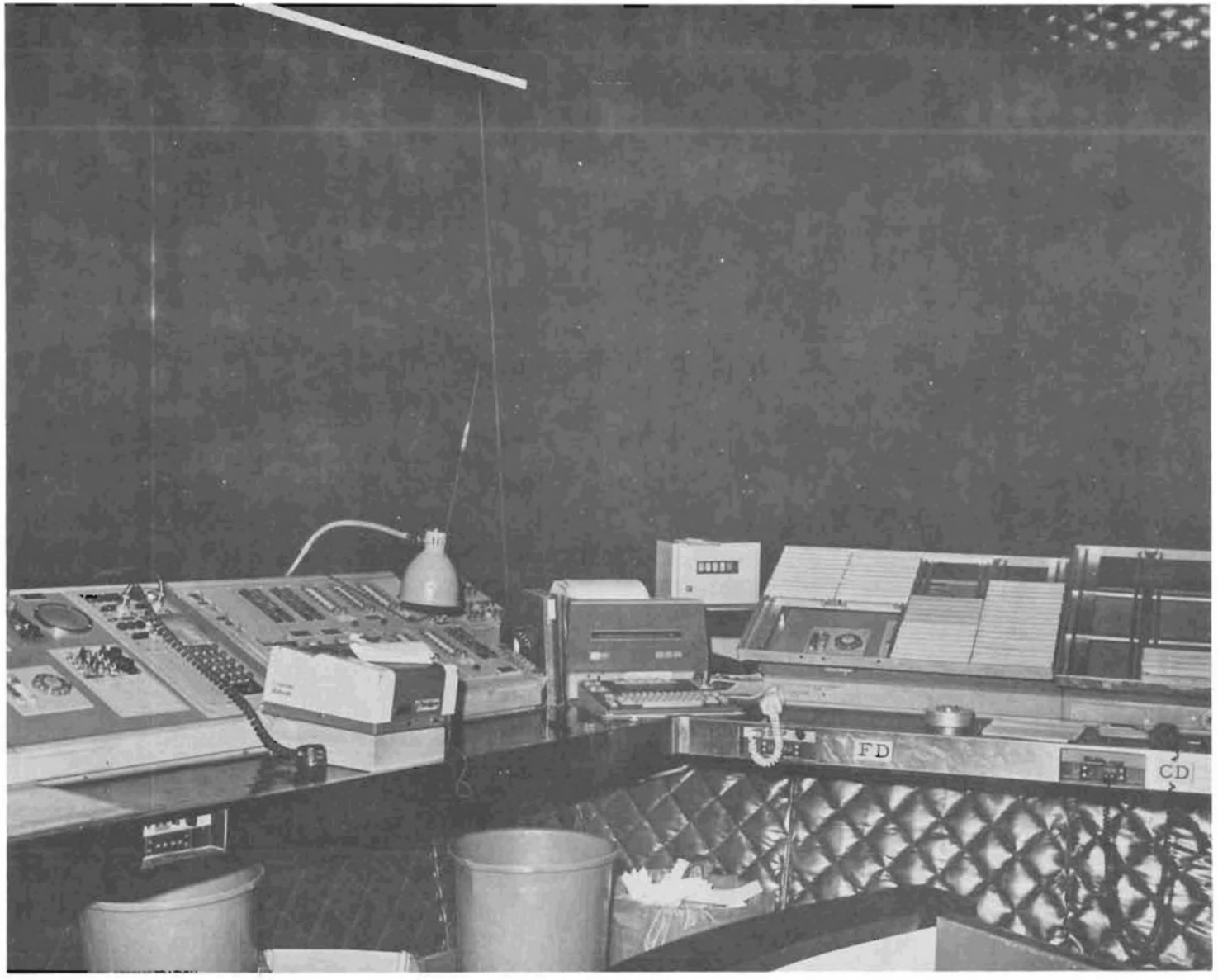

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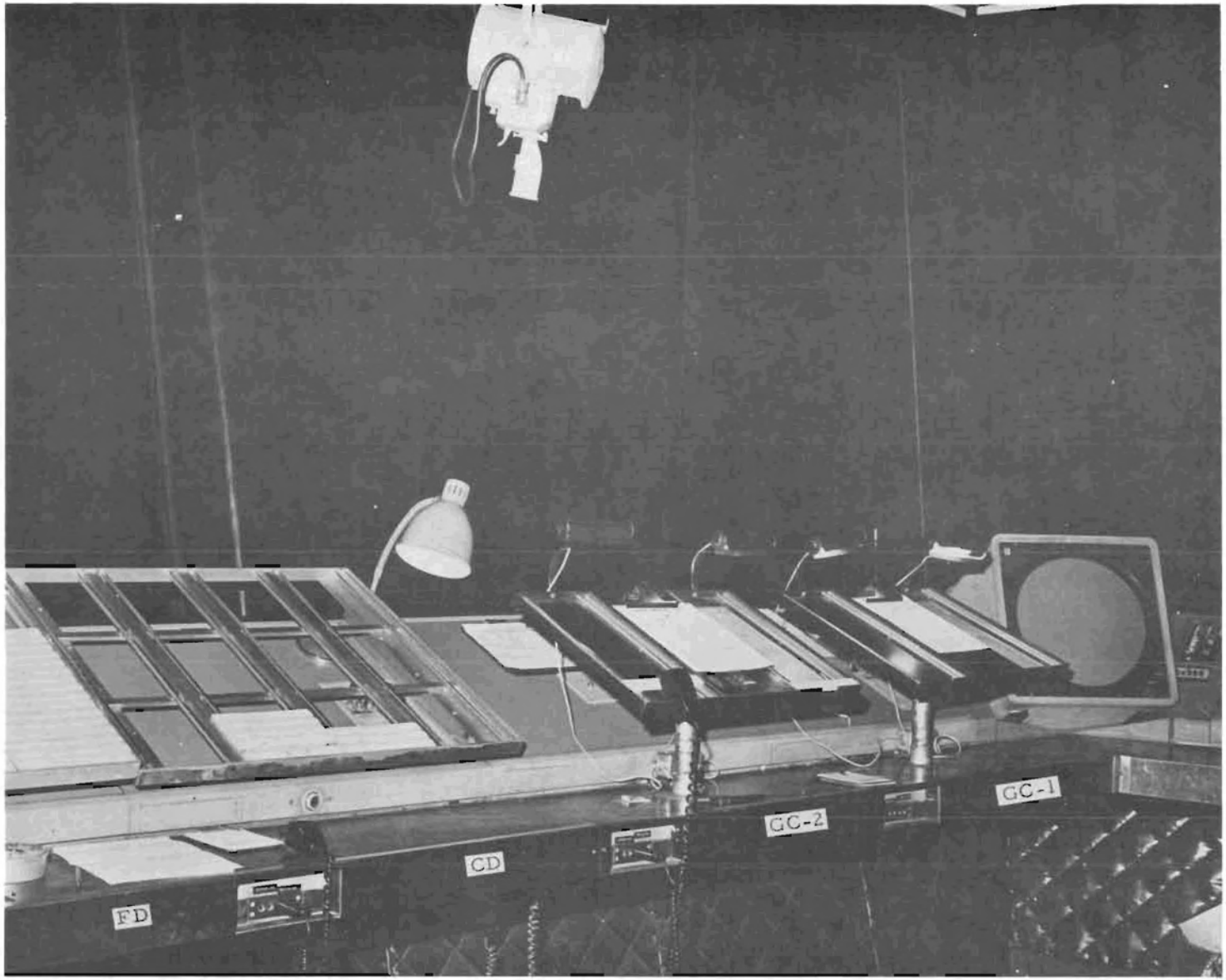
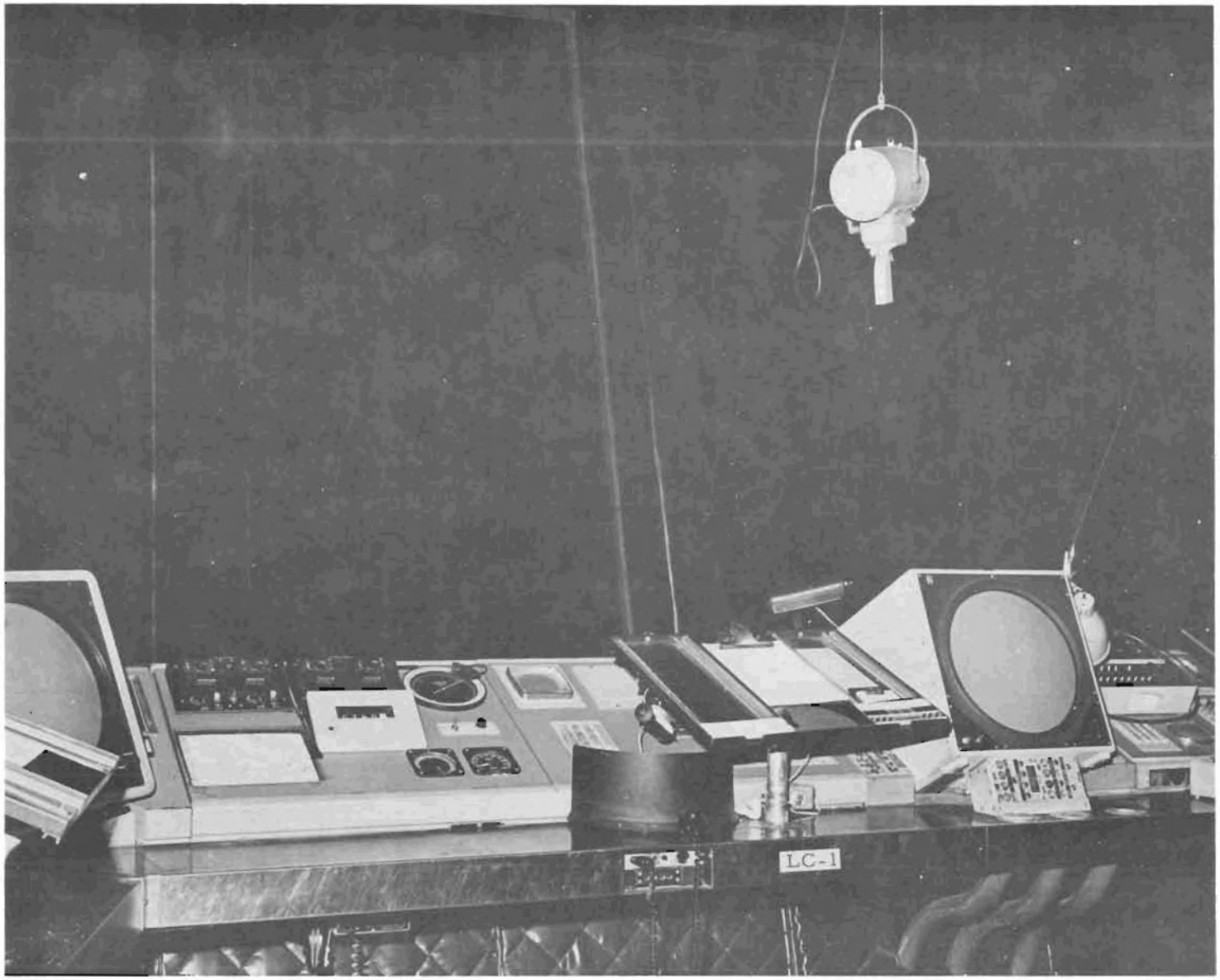
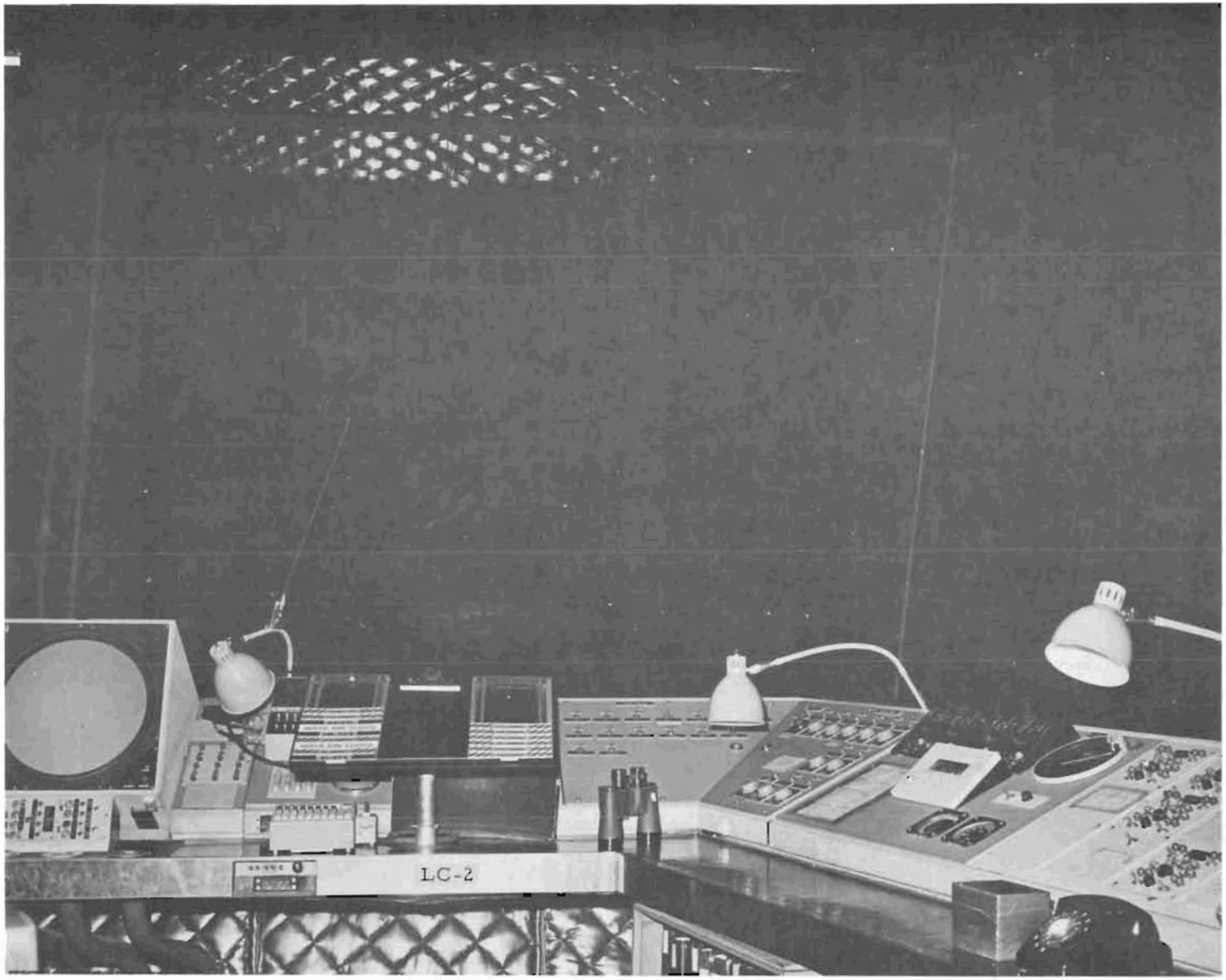


