

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., 1 April 1993

MODIFICATION WORK ORDER
MODIFICATION OF M978 HEAVY EXPANDED MOBILITY
TACTICAL TRUCK (HEMTT) TANKER
FRONT TANK VENT TO SAFELY ROUTE VENTED FUEL

MODEL	NSN
TRUCK, TANK, FUEL, W/WINCH, M978	2320-01-097-0249
TRUCK, TANK, FUEL, W/O WINCH, M978	2320-01-100-7672

MWO 9-2320-279-20-5 dated 1 April 1992, is changed as follows:

1. Remove old pages and insert new pages as indicated below.
2. New or changed information is indicated by a vertical bar in the margin of the page.
3. Minor changes to illustrations are indicated by a miniature pointing hand.
4. Illustrations that are new or that have major revisions are indicated by a vertical bar adjacent to the illustration identification number.

Remove Pages
3 and 4

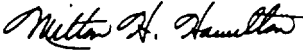
Insert Pages
3 and 4

5. File this change sheet in front of the publication for reference purposes.

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:


MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
04035

Distribution:

To be distributed in accordance with DA Form 12-38-E (Block 0865) Unit maintenance requirements for MWO 9-2320-279-20-5.

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

NORMAL

MWO effective date 1 January 1992 and completion date 31 December 1995

MWO 9-2320-279-20-5

MODIFICATION WORK ORDER

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HEADQUARTERS, DEPARTMENT OF THE ARMY, WASHINGTON, DC
1 April 1992

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this MWO. If you find any mistakes or if you know a way to improve the procedures, please let us know. Write a letter, or complete and mail in a DA Form 2028 (Recommended Changes to Publications and Blank Forms), direct to: Commander, U.S. Army Tank-Automotive Command, Attn: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

- 1. PURPOSE.** The installation of the kit contained in this MWO is intended to safely route fuel seeping from the front tank vent of the M978 HEMTT tanker.
- 2. PRIORITY.** This modification is classified as NORMAL.
- 3. END ITEM TO BE MODIFIED.** Refer to Table 1.

Table 1. End Items to be Modified

Nomenclature	NSN	PN	CAGE	Model	Serial No. Range
Tanker vehicle w/winch	2320-01-097-0249	XM978 w/winch	19207	M978	20008
Tanker vehicle wo/winch	2320-01-100-7672	XM978 w/o winch	19207	M978	through 39398

MWO 9-2320-279-20-5

4. MODULE (COMPONENTS, ASSEMBLIES, SUBASSEMBLIES, BOARDS, AND CARDS) TO BE MODIFIED. Nonapplicable.

5. PARTS TO BE MODIFIED. The following items, whether installed or in depot stock shall be modified. Refer to Table 2.

Table 2. Parts to be Modified

Nomenclature	PN	CAGE	Serial No. Range
Tanker assembly front vent	45D018	17566	20008 through 39398

6. APPLICATION.

- a. Time Compliance Schedule. The effective date of this MWO is 1 January 1992 and its completion date is 31 December 1995.
- b. Lowest Level of Maintenance Authorized to Apply the MWO: Unit.
- c. Work Force and Man-Hour Requirements for Application of this MWO to a Single Unit, End Item or System is as follows:

REQUIREMENTS

WORK FORCE/SKILLS

MAN-HOURS

Heavy Wheeled Vehicle Mechanic
(MOS 63S) (2)

.5

Total man-hours required for a single application of this MWO is one hour.

- d. MWO's to be applied to or Concurrently with the Application of this MWO: Not applicable.
- e. Additional Information Deemed Necessary to Assist in the Application of this MWO. Not applicable,

7. TECHNICAL PUBLICATIONS AFFECTED/CHANGED. Refer to Table 3.

Table 3. Publications Affected

Publication	Date
TM 9-2320-279-20	April 1987
TM 9-2320-279-20P	March 1988
TM 9-2320-279-34P	March 1988

8. MWO KITS/PARTS AND THEIR DISPOSITION.

- a. Kits/Parts Needed to Apply this MWO.
 - (1) The parts listed in Table 4 are required to accomplish this MWO.

