MILITARY STANDARD

TRUCKLOADING

BOMB, MK 82 AND MODS (500 lbs)

IN MHU - 149/E

AIR FORCE UNIT LOAD

TPO 01-006-5657

TO ALL HOLDERS OF MIL-STD-1320-170 (NAVY)

PAGE 1

- 1. On Unit Load Data, change:
 - a. Weight from "3035 lbs" to "3029 lbs".
 - b. Dimension from "35W" to "35 1/2W".
 - c. Cube from "41.9 cu ft" to 42.5 cu ft".

PAGE 2

- 1. FTL Single Row (44 & 45 ft vans)
 - a. In note 3 change "20" to "16" and "26" to "22".
 - b. In note 5 change "Detail D, Page 4," to "Detail K, Page 6".
- 2. Change dimension in Detail A from "20" to "16".

PAGE 3

- l. In Truckload Data, change Truckload Weight from "42,490 lbs" to "42,406 lbs".
- 3. On main isometric view:
 - a. Draw leader (arrow) from "See detail B" to rear blocking assembly to rear of truckload.

- b) Draw (Leader (arrow) from insible 5 (10 Sieepers 20) (1991) Side of unit 1980s
 - c. Draw leader (arrow) from see detail A to front builthead at front of truckload

The second second second

PAGE 5

1. In Truckload Data, change truckload weight from "42,490 lbs" to "42,496 lbs".

PAGE 6

1. In Detail K, change dimension "35" to "35 1/2".

PAGE 7

]. In Truckload Data, change Truckload Meight from "45,525 lbs" to "45,435".

PAGE 9

1. In Truckload Data, change Truckload Weight from "42,490 lbs" to "42,406 lbs".

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Review Activities
NAVY - OS, AS

Preparing Activity: NAVY — OS (Project No. 8140 — A169) FSC 8140 NOTICE OF INACTIVATION FOR NEW DESIGN

INCH-POUND

MIL-STD-1320-170(OS) NOTICE 3 25 February 1993 SUPERSEDING NOTICE 2 13 March 1991

MILITARY STANDARD

TRUCKLOADING BOMB, MK 82 AND MODS (500 LBS) IN MHU-149E AIR FORCE UNIT LOAD TPO-01-006-5657

This notice should be filed in front of MIL-STD-1320-170(OS) dated 5 November 1976.

MIL-STD-1320-170(OS) is inactive for new design and is no longer used by the Navy except for replacement purposes.

Preparing activity: Navy - OS

(Project 8140-N863)

AMSC N/A FSC 8140 DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

MILITARY STANDARD

MIL-STD-1320-170 (NAVY)

12 JANUARY 1976

TRUCKLOADING
BOMB, MK 82 AND MODS (500 LBS)
IN MHU-149/E
AIR FORCE UNIT LOAD
TPO 01-006-5657

UNIT LOAD DATA

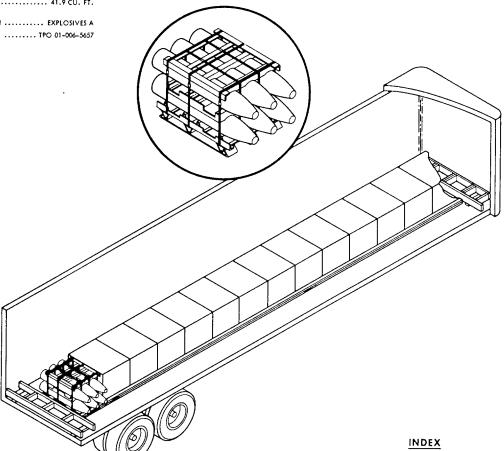
 WEIGHT (APPROX)
 3035 LBS

 DIMENSIONS
 61 3/4L X 35W X 33 1/2H

 CUBE
 41.9 CU, FT.