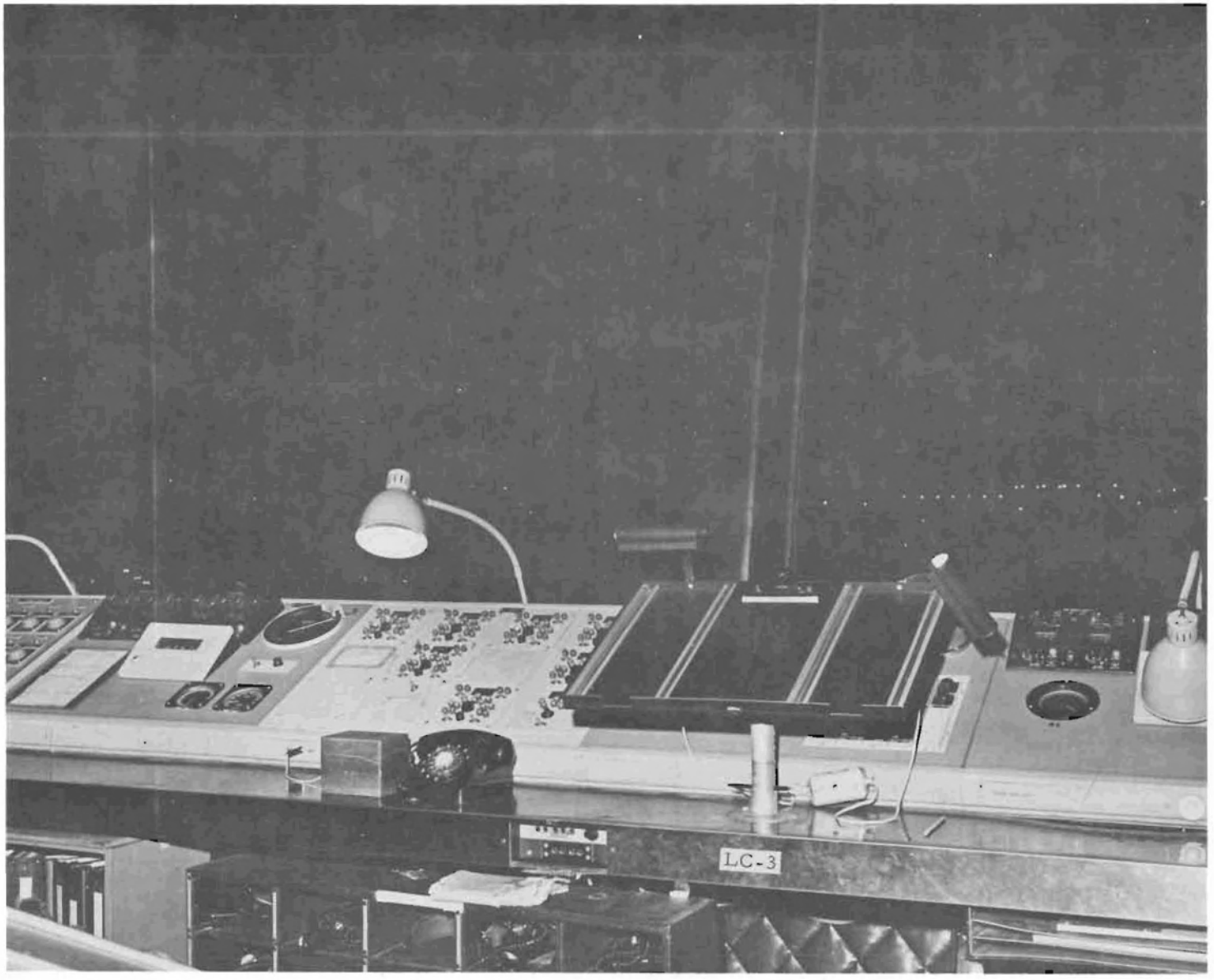
ORD 7/75 ORD TOWER-4



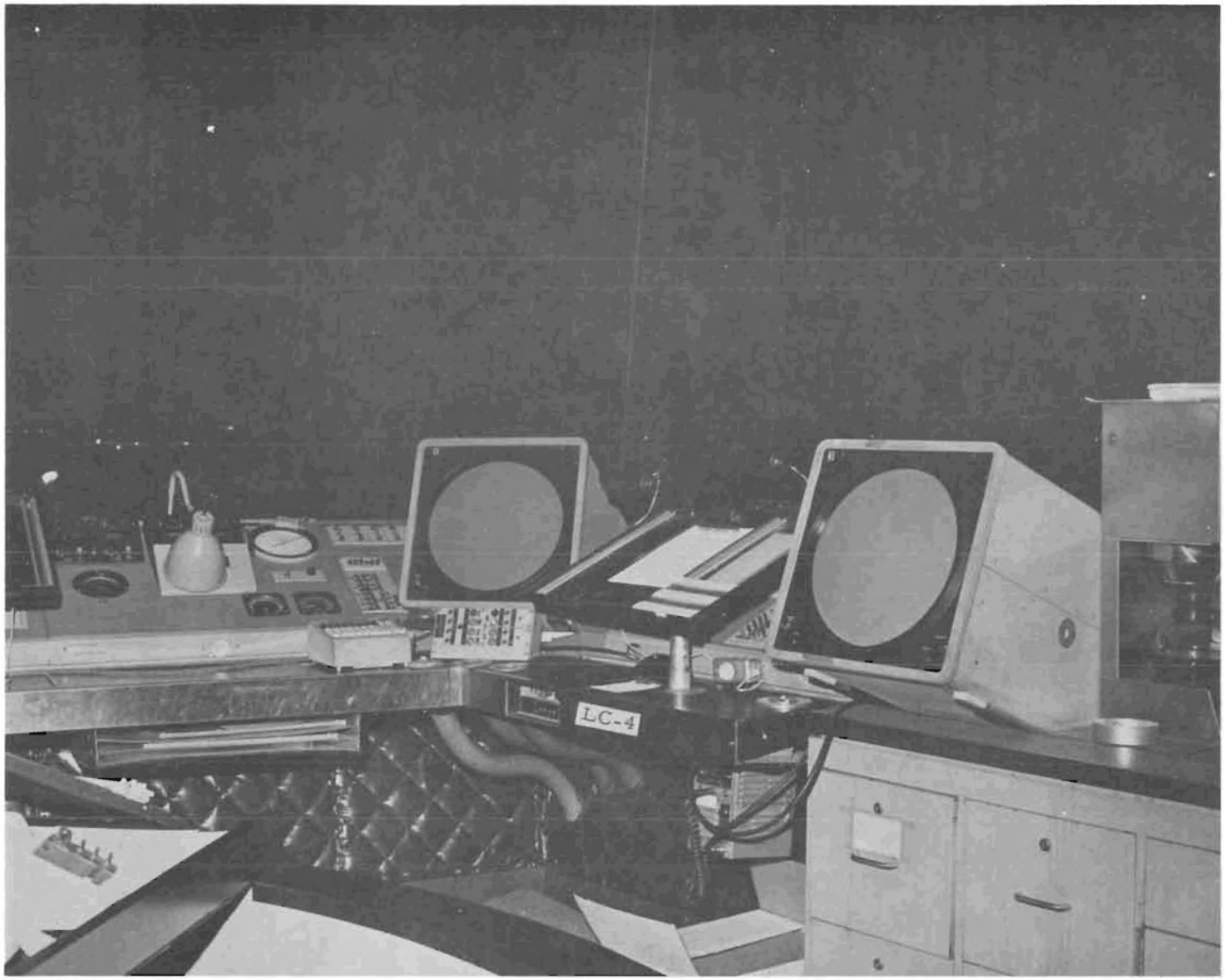
ORD 7/75 ORD TOWER-5



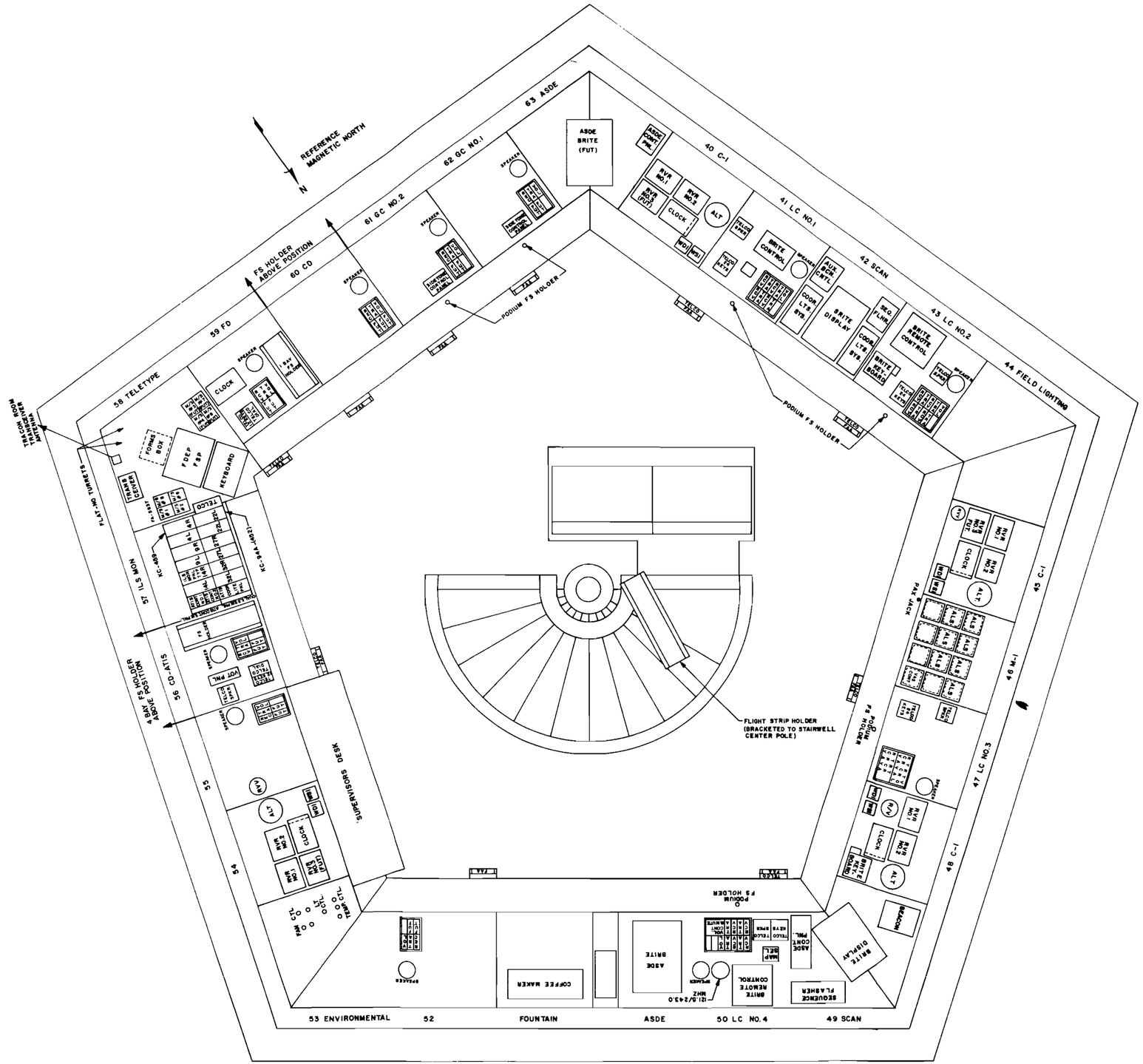
ORD 7/75 ORD TOWER-6



ORD 7/75 ORD TOWER-7



ORD 7/75 ORD TOWER-8


REFERENCE MAGNETIC NORTH
N
63 ASDE
62 GC NO.1
61 GC NO.2
60 CD
59 FD
58 TELETYPE
57 ILS MON
56 CD-ATIS
55
54
53 ENVIRONMENTAL
52
FOUNTAIN
ASDE
50 LC NO.4
49 SCAN
48 C-1
47 LC NO.3
46 M-1
45 C-1
44 FIELD LIGHTING
43 LC NO.2
42 SCAN
41 LC NO.1
40 C-1
ASDE BRITE (FUT)
FS HOLDER ABOVE POSITION
PODIUM FS HOLDER
FLIGHT STRIP HOLDER (BRACKETED TO STAIRWELL CENTER POLE)
SUPERVISORS DESK
TRACON ROOM TRANSCEIVER ANTENNA
