

COPY 13

2

NA Report No. **FAA-NA-75-170**

25
170

FAA WJH Technical Center
00090579

TERMINAL FACILITY CONFIGURATION AND DATA SURVEY

BOSTON TOWER/TRACON



**NAFEC
LIBRARY**
1107
RECEIVED

JULY 1975

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



BOSTON TOWER/TRACON

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 ANA-260, annually during the month of January. Suggestions on content, involving modification, revisions and/or additions, are also encouraged at that time.

Subprogram Manager.....K. Cohen, ARD-120
SRDS, Washington, D. C.

Program Area Agreement Manager...F. Hierbaum, ANA-260
NAFEC, Atlantic City, N. J.

Activity Leader.....✓...D. Martin, ANA-260
NAFEC, Atlantic City, N. J.

NA-75-170

1. NAME OF FACILITY: BOSTON TOWER
LOGAN INTERNATIONAL AIRPORT
2. TYPE FACILITY:
FAA TOWER/TRACON
3. GEOGRAPHIC LOCATION:
EAST BOSTON, SUFFOLK COUNTY, MASS.
4. MAILING ADDRESS/FACILITY OFFICERS:
FAA AIR TRAFFIC CONTROL TOWER
19TH FLOOR TOWER BUILDING
LOGAN INTERNATIONAL AIRPORT
EAST BOSTON, MASS. 02128
PHONE: FTS 8-617-223-3387

WILLIAM KEEPERS, FACILITY CHIEF
WILLIAM MINER, OPERATIONS OFFICER
DEPUTY CHIEF POSITION: VACANT
5. TYPE OF TOWER CAB:
ELEVEN SIDED; 426 SQ. FT. ASDE DOME IS 300.06 MSL;
CAB IS 263 FT. MSL
6. DISTANCE BETWEEN TRACON AND PRIMARY TOWER CAB:
TOWER CAB IS 17 FLOORS ABOVE LEVEL OF TRACON IN A
BUILDING APPROXIMATELY 50 YARDS DISTANT (TRACON
6TH FLOOR; CAB 23RD FLOOR).
7. a. TYPE OF RADAR(S): ASR-7
b. ANTENNA LOCATION(S): ON FIELD
c. TYPE OF RADAR BEACON INTERROGATOR: ATCBI-4
8. NUMBER OF DISPLAYS:
a. TRACON: SIX VERTICAL (ARTS TYPE-1); ONE VERTICAL
ARSR (BOS CENTER FT. HEATH RADAR)
b. MAINTENANCE ROOM: ONE VERTICAL
9. NUMBER AND TYPE OF BRITE SYSTEM(S): ONE BRITE-1; ONE BRITE-4
NUMBER AND TYPE DISPLAY(S): ONE BRITE-1; ONE BRITE-4;
ONE 16" CONRAC IN CAB.
ALL DISPLAYS INTERCHANGEABLE BETWEEN ASR AND ASDE
MODES.

10. ALPHA/NUMERIC CAPABILITY ON BRITE DISPLAY(S):
YES, IN THE ASR-MODE
11. TYPE OF RADAR SERVICE PROVIDED: TCA, GROUP I
12. LIST OF AUTHORIZED POSITIONS OF OPERATION:
 CAB: LOCAL CONTROL (LC)
 LOCAL CONTROL COORDINATOR (CC)
 GROUND CONTROL (GC)
 CLEARANCE DELIVERY (CD)
 FLIGHT DATA (FD)
 SUPERVISOR (SC)
- TRACON: DEPARTURE RADAR NORTH (DR-1)
 DEPARTURE DATA (DD)
 DEPARTURE RADAR WEST (DR-2)
 ARRIVAL RADAR-1 (AR-1)
 ARRIVAL DATA (AD)
 ARRIVAL RADAR-2 (AR-2)
 BEDFORD RADAR (AR-3)
 BEDFORD DATA (AD-2)
 ARRIVAL COORDINATOR (ACC)
 TEAM SUPERVISOR (TS)
 ASSISTANT CHIEF (AC)
13. NORMAL STAFFING BY SHIFTS:
 07 - 15 THREE SUPERVISORS, ONE DATA SYSTEMS SPECIALIST,
 AND 15 CONTROLLERS
 LC, CC, GC, CD, FD, SC, DR-1
 DD, DR-2, AR-1, AD, AR-2, AR-3
 ACC, TS, AND AC
- 15 - 23 THREE SUPERVISORS, ONE DATA SYSTEMS SPECIALIST,
 AND 15 CONTROLLERS
 LC, CC, GC, CD, FD, SC, DR-1,
 DD, DR-2, AR-1, AD, AR-2, AR-3,
 ACC, TS, AND AC
- 23 - 07 ONE SUPERVISOR AND FIVE CONTROLLERS
 LC, FD/CD, GC,
 AR, DR, AND TS

14. CONSOLIDATION OF POSITION PROCEDURE:

LC AND CC TO LC
CD AND FD TO CD
DD TO AD
DR-2 TO DR-1
AR-1 AND DR-1 TO AR-2
ALL RADARS TO AR-2

15. SATELLITE AIRPORTS (APPROACH CONTROL AND/OR RADAR SERVICE PROVIDED):

BEVERLY, MASS. - 20 nmi NE - MUNICIPAL AIRPORT -
FAA TOWER - COMMUNICATIONS VIA LANDLINE

BEDFORD AIRPORT - 18 nmi NW - STATE AIRPORT -
FAA TOWER - COMMUNICATIONS VIA LANDLINE

AYER/FT. DEVINS AAF - 35 nmi NW - ARMY TOWER -
COMMUNICATIONS VIA LANDLINE

NORWOOD MUNICIPAL - 16 nmi SW - FAA TOWER -
COMMUNICATIONS VIA LANDLINE

SOUTH WEYMOUTH NAS - 18 nmi S - NAVY TOWER -
COMMUNICATIONS VIA LANDLINE

LAWRENCE - 22 nmi NW - MUNICIPAL AIRPORT -
NO TOWER - COMMUNICATIONS VIA BOSTON FLIGHT
SERVICE STATION

TEW MAC - 6 1/2 nmi SSW - PRIVATE AIRPORT - NO TOWER -
COMMUNICATIONS VIA BOS FSS

FITCHBURG - 40 nmi NW - MUNICIPAL AIRPORT - NO TOWER -
COMMUNICATIONS VIA BOS FSS

ROBBINS - 13 nmi NE - PRIVATE AIRPORT - NO TOWER -
COMMUNICATIONS VIA TELEPHONE

MANSFIELD - 24 nmi SW - MUNICIPAL AIRPORT - NO TOWER -
COMMUNICATIONS VIA BOS FSS

MARSHFIELD - 21 nmi SE - MUNICIPAL AIRPORT - NO TOWER -
COMMUNICATIONS VIA BOS FSS

PLYMOUTH - 26 nmi S - MUNICIPAL AIRPORT - NO TOWER -
COMMUNICATIONS VIA LANDLINE (CONTROL COORDINATED
WITH OTIS AFB)

TAUNTON - 29 nmi S - MUNICIPAL AIRPORT - NO TOWER -
COMMUNICATIONS VIA BOS FSS

PLUM ISLAND - 32 nmi NE - MUNICIPAL AIRPORT - NO
TOWER - COMMUNICATIONS VIA BOS FSS

HAVERHILL - 27 nmi N - MUNICIPAL AIRPORT - NO TOWER -
COMMUNICATIONS VIA BOS FSS

MINUTE MAN (STOWE) - 23 nmi NW - MUNICIPAL AIRPORT -
NO TOWER - COMMUNICATIONS VIA BOS FSS

16. NUMBER OF ARTS KEYPACKS (LOCATIONS):

- a. TOWER: ONE AT FD
- b. TRACON/RAPCON: NINE - AR-1, AR-2, AR-3, DR-1, DR-2
SAT, AD-1, AD-2, AND DD
- c. MAINTENANCE: ONE

17. AIR/GROUND FREQUENCIES BY POSITION (MHz):

LOCAL CONTROLS: 119.1, 133.0, 257.8, 121.5, 121.9, 121.5,
AND 243.0

GROUND CONTROLS: 121.9, 133.0, 257.8, 121.75, 121.65,
119.1, 121.5, AND 243.0

CLEARANCE DELIVERY: 121.65, 133.0, 257.8, 121.75, 121.9,
119.1, 121.5, AND 243.0

DEPARTURE RADAR-2: 124.1, 382.0, 343.6, 127.2, 119.1,
243.0, 124.1, AND 133.0

DEPARTURE RADAR-1: 127.2, 124.1, 119.1, 382.0, 343.6, 243.0,
257.8, 263.0, AND 133.0

ARRIVAL RADAR-2: 120.6, 126.5, 118.1, 243.0, 263.1,
382.0, 124.1, 121.5, AND 353.9

ARRIVAL RADAR-1: 126.5, 263.1, 121.5, 133.0, 120.6,
382.0, AND 124.1

STANDBY POSITION: 124.4, 133.0, 120.6, 121.5, 119.1,
279.6, 124.1, 243.6, 243.0, AND
382.0

ARRIVAL RADAR-3: 124.4, 133.0, 257.8, 121.5, 126.3,
279.6, 120.6, 124.1, 240.0, AND
382.0

ARSR POSITION: 124.4, 133.0, 279.6, 124.1, 257.8

18. FLIGHT DATA HANDLING ACTIVITY PECULIAR TO THE FACILITY:
CLEARANCE DELIVERY UTILIZES A HIGH RESOLUTION,
SOLID STATE, 9-INCH CONRAC MONITOR AS A COMPUTER
READOUT DEVICE FOR ARTS KEYPACK ENTRIES. NO
DEPARTURE MESSAGES ARE GENERATED FROM THE CAB
TO THE TRACON.

19. TRAFFIC COUNT FOR A REPRESENTATIVE BUSY DAY: 1/15/75

	Airport Operations					TCA Operations			Tower(TF)		Local	
	ACR	AT	CIV	MIL	TOT	AT	CIV	MIL	CIV	MIL	CIV	MIL
00 - 08	25	27	5	0	57	23	5	-	-	-	6	-
08 - 16	225	71	58	-	354	51	36	-	3	-	10	-
16 - 24	260	61	58	2	381	37	36	-	-	2	16	-
Totals:	510	159	121	2	792	111	77	0	3	2	32	0 = 1017

20. FUTURE PLANNING:

A TRACON REFURBISHING EFFORT IS ANTICIPATED DURING
FY-76. PLANS INCLUDE ONE ADDITIONAL RADAR POSITION
TO SERVE A "FINAL VECTOR" CONTROLLER AND A
16" BRITE-CONRAC MONITOR, SHOWING THE CENTER ARSR
PRESENTATION, MOUNTED ABOVE THE PRESENT BEDFORD
ASR DISPLAY. EVENTUAL USE OF THE SPARE ASR DISPLAY
FOR AN ERS POSITION IS ALSO ANTICIPATED.

21. FDEP EQUIPMENT:
FACILITY HAS FOUR PRINTERS AND TWO KEYBOARDS. THE TRACON USES ONE PRINTER FOR ALL ARRIVALS (PRIMARY AND SECONDARY AIRPORTS) AND A SECOND FOR ALL DEPARTURES. THE TOWER UTILIZES A SINGLE PRINTER FOR DEPARTURE (CLEARANCE) INFORMATION AND THE ASSOCIATED KEYBOARD FOR ROUTINE INFORMATION, CALL-UPS, AND DEPARTURE TIMES IN THE ABSENCE OF ARTS INTERFACE. THE SECOND PRINTER IN THE CAB FUNCTIONS AS A BACKUP. MAINTENANCE RETAINS A FIFTH PRINTER AS A SPARE.
22. TOWER EN ROUTE AGREEMENTS:
QUONSET POINT RATCC; MANCHESTER, N. H., TOWER; OTIS RAPCON, AND PEASE AFB AT PORTSMOUTH, N. H.
23. ASSOCIATED FSS(S):
BOSTON FLIGHT SERVICE STATION, LOCATED ON THE AIRPORT
24. RADAR DATA PROCESSING WITH ADJACENT FACILITY(S):
RDP WITH BOSTON CENTER IS IN A SHAKEDOWN STATUS AS OF THIS DATE
25. WEATHER DATA POSTED WITHIN FACILITY (SOURCE AND HOW RECEIVED):
LOCAL (BOS), RECEIVED FROM THE NATIONAL WEATHER SERVICE AT THE AIRPORT.

BEDFORD, RECEIVED VIA THE FDEP AS A GENERAL INFORMATION MESSAGE.

NORWOOD, BEVERLY, AND NAS SOUTH WEYMOUTH POSTED AS REQUIRED AND RECEIVED VIA INTERPHONE.
26. RVR'S (RVV'S):
RVR'S ON RUNWAYS 33 AND 4R
RVV ON RUNWAY 22L
27. ASDE AND TYPE OF DISPLAY:
AN ASDE-1 PRESENTATION IS SELECTIVELY DISPLAYED ON ANY OR ALL OF THE TOWER BRITES OR THE CONRAC. THE ASDE IS NOT COMMISSIONED AS OF THIS DATE.

28. ARTS III COMPUTER:

- a. CAPACITY (NO. OF K): 32
- b. NO. OF INPUT/OUTPUT CHANNELS: 16 WITH 14 PRESENTLY
IN USE.
- c. IS THIS FACILITY AN ASSEMBLY SITE: NO
ASSEMBLY SITE FOR BOS IS WASHINGTON NATIONAL
TOWER

29. ACCESS TO CAB FOR MOVEMENT OF EQUIPMENT:

IN ADDITION TO THE STAIRWELL (36 INCHES WIDE) THERE IS AN ELECTRIC CHAIN HAUL (HOIST) WHICH OPERATES THROUGH A SERIES OF TRAP DOORS TO/FROM THE 19TH FLOOR. (HATCH IS 40" X 40")

ADDITIONALLY, THERE IS A BUILT-IN HOIST DIRECTLY ADJACENT TO THE CAB, ON THE CATWALK, WHICH CAN BRING EQUIPMENT FROM THE GROUND. IT'S PLANNED USAGE IS FOR REPLACEMENT OF GLASS.

30. FACILITY STAFFING:

CHIEF, DEPUTY CHIEF, OPERATIONS OFFICER, PLANNING AND PROCEDURES SPECIALIST, TWO EPDS'S, FIVE ASSISTANT CHIEFS, SEVEN TEAM SUPERVISORS, FOUR DATA SYSTEMS SPECIALISTS, AND 68 CONTROLLERS.

31. MISCELLANEOUS:

- 1. BOSTON TOW BOAT COMPANY, INC., CALLS THE TOWER AND ADVISES OF ANY/ALL BOSTON HARBOR SHIP TRAFFIC WITH A MAST HEIGHT OF 132 FEET OR ABOVE; A CONDITION WHICH RAISES THE ILS 4R MINIMUMS.
- 2. MAINTENANCE MONITORS A REGIONALLY FABRICATED FDEP INTERFACE ALARM WHICH INDICATES IN THE OPERATING QUARTERS IF /WHEN A PROBLEM IS NOT OF A LOCAL NATURE. (PHOTOGRAPH; BOSTON EQUIPMENT ROOM 3.)

3. BASIC TOWER INSTRUMENTS AT EACH POSITION (WIND INDICATORS, ALTIMETER, MINITURIZED CLOCKS) ARE MOUNTED IN ROTATABLE UNITS. THEY MAY BE ADJUSTED TO ANY VIEWING ANGLE WHICH SUITS THAT OF THE INDIVIDUAL CONTROLLER OR TO AN OPTIMUM WHICH ELIMINATES GLARE AND/OR REFLECTIONS.
4. THE TWO BRITES AND ONE CONRAC DISPLAY IN THE CAB ARE MOUNTED ON A CIRCULAR TRACK. ELECTRO-MECHANICAL SPOKES EMANATE FROM THE CENTER OF THE TOWER CEILING AND ARE USED TO CONTROL THEIR MOVEMENT TO DESIRED POSITIONS.



BOS - 5/75

BOS TOWER - 1 (BAY G - H)



BOS TOWER - 2 (BAY H - I)

BOS - 5/75



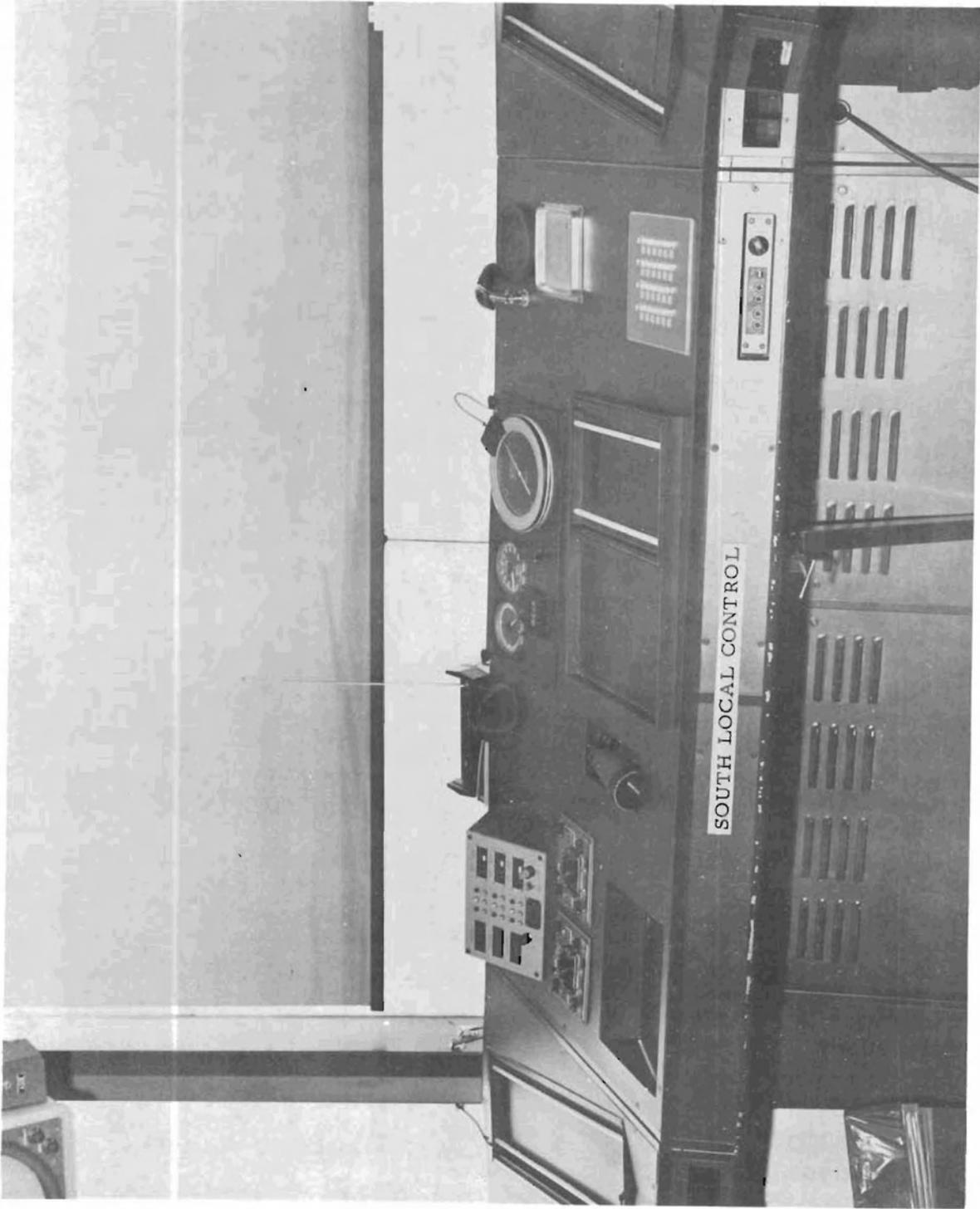
BOS - 5/75

BOS TOWER - 3 (BAY I - J)