 DOT HAZARD
 EXPLOSIVES A

 AIR FORCE DWG, NO.
 TPO 01-006-5657



NOTES:

1. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

 FOR CROSS REFERENCE TO ASSOCIATED PALLETIZING, CONTAINERLOADING AND CARLOADING MILITARY STANDARDS. REFER TO INDEX TO STANDARDS, MIL-HDBK-236. (NAVY).

ITEM	
GENERAL NC TES	2
FTL-SINGLE ROW 40 & 45 FT VAN	2 & 3
FTL-DCUBLE ROW 40, 42, 44 & 45 FT VAN	

14 UNIT LOADS 4 & 5 15 UNIT LOADS 6 & 7 FTL 40 & 42 FT FLATBED 8 & 9

AUTHORIZED FOR HIGHWAY MOVEMENT ONLY.

SIGNATURE TECHNICAL DIRECTION AGENT (TDA) DATE

SIGNATURE AIR SYSCOM, BY DIRECTION DATE

ORIGINATOR

Charles Melorade 12/17/75

5.51.11.51.2

NAVAL WEAPONS HANDLING LABORATORY

WPNSTA EARLE, NEW JERSEY

PAGE 1 CF 9

GENERAL NOTES

- 1. THIS DOCUMENT GIVES DETAILED INSTRUCTIONS FOR TRUCKLOADING AIR FORCE UNIT LOADS OF 500 LB. MK 82 BOMBS WHEN THE BOMBS ARE PALLETIZED IN ACCORDANCE WITH TPO 01-006-5657.
- THE PROCEDURES AND PRACTICES DESCRIBED HEREIN ARE INTENDED FOR 40, 42, 44 & 45 FT VANS AND 40 & 42 FT FLATBED TRAILERS. THE TRAILER MAY HAVE WOOD FLOORS, METAL FLOORS OR METAL FLOORS WITH WOOD NAILING STRIPS AS SPECIFIED BY THE SPECIFIC PLAN. CHECK THE SPECIFIC LOAD PLAN FOR THE TYPE OF FLOOR PERMITTED. ALL TRAILERS SHALL HAVE THE TANDEM AXLES LOCATED IN THE "WESTERN" POSITION (AT THE EXTREME REAR OF THE TRAILER).
- 3. THE TRUCKLOAD SHOWN ON PAGE 7 IS FOR "LIGHTWEIGHT" TRACTOR-TRAILERS ONLY. THE EMPTY TRACTOR-TRAILER SHOULD NOT WEIGH OVER 25,500 LBS AND THE DRIVE AXLES SHOULD NOT EXCEED 10,500 LBS. IF THIS LOAD PLAN IS USED FOR A "STANDARD WEIGHT" TRACTOR-TRAILER (27,500 LBS NET VEHICLE WEIGHT), THE AXLE WEIGHT WILL BE IN EXCESS OF THE LIMIT OF 32,000 LBS. FOR TANDEM AXLES AND THE GROSS VEHICLE WEIGHT WILL EXCEED 73, 280 LBS.
- THE TRUCKLOADS SHOWN ON PAGES 3 AND 5 ARE SUITABLE FOR EITHER "STANDARD OR LIGHTWEIGHT" TRACTOR-TRAILERS.
- THE FILLER ASSEMBLIES SHALL FILL THE VOID BETWEEN THE UNIT LOADS AND THE TRAILER SIDE WALLS. THEY SHALL BE SECURED IN PLACE TO PREVENT LONGITUDINAL MOVEMENT.

WARNING

THE USE OF FILLER ASSEMBLIES WHEN SHIPPING THE HEAVIER FTL'S MAY CAUSE THE VEHICLE TO BE OVER-WEIGHT. GROSS VEHICLE WEIGHTS AND AXLE WEIGHTS SHOULD BE COMPUTED PRIOR TO LOADING.

THE REAR BLOCKING ASSEMBLY SHALL BEAR AGAINST THE LADING AND THE TRAILER DOORS WHEN THE DOORS ARE CLOSED.