FLAT-NO TURRETS
4 BAY FS HOLDER ABOVE POSITION
FORMS BOX
TRANS CEIVER
FDEP FSP
KEYBOARD
CLOCK
SPEAKER
ALT
RVR NO.1
RVR NO.2
RVR NO.3 (FUT)
RVR NO.4 (FUT)
BRITE CONTROL
BRITE DISPLAY
BRITE REMOTE CONTROL
BRITE KEY-BOARD
SEQ. FLHR.
COOR. LTS. SYS.
AUX. BCN. CNTL.
TELCO SPKR
TELCO KEYS
PAX JACK
BEACON
BRITE DISPLAY
SEQUENCE FLASHER
ASDE CONT. PNL.
MAP SEL.
BRITE REMOTE CONTROL
ASDE BRITE
COFFEE MAKER
FAN CTL
LT CTL
TEMP. CTL
VOT PNL
KC-409
KC-94A-(452)
TELCO
FAA

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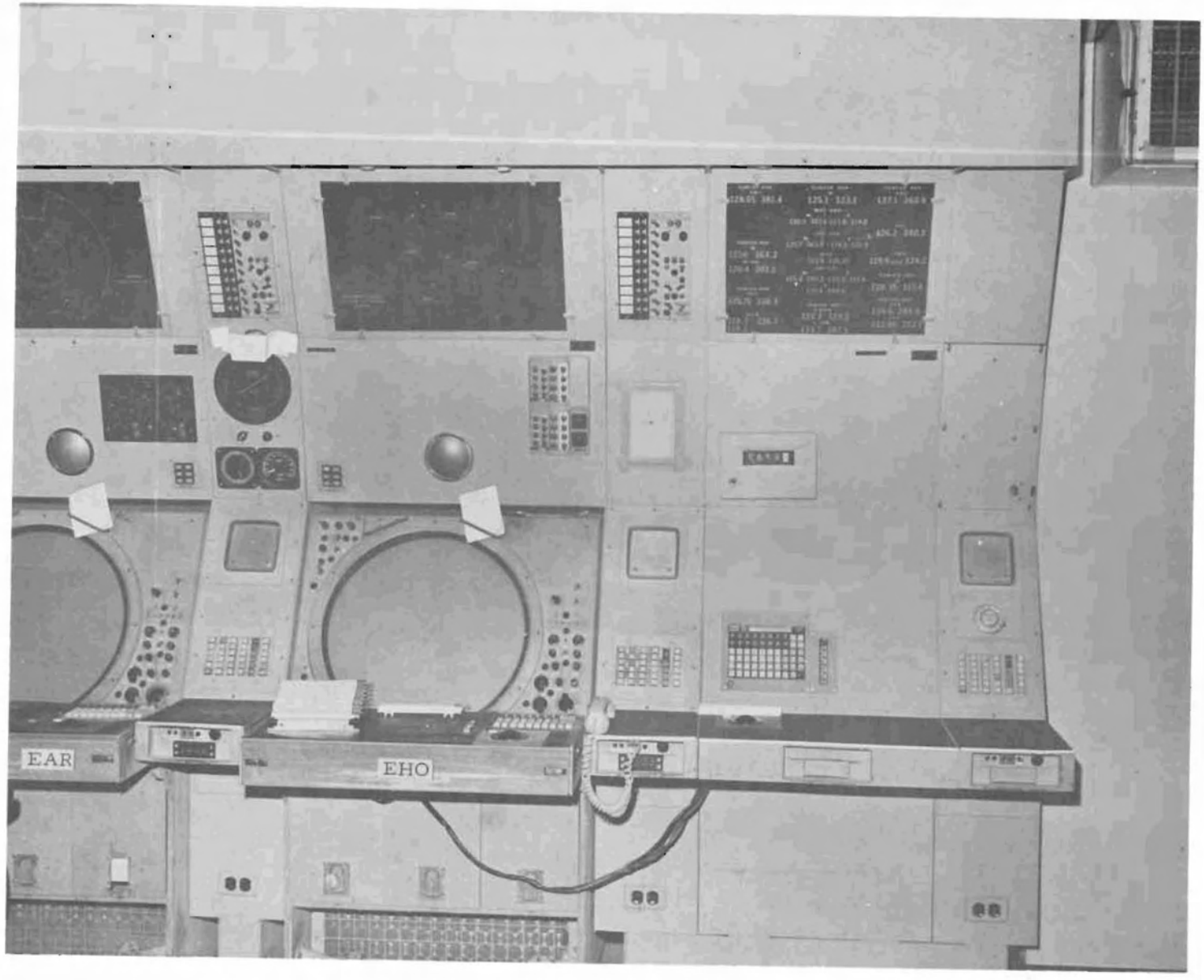
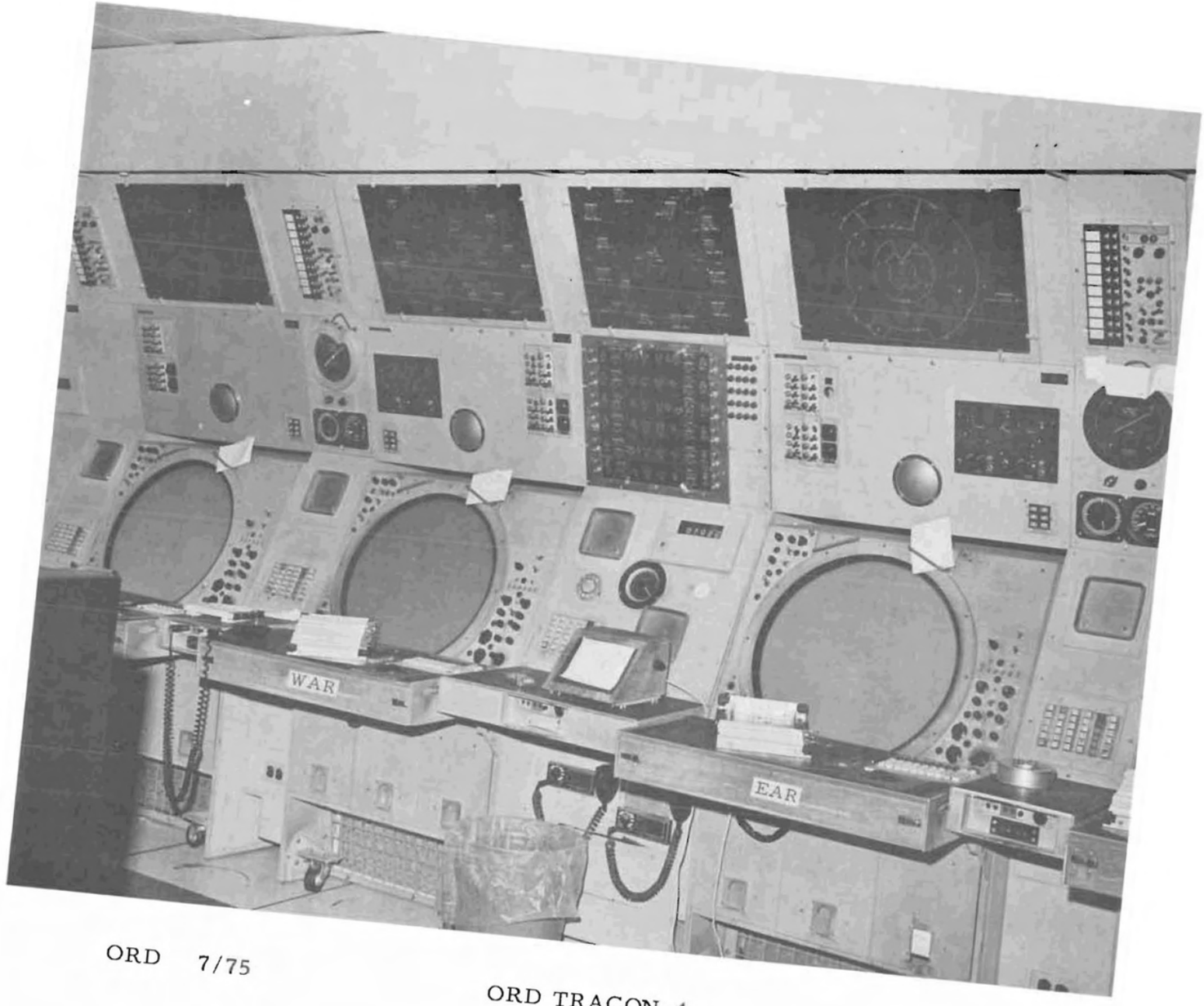
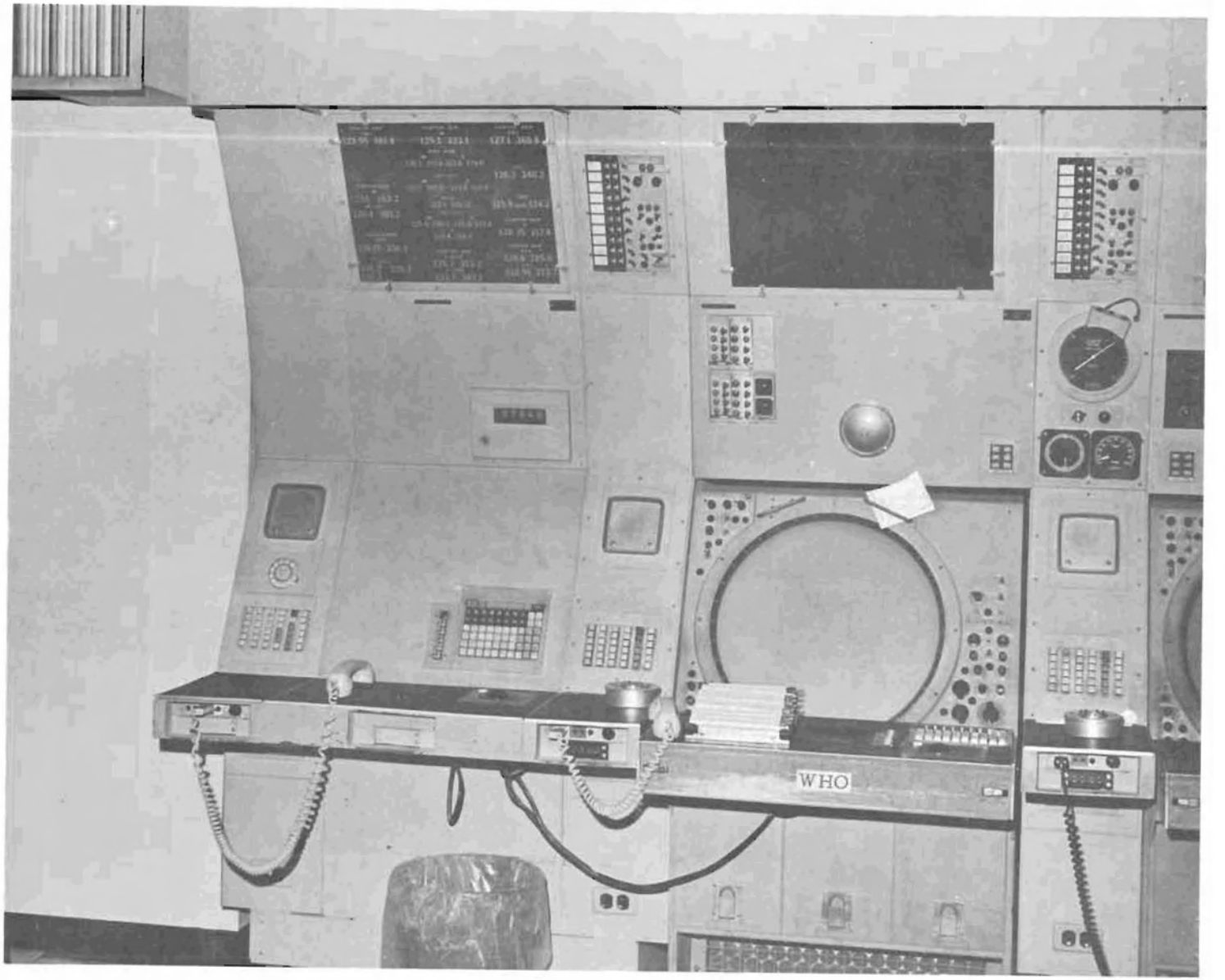
ORD 7/75 ORD TRACON-2


