

APPROVED BY  
MTMTS

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# HAWK

## MINIMUM REQUIREMENTS FOR THE HANDLING, STOWAGE, AND BRACING ABOARD SHIPS OF SHOPS AND SHELTERS\* (CRATED)

- \* ITEM 1 - CENTRAL, BATTERY CONTROL, AN/TSW-2 AND/OR AN/TSW-8
- ITEM 2 - SIMULATOR STATION, RADAR SIGNAL, AN/TPQ-21 AND/OR AN/TPQ-29
- ITEM 3 - SHOP EQUIPMENT, (SHOP 1) AN/TSM-88 AND/OR AN/TSM-106
- ITEM 4 - SHOP EQUIPMENT, (SHOP 2) AN/TSM-41 AND/OR AN/TSM-108
- ITEM 5 - SHOP EQUIPMENT, (SHOP 3) AN/TSM-42, AN/TSM-90 AND/OR AN/TSM-104
- ITEM 6 - SHOP EQUIPMENT, (SHOP 4) AN/TSM-43 AND/OR AN/TSM-91
- ITEM 7 - SHOP EQUIPMENT, (SHOP 5) XM2E2
- ITEM 8 - SHOP EQUIPMENT, (SHOP 6) AN/TSM-45 AND/OR AN/TSM-92
- ITEM 9 - SHOP EQUIPMENT, (SHOP 7) AN/TSM-40
- ITEM 10 - SHOP EQUIPMENT, (SHOP 8) AN/TSM-107
- ITEM 11 - SHOP EQUIPMENT, (SHOP 9) AN/TSM-121
- ITEM 12 - SHOP EQUIPMENT, (MOBILE TEAM) AN/TSM-89 AND/OR AN/TSM-105

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				CLASS	DIVISION	DRAWING	FILE
				19	48	7227	GSE 18HA8

DO NOT SCALE

**NOTES**

**GENERAL:**

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13.
- B. THIS DRAWING DEPICTS MINIMUM PROCEDURES APPLICABLE TO THE HANDLING, STOWAGE, AND BRACING ABOARD SHIPS OF SHOP EQUIPMENT (CRATED) FOR THE HAWK MISSILE SYSTEM. HANDLING, STOWAGE AND BRACING PROCEDURES FOR THE ACCESSORY ITEMS OF AN/TSM-106 AND AN/TSM-107 ARE NOT SHOWN. THESE WILL BE STOWED WITH GENERAL CARGO OF A SIMILAR NATURE.
- C. OTHER TYPES OF CARGO MAY BE STOWED IN THE SAME HOLD OR TWEEN DECK WITH THE SHOP EQUIPMENT SHOWN HEREIN.
- D. LADING DATA:

THE FOLLOWING DATA APPLIES TO BASE UNITS OF THE ITEMS AS IDENTIFIED. SEE "CHARTS Ⓢ AND ⊕" ON THIS PAGE FOR ADDITIONAL LADING DATA PERTAINING TO ACCESSORY ITEMS FOR SHOP EQUIPMENT AN/TSM-106 AND AN/TSM-107.

**CRATE DIMENSIONS (TYPICAL) :**

ITEMS 3 AND 11 ----- 15'-0" LONG X 8'-1" WIDE X 7'-8" HIGH.  
 ITEMS 1, 2, 4 THRU 10 AND 12 ---- 16'-5" LONG X 8'-1" WIDE X 7'-8" HIGH.