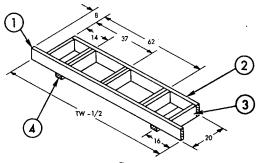
WARNING

DO NOT USE TRAILERS WITH ROLL UP DOORS WHEN BLOCKING BY THIS METHOD.

- 7. CHAINS AND STEEL STRAPS MAY BE USED INTERCHANGEABLY FOR TIE-DOWNS ON A 1 TO 1 BASIS.
- 8. STEEL STRAPS SHALL BE 2 X .050 AND APPLIED AS SPECIFIED BY THE LOAD STRAPPING REQUIREMENTS SHOWN ON PAGE 8.
- CHAINS AND LOAD BINDERS SHALL MEET THE FOLLOWING CONDITIONS:
 - A. CHAINS AND FITTINGS SHALL BE 3/8 INCH AND LOADBINDERS 3/8 INCH CAPACITY.
 - B. CHAINS, FITTINGS AND LOADBINDERS SHALL HAVE A MINIMUM SAFE WORKING LCAD OF 5000 LBS.
 - C. LOADBINDERS SHALL BE SAFETY WIRED WITH 16 GAUGE SOFT ANNEALED IRON WIRE OR SECURED USING THE END PIECE OF THE
- 10. PRIOR TO LOADING THE TRAILER AND DURING THE PRELOADING INSPECTION REQUIRED BY OP 2165 AND REPORTED ON DD FORM 626, THE CHAINS, FITTINGS AND LOADBINDERS SHALL BE INSPECTED FOR STRETCH, GOUGING, BENT LINKS, WEAR AND ANY OTHER NOTICEABLE DEFECTS. THE INSPECTOR SHALL CONFIRM THAT THE CHAINS AND LOADBINDERS HAVE BEEN INSPECTED AND SHALL SO NOTE IN ITEM NC. 22 OF DD FORM 626. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF A CHAIN OR LOADBINDER.
- 11. THE MAXIMUM GROSS WEIGHT OF THE TRACTOR-TRAILER AND THE ALLOWABLE AXLE WEIGHTS ARE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THESE LIMITATIONS AND THE SHIPPER SHALL LOAD THE TRAILER IN SUCH A MANNER THAT THE TRACTOR-TRAILER WILL NOT EXCEED THESE LIMITATIONS.
- 12. AFTER BLOCKING AND BRACING HAS BEEN INSPECTED, ATTACH SHIPPING DOCUMENTS TO TRAILER IN AN ACCESSIBLE AREA, AND ATTACH "EXPLOSIVES A" PLACARD TO BOTH SIDES, FRONT AND BACK OF TRAILER.
- 13. APPLICABLE MATERIAL SPECIFICATIONS: DUNNAGE LUMBER, MM- L-751; NAILS, FF-N-105, TYPE II, STYLE 10, COMMON BRIGHT; STRAPPING, QQ-S-781, TYPE I, CLASS A.
- 14. FOR GENERAL TRUCKLOADING PROCEDURES REFER TO THE GENERAL TRUCKLOADING DOCUMENT, MIL-STD-1320 (NAVY).

FTL-SINGLE ROW (44 & 45 FT VANS)

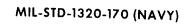
- THIS TRUCKLOAD IS AUTHORIZED FOR A FTL (14 UNIT LOADS) ARRANGED IN A SINGLE ROW PATTERN. EITHER "STANDARD OR LIGHTWEIGHT" VANS HAVING FLOORS OF WOOD, METAL OR METAL WITH WOOD NAILING STRIPS MAY BE USED.
- 2. ONLY 44 & 45 FT VANS WILL ACCOMMODATE THE FTL OF 14 UNIT LOAD ARRANGED IN A SINGLE ROW PATTERN. WHEN 44 OR 45 FT VANS ARE NOT AVAILABLE, USE THE TRUCKLOAD SHOWN ON PAGE 5 TO SHIP 14 UNIT LOADS.
- THE FRONT BULKHEAD, DETAIL A, IS FOR 44 FT TRAILERS. WHEN LOADING 45 FT TRAILERS, INCREASE THE DEPTH OF THE BULKHEAD FROM 20 TO 26 INCHES.
- DETAIL B MAY BE OF "SOLID FILL" CONSTRUCTION WHEN SPACE AT REAR OF LOAD IS LESS THAN 12 INCHES.
- IF THE TRAILER HAS ALL METAL FLOORS OR METAL FLOORS WITH WOOD NAILING STRIPS THAT ARE POSITIONED WRONG FOR NAILING, USE FILLER ASSEMBLY DETAIL D, PAGE 4, TO CONTROL LATERAL MOVEMENT OF LADING.