EAR
EHO



ORD 7/75

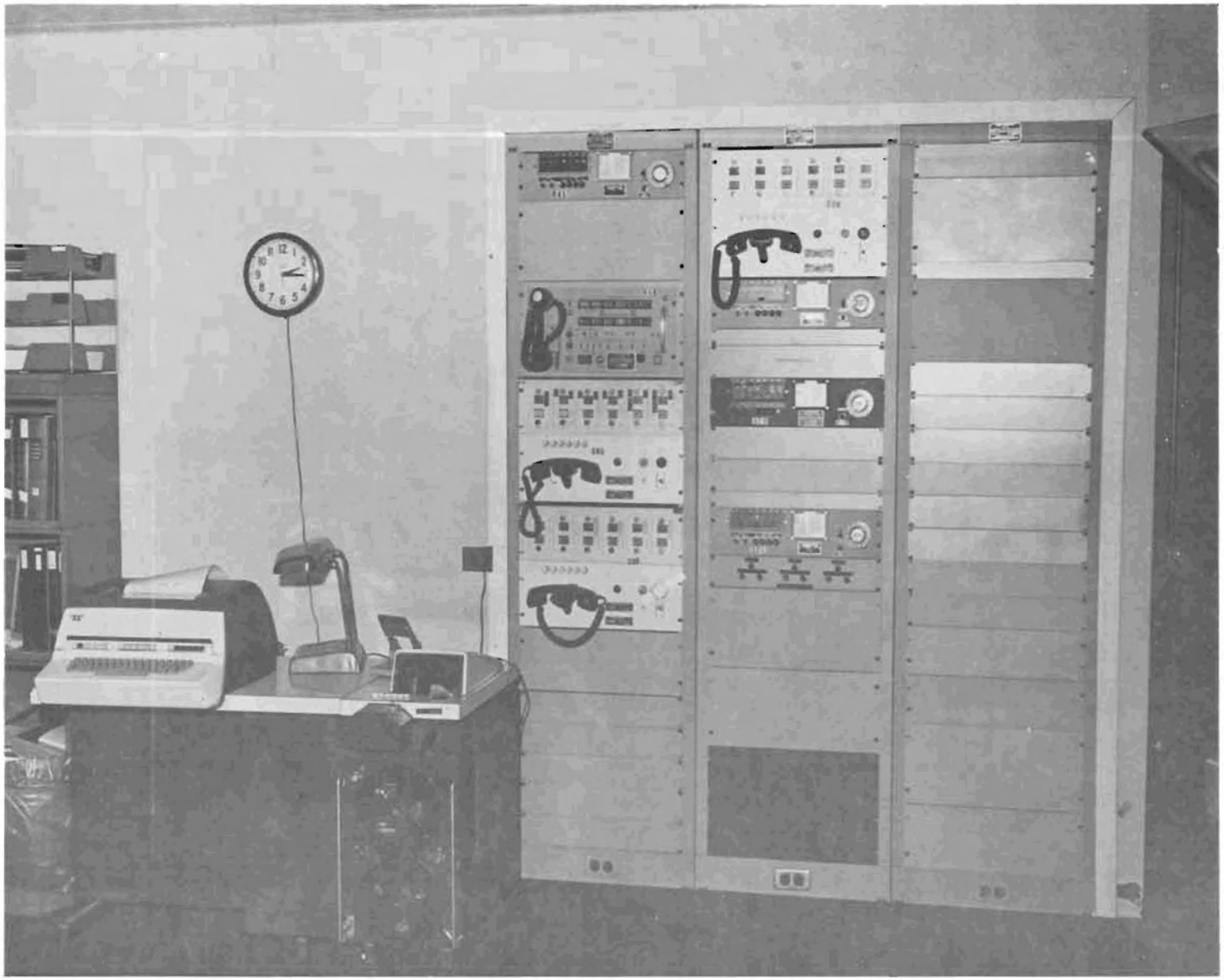
ORD TRACON-4

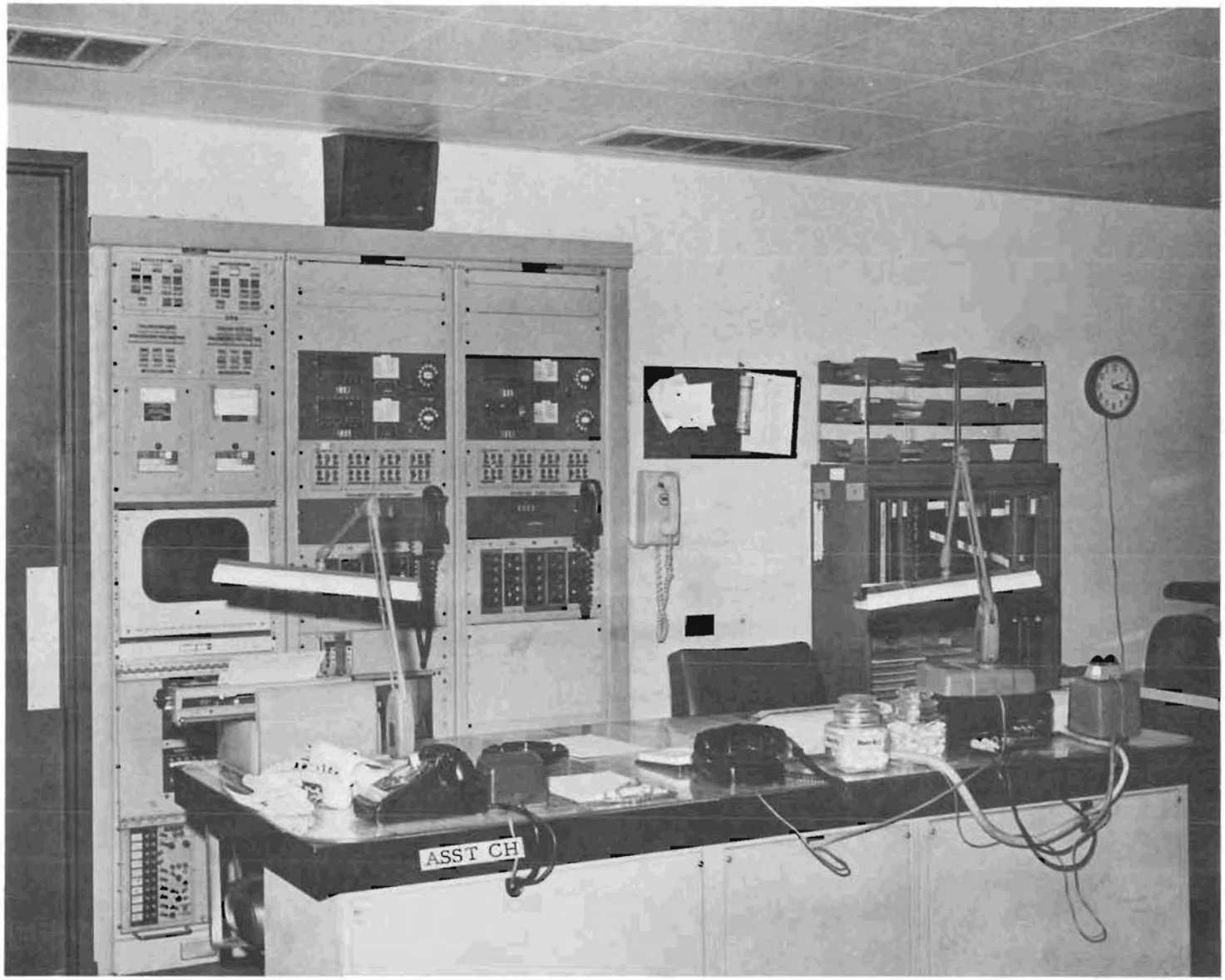

WHO

WDR
H-3
SDR
WSDHO

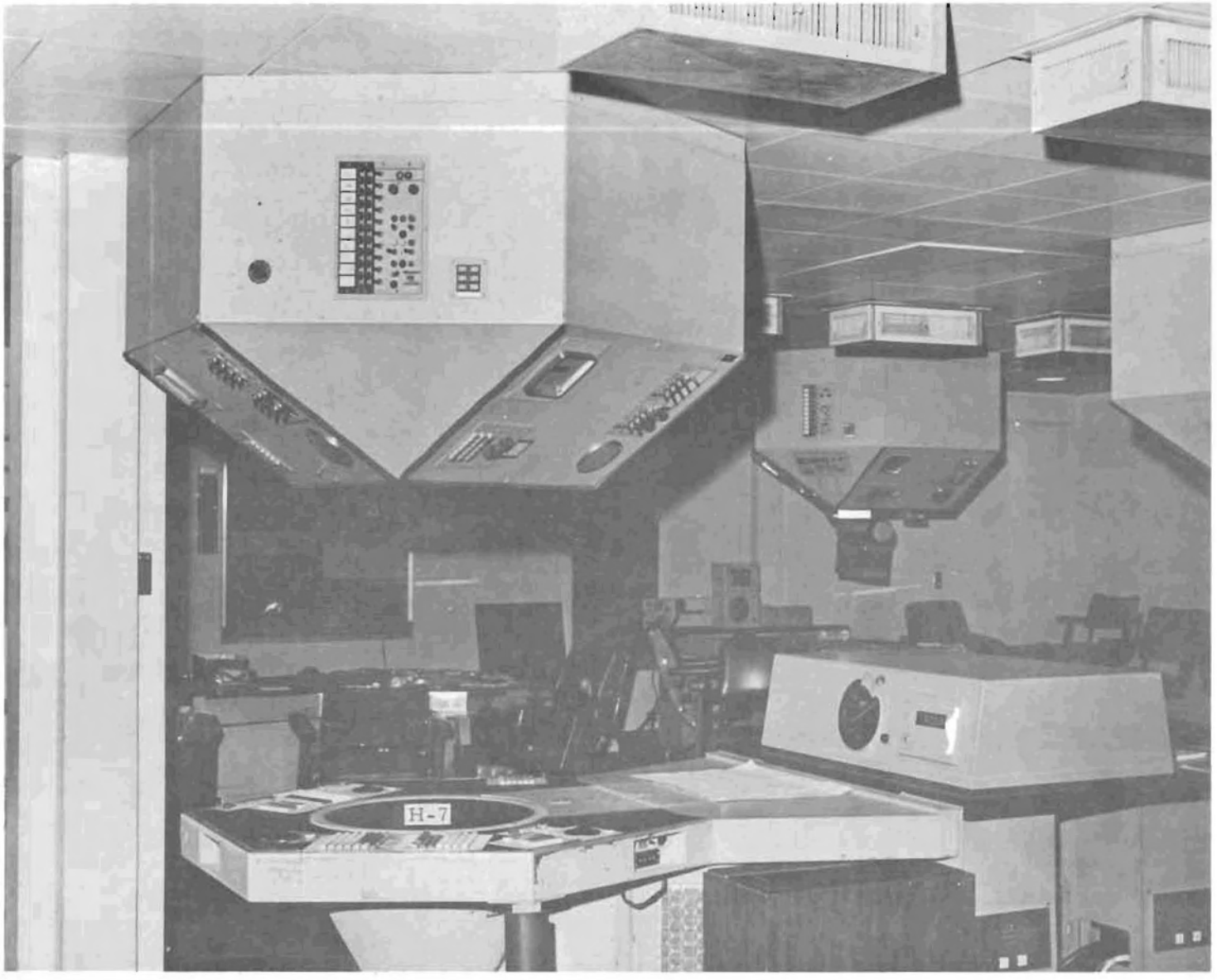
ORD 7/75 ORD TRACON-7

H-5

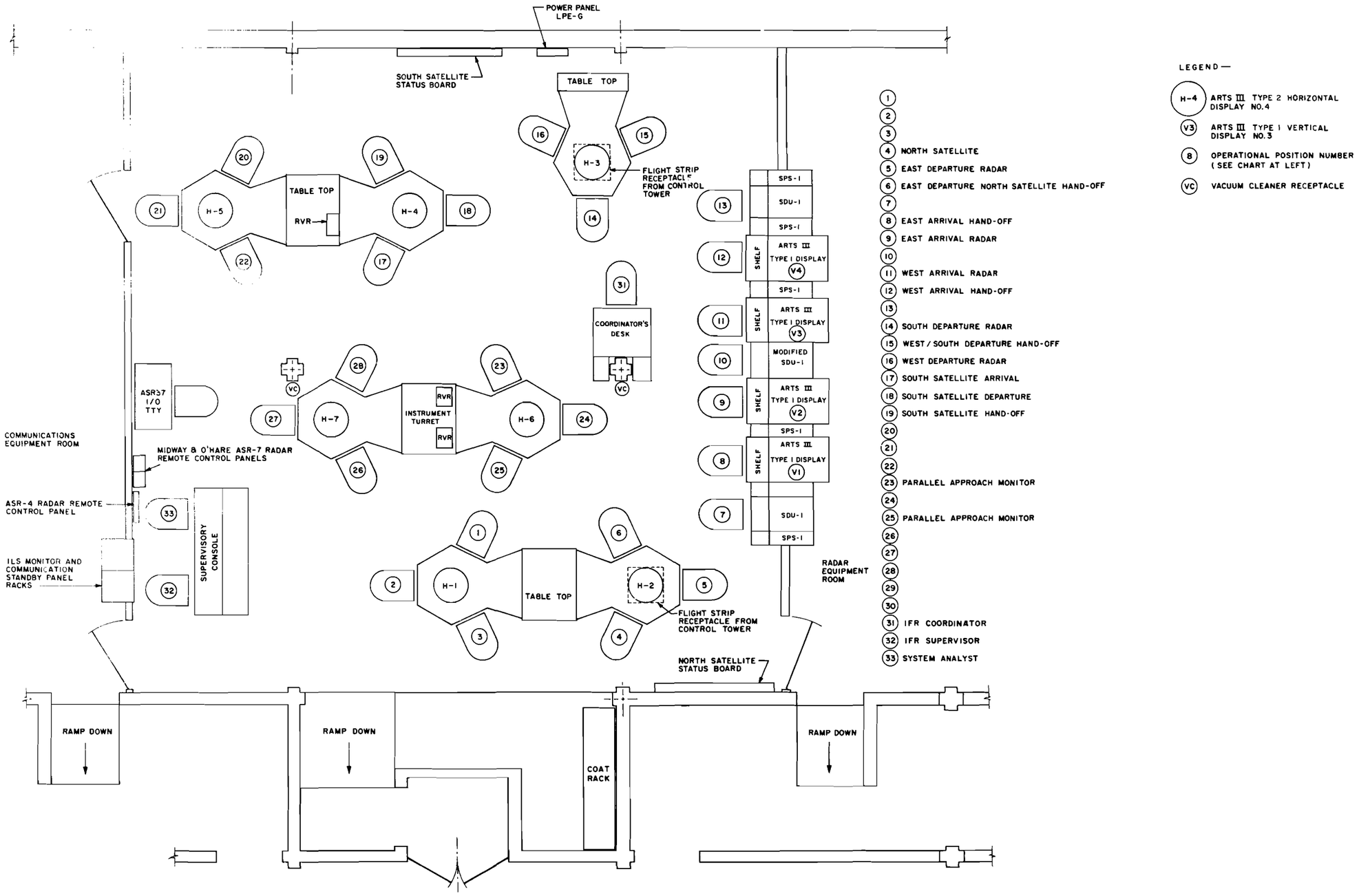


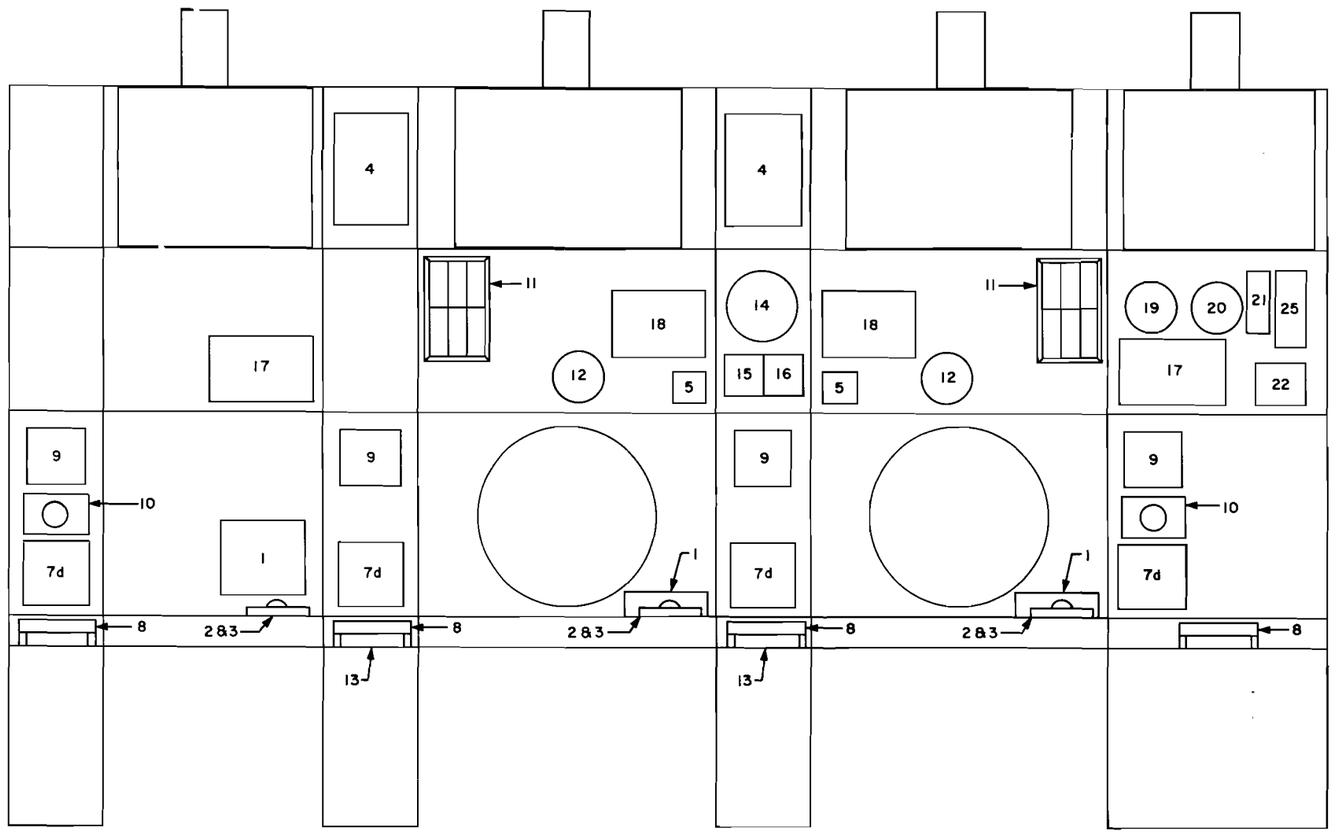


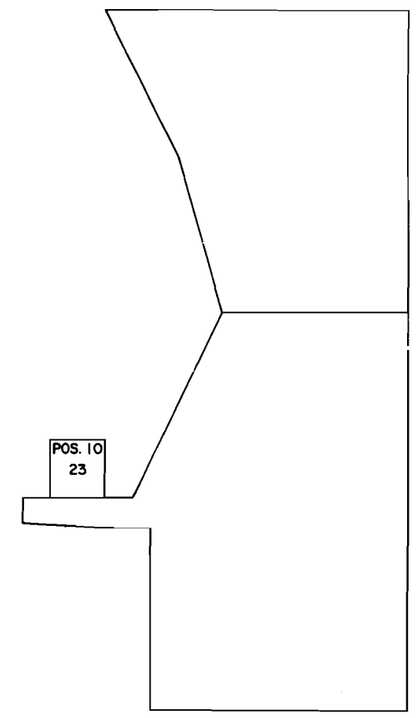
ORD 7/75 ORD TRACON-10


H-7

PARMON
PARMON
H-6

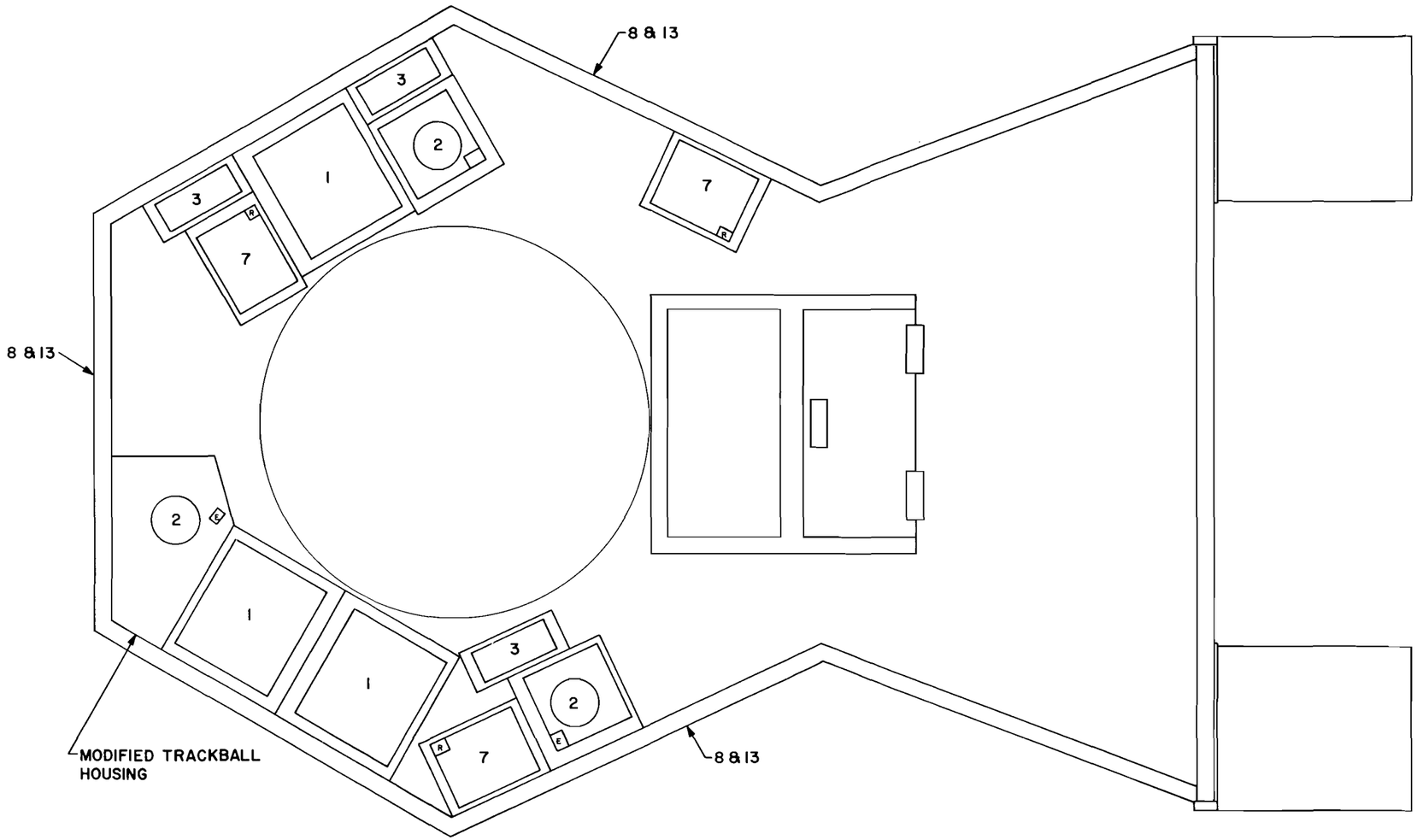

POWER PANEL
LPE-G
SOUTH SATELLITE STATUS BOARD
TABLE TOP
H-3
FLIGHT STRIP RECEPTACLE FROM CONTROL TOWER
TABLE TOP
RVR
H-5
H-4
COORDINATOR'S DESK
VC
ASR37 I/O TTY
H-7
INSTRUMENT TURRET
RVR
RVR
H-6
COMMUNICATIONS EQUIPMENT ROOM
MIDWAY & O'HARE ASR-7 RADAR REMOTE CONTROL PANELS
ASR-4 RADAR REMOTE CONTROL PANEL
ILS MONITOR AND COMMUNICATION STANDBY PANEL RACKS
SUPERVISORY CONSOLE
H-1
TABLE TOP
H-2
FLIGHT STRIP RECEPTACLE FROM CONTROL TOWER
SHELF
SPS-1
SDU-1
SPS-1