**CUBE:**

ITEMS 3 AND 11 ----- 930 CU. FT  
 ITEMS 1, 2, 4 THRU 10 AND 12 ---- 1,018 CU. FT

**GROSS WEIGHT:**

ITEM 1 - CENTRAL BATTERY CONTROL, AN/TSM-2 -----	7,675 LBS. (APPROX).
AN/TSM-8 -----	7,675 LBS. (APPROX).
ITEM 2 - SIMULATOR STATION RADAR SIGNAL, AN/TPQ-21 -----	7,825 LBS. (APPROX).
AN/TPQ-29 -----	7,825 LBS. (APPROX).
ITEM 3 - SHOP EQUIPMENT (SHOP 1), AN/TSM-88 -----	5,330 LBS. (APPROX).
Ⓢ AN/TSM-106 -----	7,560 LBS. (APPROX).
ITEM 4 - SHOP EQUIPMENT (SHOP 2), AN/TSM-41 -----	8,934 LBS. (APPROX).
AN/TSM-108 -----	7,805 LBS. (APPROX).
ITEM 5 - SHOP EQUIPMENT (SHOP 3), AN/TSM-42 -----	9,045 LBS. (APPROX).
AN/TSM-90 -----	7,555 LBS. (APPROX).
AN/TSM-104 -----	8,042 LBS. (APPROX).
ITEM 6 - SHOP EQUIPMENT (SHOP 4), AN/TSM-43 -----	7,892 LBS. (APPROX).
AN/TSM-91 -----	7,626 LBS. (APPROX).
ITEM 7 - SHOP EQUIPMENT (SHOP 5), XM2E2 -----	8,375 LBS. (APPROX).
ITEM 8 - SHOP EQUIPMENT (SHOP 6), AN/TSM-45 -----	8,375 LBS. (APPROX).
AN/TSM-92 -----	7,755 LBS. (APPROX).
ITEM 9 - SHOP EQUIPMENT (SHOP 7), AN/TSM-40 -----	8,175 LBS. (APPROX).
ITEM 10 - SHOP EQUIPMENT (SHOP 8), Ⓢ AN/TSM-107 -----	7,763 LBS. (APPROX).
ITEM 11 - SHOP EQUIPMENT (SHOP 9), AN/TSM-121 -----	6,555 LBS. (APPROX).
ITEM 12 - SHOP EQUIPMENT (MOBILE TEAM), AN/TSM-89 -----	8,220 LBS. (APPROX).
AN/TSM-105 -----	8,220 LBS. (APPROX).

**HANDLING:**

- A. PERTINENT PROVISIONS OF TITLE 46 CODE OF FEDERAL REGULATIONS APPLY.
- B. HANDLING OF THE SHOP EQUIPMENT (CRATED) SHOULD BE ACCOMPLISHED BY USING SLING EXTENSIONS SECURELY POSITIONED IN THE NOTCHES OF THE CRATE SKIDS AS SHOWN.
- C. EACH CRATED ITEM SHALL BE HANDLED INDIVIDUALLY. STACKING OF CRATED ITEMS IS NOT PERMITTED.
- D. THE HANDLING SLING SHALL BE OF A DESIGN AND CONFIGURATION TO LIFT THE ITEM IN SUCH A MANNER THAT THE CABLE LEGS DO NOT APPLY EXCESSIVE PRESSURE WHICH MAY DAMAGE THE CRATE.
- E. ALTHOUGH DESIRABLE, A LEVEL LIFT IS NOT MANDATORY. THE CENTER OF GRAVITY OF THIS ITEM IS SHOWN TO ASSIST IN DETERMINING CABLE LENGTHS TO ASSURE A SAFE LIFT.

**STOWAGE AND BRACING:**

- A. STOWAGE OF THIS ITEM IS RESTRICTED TO ONE (1) LAYER HIGH. HOWEVER, OTHER CARGO ITEMS MAY BE OVER-STOWED BY CONSTRUCTING A DUNNAGE FLOOR ON TOP OF THE DEPICTED CRATES. **CAUTION:** THE WEIGHT OF OVER-STOWED CARGO MUST NOT CRUSH OR OTHERWISE DAMAGE THE CRATES OF THE SHOP EQUIPMENT.