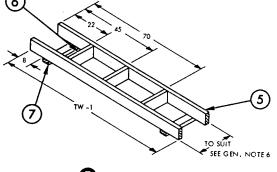


DETAIL A

FRONT BULKHEAD (44 FT TRAILER) (SEE FTL NOTE 3, PAGE 2) (1 REQUIRED)

PAGE 2





NOTE

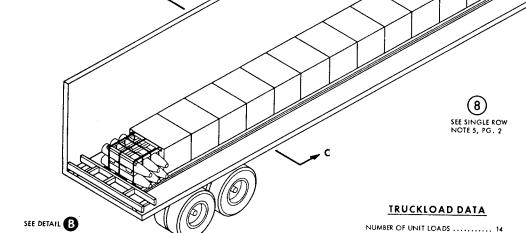
THE TRUCKLOAD SHOWN BELOW IS FOR A 44 FT VAN WITH A WOOD FLOOR, FOR 45 FT VANS SEE FTL NOTE 3. FOR VANS WITH NON-NAILABLE FLOORS, SEE FTL NOTE 5.

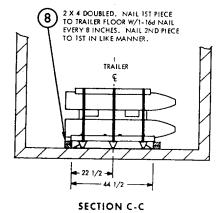
DETAIL B

REAR BLOCKING ASSEMBLY

1 REQUIRED

SEE FTL NOTE 4, PAGE 2





NO.			REQ D	τo	NAILS	
PIECE	DESCRIPTION	SIZE	NO. OF	NAIL	NUMBER	51ZI
1	AFT CROSSMEMBER	2 X 6 X TW-1	1	3	3/JOINT	160
2	FWD CROSSMEMBER	2 X 6 TO SUIT	1	3	3/JCINT	160
3	STRUT	2 × 6 × 17	8	SEE 1 & 2	-	-
4	SUPPORT	2 X 4 X 20	2	1 & 2	2/JCINT	16
5	CROSSMEMBER	2 X 6 X TW-1	2	6	3/JCINT	-
6	STRUT	2 X 6 TO SUIT	3	SEE 5	-	
7	SUPPORT	2 X 4 TO SUIT	2	5	2/JOINT	16
8	SLEEPER	2 X 4 X AS REQ'D	164 FT	SEE SECTION C-C		