ARTS III TYPE I DISPLAY V4
SPS-1
ARTS III TYPE I DISPLAY V3
MODIFIED SDU-1
ARTS III TYPE I DISPLAY V2
SPS-1
ARTS III TYPE I DISPLAY V1
SDU-1
SPS-1
RADAR EQUIPMENT ROOM
NORTH SATELLITE STATUS BOARD
RAMP DOWN
RAMP DOWN
COAT RACK
RAMP DOWN
LEGEND —
H-4 ARTS III TYPE 2 HORIZONTAL DISPLAY NO.4
V3 ARTS III TYPE 1 VERTICAL DISPLAY NO.3
8 OPERATIONAL POSITION NUMBER (SEE CHART AT LEFT)
VC VACUUM CLEANER RECEPTACLE
1
2
3
4 NORTH SATELLITE
5 EAST DEPARTURE RADAR
6 EAST DEPARTURE NORTH SATELLITE HAND-OFF
7
8 EAST ARRIVAL HAND-OFF
9 EAST ARRIVAL RADAR
10
11 WEST ARRIVAL RADAR
12 WEST ARRIVAL HAND-OFF
13
14 SOUTH DEPARTURE RADAR
15 WEST / SOUTH DEPARTURE HAND-OFF
16 WEST DEPARTURE RADAR
17 SOUTH SATELLITE ARRIVAL
18 SOUTH SATELLITE DEPARTURE
19 SOUTH SATELLITE HAND-OFF
20
21
22
23 PARALLEL APPROACH MONITOR
24
25 PARALLEL APPROACH MONITOR
26
27
28
29
30
31 IFR COORDINATOR
32 IFR SUPERVISOR
33 SYSTEM ANALYST