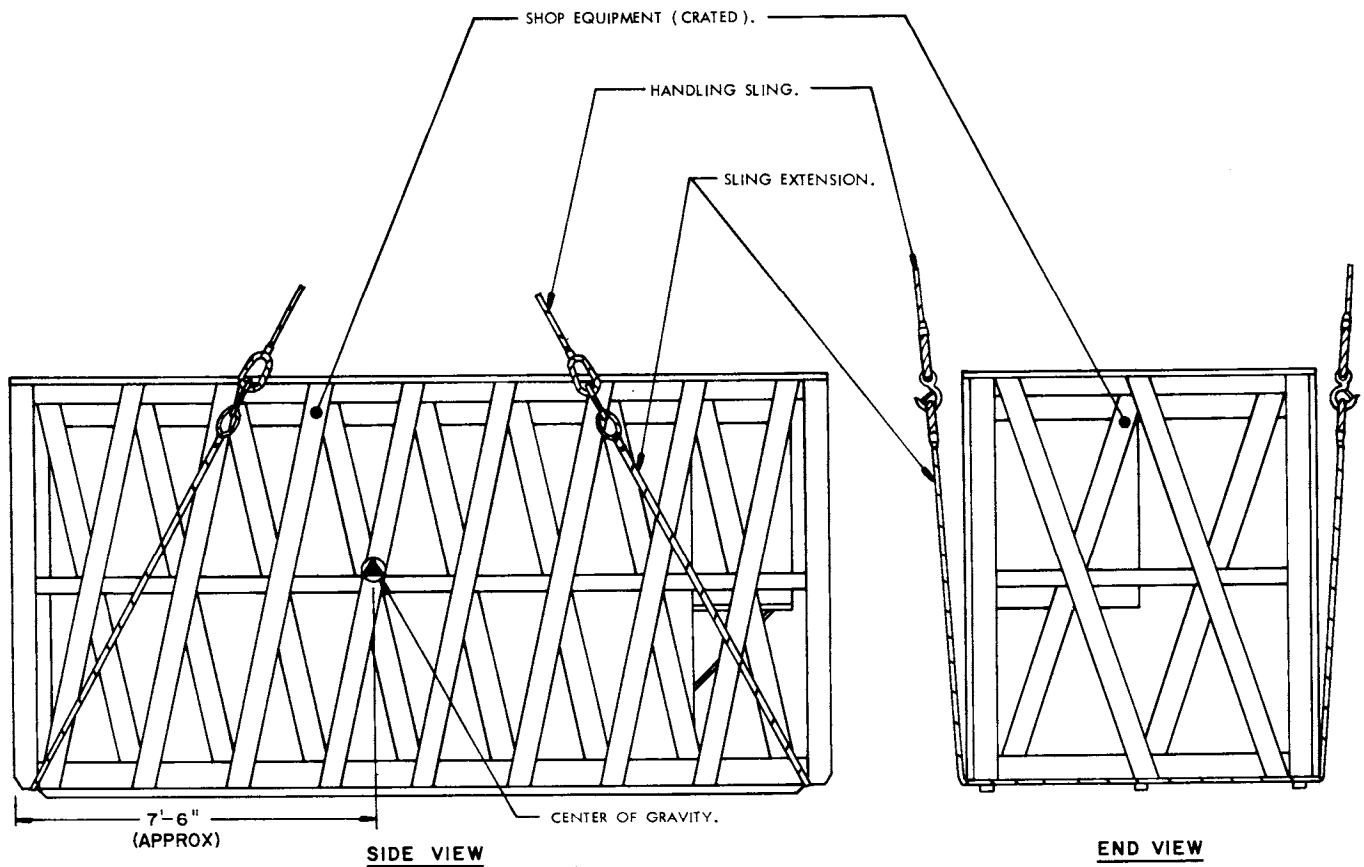
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( STOWAGE AND BRACING NOTES CONTINUED )