Table 4. Part and Security Classification

Nomenclature	NSN	PN	CAGE	Qty	Classified
Drain vent kit	3935-01-306-3324	1660000U	45152	1	Unclassified
Includes:					
Reducer bushing		1655620	45152	1	Unclassified
Elbow		1655610	45152	1	Unclassified
Hose mender		1655600	45152	1	Unclassified
Hose clamp		306BX19	45152	3	Unclassified
Vent hose		1655630	45152	1	Unclassified
Cushion clip		2288HX	45152	2	Unclassified
Plug		1655590	45152	1	Unclassified
Cushion clip		2287HX	45152	1	Unclassified
Screw		420AX1	45152	2	Unclassified
Lockwasher		351AX	45152	2	Unclassified
Nut		434AX1	45152	2	Unclassified

(2) Kit shipping data:

- b. Contents of MWO Kits: Refer to Table 4.
- c. Bulk and Expendable Material: Not applicable.
- d. Parts Disposition. Not applicable.

9. SPECIAL TOOLS; JIGS; TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE); AND FIXTURES REQUIRED. Not applicable.

10. MODIFICATION PROCEDURES.

a. Prepare vehicle for installation.

- (1) Insert plug (1) into vent opening (2).
- (2) Mark vent shield (3) as shown in Figure 1.

CAUTION

Do not cut into vent opening when cutting shield.

- (3) Cut vent shield (3) using a hacksaw.
- (4) Sand sharp edges and remove burrs from vent shield (3).
- (5) Remove and discard plug (1).