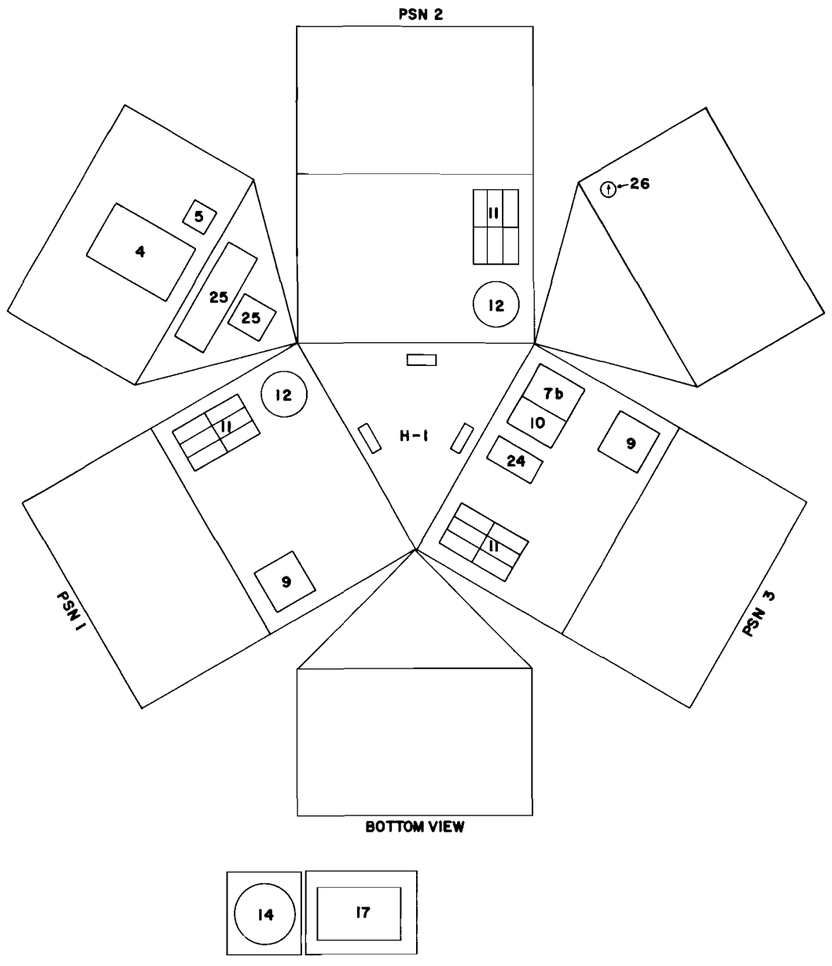


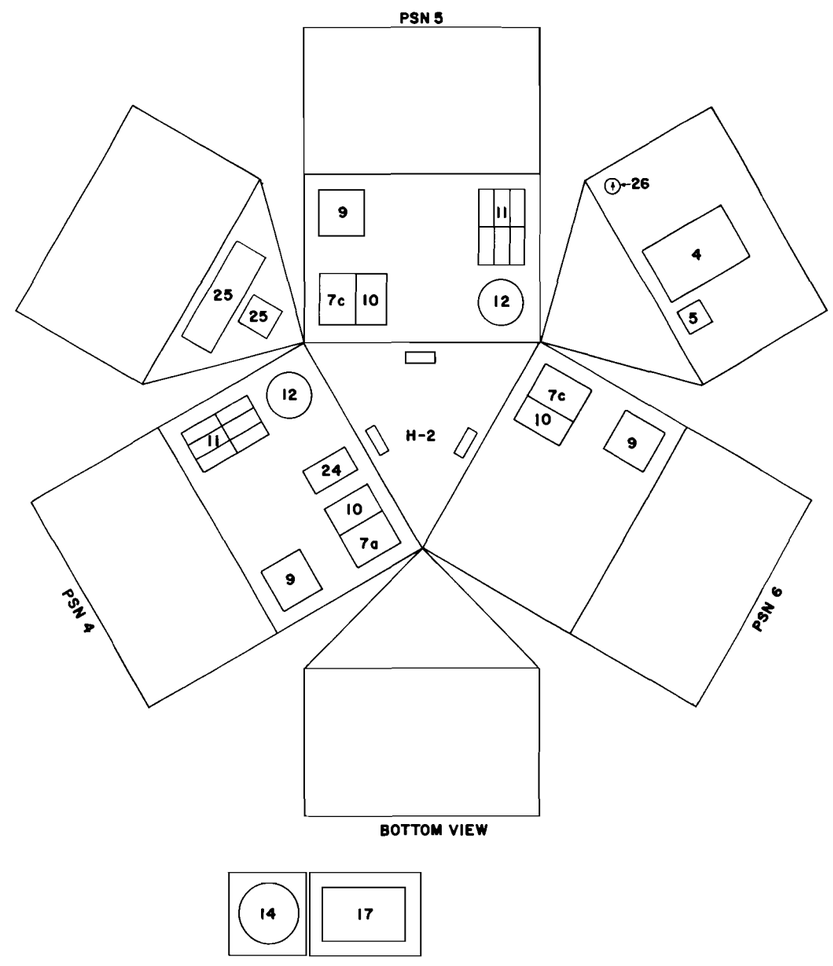
1 - ARTS III KEYBOARD
2 - TRACKBALL
3 - QUICK LOOK
4 - BEACON CONTROL BOX
5 - MAP SELECTOR
6 -
7 - TELCO KEYBOARD a-12 b-18 c-24 d-36 KEYS
8 - TELCO JACK
9 - TELCO SPEAKER
10 - TELCO DIAL
11 - FREQUENCY SELECTOR AND VOLUME CONTROL
12 - FAA SPEAKER
13 - RADIO JACK

14 - ALTIMETER
15 - WIND DIRECTION INDICATOR
16 - WIND SPEED INDICATOR
17 - CLOCK
18 - RVR DISPLAY
19 - RVV RUNWAY 9
20 - DIRECTION FINDER
21 - DF CONTROLS
22 - GLENVIEW TELCO SPEAKER
23 - ELECTROWRITER
24 -
25 - COORDINATION LIGHT SYSTEM

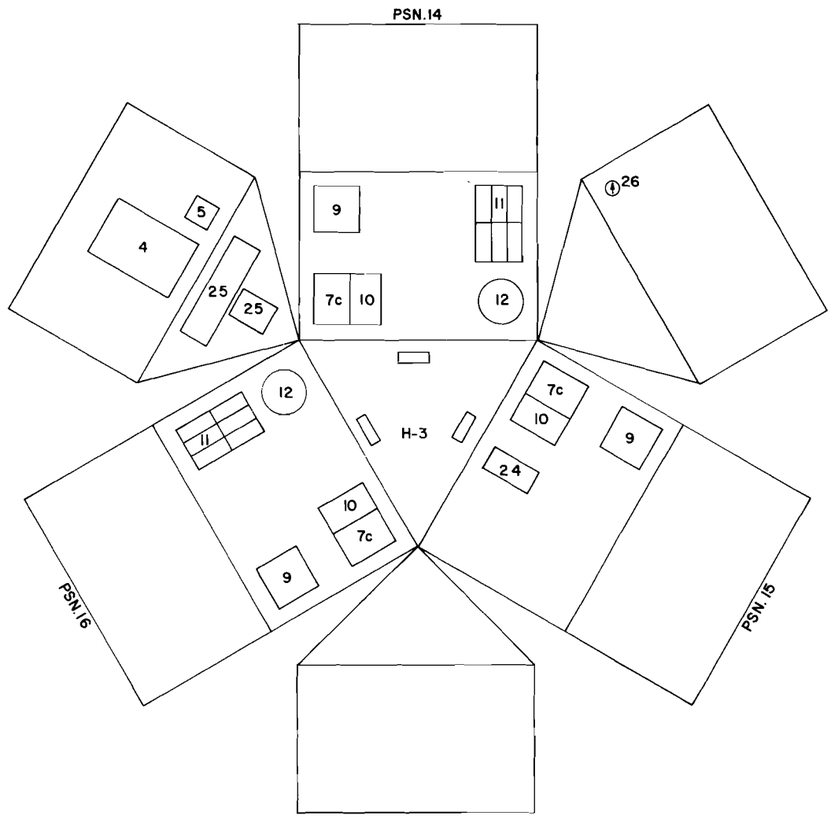


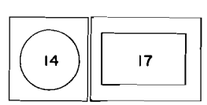
1 ARTS III KEYBOARD
2 TRACKBALL
3 QUICK LOOK
4
5
6
7 TELCO KEYBOARD (EXCEPT POSITION NO 2)
8 TELCO JACK
9
10
11
12
13 RADIO JACK

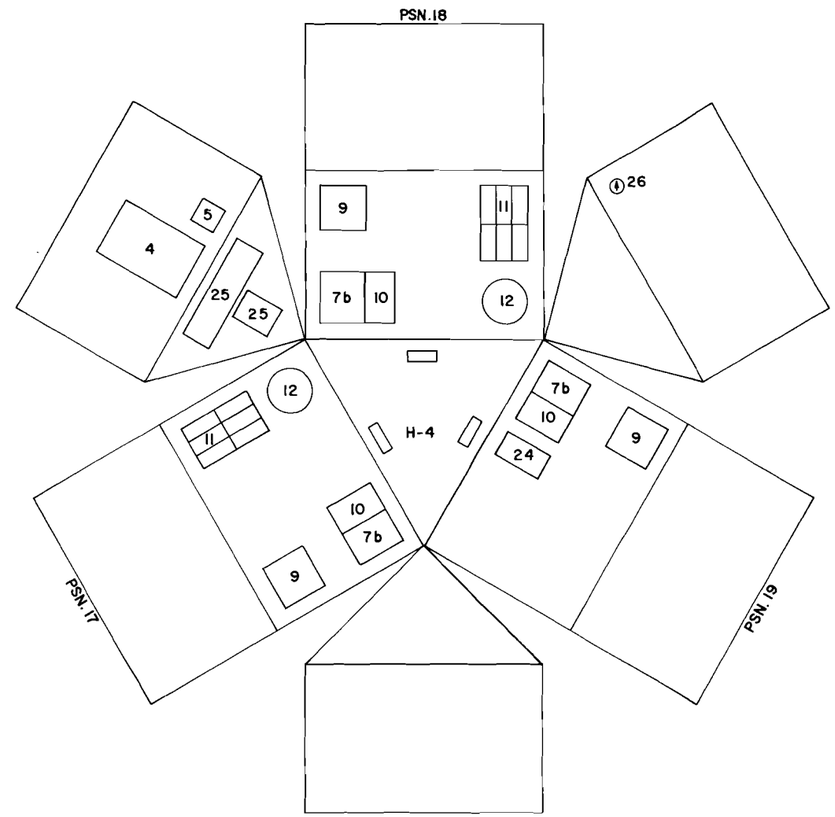