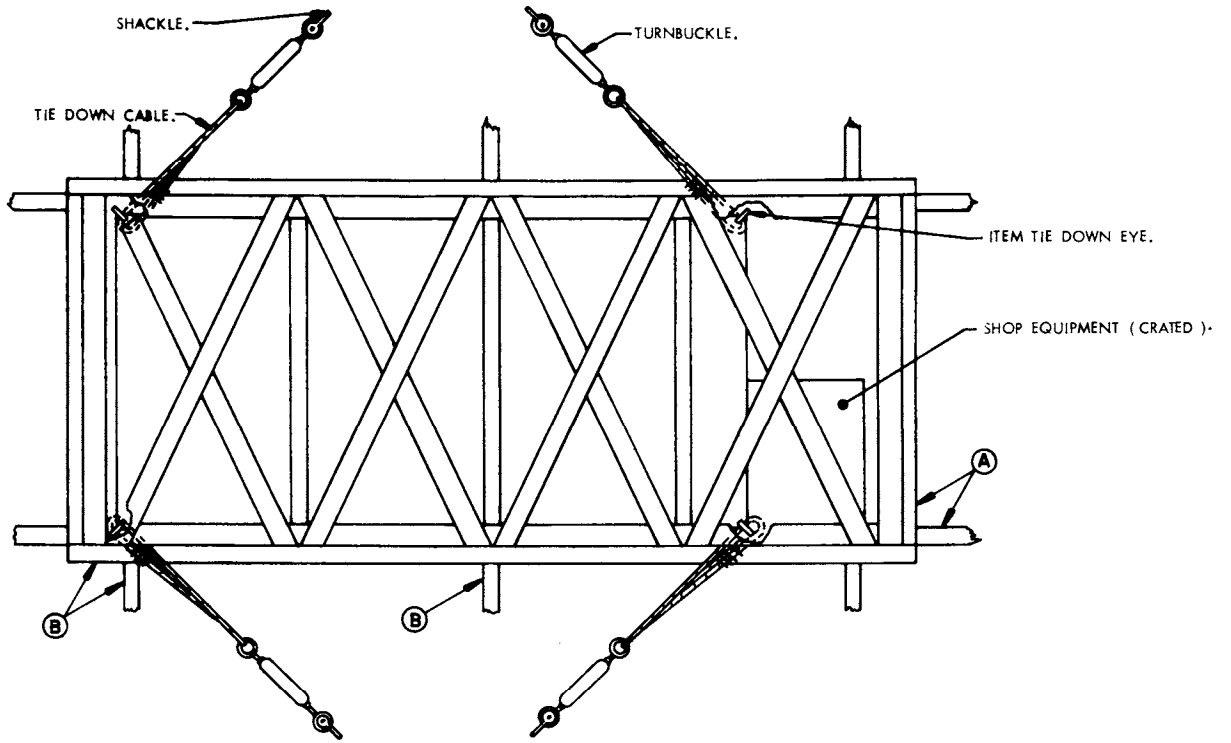
- B. SPECIES, GRADE AND SIZE OF LUMBER TO BE USED WILL COMPLY WITH REQUIREMENTS OF CURRENT SHIPWRIGHT-CARPENTRY AND RELATED SERVICES CONTRACTS. BRACING METHODS AND LUMBER SIZES DEPICTED IN THIS DRAWING ARE CONSIDERED MINIMUM AND ARE NOT INTENDED TO CONFLICT WITH CONTRACT REQUIREMENTS.
- C. A TYPICAL TIE DOWN PROCEDURE FOR THE CRATED ITEM IS SHOWN ON PAGE 4 AND DEPICTS THE PREFERRED METHOD OF USING CABLES AND TURNBUCKLES. IF USED, A TURNBUCKLE MUST BE OF A SIZE EQUAL IN STRENGTH TO THE MINIMUM SIZE CABLE REQUIRED TO SECURE THE ITEM. IN LIEU OF CABLES AND TURNBUCKLES, SECUREMENT MAY BE ACCOMPLISHED BY OTHER ACCEPTED METHODS.

LADING DATA CHART Ⓢ			
( ACCESSORY ITEMS FOR THE AN/TSM 106 )			
ITEM	DIMENSIONS	WEIGHT ( APPROX )	CUBE
BOX NUMBER 1	45-3/4" L X 30-1/4" W X 36-1/2" H	315 LBS	28.65 CU. FT.
BOX NUMBER 2	35-3/4" L X 22-3/8" W X 31-3/8" H	200 LBS	14.52 CU. FT.