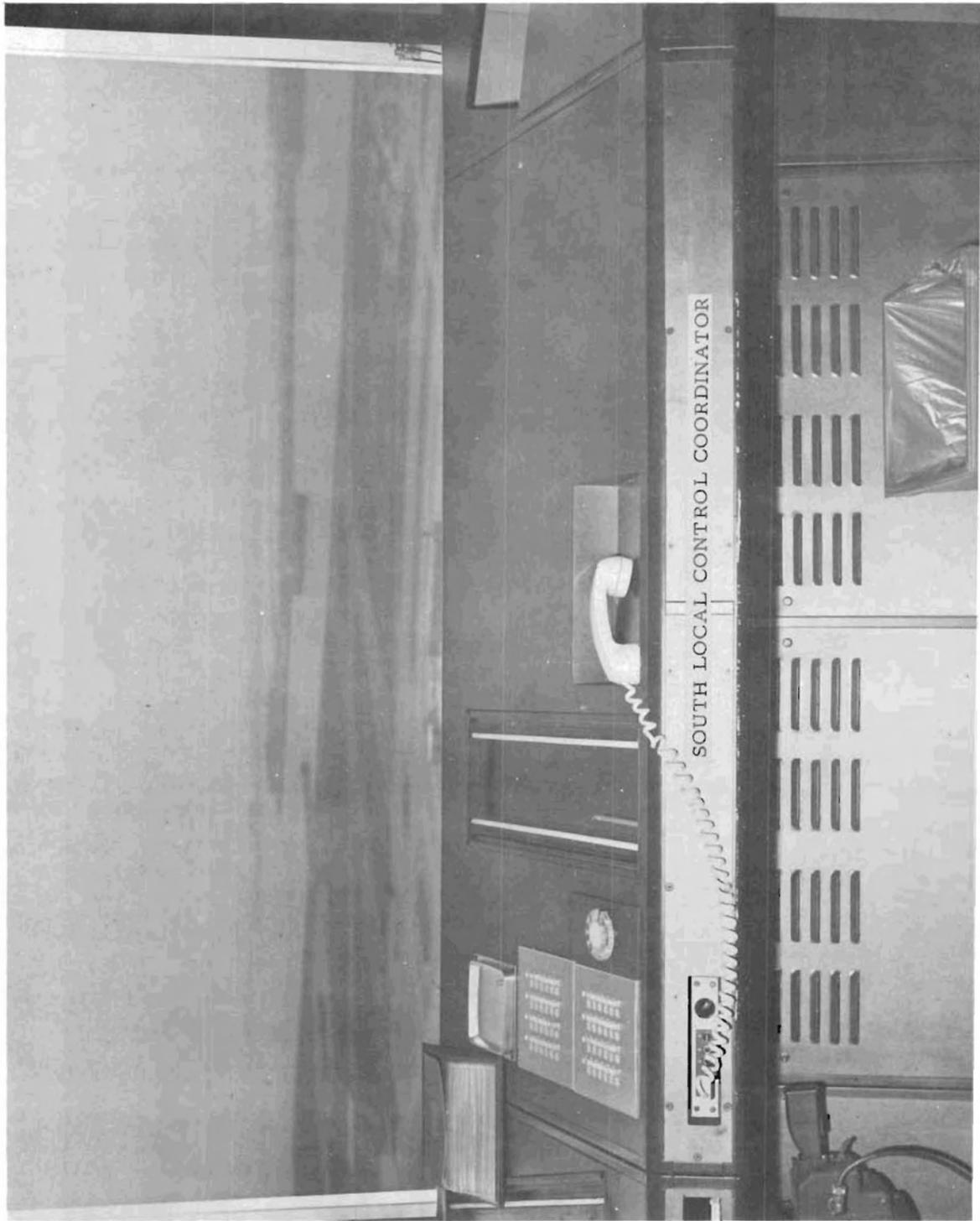
BOS - 5/75

BOS TOWER - 4 (BAY J - K)



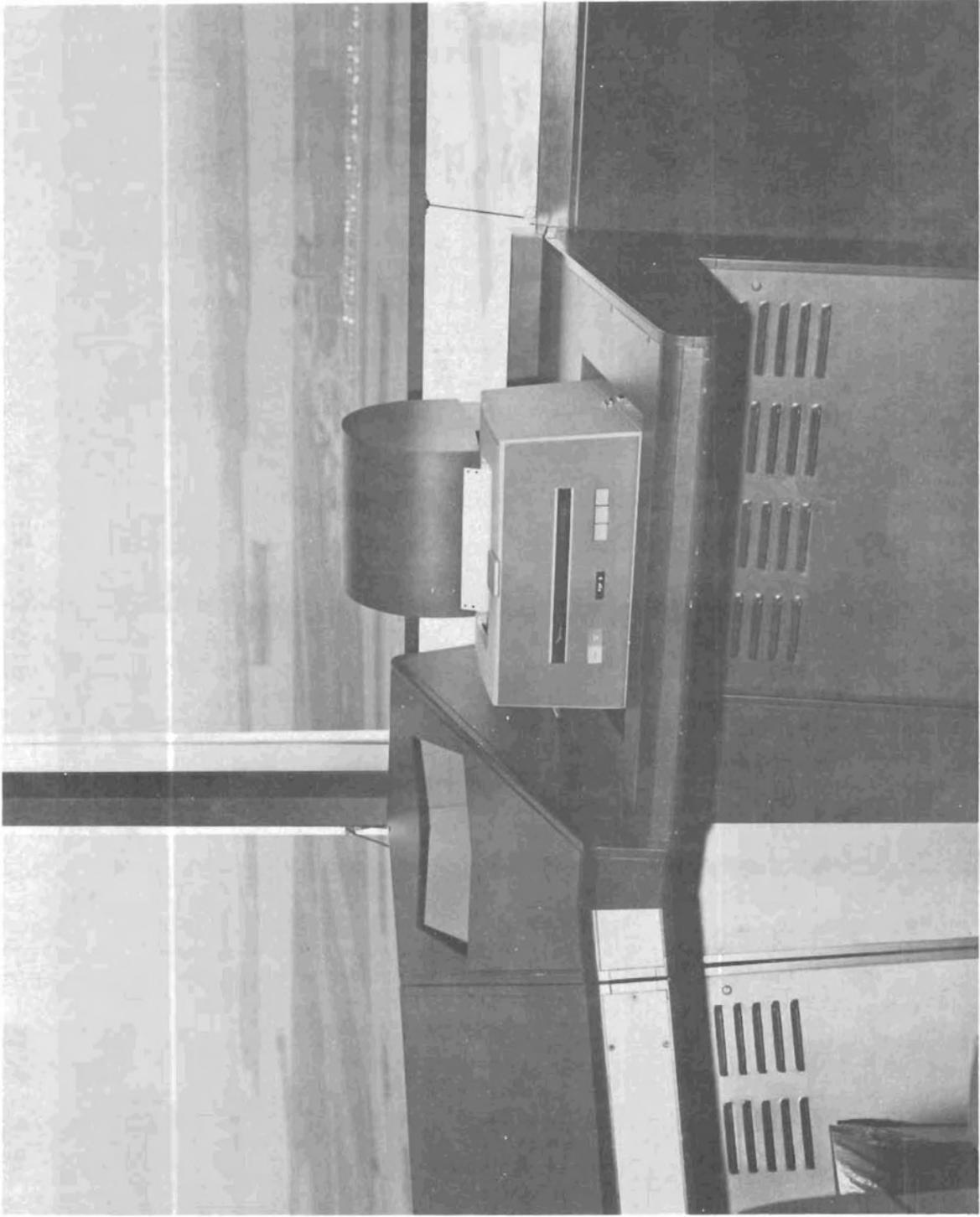
BOS - 5/75

BOS TOWER - 5 (BAY K - A)



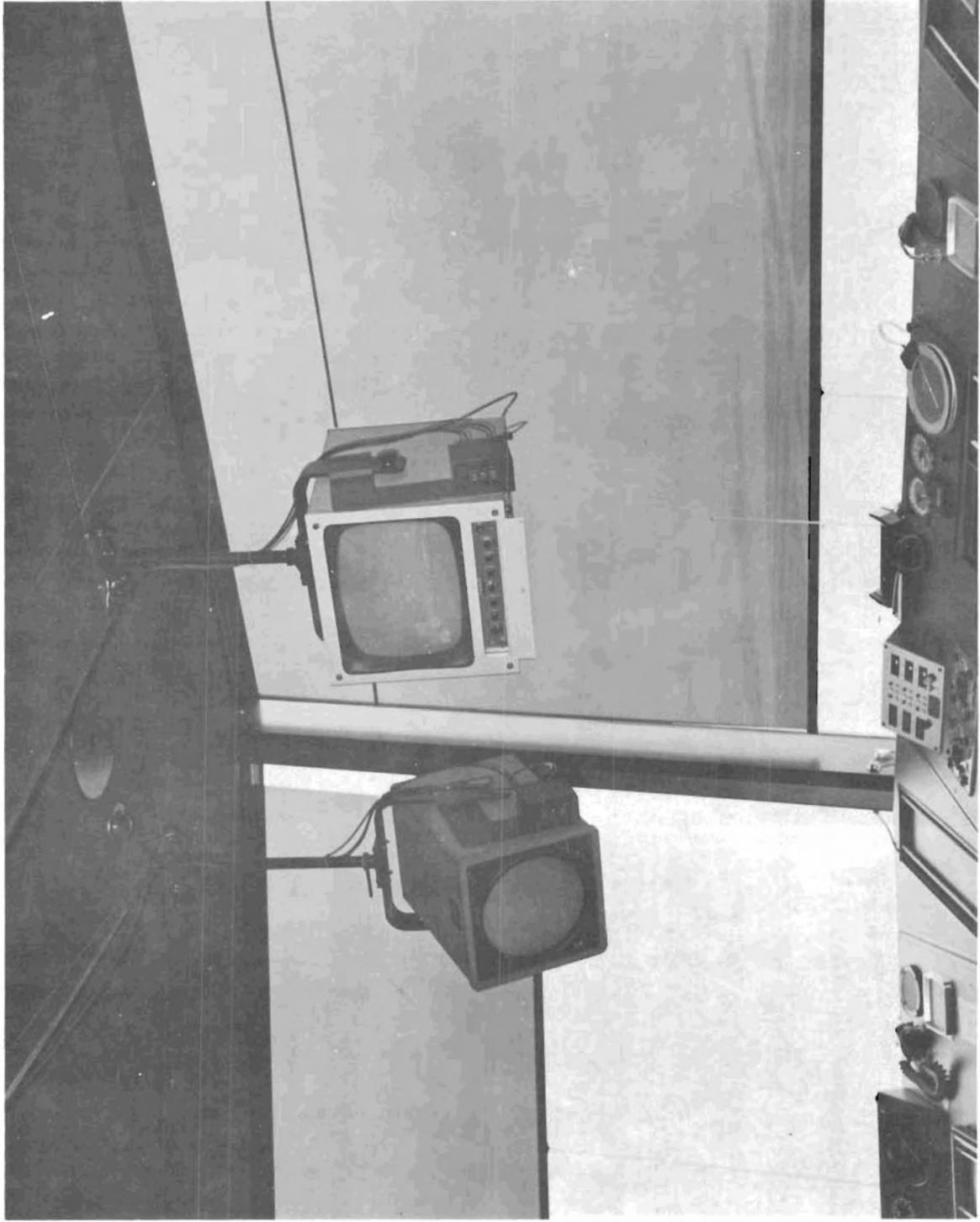
BOS - 5/75

BOS TOWER - 6 (BAY A - B)



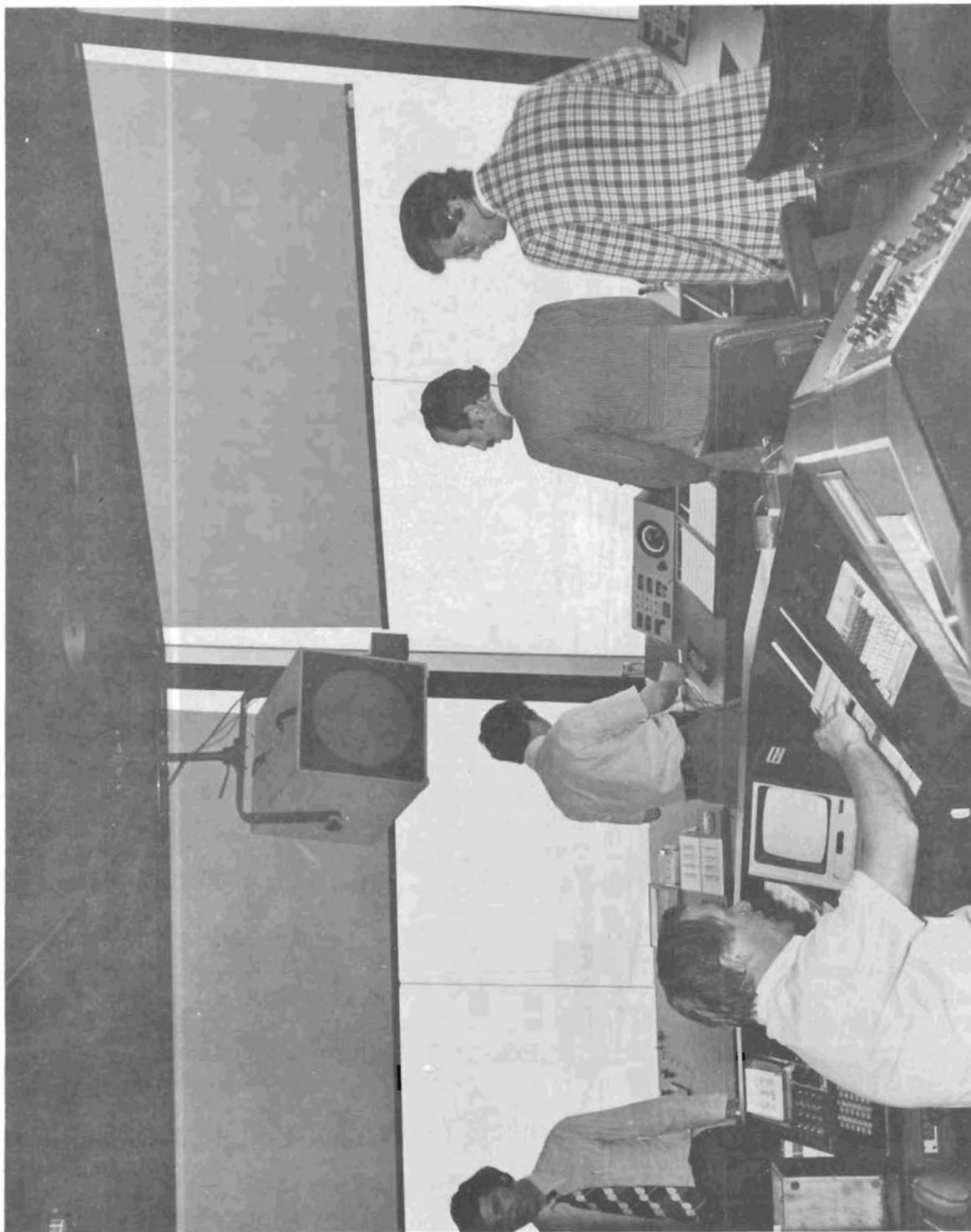
BOS - 5/75

BOS TOWER - 7 (BAY B - C)