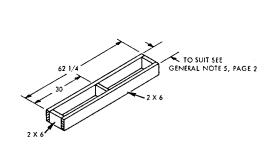
FTL-SINGLE ROW-44 FT VAN

PAGE 3

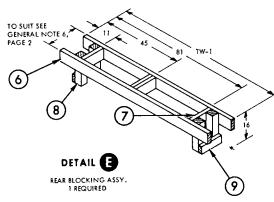
SEE DETAIL

FTL-DOUBLE ROW PATTERN (40, 42, 44 & 45 FT. VANS) 14 UNIT LOADS

- THIS TRUCKLOAD IS AUTHORIZED FOR A FTL (14 UNIT LOADS) ARRANGED IN A DOUBLE ROW PATTERN. EITHER "STANDARD OR LIGHT—WEIGHT" VANS HAVING FLOORS OF WOOD, METAL OR METAL WITH WOOD NAILING STRIPS MAY BE USED.
- 2. THE DEPTH OF THE FRONT BULKHEAD, DETAIL F, VARIES WITH THE LENGTH OF THE TRAILER BEING LOADED. THE BULKHEAD SHALL BE CONSTRUCTED AS SPECIFIED BY DETAIL F AND TABLE I.
- 3. IF THE TRAILER HAS ALL METAL FLOOR OR METAL FLOOR WITH WOOD NAILING STRIPS THAT ARE LOCATED WRONG FOR NAILING, USE FILLER ASSEMBLY DETAIL D TO CONTROL LATERAL MOVEMENT OF LADING.
- 4. WHEN SPACE AT THE REAR OF THE LOADED TRAILER PERMITS AND THE TRAILER HAS A NAILABLE FLOOR, DETAIL G IS AN AUTHORIZED ALTER-NATE. TWO KNEE BRACES ARE REQUIRED FOR EACH UNIT LOAD (4 TOTAL), WITH THE BRACE AGAINST THE 1ST AND 3RD BOMBS OF THE BOTTOM LAYER OF THE UNIT LOAD. NAIL BRACE TO TRAILER FLOOR WITH 8-16d NAILS.



FILLER ASSEMBLY
SEE NOTE 3, PAGE 4

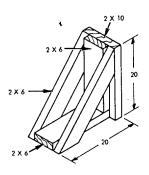


TABLEI

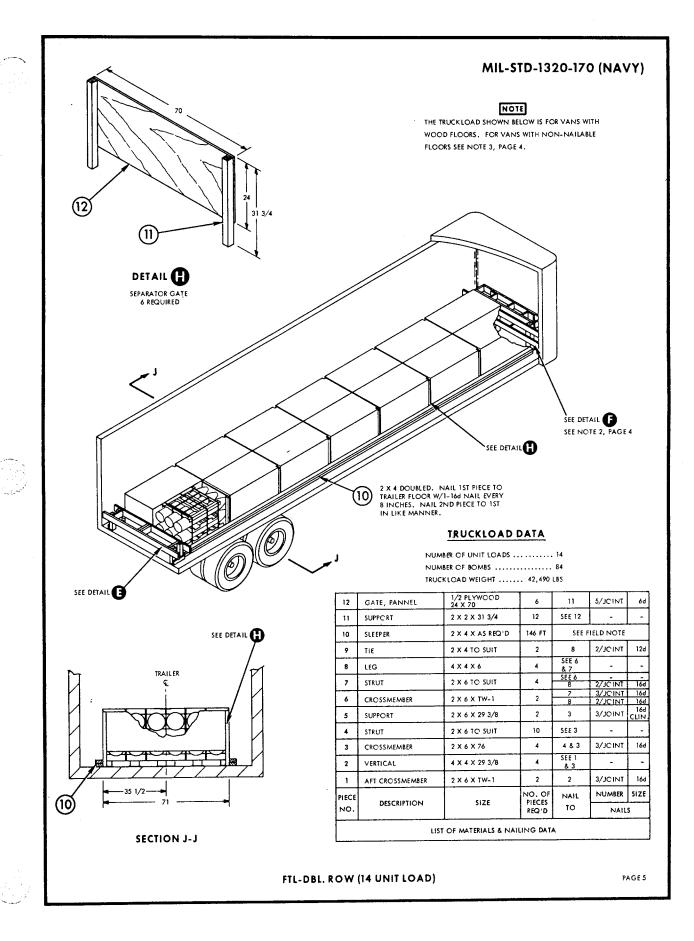
29 3/8	SEE TABLE I	710	37 37 18 29 3/8
	,	· ·	



LENGTH OF TRAILER	DIMENSION "X"
40 FT	12
42 FT	25
44 FT	37
45 FT	43







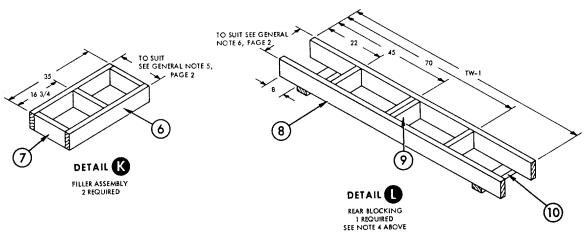
FTL-DBL ROW + 1 PATTERN (42, 44 & 45 FT. VANS) 15 UNIT LOADS