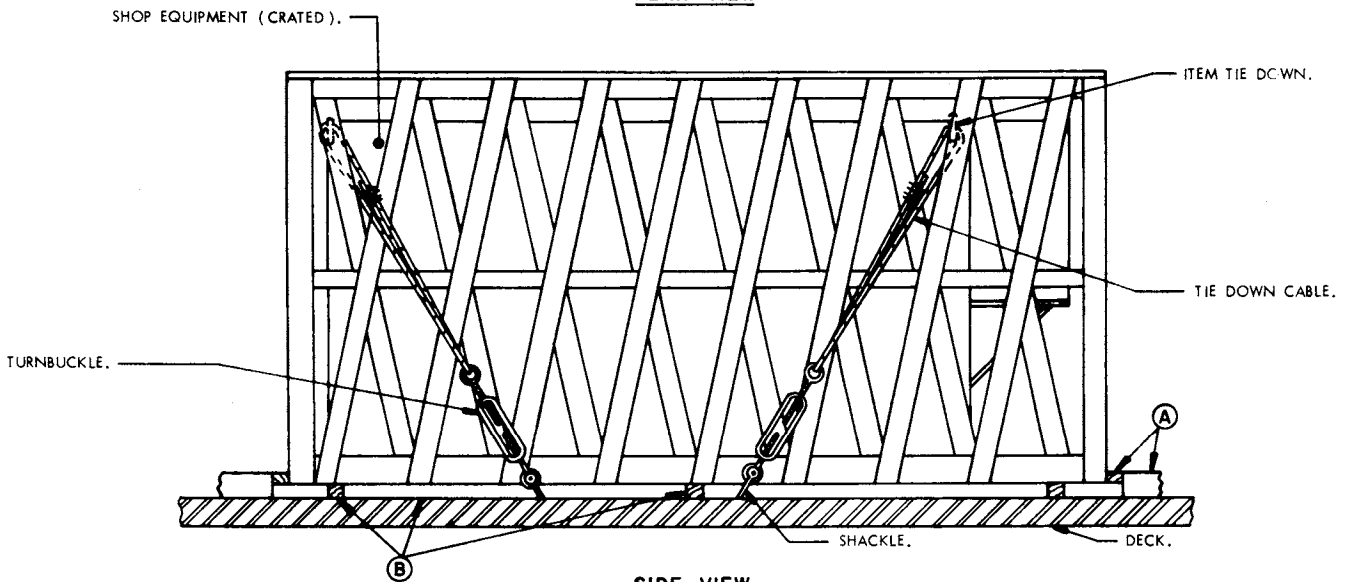
LADING DATA CHART ⊕			
( ACCESSORY ITEMS FOR THE AN/TSM-107 )			
ITEM	DIMENSIONS	WEIGHT ( APPROX )	CUBE
BORESIGHT FIXTURE AND CASE	8'-9-5/8" L X 24-1/2" W X 28" H	542 LBS	41.93 CU. FT.
DUMMY LOAD CASE	50" L X 35" W X 18-7/8" H	223 LBS	19.12 CU. FT.
ANTENNA MAST GROUP CASE	66-1/4" L X 34-1/2" W X 17-1/4" H	189 LBS	22.82 CU. FT.
CABLE ASSEMBLY AND REEL ( 10110319 )	29-3/4" L X 29-3/4" W X 20-1/4" H	167 LBS	10.36 CU. FT.
CONSOLIDATED ITEMS	42-1/4" L X 33" W X 23" H	157 LBS	18.77 CU. FT.
FILTER UNIT	51-1/4" L X 36-1/8" W X 44-1/8" H	520 LBS	47.26 CU. FT.
CABLE ASSEMBLY AND REEL ( 9186364 )	28-1/4" L X 28-1/4" W X 9-13/16" H	122 LBS	4.52 CU. FT.
GRID BOARD AND CASE	8'-0-3/4" L X 37-3/4" W X 11-7/8" H	50 LBS	22.35 CU. FT.
COMPRESSOR	34-3/4" L X 24" W X 27-11/16" H	205 LBS	13.36 CU. FT.



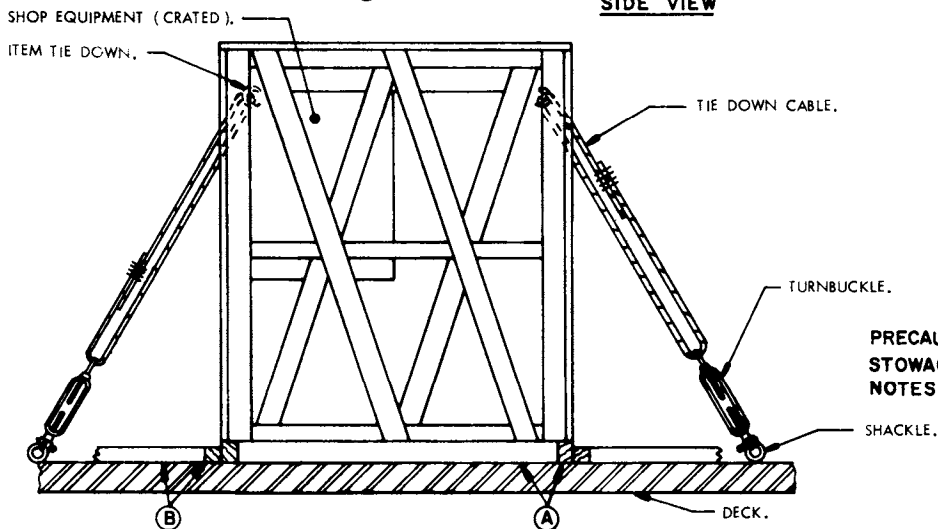
PRECAUTIONARY PROVISIONS FOR HANDLING, STOWAGE AND BRACING AS SPECIFIED IN THE NOTES ON PAGE 2 MUST BE OBSERVED.