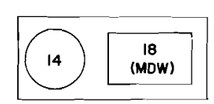


1
2
3
4 BEACON CONTROL BOX
5 MAP SELECTOR
6
7 TELCO KEYBOARD a.12 b.18 c.24 d.36
8
9 TELCO SPEAKER
10 TELCO DIAL
11 FREQUENCY SELECTOR AND VOLUME CONTROL
12 FAA SPEAKER
13
14 ALTIMETER
15
16
17 CLOCK
18
19
20
21
22
23
24 AUXILIARY BEACON CONTROL BOX
25 COORDINATION LIGHT SYSTEM
26 LIGHT DIMMER
27









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4 BEACON CONTROL BOX
5 MAP SELECTOR
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7 TELCO KEYBOARD a.12 b.18 c.24 d.36
8
9 TELCO SPEAKER
10 TELCO DIAL
11 FREQUENCY SELECTOR AND VOLUME CONTROL
12 FAA SPEAKER
13
14 ALTIMETER
15
16
17 CLOCK
18 RVR DISPLAY
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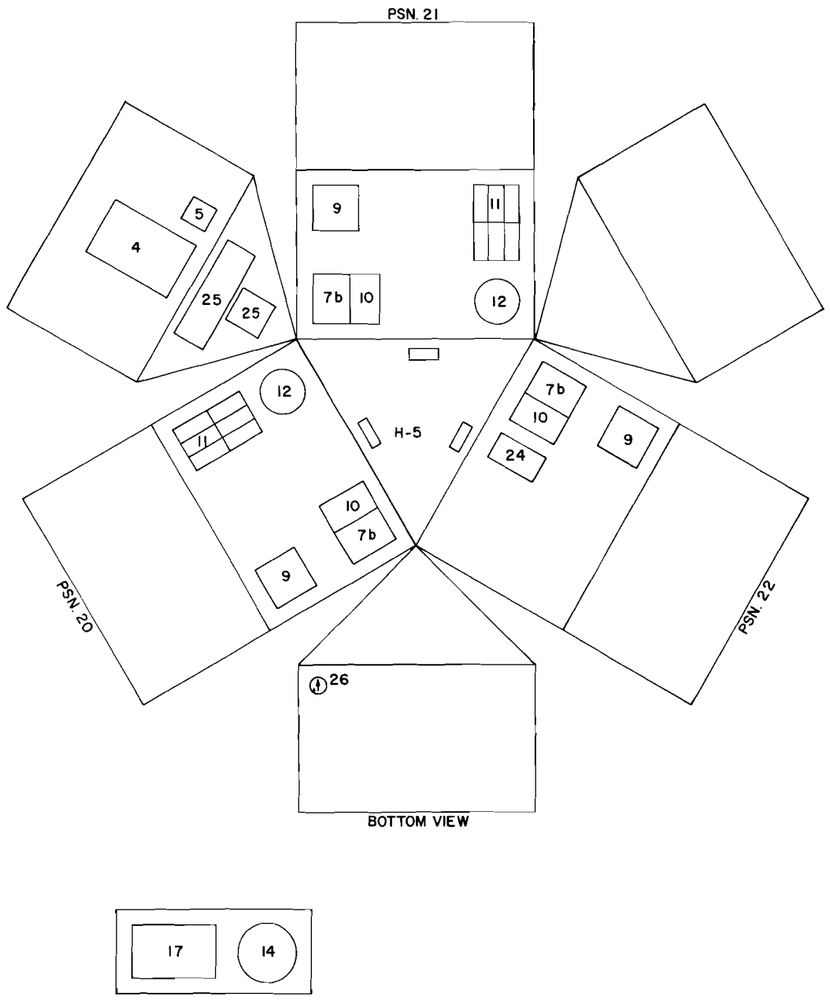
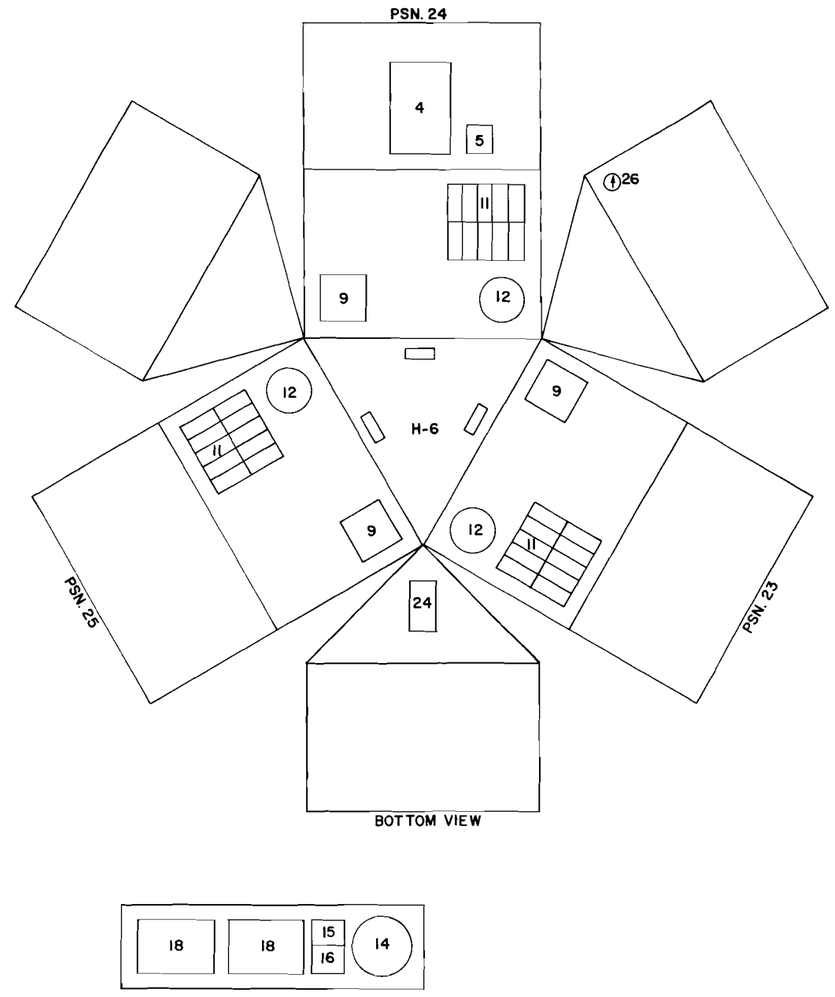
24 AUX. BEACON CONTROL BOX
25 COORDINATION LIGHT SYSTEM
26 LIGHT DIMMER