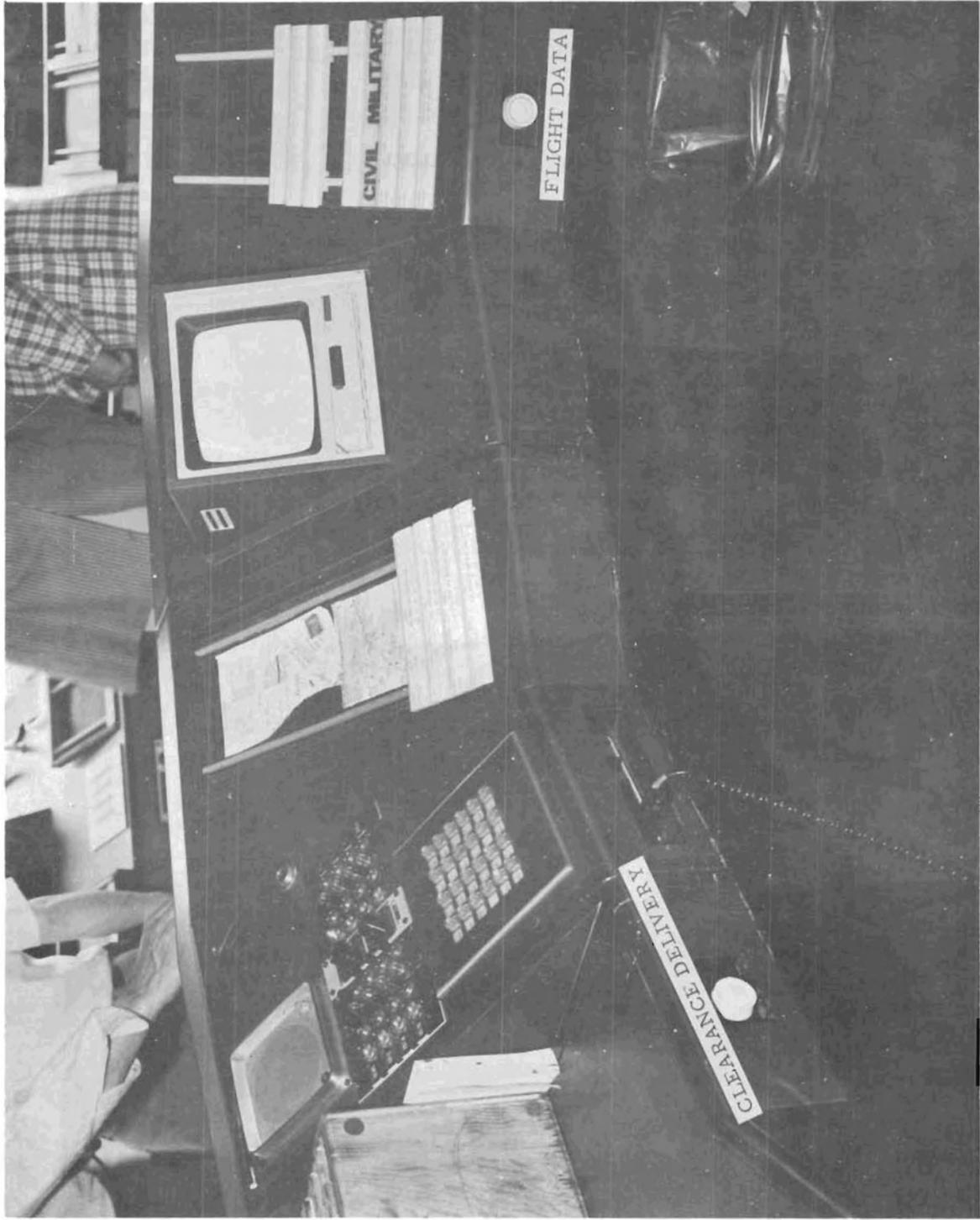
BOS - 5/75

BOS TOWER - 8



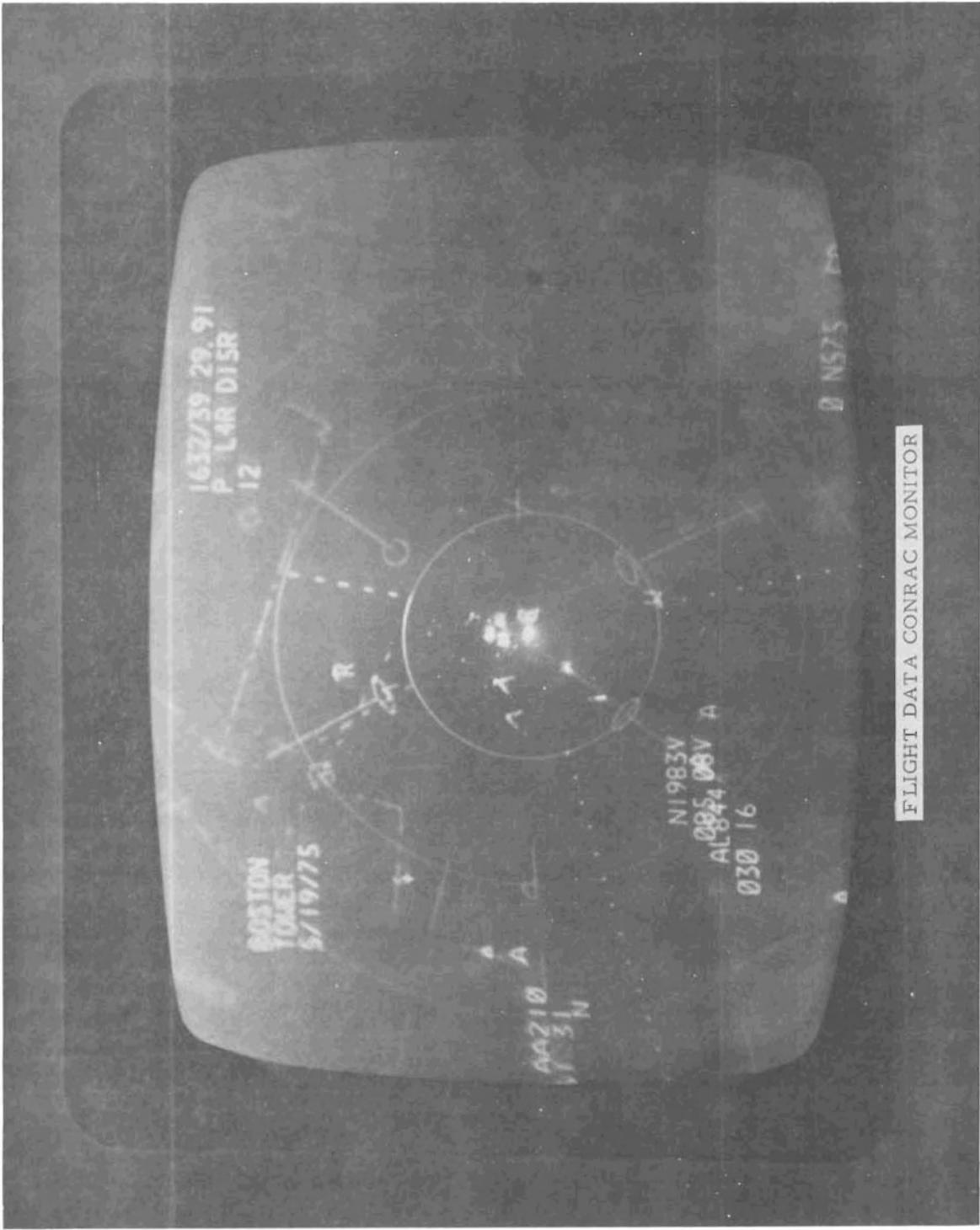
BOS TOWER - 9

BOS - 5/75



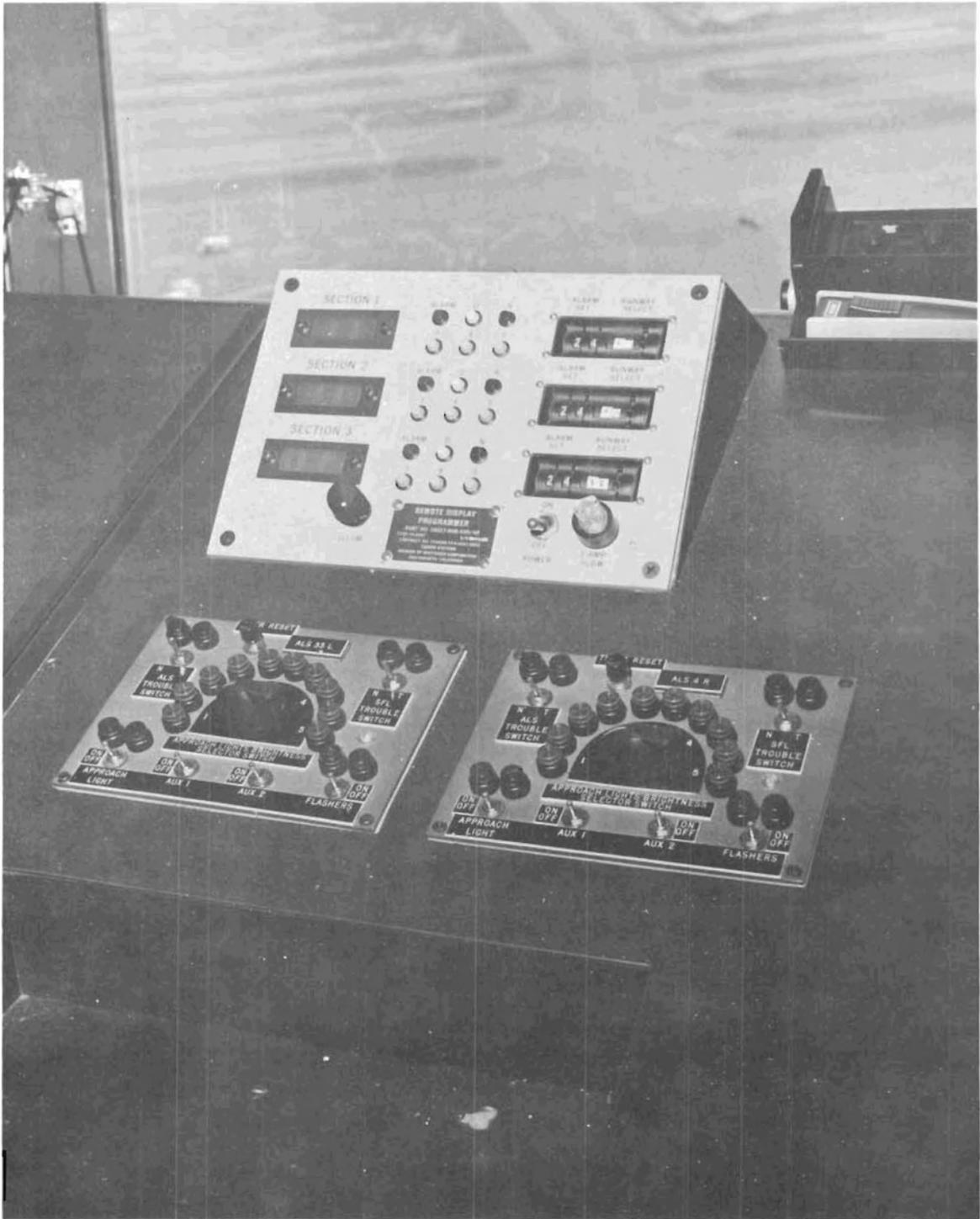
BOS - 5/75

BOS TOWER - 10



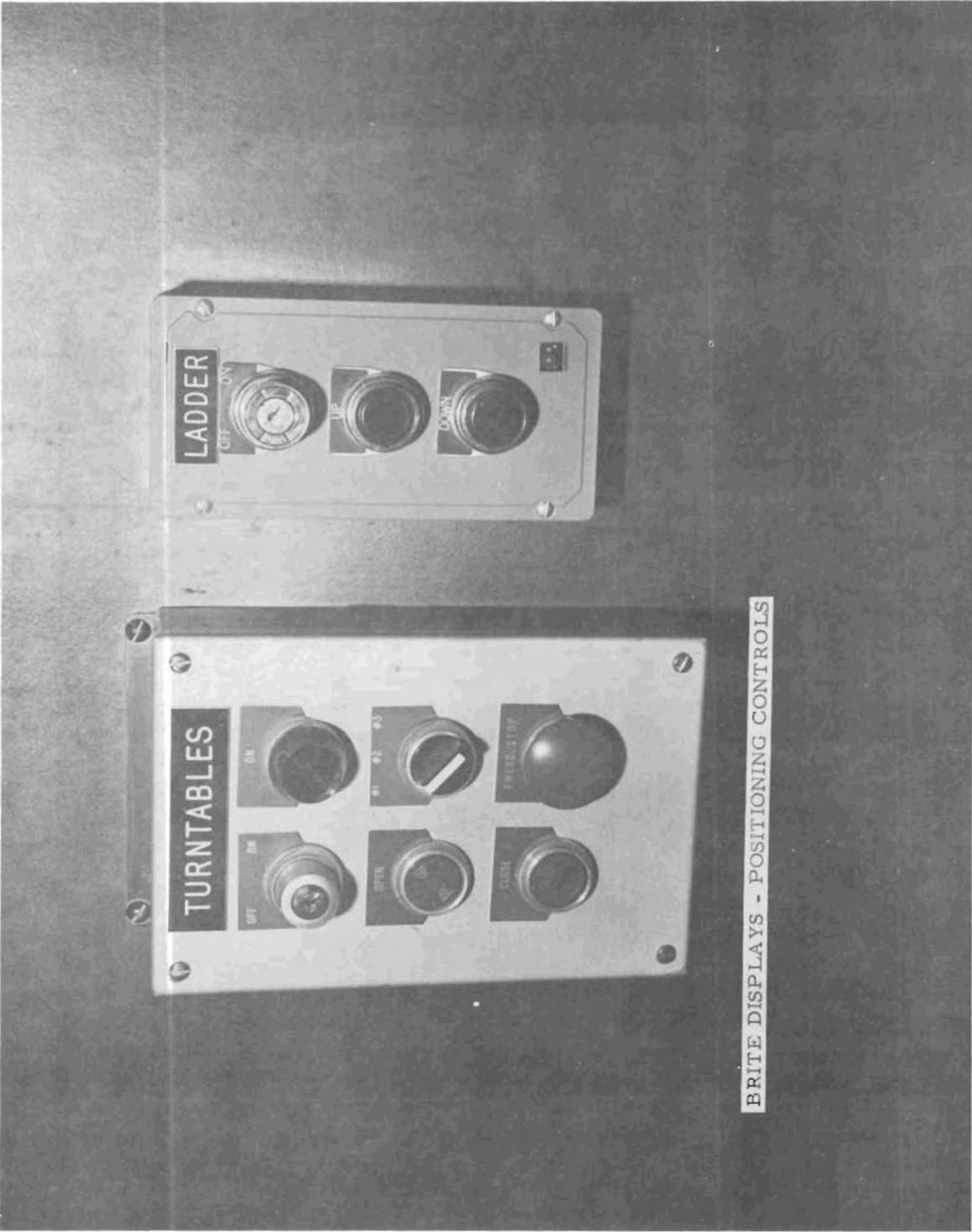
BOS - 5/75

BOS TOWER - 11



BOS - 5/75

BOS TOWER - 12



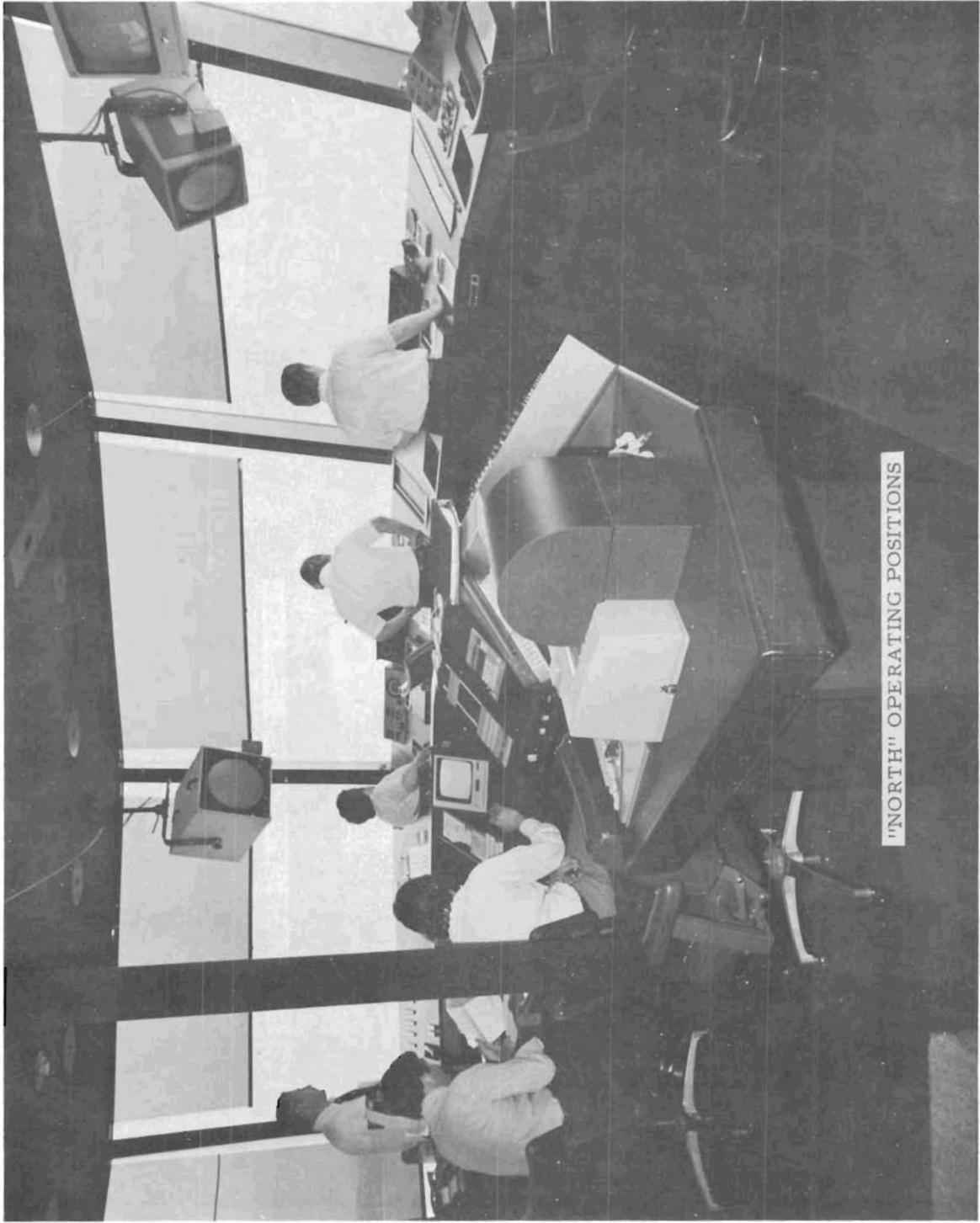
TURNTABLES

LADDER

BRITE DISPLAYS - POSITIONING CONTROLS

BOS - 5/75