**PLAN VIEW**



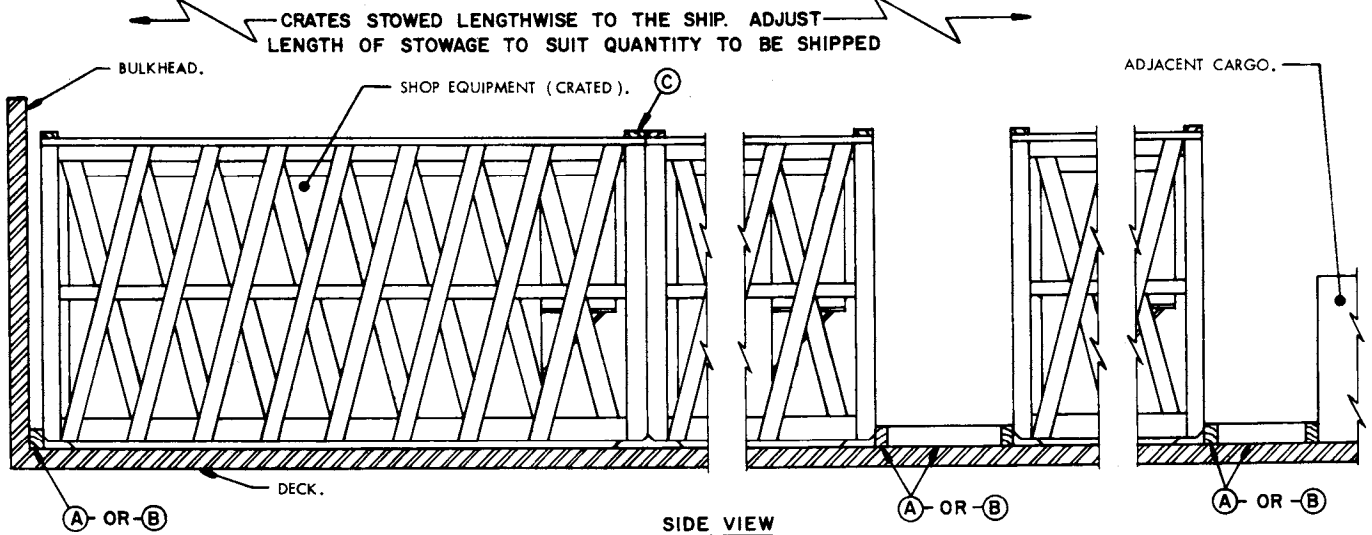
**SIDE VIEW**



**END VIEW**

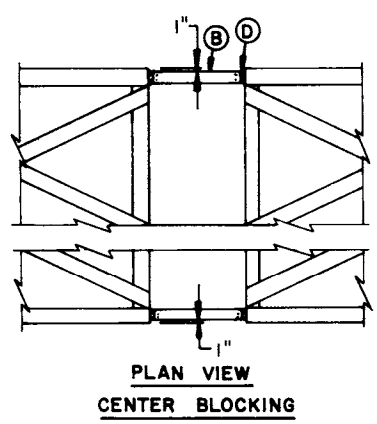
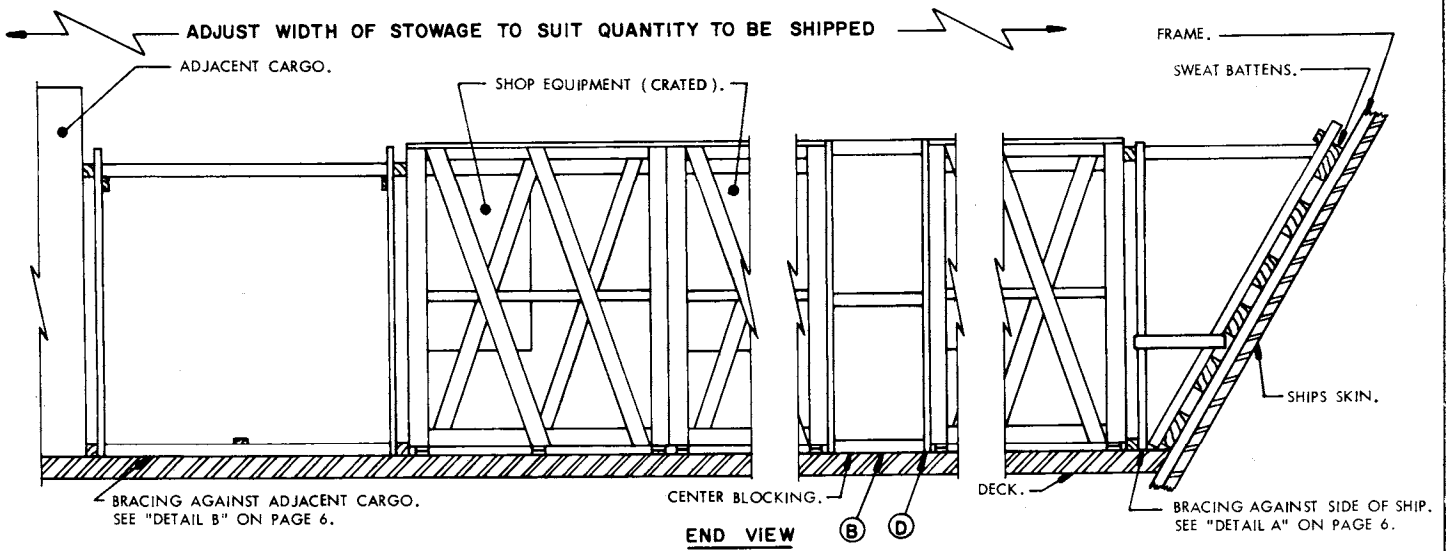
MINIMUM LUMBER SIZES	
(A)	4" X 6"
(B)	4" X 4"