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13
14 ALTIMETER
15 WIND DIRECTION INDICATOR
16 WIND SPEED INDICATOR
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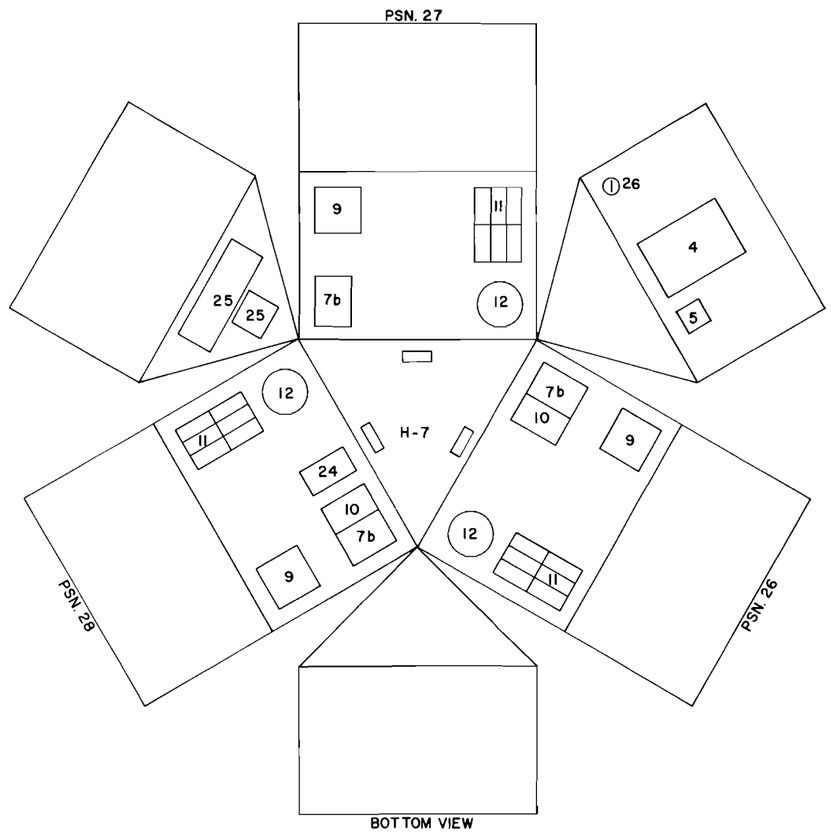

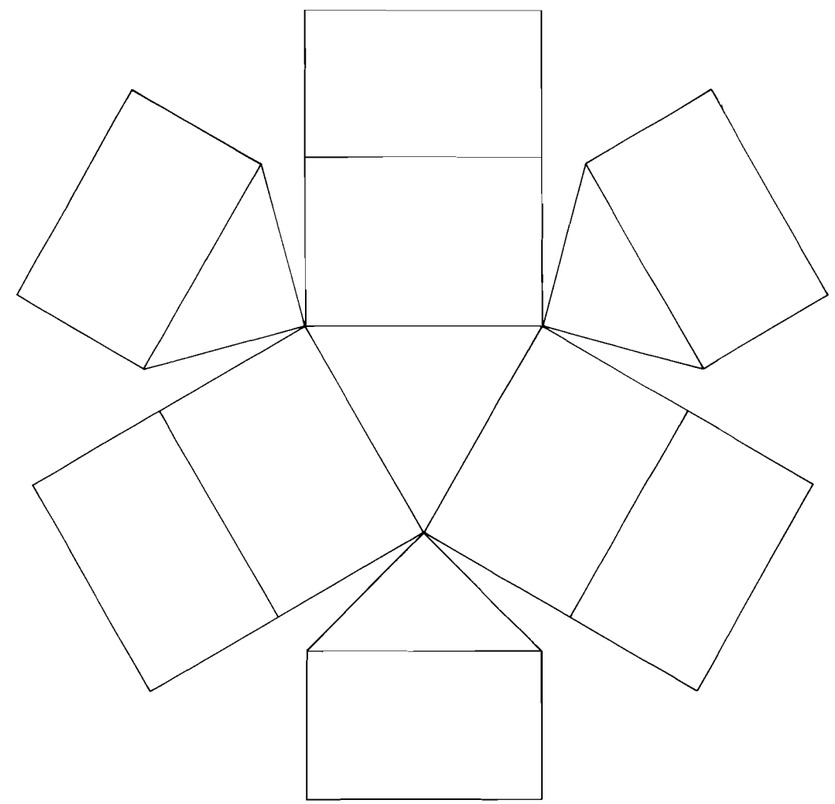

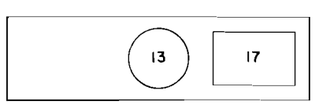

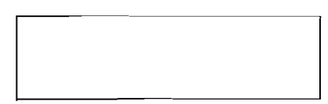

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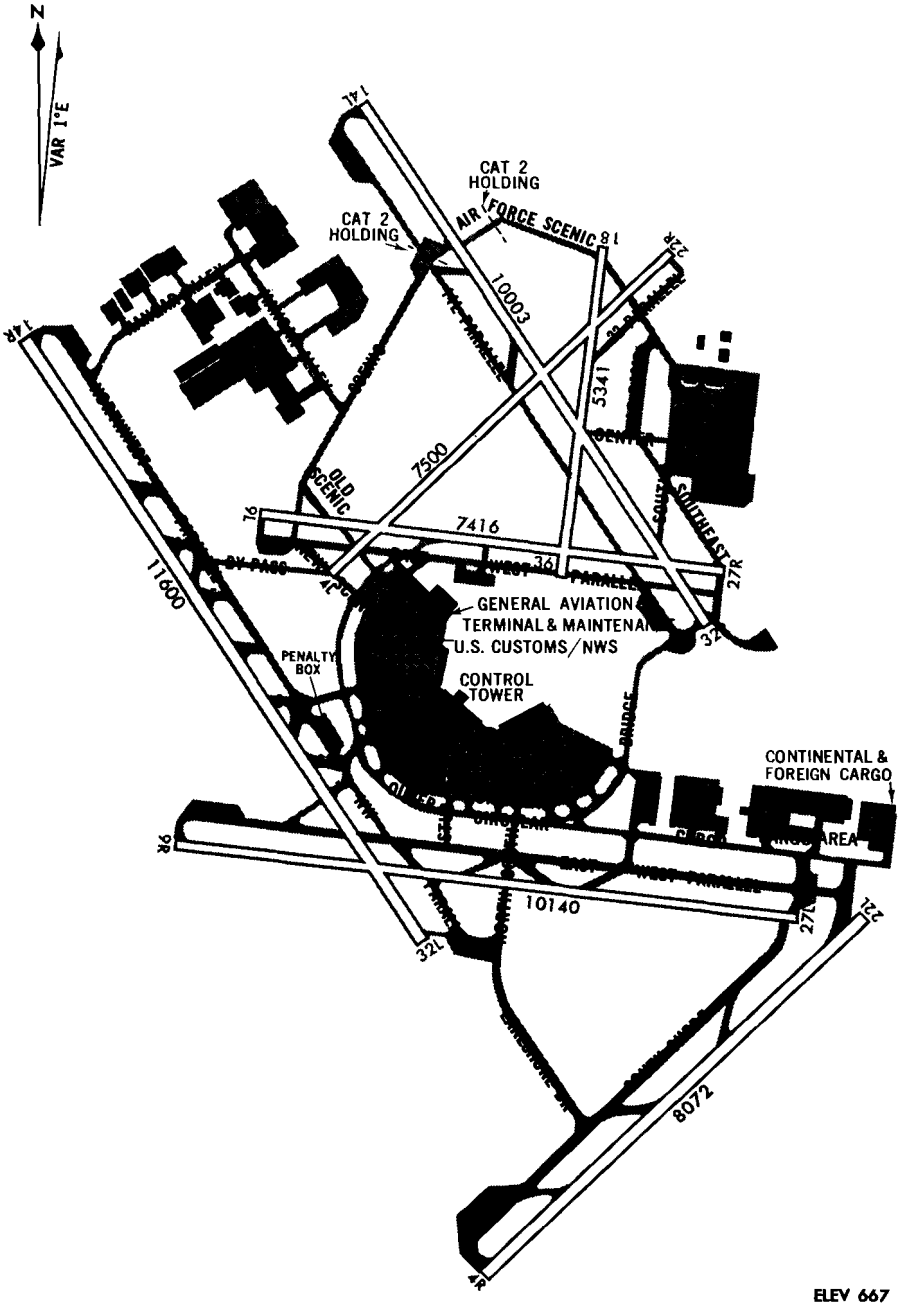
AIRPORT TAXI CHART

AL-166 (FAA)

CHICAGO-O'HARE INTERNATIONAL AIRPORT
CHICAGO, ILLINOIS



ELEV 667

AIRPORT TAXI CHART
JUNE 1972

NATIONAL OCEAN SURVEY

CHICAGO, ILLINOIS
CHICAGO-O'HARE INTERNATIONAL AIRPORT