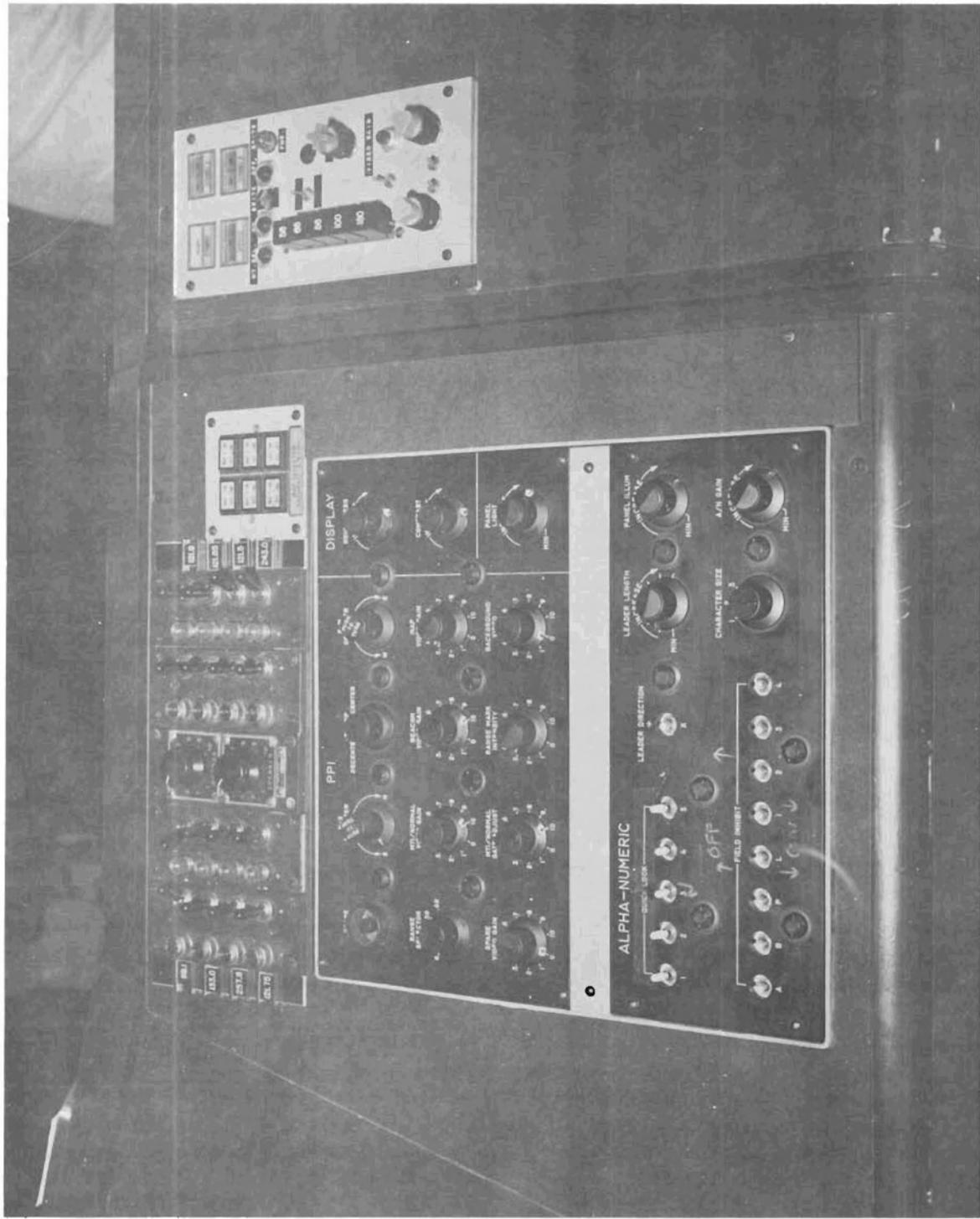
BOS TOWER - 13



"NORTH" OPERATING POSITIONS

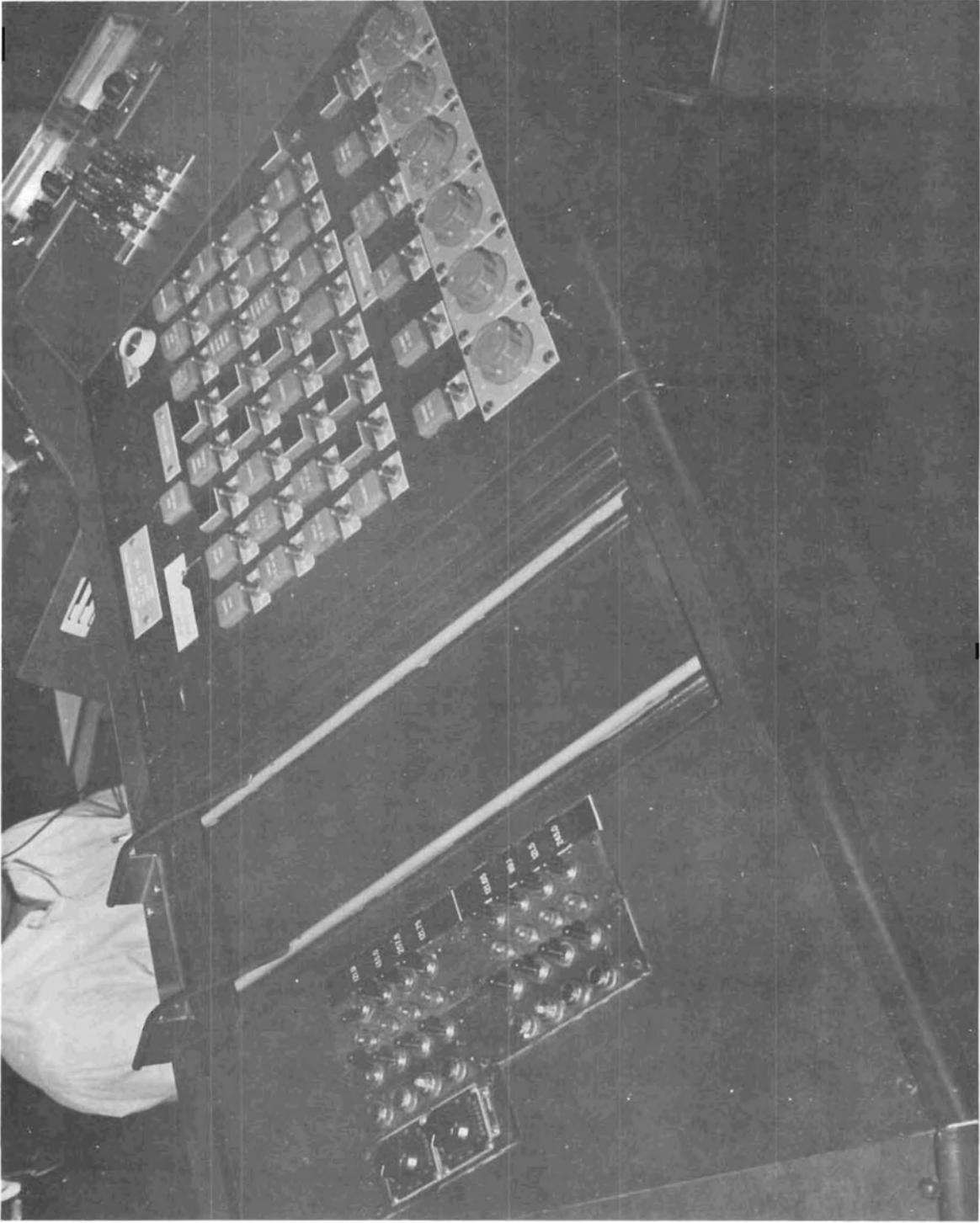
BOS - 5/75

BOS TOWER - 14



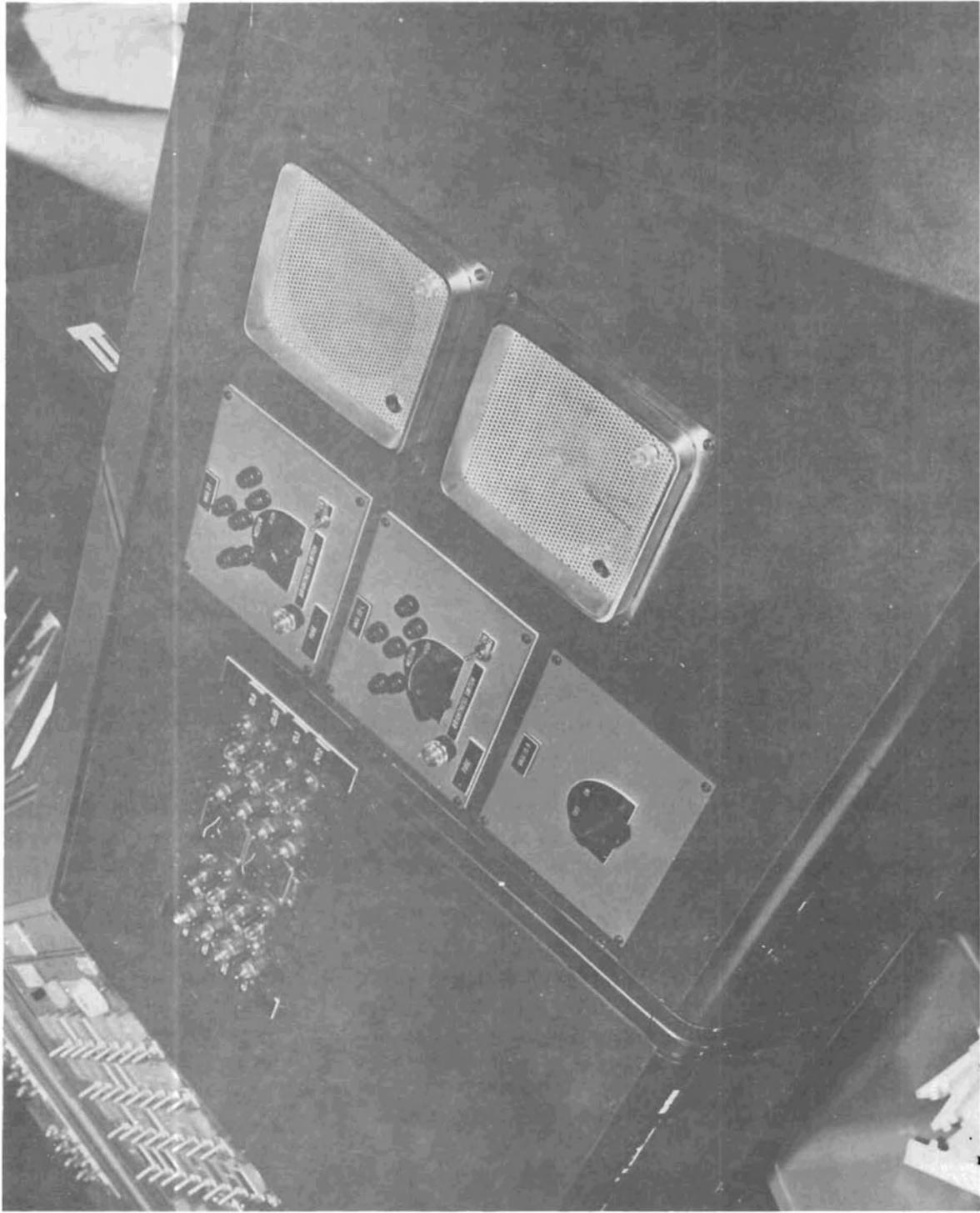
BOS - 5/75

BOS TOWER - 15



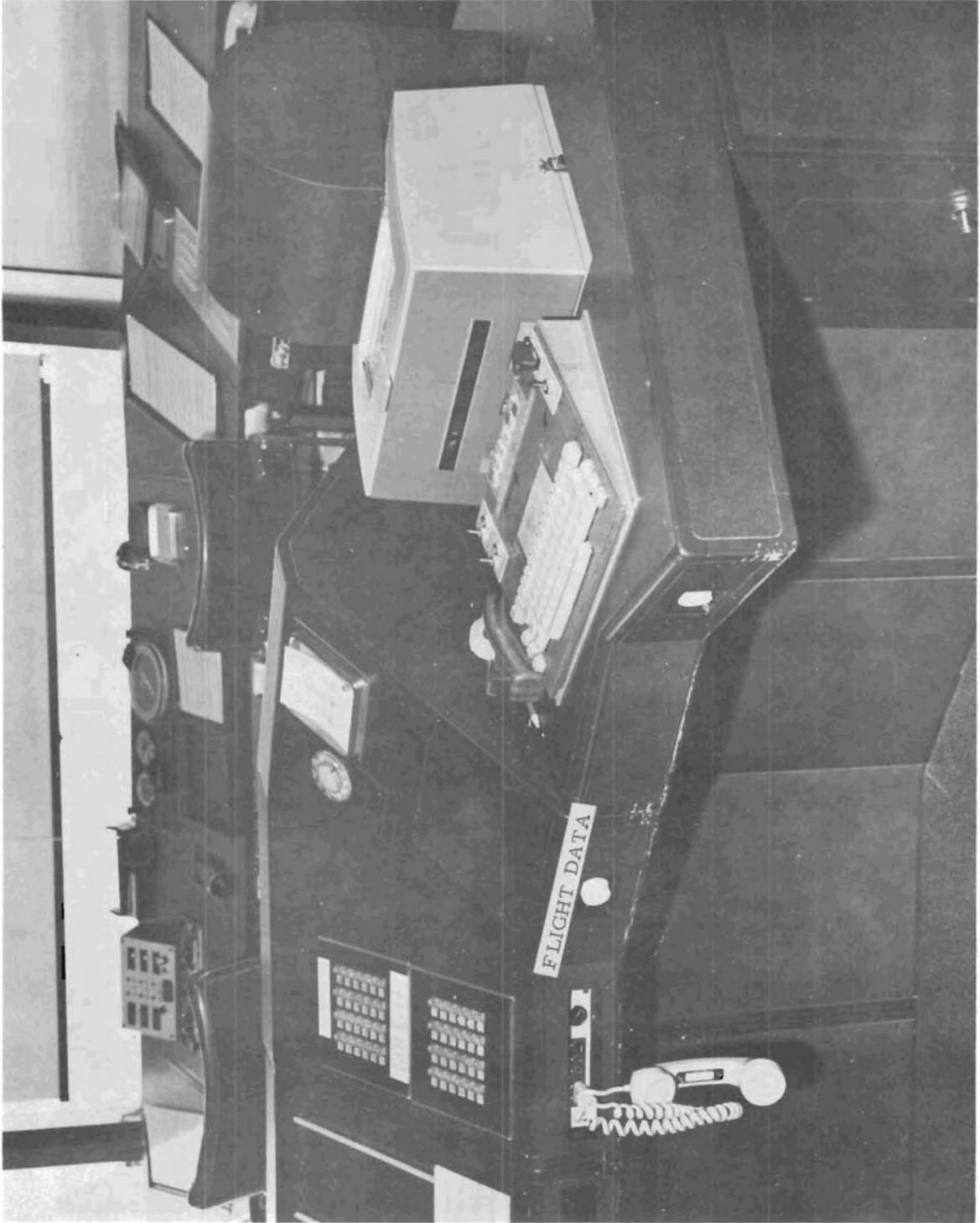
BOS - 5/75

BOS TOWER - 16



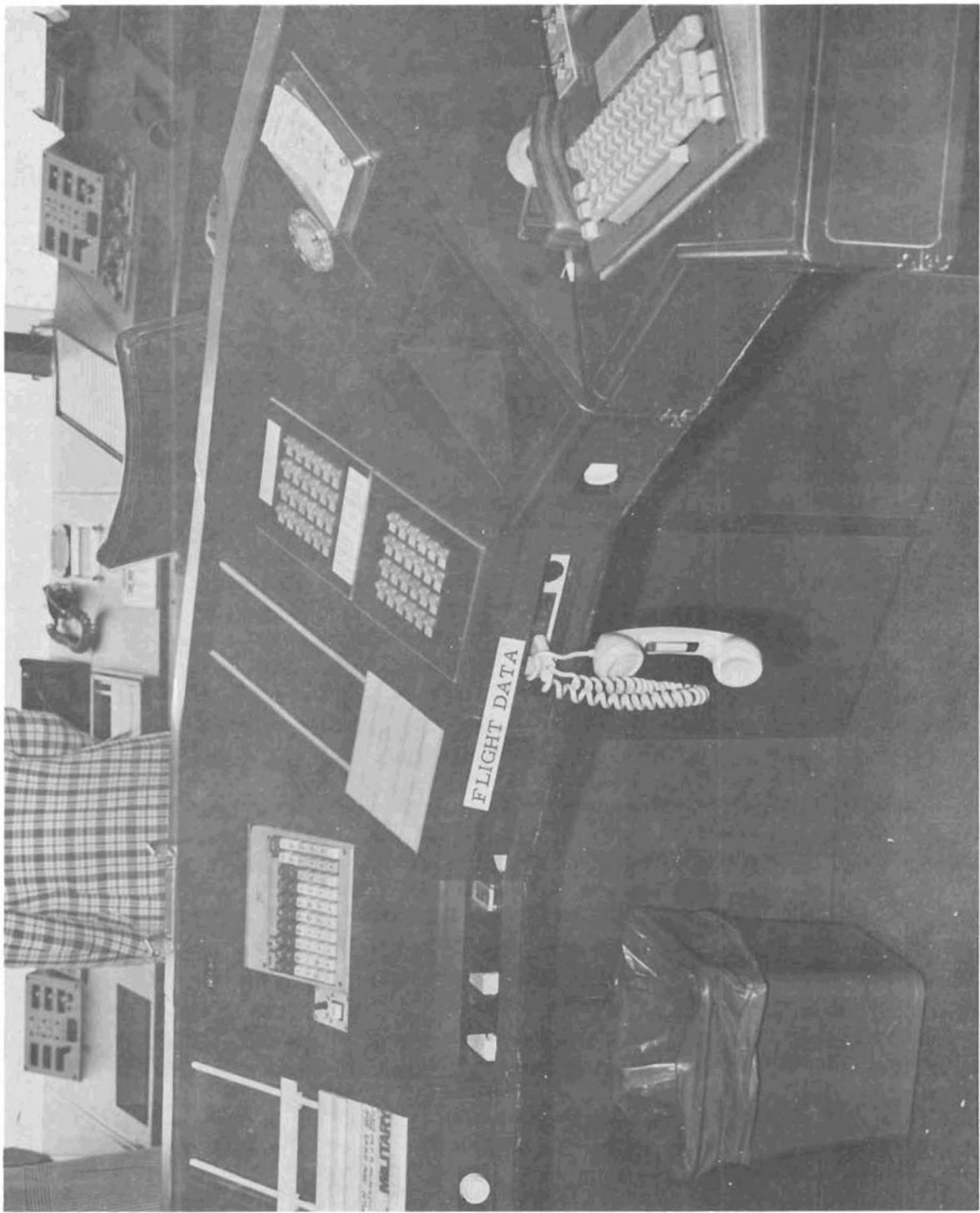
BOS TOWER - 17

BOS - 5/75



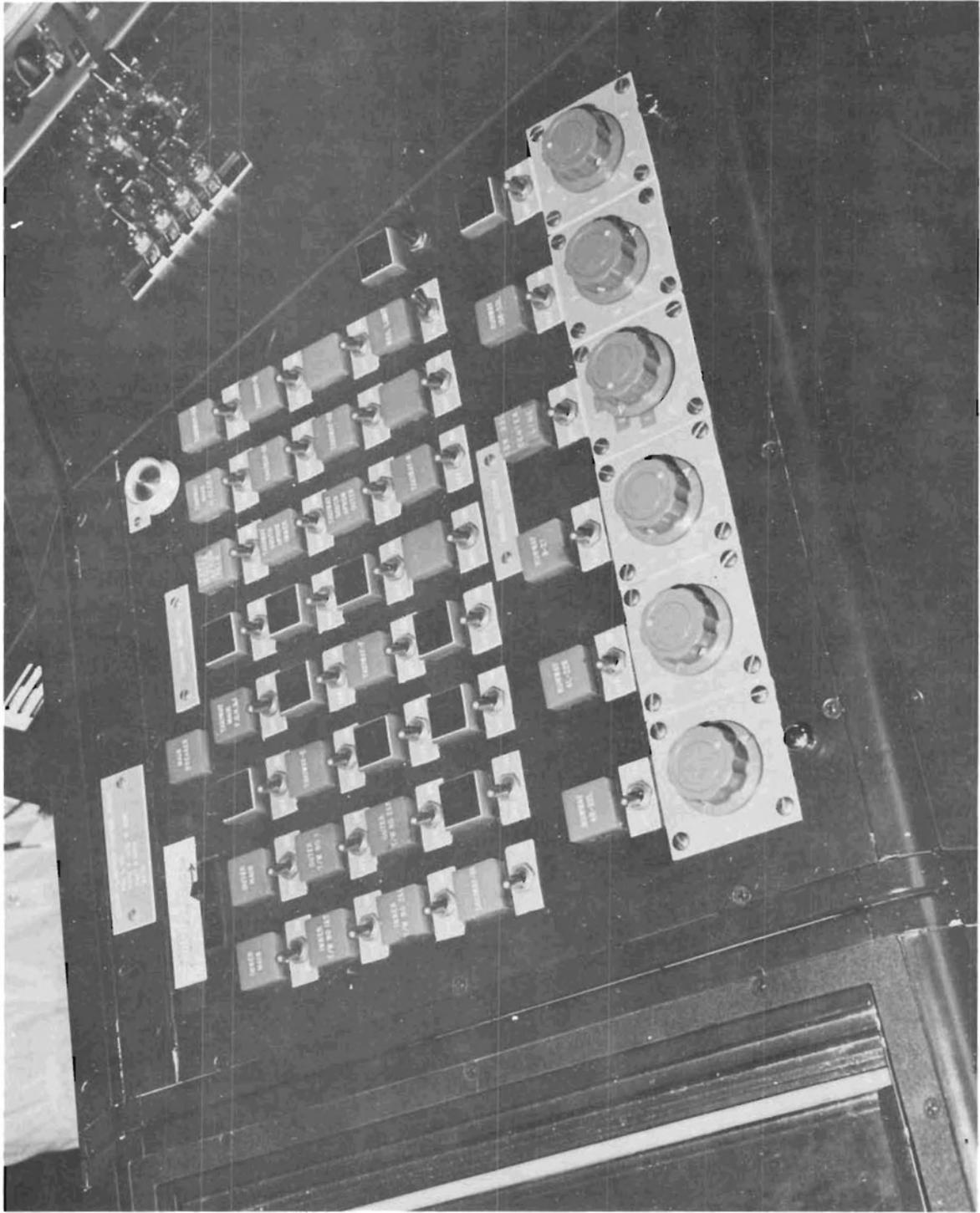
BOS - 5/75

BOS TOWER - 18