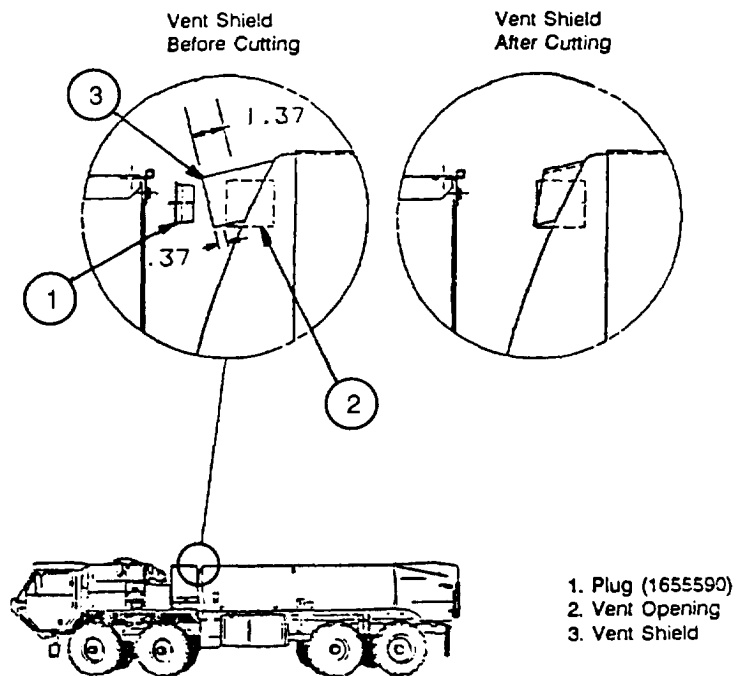


Figure 1

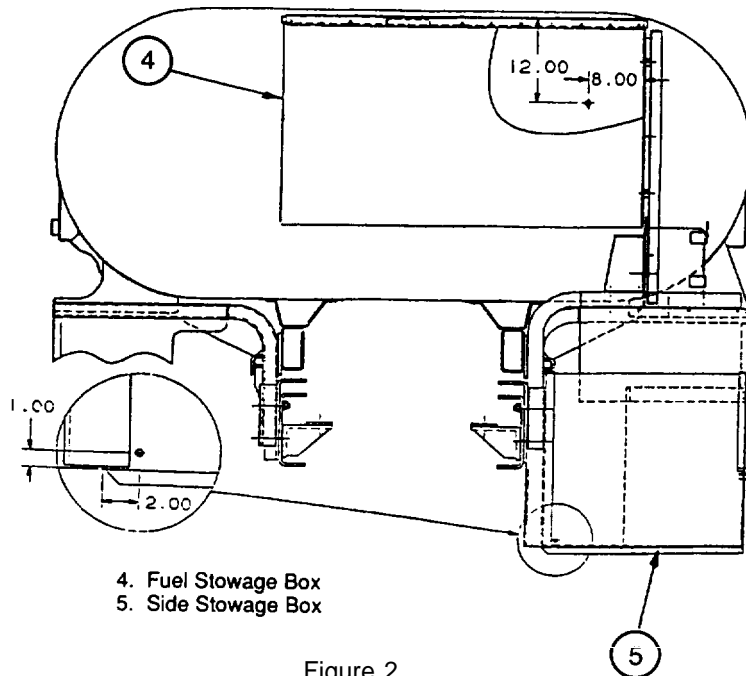


Figure 2

(6) Mark and drill .41" hole in rear of fuel can stowage box (4) as shown in Figure 2.

(7) Mark and drill .41" hole in front of side stowage box (5) as shown in Figure 2.

b. Kit installation.