1. THIS TRUCKLOAD IS AUTHORIZED FOR A FTL (15 UNIT LOADS) ARRANGED IN A DOUBLE ROW PATTERN PLUS ONE UNIT LOAD CROSSWAYS
AT THE REAR OF THE LOAD. ONLY LIGHTWEIGHT VANS HAVING FLOORS OF WOOD, METAL OR METAL WITH WOOD NAILING STRIPS
MAY BE USED.

WARNING

THE EMPTY WEIGHT OF "LIGHTWEIGHT" TRACTOR-TRAILERS SHOULD NOT EXCEED 25,500 LBS OR THE DRIVE AXLES 10,500 LBS.

- 2. THE DEPTH OF THE FRONT BULKHEAD, DETAIL M, VARIES WITH THE LENGTH OF THE TRAILER BEING LOADED. THE BULKHEAD SHALL BE CONSTRUCTED AS SPECIFIED BY DETAIL M AND TABLE II.
- IF THE TRAILER HAS ALL METAL FLOORS OR METAL FLOORS WITH WOOD NAILING STRIPS THAT ARE LOCATED WRONG FOR NAILING, USE
 FILLER ASSEMBLY, DETAIL D, ON PAGE 4 TO CONTROL LATERAL MOTION. SEE GENERAL NOTE 5 PAGE 2.
- 4. DETAIL L MAY BE OF "SOLID FILL" CONSTRUCTION WHEN SPACE AT REAR OF LOAD IS LESS THAN 12 INCHES.



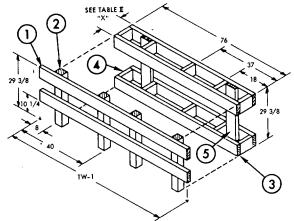
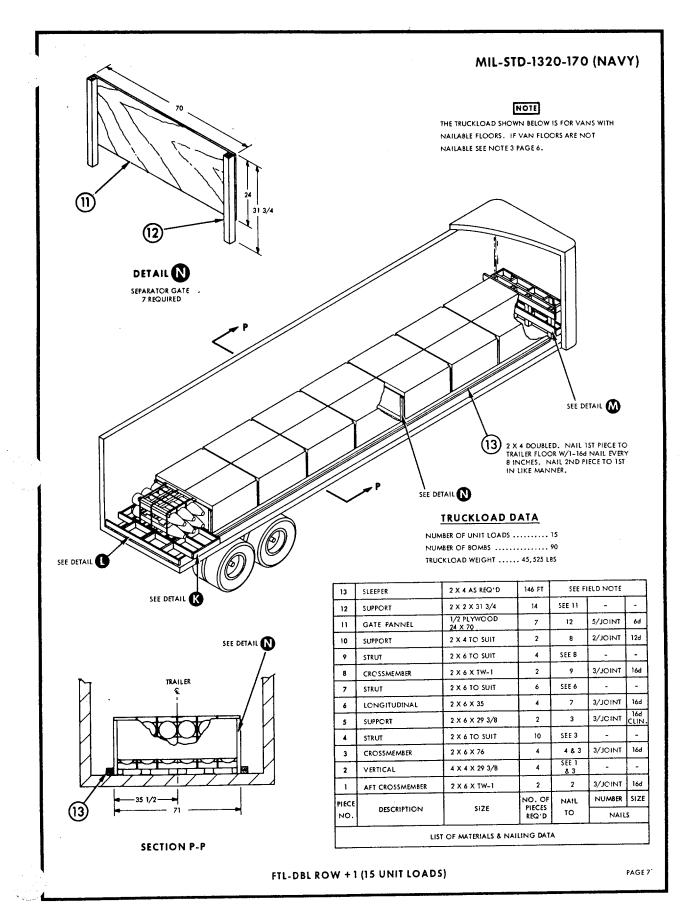