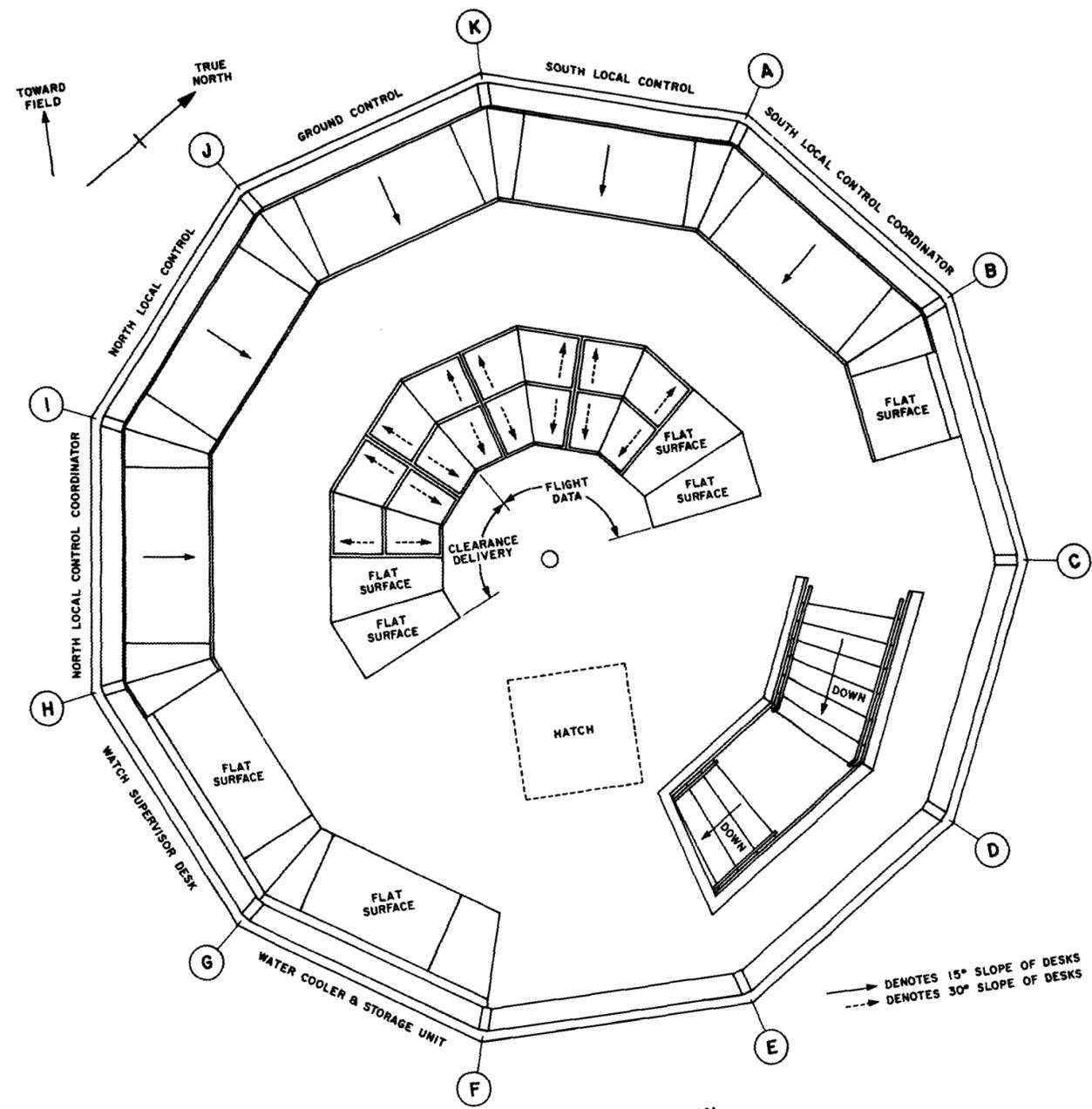
BOS - 5/75

BOS TOWER - 19



BOS - 5/75

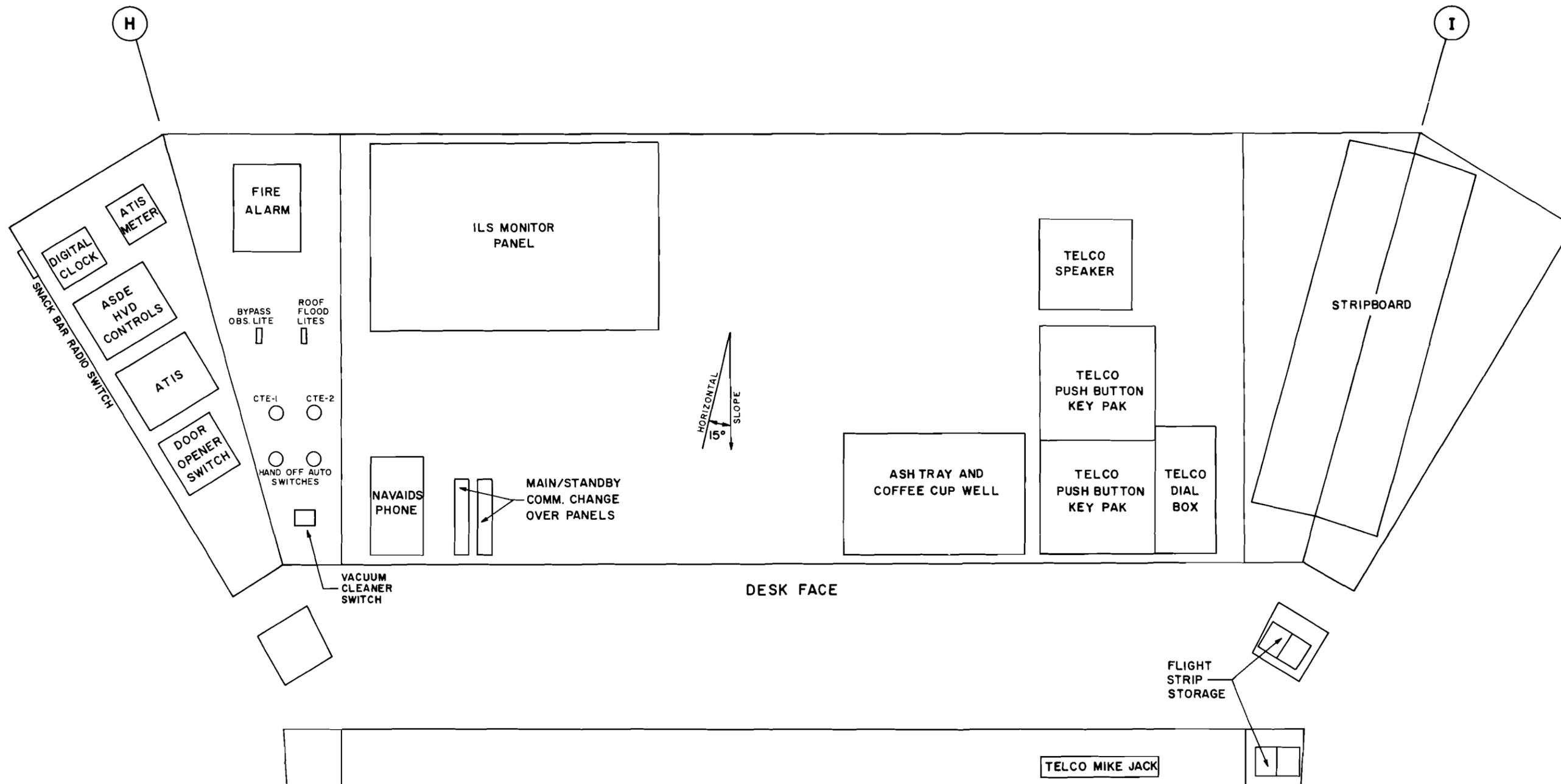
BOS TOWER - 20



CAB FLOOR PLAN

BOS TOWER - 21

BOS - 5/75



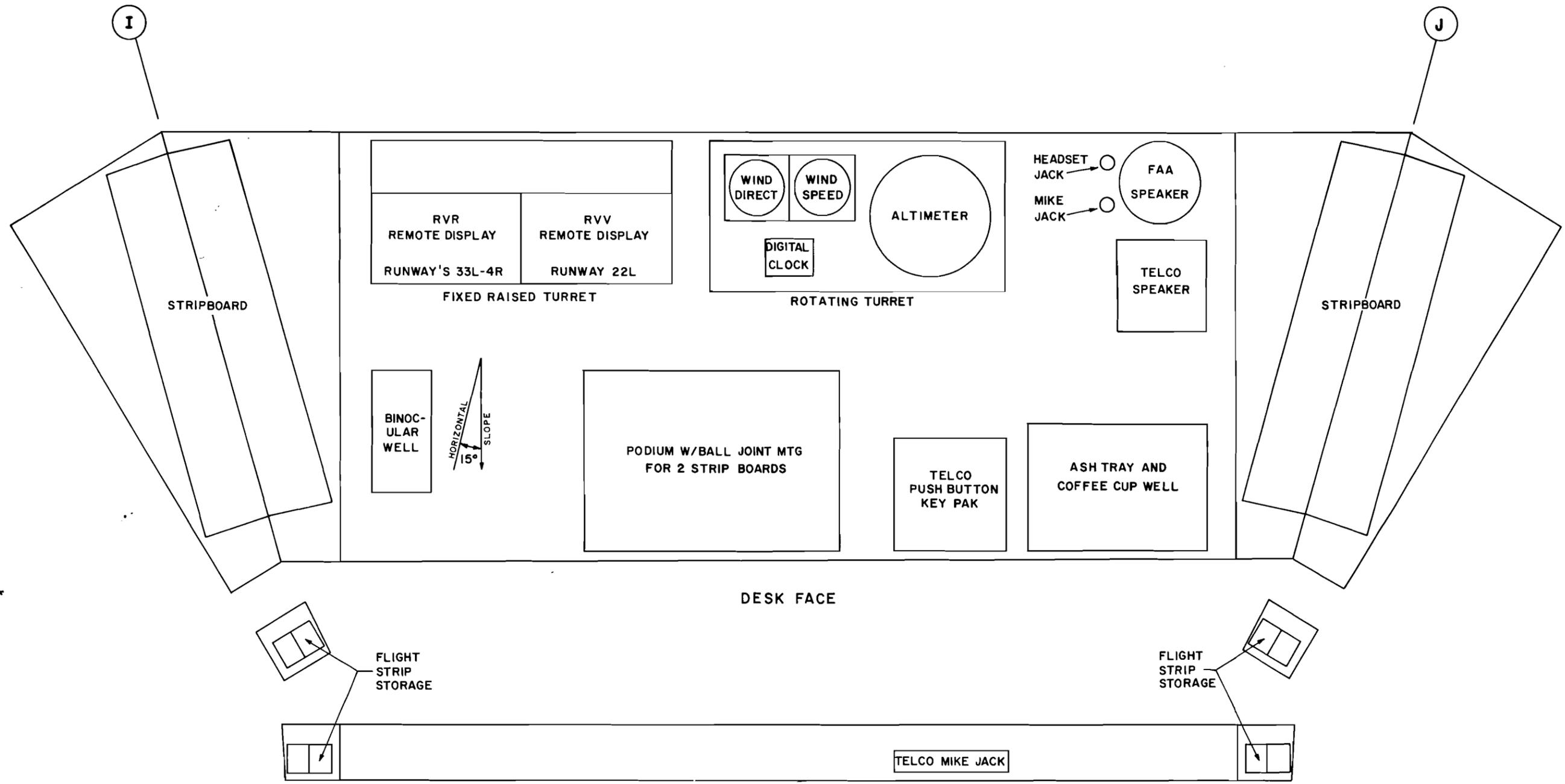
DESK FACE

DESK EDGE

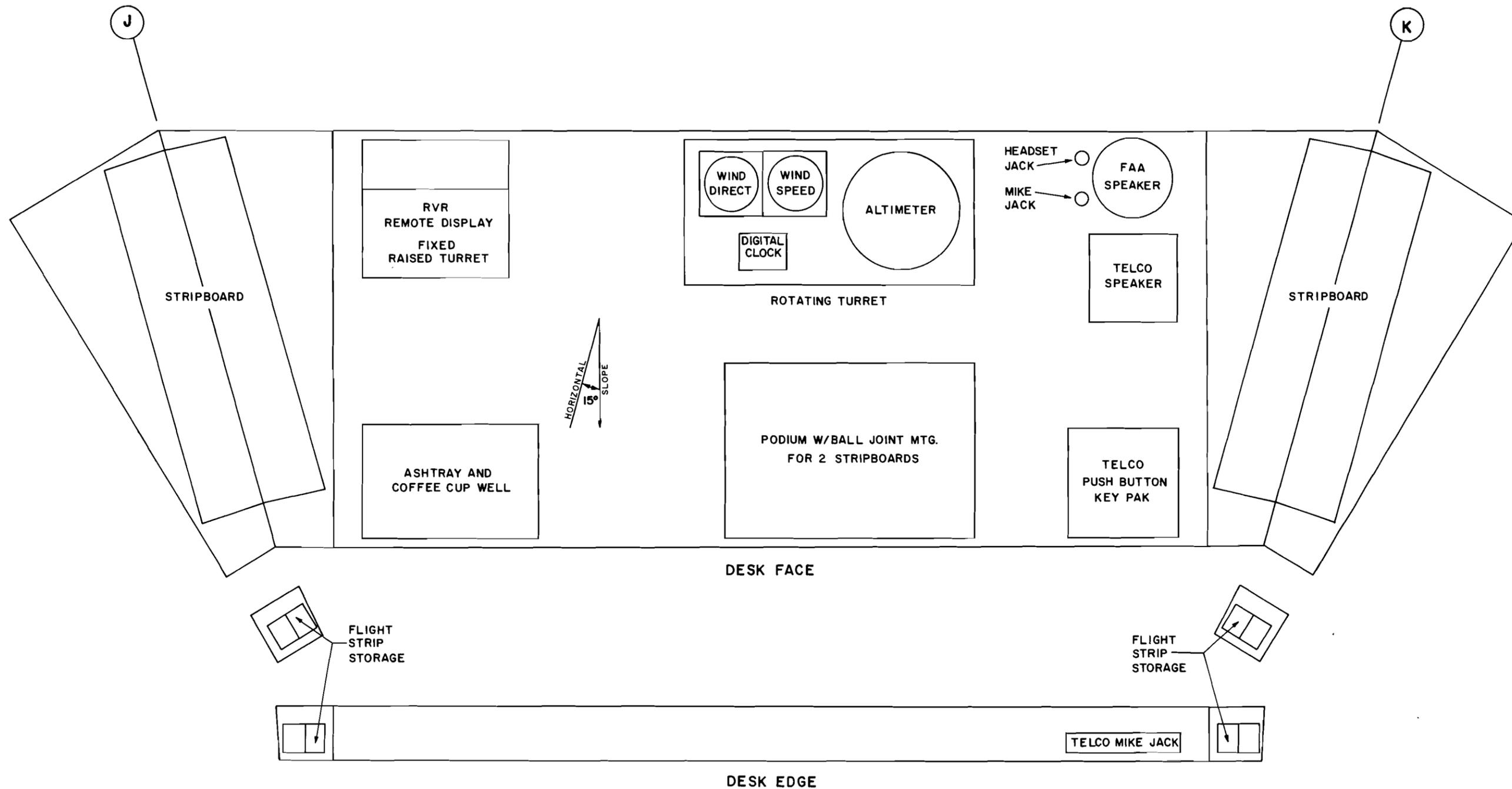
NORTH LOCAL CONTROL COORDINATOR
BAY (H-I)

BOS - 5/75

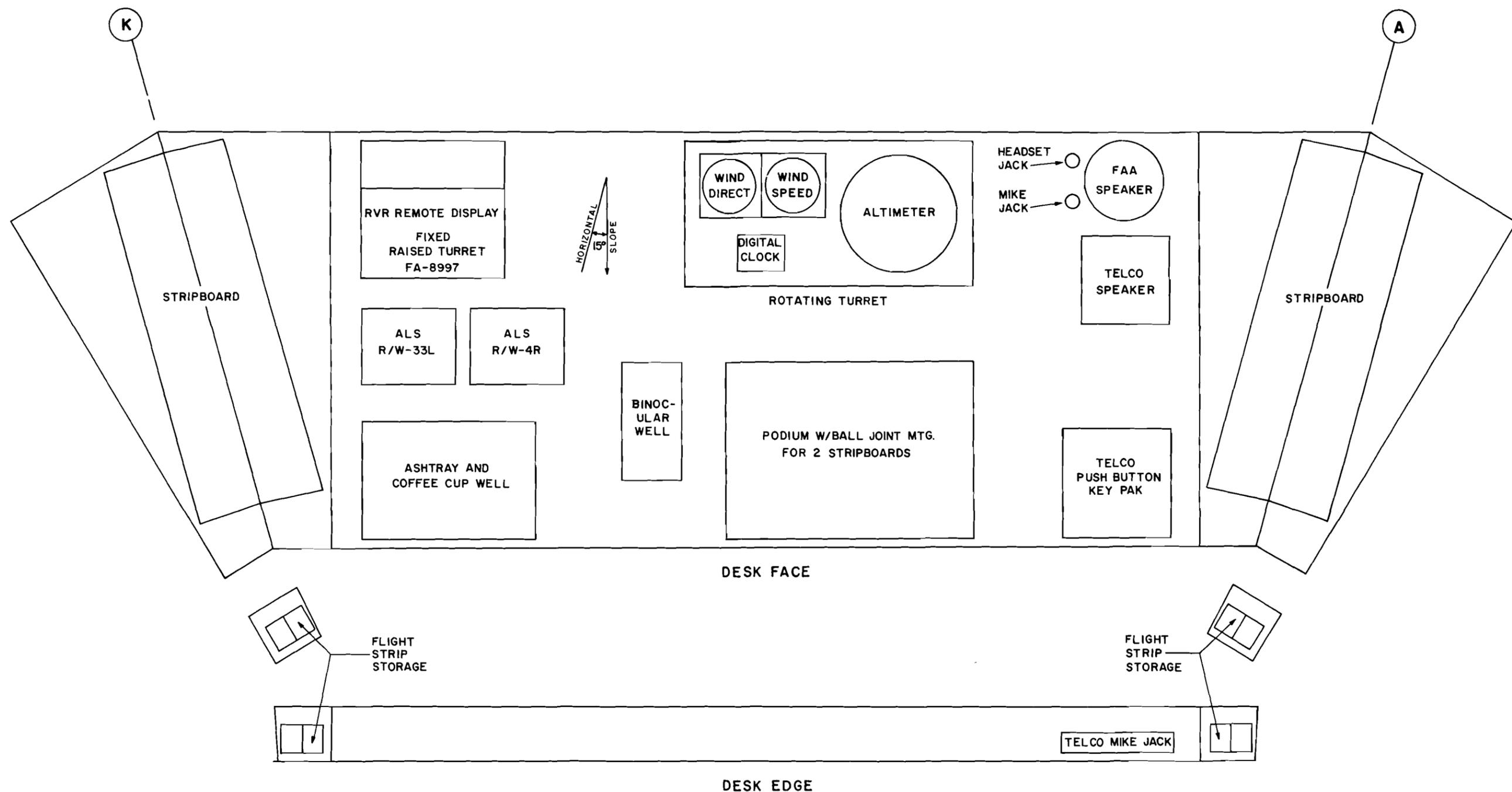
BOS TOWER - 22



NORTH LOCAL CONTROL
BAY (I-J)



