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MECH DIV AAR, THEIR LETTER
DATED 19 January 1961 FILE, 10.3
SIGNED Stanley W. Plate, Lt Col, USA
DATE Telephone call from Mrs Pepperline a
MTMA, WASHINGTON 25, D.C.

INTERIM APPROVED BY
MTMA

Stanley W. Plate, Lt Col, USA
MTMA
DATE 18 January 1961

APPROVED
BUREAU OF EXPLOSIVES

A. F. Grassmuck
INSPECTOR
DATE 12/19/60

WIRE ROPE AND ANNEALED WIRE APPLICATION METHODS FOR SECURING LADING ON RAIL & MOTOR CARRIER EQUIP.

DRAFTSMAN	TRACER	ENGINEER
K.S.J.		CRJ / 8-60
CHECKER	CHECKER	ENGINEER
RHA / GWP	DEN	

SUBMITTED
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EXAMINED
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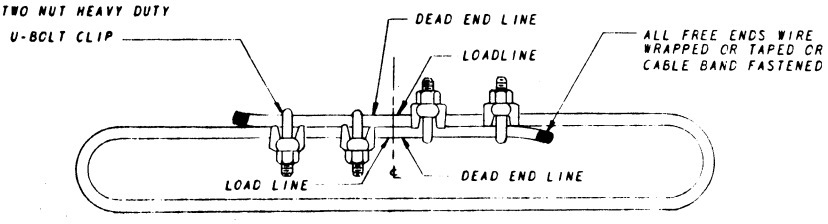
ORD. CORPS U.S.A.

APPROVED BY ORDER OF THE CHIEF OF ORDNANCE
Glenn A. Arney
ORD. CORPS U.S.A.

ORDNANCE CORPS U.S.A.

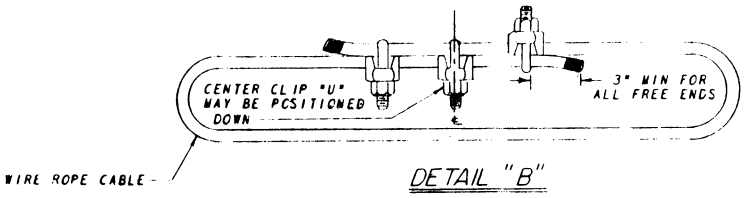
REVISIONS

CLASS	DIVISION	DRAWING	FILE
19	48	C-ORDJU - 588	



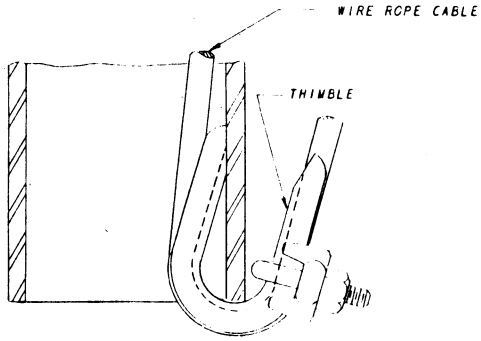
DETAIL "A"

(APPLICATION OF FOUR CLIPS FOR COMPLETE LOOP ROPE CABLE USE)



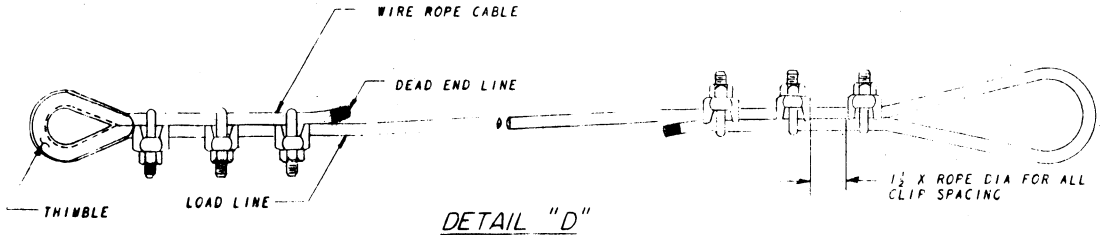
DETAIL "B"

(APPLICATION OF THREE CLIPS FOR COMPLETE LOOP ROPE CABLE USE)



DETAIL "C"

(THIMBLE APPLICATION AT CARRIER STAKE POCKET OR AT OTHER SHARP EDGES)



DETAIL "D"

(APPLICATION OF THREE CLIPS FOR SINGLE STRAND ROPE CABLE USE)

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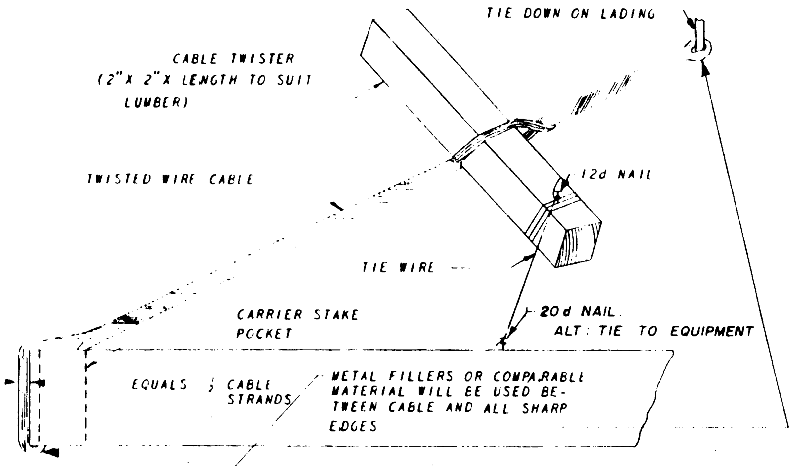


DETAIL "E"

(ANNEALED WIRE CABLE AND TWISTER WITH TIE DOWN)

GENERAL NOTES

A. THIS DRAWING IS TO BE USED IN CONJUNCTION WITH OFFICIAL ORDNANCE CORPS OUTLOADING DRAWINGS.

B. AS PROVEN BY ORDNANCE CORPS TESTS, THE METHODS SHOWN DEPICT THE PROPER USE OF AND THE MOST EFFICIENT APPLICATION OF THE DELINEATED MATERIAL.