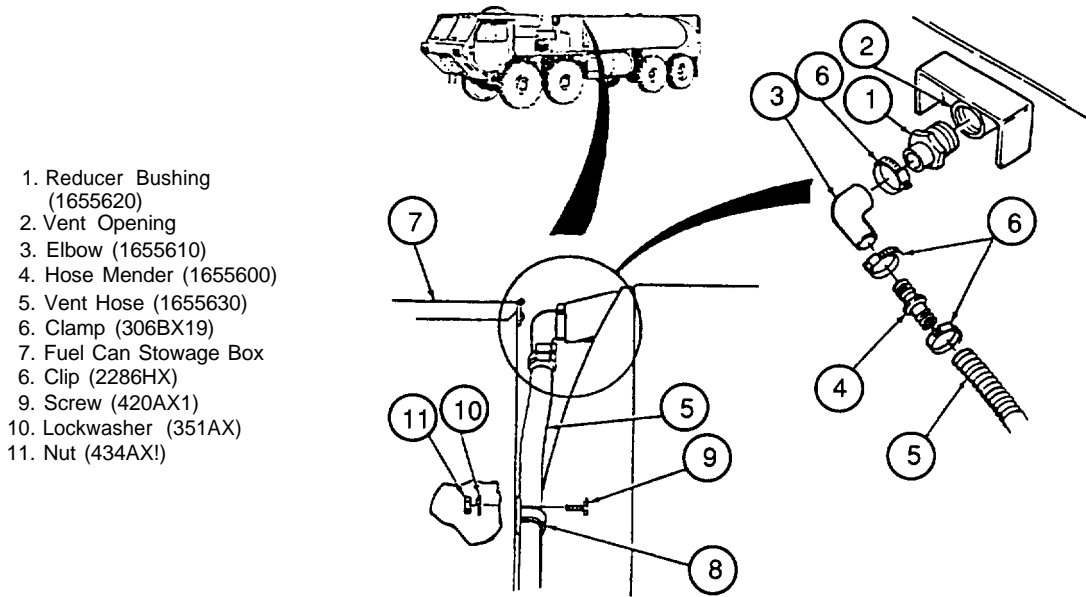


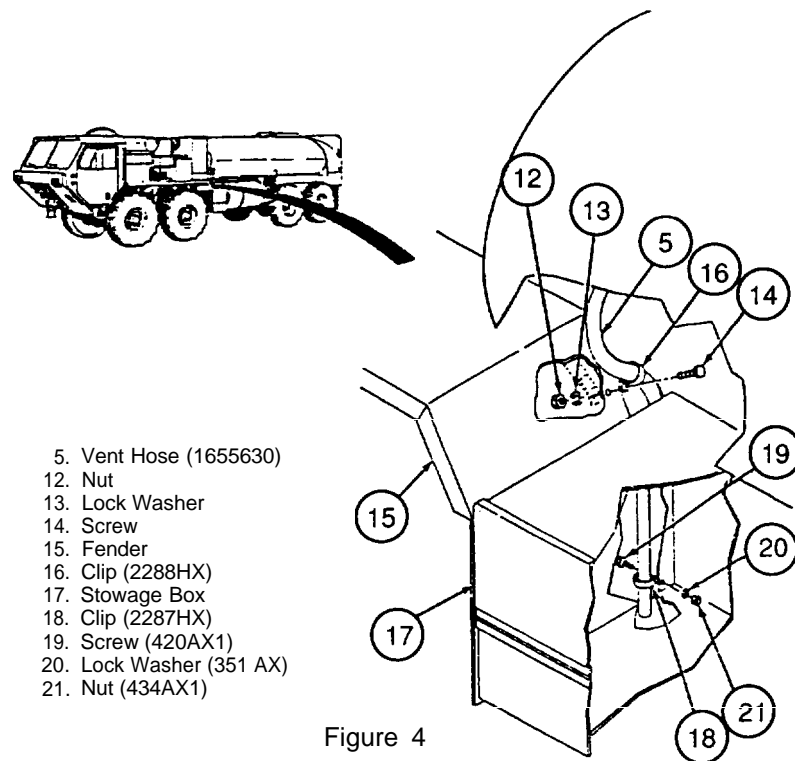
Figure 3

(1) Install reducer bushing (1) into tank vent opening (2).

(2) Assemble elbow (3), hose mender (4), and vent hose (5). Secure with two clamps (6).

(3) Install elbow (3) to reducer bushing (1) with vent clamp (6).

(4) Install vent hose (5) to fuel can stowage box (7) with clip (8), screw (9), lockwasher (10), and nut (11).



(5) Remove nut (12), lockwasher (13) and screw (14) from fender (15).

(6) Install vent hose (5) to fender (15) with clip (16) screw (14) lockwasher (13) and nut (12).

(7) Install vent hose (5) to stowage box (17) with clip (18) screw (19) lockwasher (20) and nut (21). Soldier A puts screw (19) through clip (18) and stowage box (17) while soldier B installs lockwasher (20) and nut (21).

11. CALIBRATION REQUIREMENTS. Not applicable.

12. WEIGHT AND BALANCE DATA. Weight and balance are not significantly affected.

13. QUALITY ASSURANCE REQUIREMENTS. Not applicable.

14. RECORDING AND REPORTING OF THE MODIFICATION.

a. Records and Reports: Record the modification in accordance with AR 750-10, DA PAM 738-750, DA PAM 738-751 and TB 9-1100-803-15.

b. Marking Equipment: Not applicable.

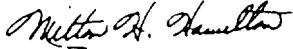
c. Identification Data: Not applicable.

15. PRODUCT IMPROVEMENT PROPOSAL (PIP) NUMBER. This MWO is authorized by PIP number 1-89-06-4242.

16. MODIFICATION IDENTIFICATION. Refer to paragraph 10.

By Order of the Secretary of the Army:

Official:



MILTON H. HAMILTON
*Administrative Assistant to the
Secretary of the Army*

03836

GORDON R. SULLIVAN
*General, United States Army
Chief of Staff*

Distribution:

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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL.

SOMETHING WRONG WITH PUBLICATION

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER

PUBLICATION DATE

PUBLICATION TITLE

BE EXACT PIN-POINT WHERE IT IS

PAGE NO.

PARA-GRAPH

FIGURE NO.

TABLE NO.

IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.

TEAR ALONG PERFORATED LINE

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SIGN HERE

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 dekagram = 10 grams = .35 ounce
 1 hectogram = 10 dekagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F Fahrenheit temperature 5/9 (after subtracting 32) Celsius temperature °C

PIN: 069434-001