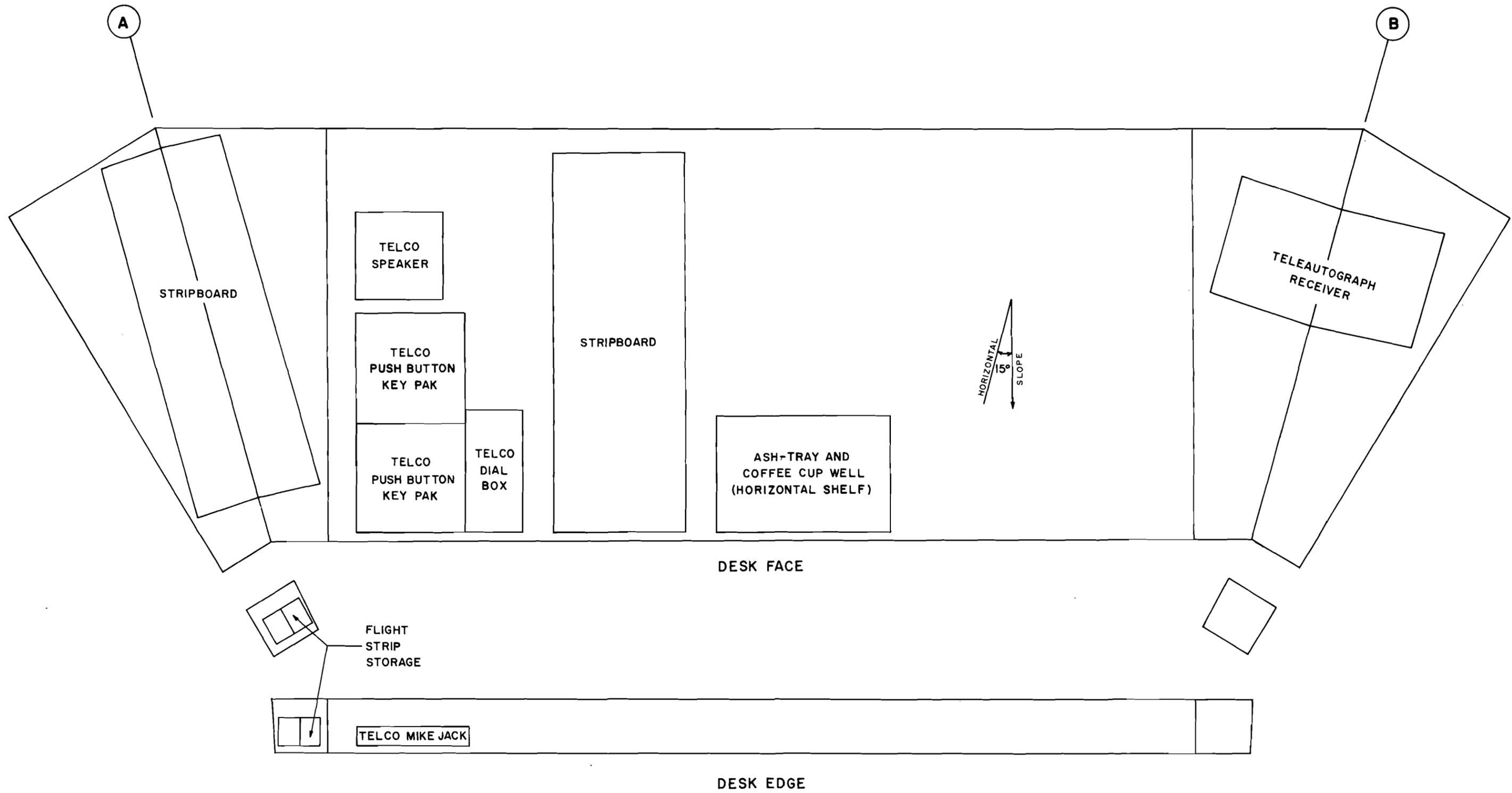
GROUND CONTROL POSITION
BAY (J-K)



SOUTH LOCAL CONTROL
BAY (K-A)

BOS - 5/75

BOS TOWER - 25

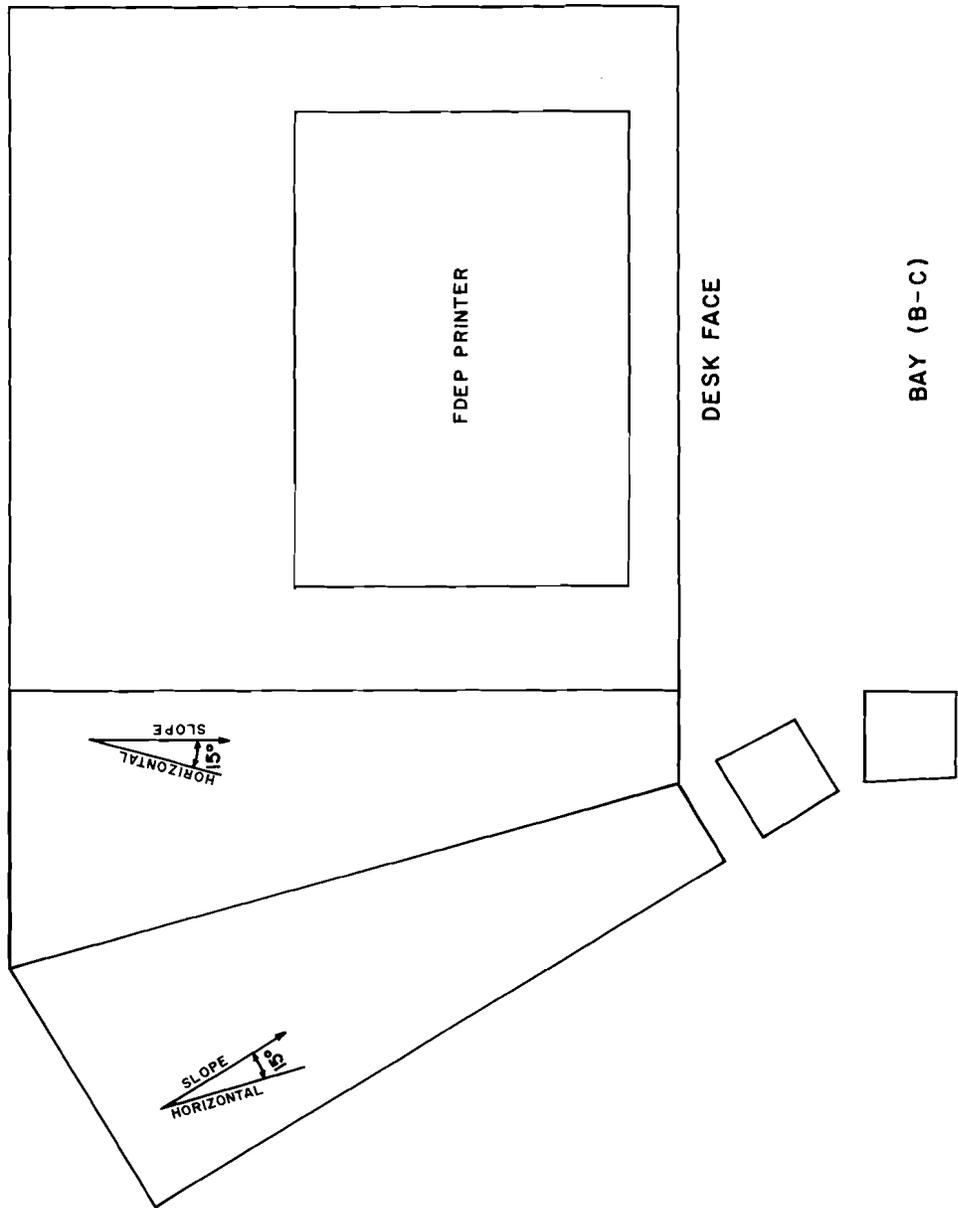


SOUTH LOCAL CONTROL COORDINATOR

BAY (A-B)

C

B



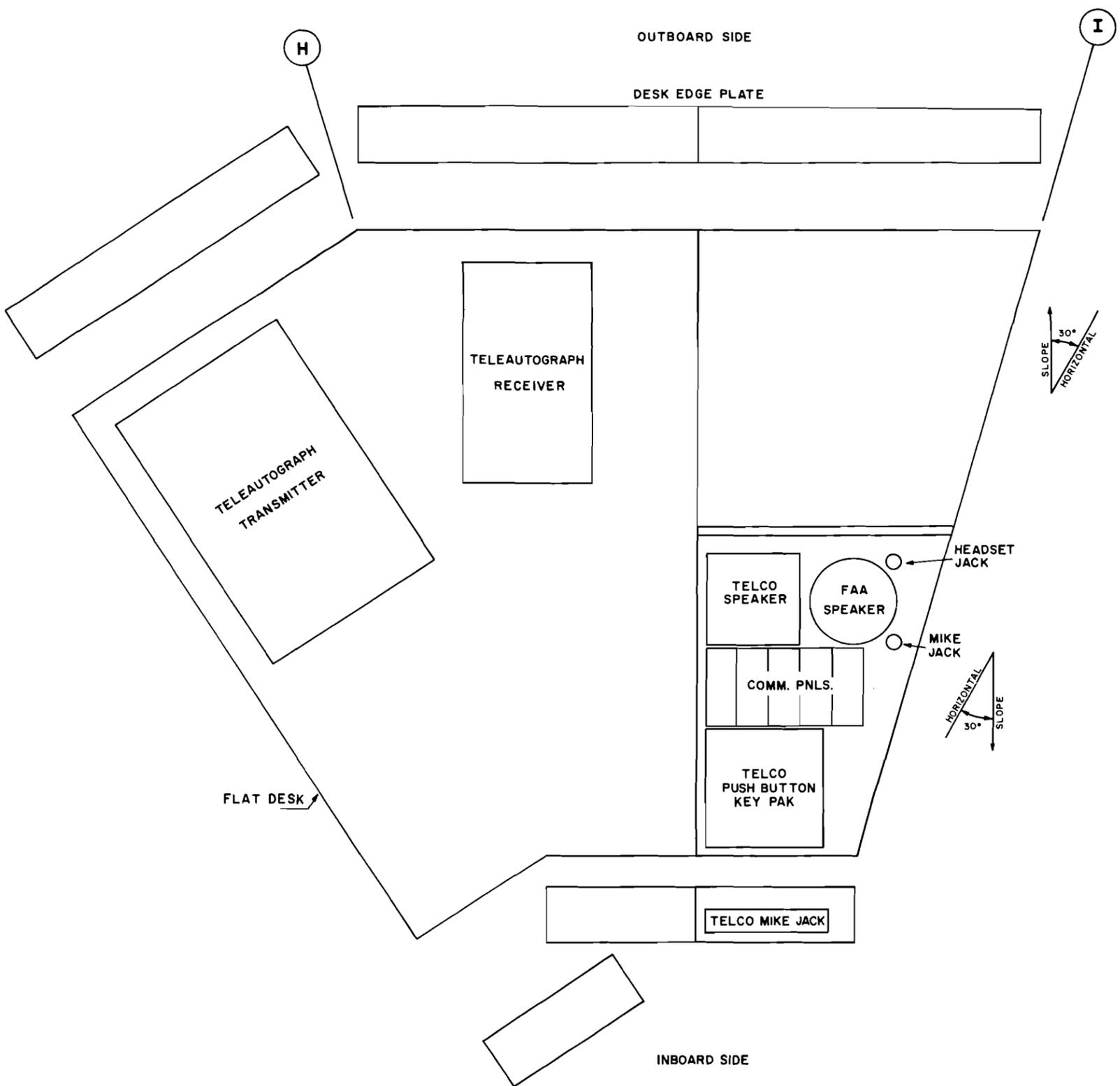
BOS - 5/75

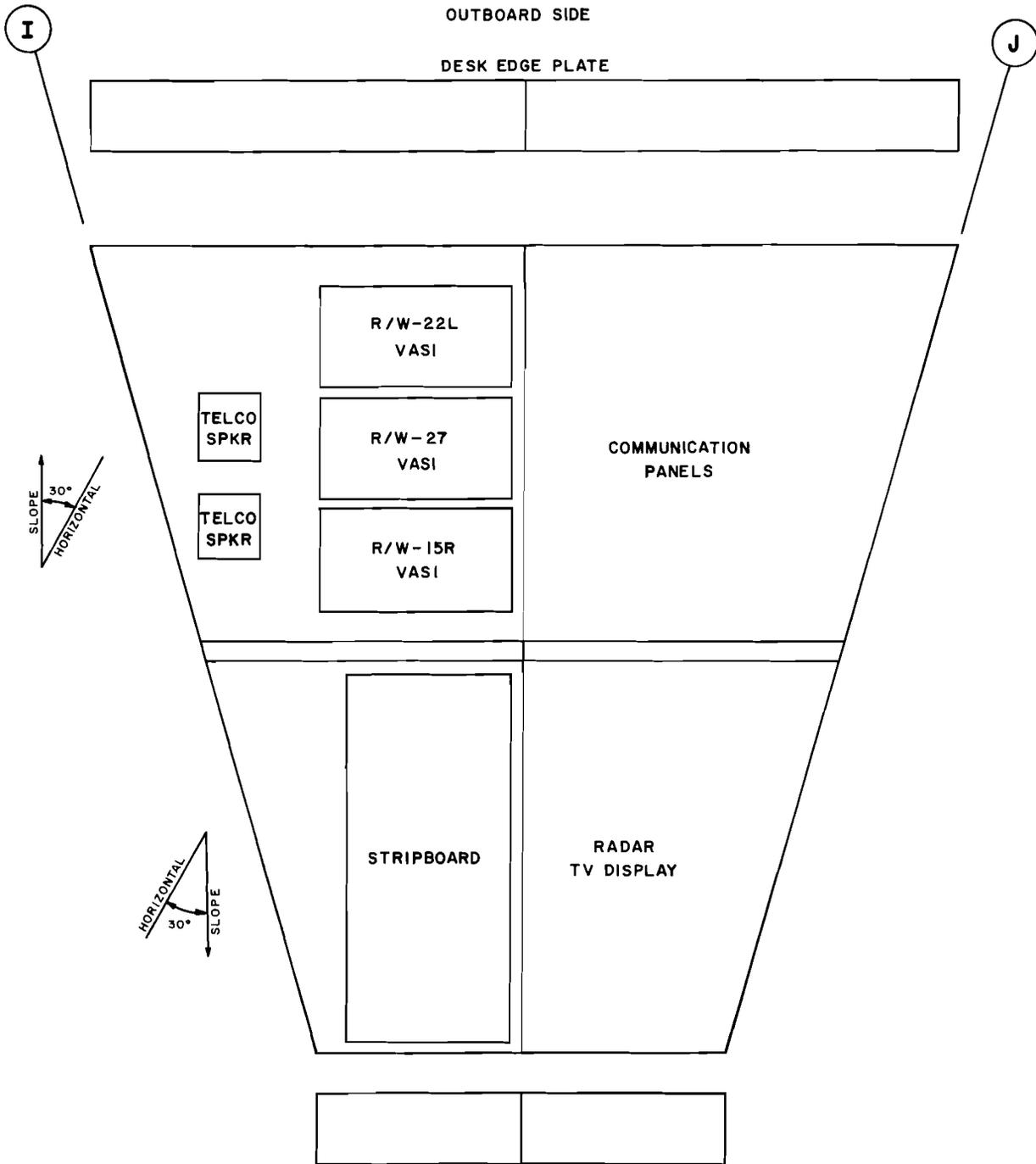
BOS TOWER - 27

BAY (B-C)