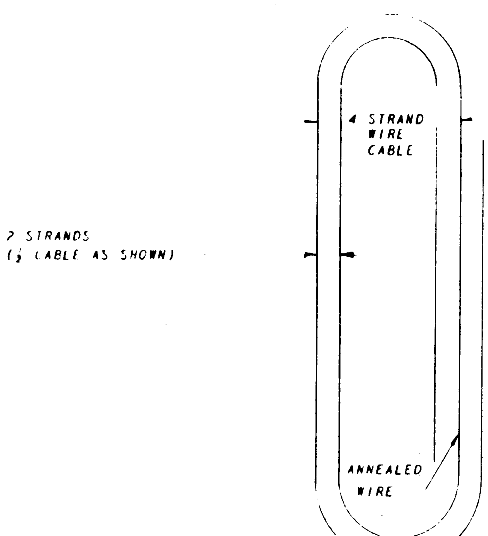
C. DETAILS "A" AND "D" DEPICT WIRE ROPE CLIP POSITIONING WHICH RESULTS IN MAXIMUM CABLE STRENGTH UTILIZATION; ie. FOR DETAIL "A" 1.7 X CABLE BREAKING STRENGTH AND FOR DETAIL "D" 0.9 X CABLE BREAKING STRENGTH AS APPLIED TO IMPROVED PLOW STEEL WIRE ROPE, PLAIN, PREFORMED, REGULAR LAY, 6 X 19 FLEXIBLE IWRC.

D. DETAIL "B" DEPICTS WIRE ROPE CLIP APPLICATION WHICH RESULTS IN APPROXIMATELY 1.5 X CABLE STRENGTH.

E. AS SHOWN, ONLY HEAVY DUTY U-BOLT TYPE CLIPS (CROSBY OR EQUAL) WILL BE USED. USAGE OF OTHER TYPE CLIPS, FOR THIS TYPE OF ROPE UTILIZATION, RESULTS IN AN APPROXIMATE 25% STRENGTH UTILIZATION LOSS.

F. WIRE ROPE CLIP NUTS MUST BE TIGHTENED TO A RANGE OF 60-90 FOOT POUNDS OF TORQUE -- 90 FOOT POUNDS PREFERRED. THIS CAN BE ACCOMPLISHED BY UTILIZING A PROPER SIZED TORQUE WRENCH. AFTER THE NUTS HAVE BEEN INITIALLY TIGHTENED TO THE DESIRED RANGE, THE "U" SIDE OF EACH CLIP MUST BE STRUCK SEVERAL TIMES WITH A HAMMER TO INSURE PROPER SEATING INTO THE DEAD END LINE. FINAL TORQUE WILL BE ACQUIRED BY REPEATEDLY AND ALTERNATELY TIGHTENING EACH CLIP NUT. ALTERNATE METHOD OF TIGHTENING CLIP NUTS WHEN A TORQUE WRENCH IS NOT AVAILABLE:

A WRENCH WITH A FIFTEEN INCH MINIMUM LENGTH HANDLE MAY BE USED IN LIEU OF A TORQUE WRENCH. INITIAL TIGHTENING WILL BE ACCOMPLISHED BY REPEATEDLY AND ALTERNATELY TIGHTENING EACH NUT ON A CLIP A MINIMUM OF FOUR TIMES. AFTER ALL CLIPS HAVE BEEN TIGHTENED IN THIS MANNER, THE "U" SIDE OF EACH CLIP MUST BE STRUCK SEVERAL TIMES WITH A HAMMER. FINAL TORQUE WILL BE ACQUIRED BY, AGAIN, REPEATEDLY AND ALTERNATELY TIGHTENING EACH CLIP NUT A MINIMUM OF FOUR TIMES.



DETAIL "F"

(METHOD FOR DETERMINING NUMBER OF WIRE STRANDS PER CABLE).

MATERIAL SPECIFICATIONS

WIRE ROPE:	STEEL WIRE, PLAIN, PREFORMED, REGULAR LAY, 6 X 19, FLEXIBLE IWRC, MACWHYTE STRAND CO OR EQUAL, FED SPEC RR-W-410.
WIRE:	ANNEALED, BLACK, FED SPEC QQ-W-461.
THIMBLE:	WIRE ROPE, STANDARD
CLIP:	U-BOLT, HEAVY DUTY, CROSBY OR EQUAL.
LUMBER:	SEE PARAGRAPH 8A0C, ORDM 3-4, VOL 3, DATED 1 JULY 1955.
NAILS:	COMMON, CEMENT COATED, FED SPEC FF-N-105.
ALT:	ANNULAR-RING TYPE NAIL OF SAME SIZE.

DO NOT SCALE

WIRE ROPE AND ANNEALED WIRE APPLICATION METHODS FOR SECURING LADING ON RAIL & MOTOR CARRIER EQUIP.

DRAFTSMAN	TRACER	ENGINEER
KSJ		CRJ / ...
CHECKER	CHECKER	ENGINEER
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REVISIONS

SUBMITTED: ... COLONEL ORD. CORPS U.S.A.

EXAMINED: ... ORD. CORPS U.S.A.

APPROVED BY ORDER OF THE CHIEF OF ORDNANCE: Glenn L. Arnney ORD. CORPS U.S.A.

ORDNANCE CORPS U.S.A.

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