PRECAUTIONARY PROVISIONS FOR HANDLING, STOWAGE AND BRACING AS SPECIFIED IN THE NOTES ON PAGE 2 MUST BE OBSERVED.



THIS VIEW SHOWS BRACING AGAINST END OF CRATE AND USING FLOOR LINE BRACING MATERIAL **A** (4" X 6", 6" VERTICAL). WHEN BRACING AGAINST CRATE SIDES, USE FLOOR LINE BRACING MATERIAL **B** IN LIEU OF **A** MATERIAL.

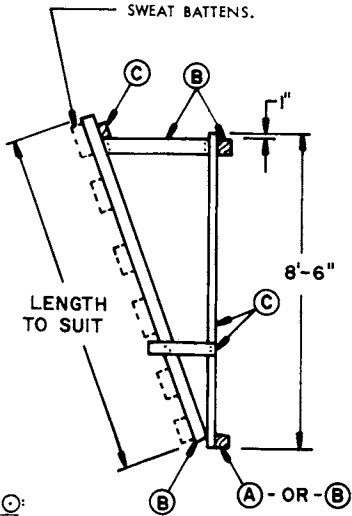
**BRACING METHOD II, W/O CABLE**



MINIMUM LUMBER SIZES	
<b>(A)</b>	4" X 6"
<b>(B)</b>	4" X 4"
<b>(C)</b>	2" X 6"
<b>(D)</b>	2" X 4"

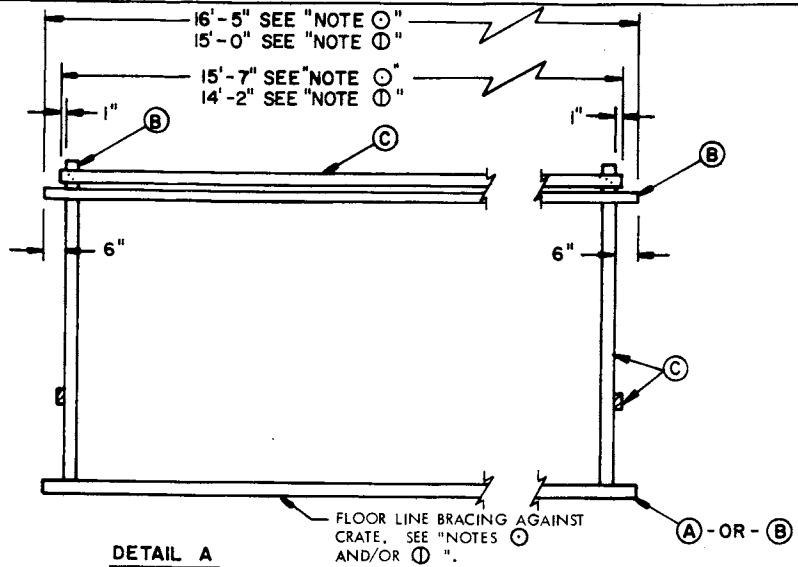
PRECAUTIONARY PROVISIONS FOR HANDLING, STOWAGE AND BRACING AS SPECIFIED IN THE NOTES ON PAGE 2 MUST BE OBSERVED.