DESK FACE

FDEP PRINTER

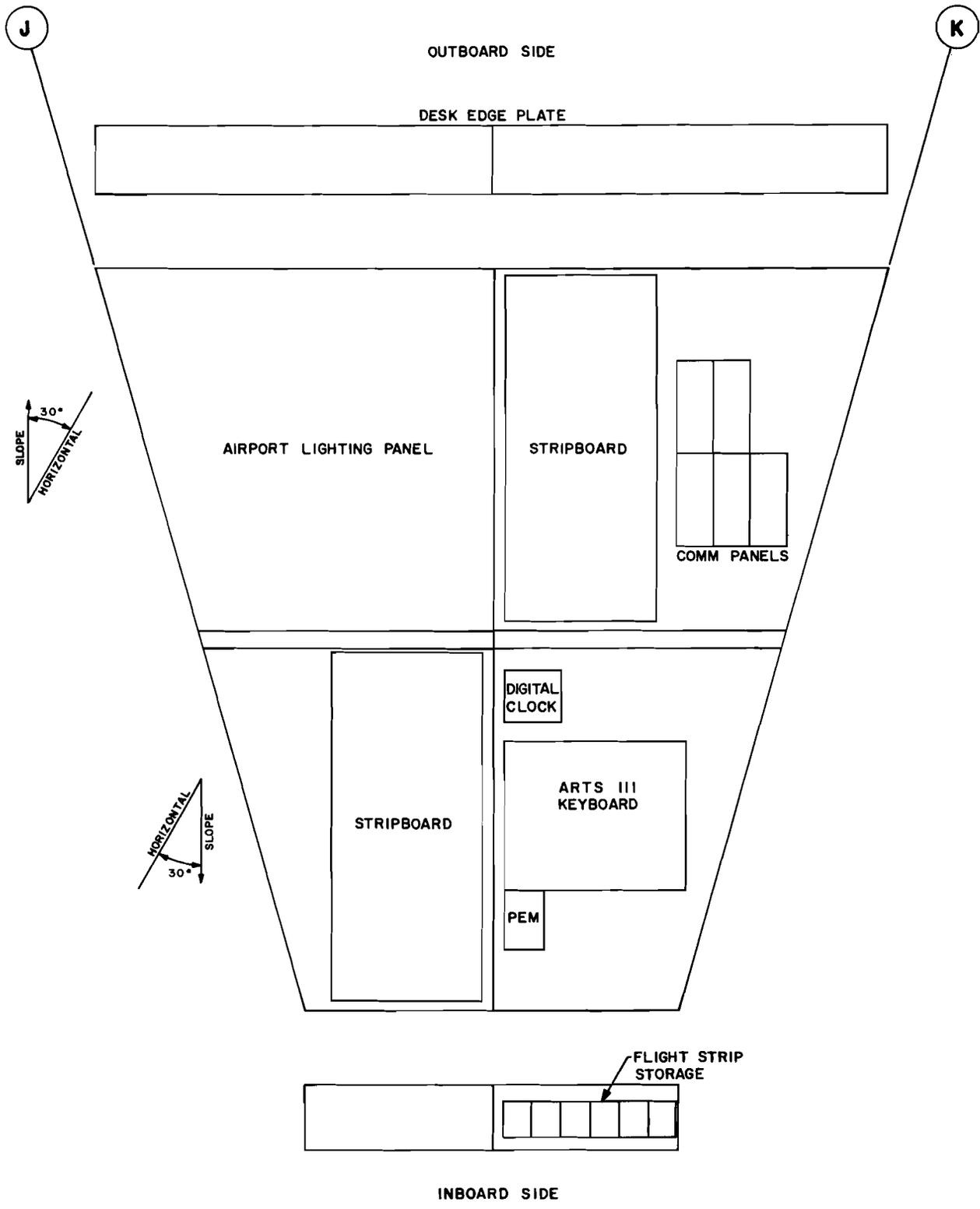




BOS - 5/75

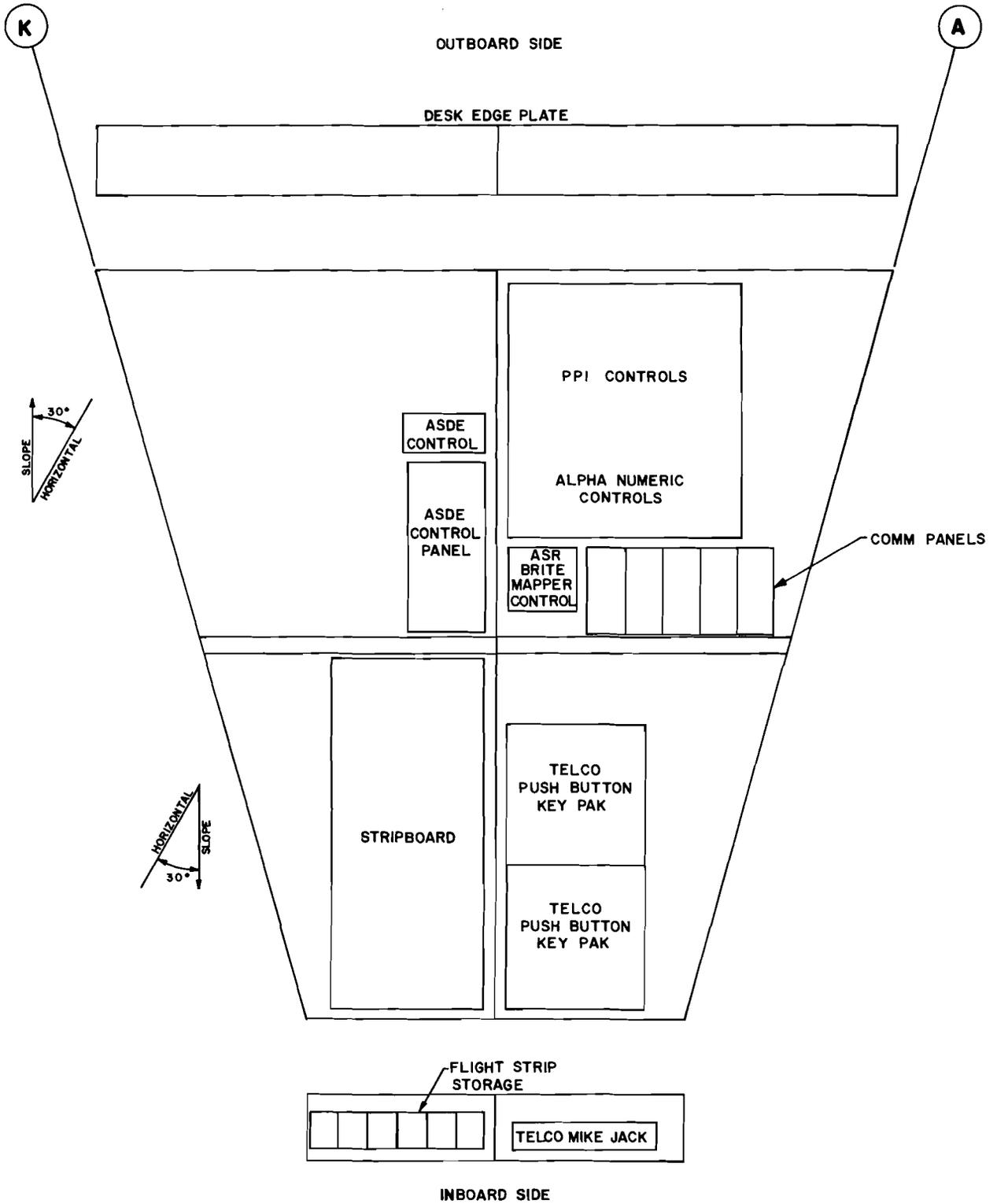
BOS TOWER - 30

(ISLAND)



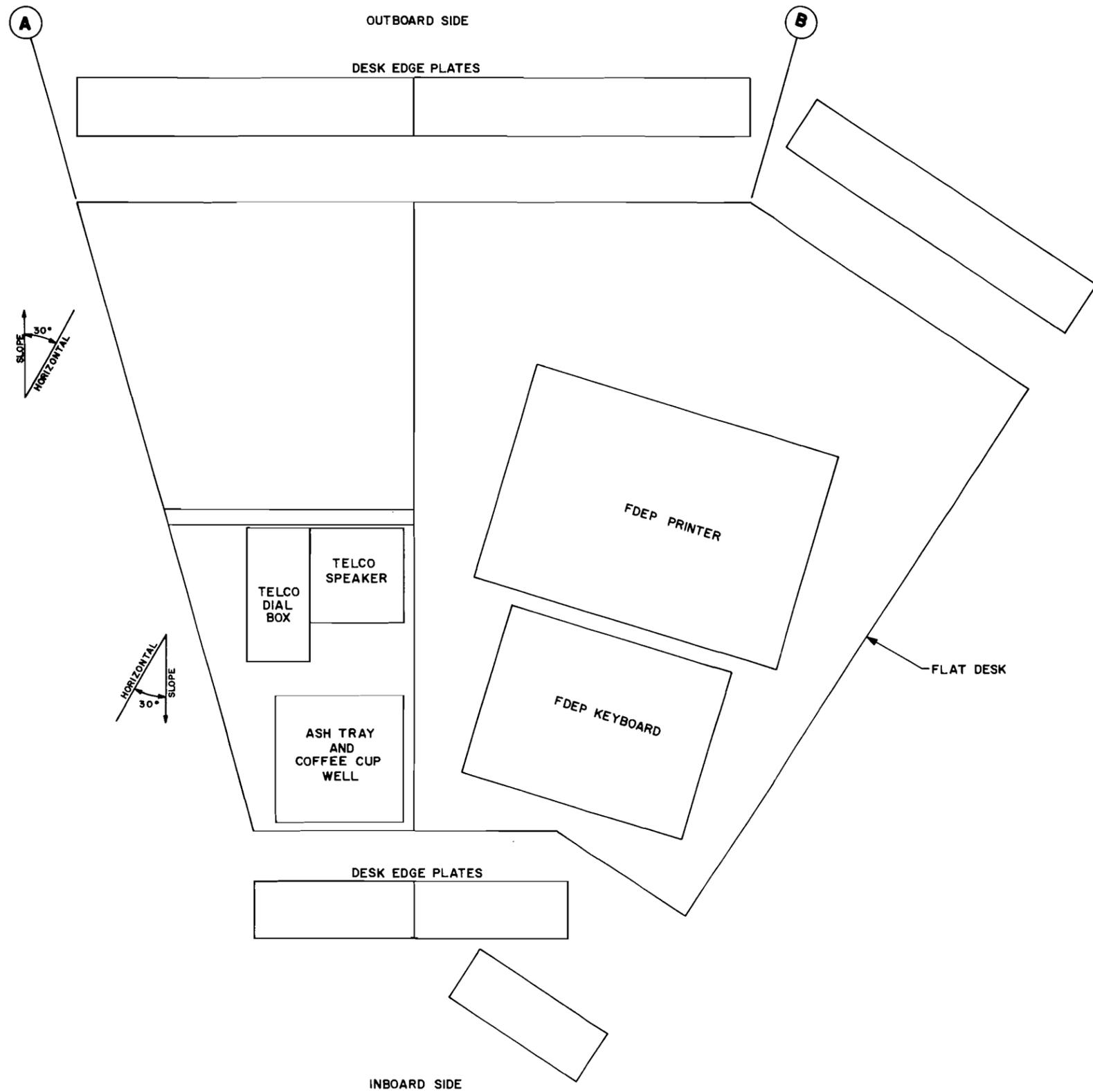
BOS - 5/75

BOS TOWER - 31 (ISLAND)



BOS - 5/75

BOS TOWER - 32 (ISLAND)



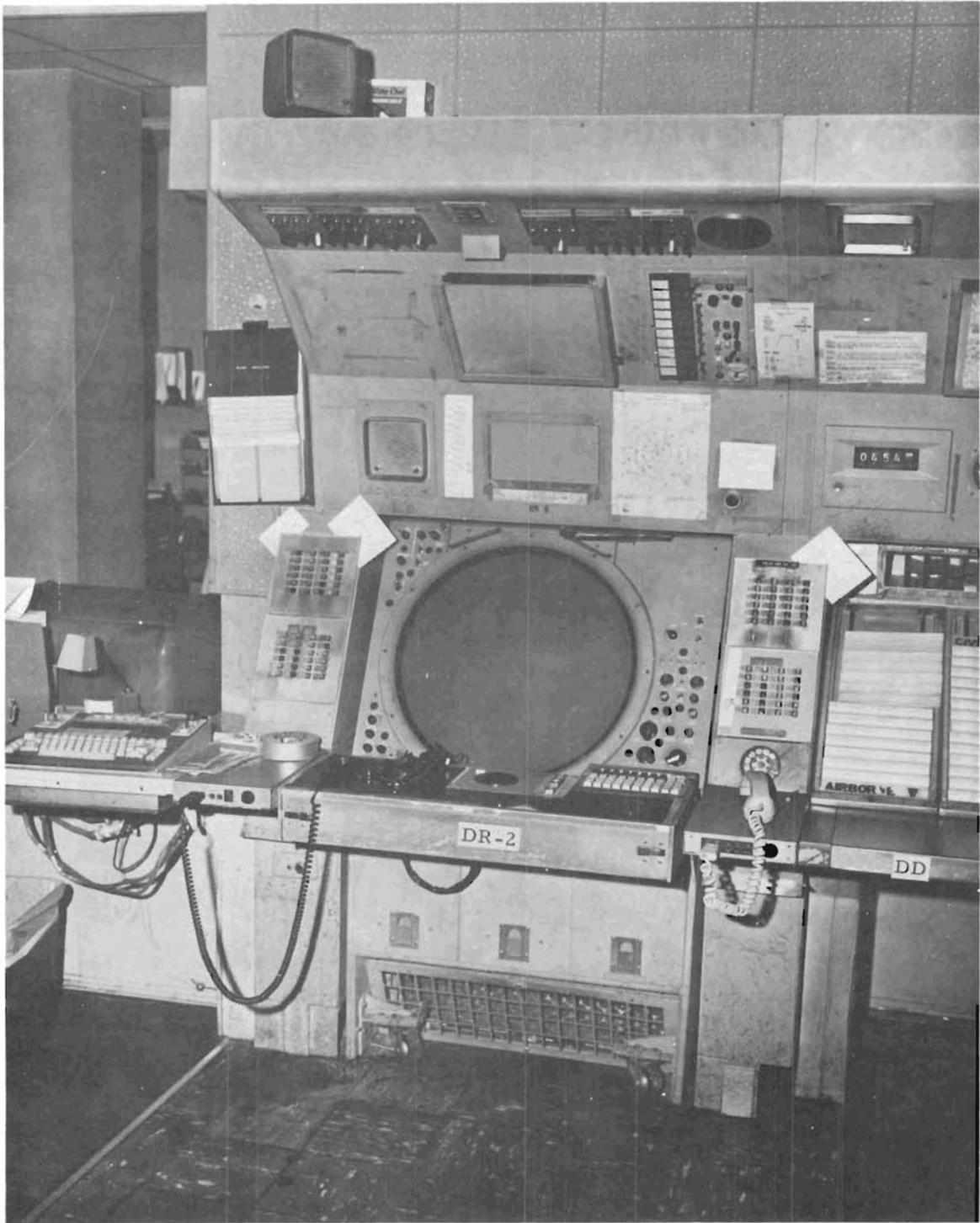
BOS - 5/75

BOS TOWER - 33 (ISLAND)