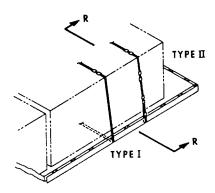
TABLE II

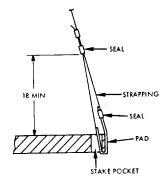
LENGTH OF	DIMENSION "X"
42	12
44	24
45	30

PRONT BULKHEAD 1 REQUIRED SEE NOTE 2 ABOVE



LOAD STRAPPING





SECTION R-R

TIE-DOWN STRAPPING

THE FOLLOWING TWO METHODS OF TIE-DOWN STRAPPING ARE APPROVED FOR USE WITH THE SHIPMENT OF LOADS ON FLATBED TRAILERS. STEEL STRAPPING SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION QQ-5-781. STRAPPING SEALS SHALL HAVE A MINIMUM TENSILE STRENGTH EQUAL TO 75 PER CENT OF THE STRAP STRENGTH. FOR EACH OF THE TYPES ILLUSTRATED ABOVE IT IS PREFERRED TO POSITION, TENSION, AND DOUBLE CRIMP THE STRAP SEALS AT THE TOP OF THE LOAD, IE PRACTICABLE.

TYPE I - CONTINUOUS STRAPPING AROUND THE FLATBED AND THE LOAD.

TYPE II - THE STRAPPING IS SECURED TO THE STAKE POCKETS, ONE PIECE ON EACH SIDE OF THE TRAILER, AND IS BROUGHT UP CVER THE LOAD, TENSIONED, AND SEALED WITH TWO DOUBLE-CRIMPED SEALS ON THE TOP.

METHOD OF SECURING STRAPPING TO STAKE POCKET IS SHOWN IN SECTION R-R. THE SHORT END IS ON THE INSIDE AND IS SECURED WITH TWO DOUBLE-CRIMPED SEALS AT A MINIMUM OF 18 INCHES ABOVE THE TRAILER BED. A STACK POCKET PAD (A SHORT PIECE OF THE SAME STRAPPING 18 INCHES LONG) IS INSERTED BETWEEN THE MAIN STRAP AND THE STAKE POCKET AND IS SECURED TO THE MAIN STRAP WITH A SEAL AS

FTL-DOUBLE ROW PATTERN (40 & 42 FT FLATBED TRAILER)

14 UNIT LOADS

- THIS TRUCKLOAD IS AUTHORIZED FOR A TFL (14 UNIT LOADS) ARRANGED IN A DOUBLE ROW PATTERN.
- 2. THE LADING SHALL BE COVERED WITH A WATERPROOF, FIRE RESISTANT TARPAULIN. THE

 BEST RESULTS ARE OBTAINED IF THE UNIT LOADS ARE COVERED WITH THE TARPAULIN PRIOR

 BEST RESULTS ARE OBTAINED IF THE UNIT LOADS ARE COVERED WITH THE TARPAULIN PRIOR
 - TO APPLYING THE TIE-DOWN CHAINS OR STRAPS. PROTECTOR BOARDS SHALL BE USED BETWEEN THE TIE-DOWNS AND THE TARPAULIN.
- WHEN LOADING 42 FT FLATBED TRAILERS, POSITION THE 1ST UNIT LOADS 34 INCHES FROM FRONT OF TRAILER.
- POSITION PROTECTOR BOARD, PIECE 7, AND HOLD DOWN CHAIN OR STRAPS OVER THE "HARD POINTS" OF THE UNIT LOADS.
- 5. CHAIN AND 2 INCH STRAPS MAY BE USED INTERCHANGEABLY ON A 1 TO 1 BASIS.
- STEEL STRAPS SHALL BE 2 X .050 AND APPLIED AS SPECIFIED BY THE LOAD STRAPPING RE-QUIREMENT SHOWN ABOVE.