**BRACING METHOD III, W/O CABLE**



NOTE C:

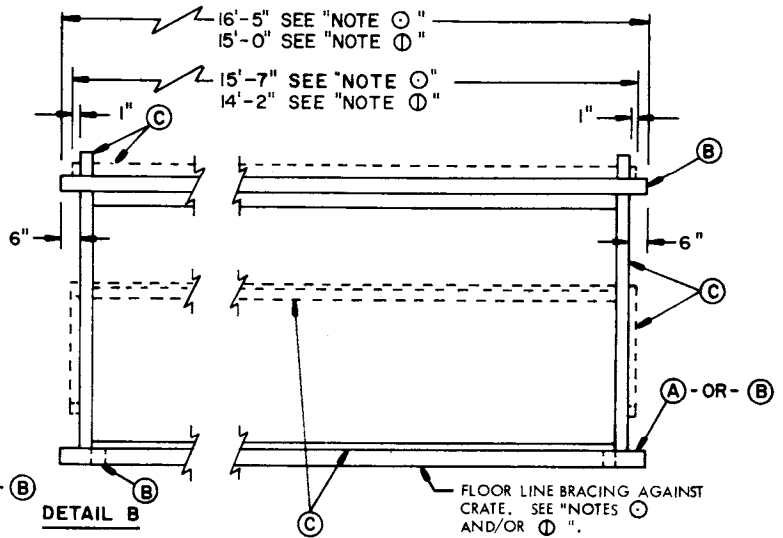
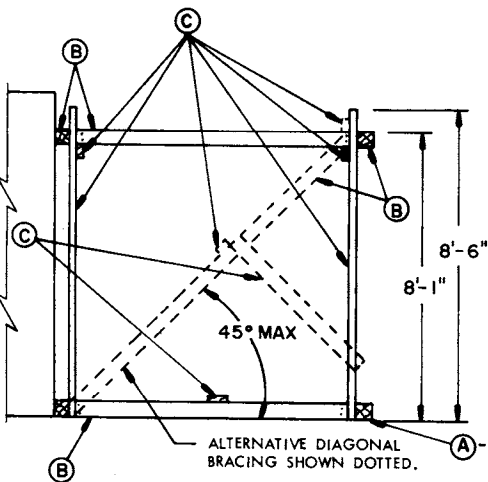
WHEN STOWING ITEMS 1, 2, 4 THRU 10 AND 12, THE DIMENSIONS SHOWN ARE FOR BRACING AGAINST SIDE OF CRATE AND USING FLOOR LINE BRACING MATERIAL (B). WHEN BRACING AGAINST CRATE ENDS, CHANGE DIMENSIONS OF THE BRACING ASSEMBLY, USE 8'-1" IN LIEU OF 16'-5" AND 7'-3" IN LIEU OF 15'-7". ALSO, USE FLOOR LINE BRACING MATERIAL (A) (4" X 6", 6" VERTICAL) AGAINST CRATE IN LIEU OF (B) MATERIAL.



SUGGESTED BRACING AT SIDE OF SHIP.

NOTE D:

WHEN STOWING ITEMS 3 AND 11, THE DIMENSIONS SHOWN ARE FOR BRACING AGAINST SIDE OF CRATE AND USING FLOOR LINE BRACING MATERIAL (B). WHEN BRACING AGAINST CRATE ENDS, CHANGE DIMENSIONS OF BRACING ASSEMBLY, USE 8'-1" IN LIEU OF 15'-0" AND 7'-3" IN LIEU OF 14'-2". ALSO, USE FLOOR LINE BRACING MATERIAL (A) (4" X 6", 6" VERTICAL) AGAINST CRATE IN LIEU OF (B) MATERIAL.



SUGGESTED BRACING AGAINST ADJACENT CARGO.

MINIMUM LUMBER SIZES	
(A)	4" X 6"
(B)	4" X 4"
(C)	2" X 4"

PRECAUTIONARY PROVISIONS FOR HANDLING, STOWAGE AND BRACING AS SPECIFIED IN THE NOTES ON PAGE 2 MUST BE OBSERVED.