BOS - 5/75

BOS TRACON - 1



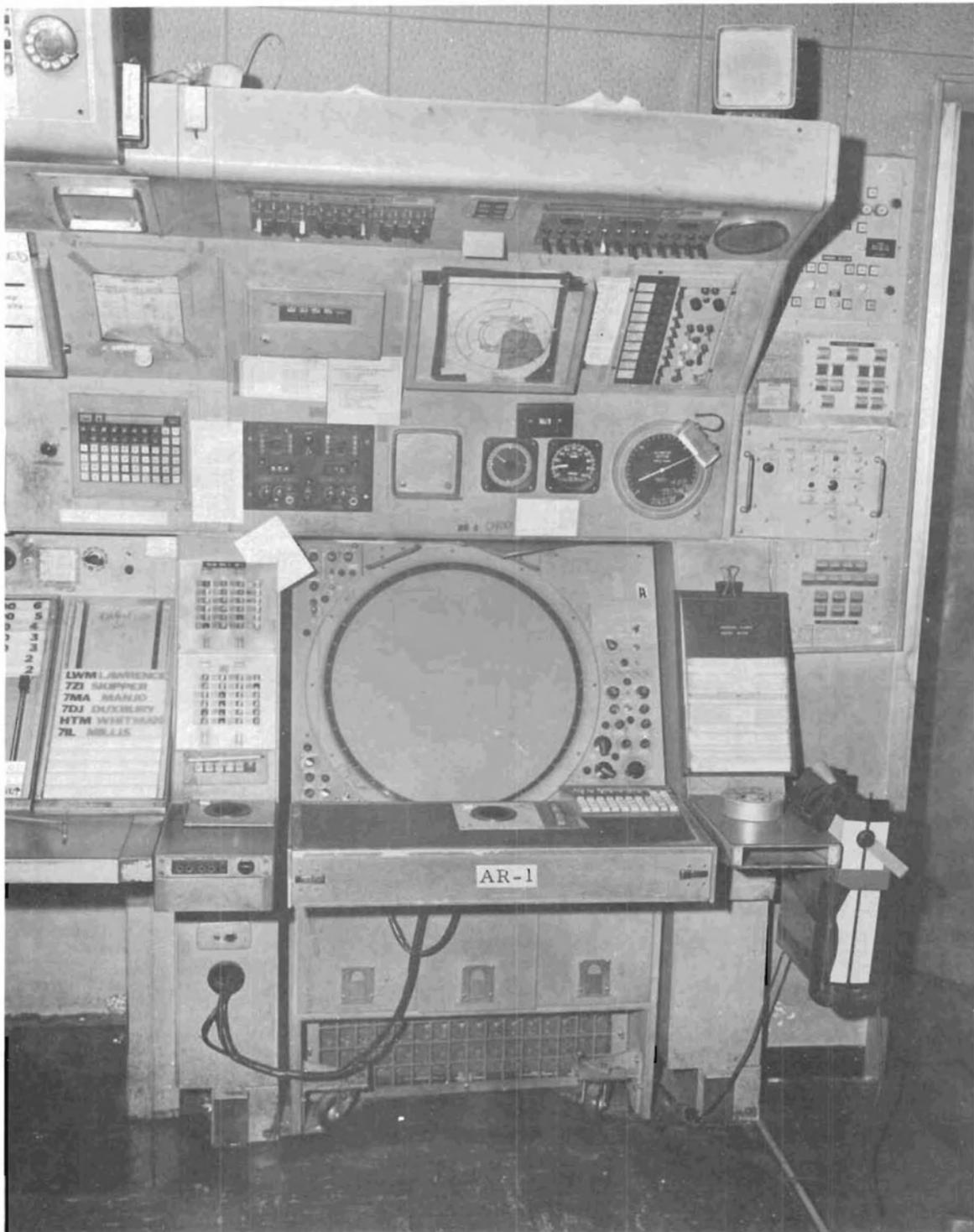
BOS - 5/75

BOS TRACON - 2



BOS - 5/75

BOS TRACON - 3



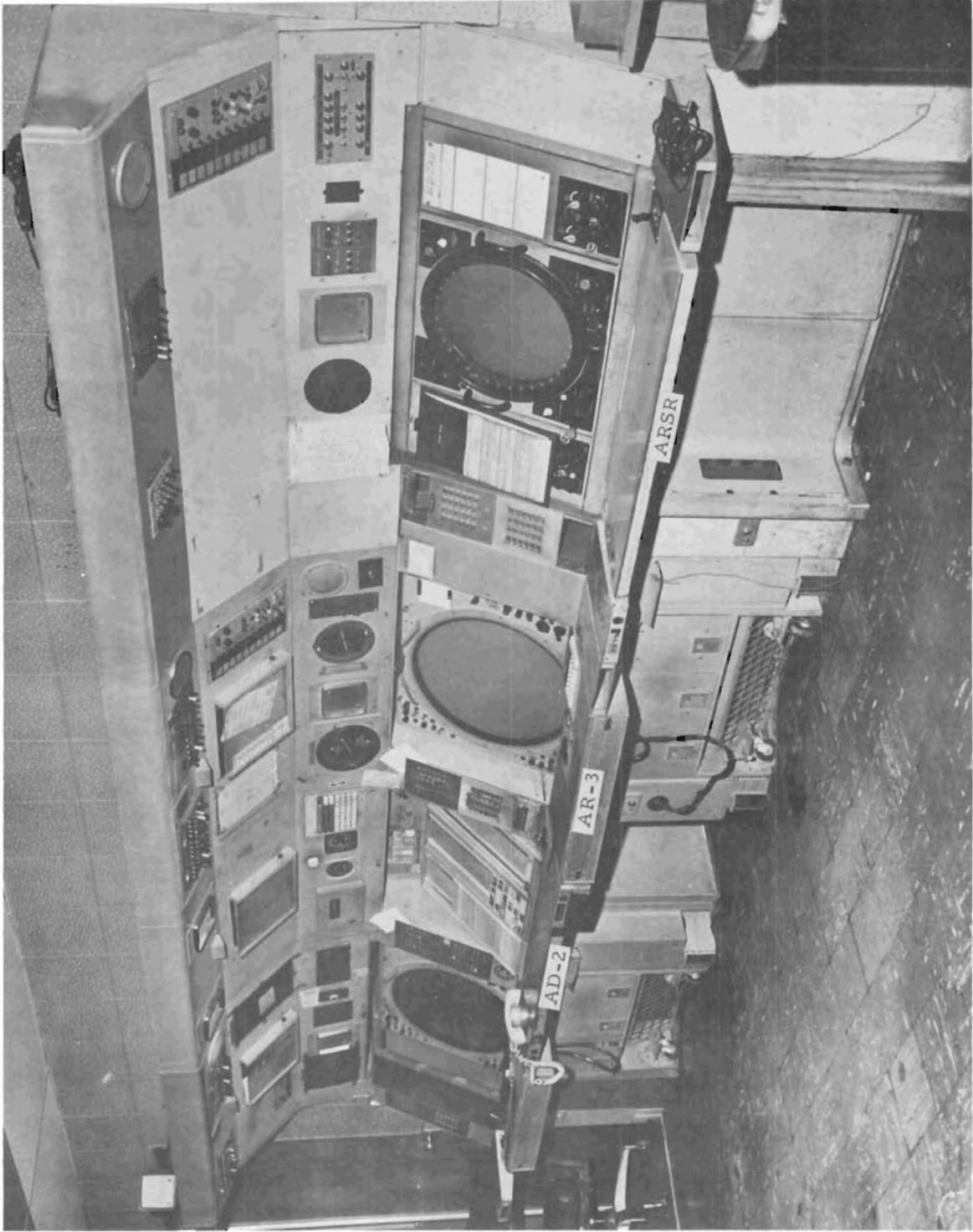
BOS - 5/75

BOS TRACON - 4



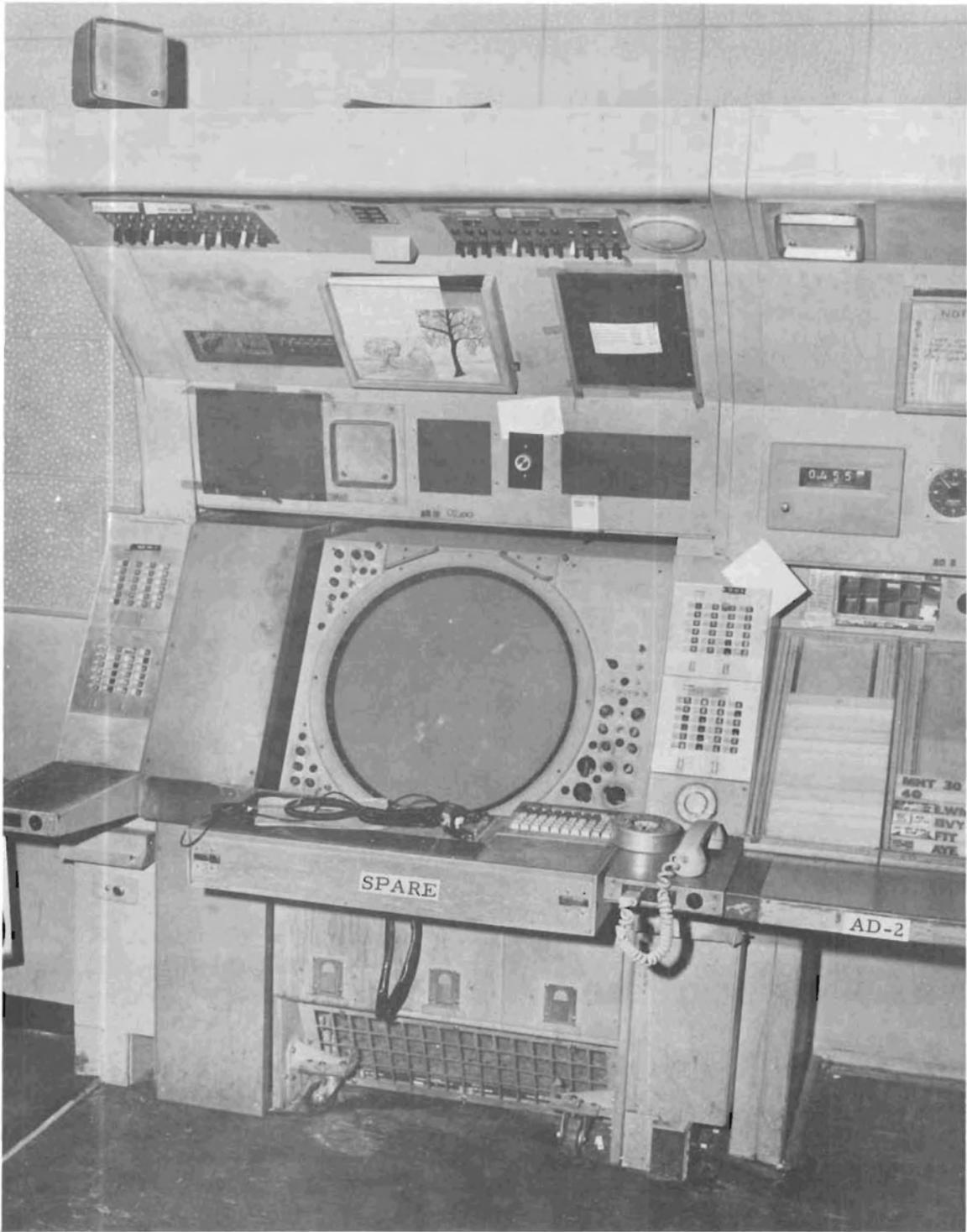
BOS - 5/75

BOS TRACON - 5



BOS - 5/75

BOS TRACON - 6



BOS - 5/75

BOS TRACON - 7



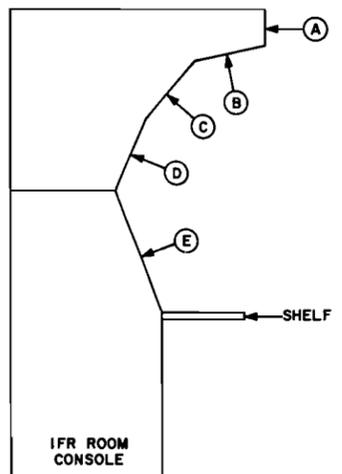
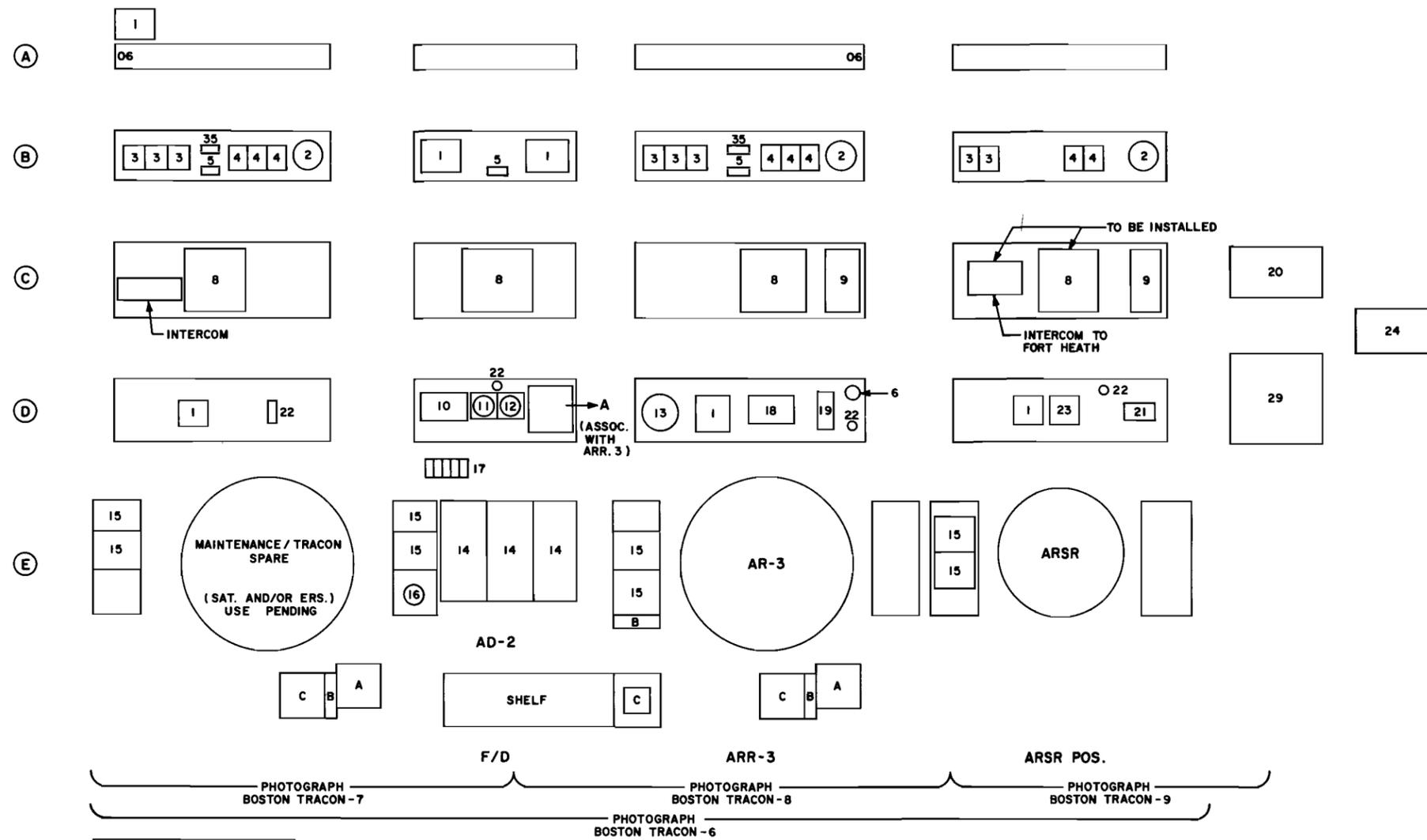
BOS - 5/75

BOS TRACON - 8



BOS - 5/75

BOS TRACON - 9



- 1 - TELCO POSITION SPEAKER
 - 2 - FAA POSITION SPEAKER
 - 3 - RECEIVER SELECTOR PANEL
 - 4 - TRANSMITTER SELECTOR PANEL
 - 5 - HALO LIGHT
 - 6 - SPEAKER FOR DF
 - 7 -
 - 8 - SECTOR MAP
 - 9 - BEACON CONTROL
 - 10 - CLOCK
 - 11 - WIND DIRECTION INDICATOR
 - 12 - WIND VELOCITY
 - 13 -
 - 14 - F/D STRIP BOARD
 - 15 - TELCO KEY UNIT
 - 16 - DIAL UNIT
 - 17 - STRIP STORAGE
 - 18 - VHF DF INDICATOR
 - 19 - VHF DF CONTROL
 - 20 - TRACON STAND-BY TRANSMITTERS AND RECEIVERS
 - 21 - STAND-BY LINK CONTROL BOX
 - 22 - ON-OFF SWITCH FOR HALO LIGHT
 - 23 - MAPPER CONTROL
 - 24 - TELAUTOGRAPH
 - 25 -
 - 26 -
 - 27 -
 - 28 -
 - 29 - ILS MONITOR
 - 30 -
 - 31 -
 - 32 -
 - 33 -
 - 34 -
 - 35 - 5-CHANNEL VIDEO MAP SELECTOR, FA 8049-5
- A - ARTS KEYBOARD
 B - QUICKLOOK SWITCH
 C - TRACKBALL



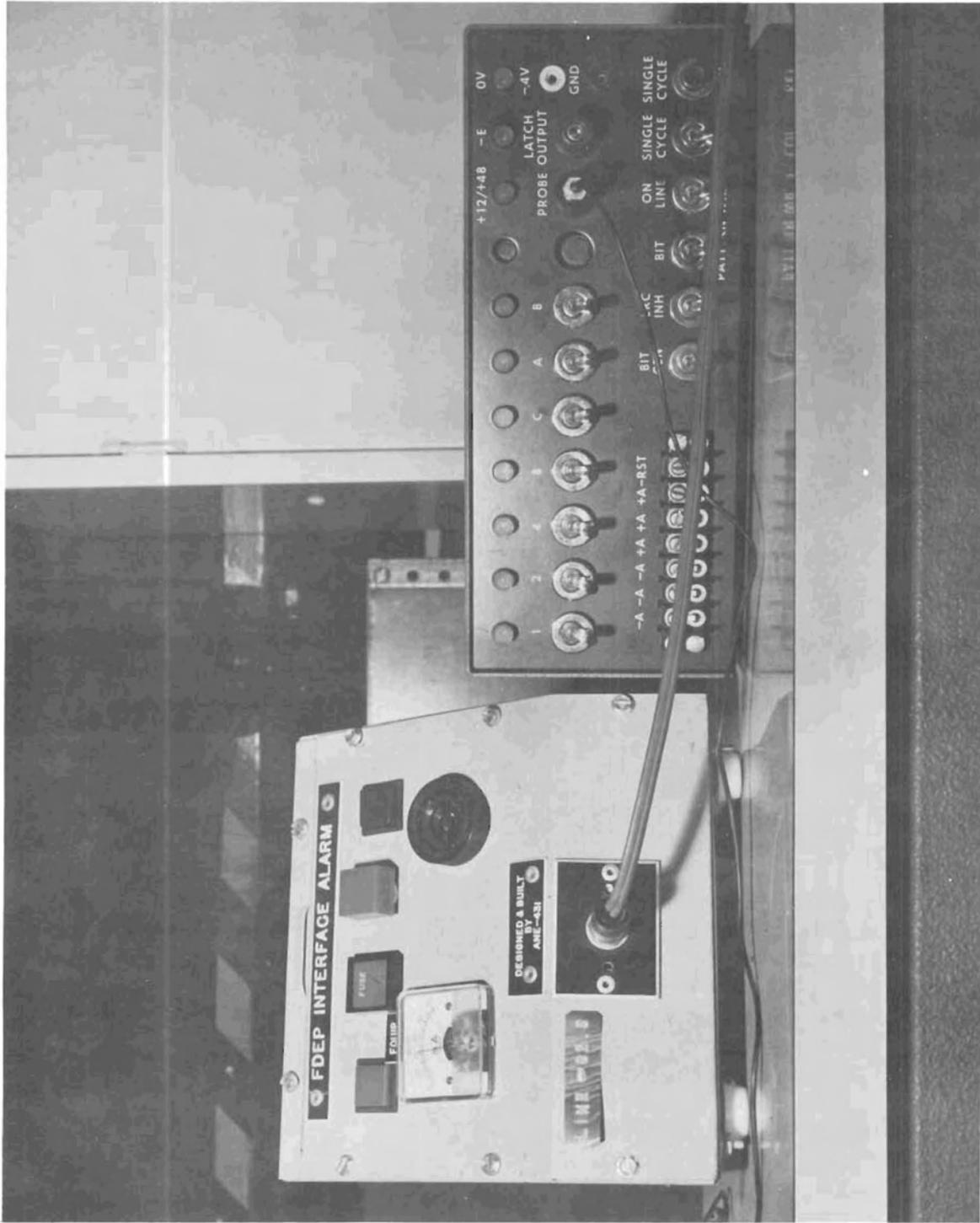
BOS - 5/75

EQUIPMENT ROOM - 1



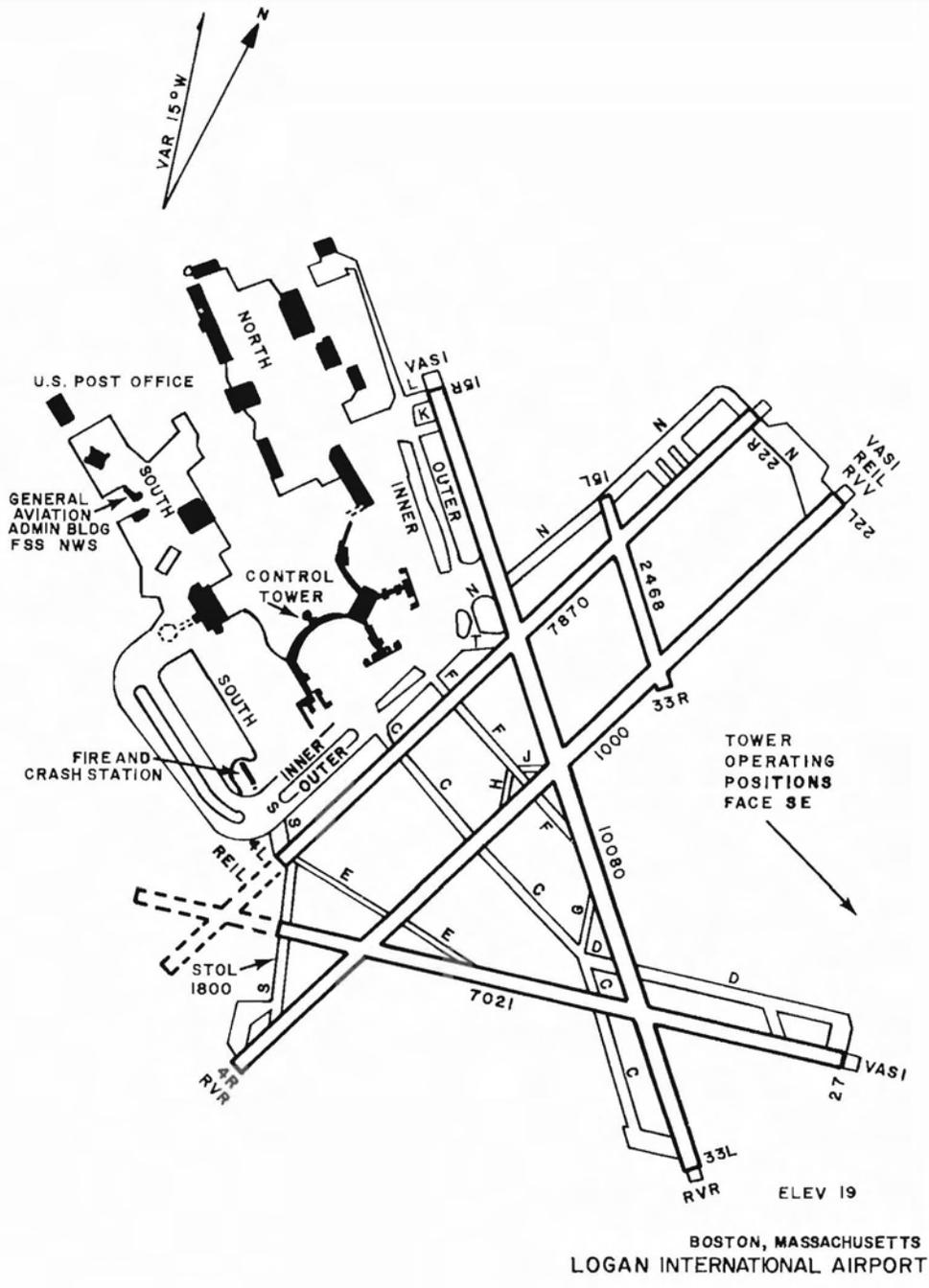
BOS - 5/75

EQUIPMENT ROOM - 2



BOS - 5/75

EQUIPMENT ROOM - 3



BOS - 5/75